libquentier

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Chapter 1

libquentier

Set of Qt/C++ APIs for feature rich desktop clients for Evernote service

1.1 What's this

This library presents a set of Qt/C++ APIs useful for applications working as feature rich desktop clients for Evernote service. The most important and useful components of the library are the following:

- Local storage - persistence of data downloaded from Evernote service in a local SQLite database
- Synchronization - the logics of exchanging new and/or modified data with Evernote service
- Note editor - the UI component capable for notes displaying and editing

The library is based on the lower level functionality provided by `QEverCloud` library. It also serves as the functional core of `Quentier` application.

1.1.1 WARNING: libquentier is in alpha state right now, neither API nor ABI can be considered stable yet!

1.2 How to build/install

Please see the building/installation guide.

1.3 How to contribute

Please see the contribution guide for detailed info.

Chapter 2

Hierarchical Index

2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 3

Class Index

3.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 4

File Index

4.1 File List

Here is a list of all documented files with brief descriptions:

Chapter 5

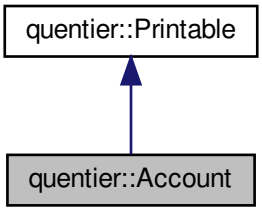
Class Documentation

5.1 quentier::Account Class Reference

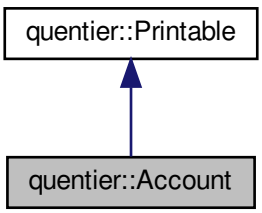
The Account class encapsulates some details about the account: its name, whether it is local or synchronized to Evernote and for the latter case - some additional details like upload limit etc.

`#include <Account.h>`

Inheritance diagram for quentier::Account:



Collaboration diagram for quentier::Account:



Public Types

- enum class **Type** { **Local** = 0 , **Evernote** }
- enum class **EvernoteAccountType** { **Free** = 0 , **Plus** , **Premium** , **Business** }

Public Member Functions

- **Account** (QString name, const Type type, const qevercloud::UserID userId=-1, const EvernoteAccountType evernoteAccountType=EvernoteAccountType::Free, QString evernoteHost={}, QString shardId={})
- **Account** (const Account &other)
- Account & **operator=** (const Account &other)
- bool **operator==** (const Account &other) const
- bool **operator!=** (const Account &other) const
- bool isEmpty () const
- QString name () const
- void **setName** (QString name)

  setName sets the username to the account
- QString displayName () const
- void setDisplayName (QString displayName)
- Type type () const
- qevercloud::UserID id () const
- EvernoteAccountType evernoteAccountType () const
- QString evernoteHost () const
- QString shardId () const
- void **setEvernoteAccountType** (const EvernoteAccountType evernoteAccountType)
- void **setEvernoteHost** (QString evernoteHost)
- void **setShardId** (QString shardId)
- qint32 **mailLimitDaily** () const
- qint64 **noteSizeMax** () const
- qint64 **resourceSizeMax** () const
- qint32 **linkedNotebookMax** () const
- qint32 **noteCountMax** () const
- qint32 **notebookCountMax** () const
- qint32 **tagCountMax** () const
- qint32 **noteTagCountMax** () const
- qint32 **savedSearchCountMax** () const
- qint32 **noteResourceCountMax** () const
- void **setEvernoteAccountLimits** (const qevercloud::AccountLimits &limits)
- virtual QTextStream & print (QTextStream &strm) const override

Friends

- QUENTIER_EXPORT QTextStream & **operator<<** (QTextStream &strm, const Type type)
- QUENTIER_EXPORT QDebug & **operator<<** (QDebug &dbg, const Type type)
- QUENTIER_EXPORT QTextStream & **operator<<** (QTextStream &strm, const EvernoteAccountType type)
- QUENTIER_EXPORT QDebug & **operator<<** (QDebug &dbg, const EvernoteAccountType type)

Additional Inherited Members

5.1.1 Detailed Description

The Account class encapsulates some details about the account: its name, whether it is local or synchronized to Evernote and for the latter case - some additional details like upload limit etc.

5.1.2 Member Function Documentation

5.1.2.1 displayName()

```
QString quentier::Account::displayName ( ) const
```

Returns

Printable user's name that is not used to uniquely identify the account, so this name may repeat across different local and Evernote accounts

5.1.2.2 evernoteAccountType()

```
EvernoteAccountType quentier::Account::evernoteAccountType ( ) const
```

Returns

The type of the Evernote account; if applied to free account, returns "Free"

5.1.2.3 evernoteHost()

```
QString quentier::Account::evernoteHost ( ) const
```

Returns

The Evernote server host with which the account is associated

5.1.2.4 id()

```
qevercloud::UserID quentier::Account::id ( ) const
```

Returns

User id for Evernote accounts, -1 for local accounts (as the concept of user id is not defined for local accounts)

5.1.2.5 isEmpty()

```
bool quentier::Account::isEmpty ( ) const
```

Returns

True if either the account is local but the name is empty or if the account is Evernote but user id is negative; in all other cases return false

5.1.2.6 name()

```
QString quentier::Account::name ( ) const
```

Returns

Username for either local or Evernote account

5.1.2.7 print()

```
virtual QTextStream & quentier::Account::print (
            QTextStream & strm ) const  [override], [virtual]
```

Implements quentier::Printable.

5.1.2.8 setDisplayName()

```
void quentier::Account::setDisplayName (
            QString displayName )
```

Set the printable name of the account

5.1.2.9 shardId()

```
QString quentier::Account::shardId ( ) const
```

Returns

Shard id for Evernote accounts, empty string for local accounts (as the concept of shard id is not defined for local accounts)

5.1.2.10 type()

```
Type quentier::Account::type ( ) const
```

Returns

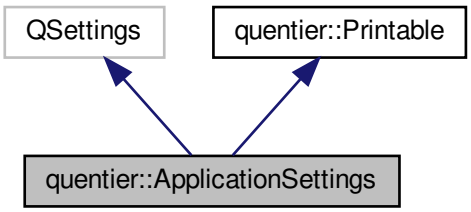
The type of the account: either local of Evernote

5.2 quentier::ApplicationSettings Class Reference

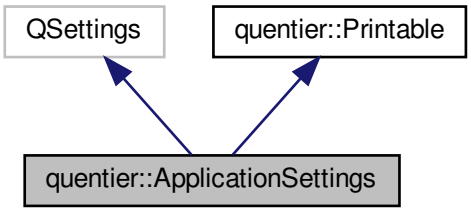
The ApplicationSettings class enhances the functionality of QSettings, in particular it simplifies the way of working with either application-wide or account-specific settings.

```
#include <ApplicationSettings.h>
```

Inheritance diagram for quentier::ApplicationSettings:



Collaboration diagram for quentier::ApplicationSettings:



Classes

- struct ArrayCloser
- struct GroupCloser

Public Member Functions

- ApplicationSettings (const QString &settingsName={})
- ApplicationSettings (const Account &account, const QString &settingsName={})
- ApplicationSettings (const Account &account, const char *settingsName, const int settingsNameSize=-1)
- virtual ~ApplicationSettings () override
- void beginGroup (const QString &prefix)
- void beginGroup (const char *prefix, const int size=-1)
- int beginReadArray (const QString &prefix)
- int beginReadArray (const char *prefix, const int size=-1)
- void beginWriteArray (const QString &prefix, const int arraySize=-1)
- void beginWriteArray (const char *prefix, const int arraySize=-1, const int prefixSize=-1)
- bool contains (const QString &key) const
- bool contains (const char *key, const int size=-1) const
- void remove (const QString &key)
- void remove (const char *key, const int size=-1)
- void setValue (const QString &key, const QVariant &value)
- void setValue (const char *key, const QVariant &value, const int keySize=-1)
- QVariant value (const QString &key, const QVariant &defaultValue={}) const
- QVariant value (const char *key, const QVariant &defaultValue={}, const int keySize=-1) const
- virtual QTextStream & print (QTextStream &strm) const override

Additional Inherited Members

5.2.1 Detailed Description

The ApplicationSettings class enhances the functionality of QSettings, in particular it simplifies the way of working with either application-wide or account-specific settings.

5.2.2 Constructor & Destructor Documentation

5.2.2.1 ApplicationSettings() [1/3]

```
quentier::ApplicationSettings::ApplicationSettings (
            const QString & settingsName = {} )
```

Constructor for application settings not being account-specific

Parameters

settingsName	If not empty, the created application settings would manage the settings stored in a file with a specific name within the common settings storage; otherwise they would be stored in the default settings file for the account

5.2.2.2 ApplicationSettings() [2/3]

```
quentier::ApplicationSettings::ApplicationSettings (
            const Account & account,
            const QString & settingsName = {} )
```

Constructor for application settings specific to the account

Parameters

account	The account for which the settings are to be stored or read
settingsName	If not empty, the created application settings would manage the settings stored in a file with a specific name within the account's settings storage; otherwise they would be stored in the default settings file for the account

5.2.2.3 ApplicationSettings() [3/3]

```
quentier::ApplicationSettings::ApplicationSettings (
            const Account & account,
            const char * settingsName,
            const int settingsNameSize = -1 )
```

Constructor for application settings specific to the account

Parameters

account	The account for which the settings are to be stored or read
settingsName	If not nullptr, the created application settings would manage the settings stored in a file with a specific name within the account's settings storage; otherwise they would be stored in the default settings file for the account. Must be UTF-8 encoded as internally it is converted to QString via QString::fromUtf8
settingsNameSize	Size of the settingsName string. If negative (the default), the settingsName size is taken to be strlen(settingsName)

5.2.2.4 ~ApplicationSettings()

```
virtual quentier::ApplicationSettings::~ApplicationSettings ( )  [override], [virtual]
```

Destructor

5.2.3 Member Function Documentation

5.2.3.1 beginGroup() [1/2]

```
void quentier::ApplicationSettings::beginGroup (
            const char * prefix,
            const int size = -1 )
```

Appends prefix to the current group. Overload of beginGroup accepting const char * and optionally the size of the string

Parameters

prefix	String containing the prefix name. Must be UTF-8 encoded as internally it is converted to QString via QString::fromUtf8
size	Size of the prefix sring. If negative (the default), the prefix size is taken to be stren(prefix).

5.2.3.2 beginGroup() [2/2]

```
void quentier::ApplicationSettings::beginGroup (
            const QString & prefix )
```

Appends prefix to the current group. The call is redirected to QSettings::beginGroup. It is required in this class only to workaround hiding QSettings method due to overloads

Parameters

prefix	String containing the prefix name

5.2.3.3 beginReadArray() [1/2]

```
int quentier::ApplicationSettings::beginReadArray (
            const char * prefix,
            const int size = -1 )
```

Adds prefix to the current group and starts reading from an array. Overload of beginReadArray accepting const char * and optionally the size of the string

Parameters

prefix	String containing the prefix name. Must be UTF-8 encoded as internally it is converted to QString via QString::fromUtf8
size	Size of the prefix sring. If negative (the default), the prefix size is taken to be stren(prefix)

5.2.3.4 beginReadArray() [2/2]

```
int quentier::ApplicationSettings::beginReadArray (
            const QString & prefix )
```

Adds prefix to the current group and starts reading from an array. The call is redirected to QSettings::beginRead↩ Array. It is required in this class only to workaround hiding QSettings method due to overloads

Parameters

prefix	String containing the prefix name

Returns

The size of the array

5.2.3.5 beginWriteArray() [1/2]

```
void quentier::ApplicationSettings::beginWriteArray (
            const char * prefix,
            const int arraySize = -1,
            const int prefixSize = -1 )
```

Adds prefix to the current group and starts writing an array of size arraySize. Overload of beginWriteArray accepting const char ∗ and optionally the size of the string

Parameters

prefix	String containing the prefix name. Must be UTF-8 encoded as internally it is converted to QString via QString::fromUtf8
arraySize	Size of the array to be written. If negative (the default), it is automatically determined based on the indexes of the entries written.
prefixSize	Size of the prefix sring. If negative (the default), the prefix size is taken to be stren(prefix)

5.2.3.6 beginWriteArray() [2/2]

```
void quentier::ApplicationSettings::beginWriteArray (
            const QString & prefix,
            const int arraySize = -1 )
```

Adds prefix to the current group and starts writing an array of size arraySize. The call is redirected to QSettings↩ ::beginWriteArray. It is required in this class only to workaround hiding QSettings method due to overloads

Parameters

prefix	String containing the prefix name
arraySize	Size of the array to be written. If negative (the default), it is automatically determined based on the indexes of the entries written.

5.2.3.7 contains() [1/2]

```
bool quentier::ApplicationSettings::contains (
            const char * key,
            const int size = -1 ) const
```

Overload of contains accepting const char * and optionally the size of the string

Parameters

key	String containing the setting name. Must be UTF-8 encoded as internally it is converted to QString via QString::fromUtf8
size	Size of the key sring. If negative (the default), the key size is taken to be stren(key)

Returns

True if there exists a setting called key; false otherwise

5.2.3.8 contains() [2/2]

```
bool quentier::ApplicationSettings::contains (
            const QString & key ) const
```

The call is redirected to QSettings::contains. It is required in this class only to workaround hiding QSettings method due to overloads

Parameters

key	The key being checked for presence

Returns

True if there exists a setting called key; false otherwise

5.2.3.9 print()

```
virtual QTextStream & quentier::ApplicationSettings::print (
            QTextStream & strm ) const  [override], [virtual]
```

Implements quentier::Printable.

5.2.3.10 remove() [1/2]

```
void quentier::ApplicationSettings::remove (
            const char * key,
            const int size = -1 )
```

Removes the setting key and any sub-settings of key. Overload of remove accepting const char * and optionally the size of the string

Parameters

key	String containing the setting name. Must be UTF-8 encoded as internally it is converted to QString via QString::fromUtf8
size	Size of the key sring. If negative (the default), the key size is taken to be stren(key).

5.2.3.11 remove() [2/2]

```
void quentier::ApplicationSettings::remove (
            const QString & key )
```

Removes the setting key and any sub-settings of key. The call is redirected to QSettings::remove. It is required in this class only to workaround hiding QSettings method due to overloads

Parameters

key	String containing the setting name

5.2.3.12 setValue() [1/2]

```
void quentier::ApplicationSettings::setValue (
            const char * key,
            const QVariant & value,
            const int keySize = -1 )
```

Sets the value of setting. Overload of setValue accepting const char * and optionally the size of the string

Parameters

key	String containing the setting name. Must be UTF-8 encoded as internally it is converted to QString via QString::fromUtf8
value	Value for setting key
keySize	Size of the key string. If negative (the default), the key size is taken to be strlen(key).

5.2.3.13 setValue() [2/2]

```
void quentier::ApplicationSettings::setValue (
            const QString & key,
            const QVariant & value )
```

Sets the value of setting. The call is redirected to QSettings::setValue. It is required in this class only to workaround hiding QSettings method due to overloads

Parameters

key	String containing the setting name
value	Value for setting key

5.2.3.14 value() [1/2]

```
QVariant quentier::ApplicationSettings::value (
            const char * key,
            const QVariant & defaultValue = {},
            const int keySize = -1 ) const
```

Fetches the value of setting. Overload of value accepting const char * and optionally the size of the string

Parameters

key	String containing the setting name. Must be UTF-8 encoded as internally it is converted to QString via QString::fromUtf8
defautValue	Default value returned if the setting doesn't exist
keySize	Size of the key sring. If negative (the default), the key size is taken to be stren(key)

Returns

The value for setting key. If the setting doesn't exist, returns defaultValue. If no default value is specified, a default QVariant is returned.

5.2.3.15 value() [2/2]

```
QVariant quentier::ApplicationSettings::value (
            const QString & key,
            const QVariant & defaultValue = {} ) const
```

Fetches the value of setting. The call is redirected to QSettings::value. It is required in this class only to workaround hiding QSettings method due to overloads

Parameters

key	String containing the setting name
defautValue	Default value returned if the setting doesn't exist

Returns

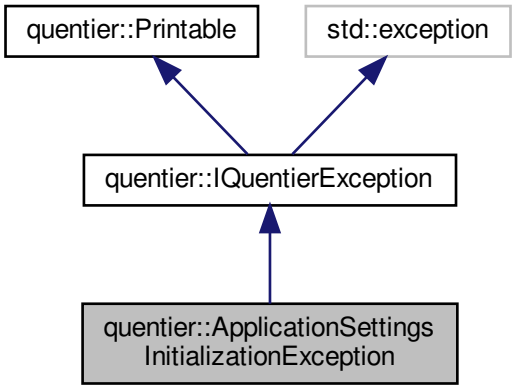
The value for setting key. If the setting doesn't exist, returns defaultValue. If no default value is specified, a default QVariant is returned.

5.3 quentier::ApplicationSettingsInitializationException Class Reference

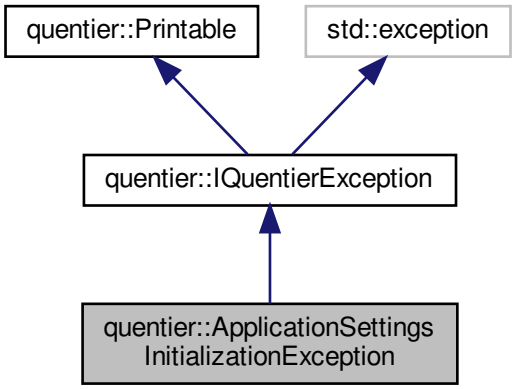
The ApplicationSettingsInitializationException can be thrown from methods of ApplicationSettings class if it's unable to locate the file with persistent settings.

`#include <ApplicationSettingsInitializationException.h>`

Inheritance diagram for quentier::ApplicationSettingsInitializationException:



Collaboration diagram for quentier::ApplicationSettingsInitializationException:



Public Member Functions

- **ApplicationSettingsInitializationException** (const ErrorString &message)

Protected Member Functions

- virtual const QString exceptionDisplayName () const override

5.3.1 Detailed Description

The ApplicationSettingsInitializationException can be thrown from methods of ApplicationSettings class if it's unable to locate the file with persistent settings.

5.3.2 Member Function Documentation

5.3.2.1 exceptionDisplayName()

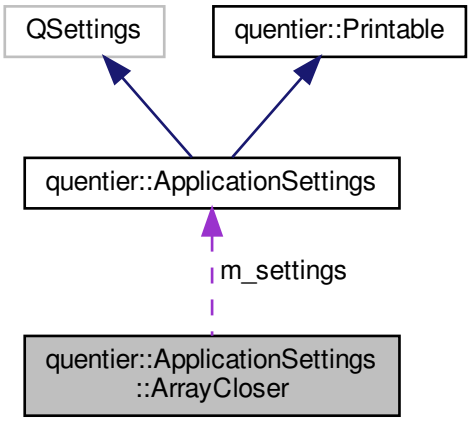
```
virtual const QString quentier::ApplicationSettingsInitializationException::exceptionDisplay↩
Name ( ) const  [override], [protected], [virtual]
```

Implements quentier::IQuentierException.

5.4 quentier::ApplicationSettings::ArrayCloser Struct Reference

`#include <ApplicationSettings.h>`

Collaboration diagram for quentier::ApplicationSettings::ArrayCloser:



Public Member Functions

- **ArrayCloser** (ApplicationSettings &settings)

Public Attributes

- ApplicationSettings & **m_settings**

5.4.1 Detailed Description

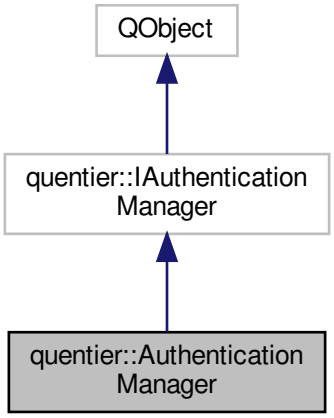
Helper struct for RAII style of ensuring the array once began would be closed even if exception is thrown after beginning the array

5.5 quentier::AuthenticationManager Class Reference

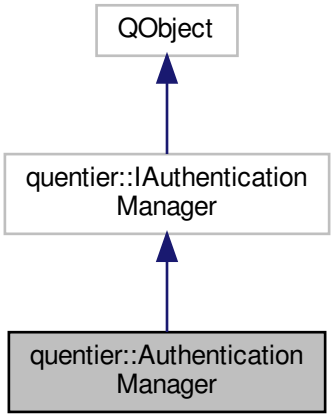
The AuthenticationManager class is libquentier's default implementation of IAuthenticationManager interface; internally uses QEverCloud's OAuth widget.

`#include <AuthenticationManager.h>`

Inheritance diagram for quentier::AuthenticationManager:



Collaboration diagram for quentier::AuthenticationManager:



Public Slots

- virtual void **onAuthenticationRequest** () override

Public Member Functions

- **AuthenticationManager** (const QString &consumerKey, const QString &consumerSecret, const QString &host, QObject *parent=nullptr)

Additional Inherited Members

5.5.1 Detailed Description

The AuthenticationManager class is libquentier's default implementation of IAuthenticationManager interface; internally uses QEverCloud's OAuth widget.

5.6 quentier::ResourceRecognitionIndexItem::BarcodeItem Struct Reference

Public Member Functions

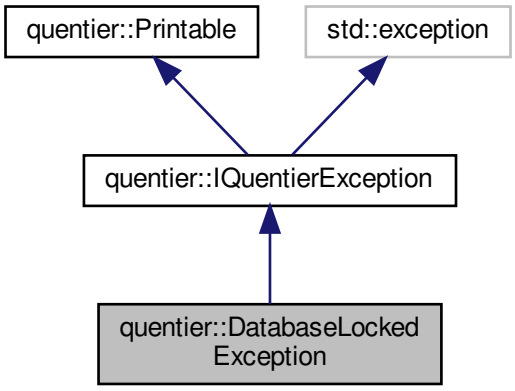
- bool **operator==** (const BarcodeItem &other) const

Public Attributes

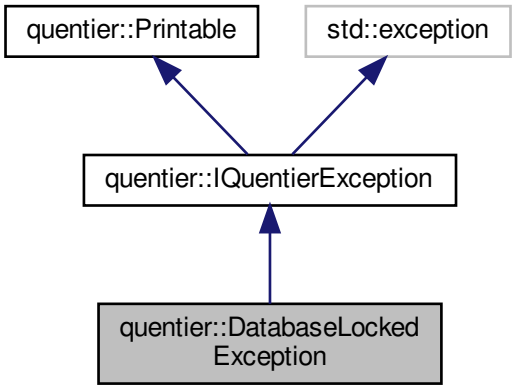
- QString **m_barcode**
- int **m_weight** = -1

5.7 quentier::DatabaseLockedException Class Reference

Inheritance diagram for quentier::DatabaseLockedException:



Collaboration diagram for quentier::DatabaseLockedException:



Public Member Functions

- **DatabaseLockedException** (const ErrorString &message)

Protected Member Functions

- virtual const QString exceptionDisplayName () const override

5.7.1 Member Function Documentation

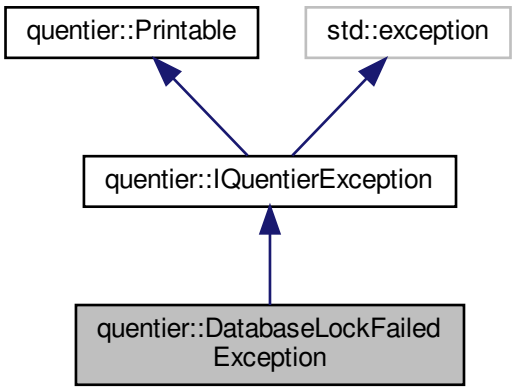
5.7.1.1 exceptionDisplayName()

```
virtual const QString quentier::DatabaseLockedException::exceptionDisplayName ( ) const  [override],
[protected], [virtual]
```

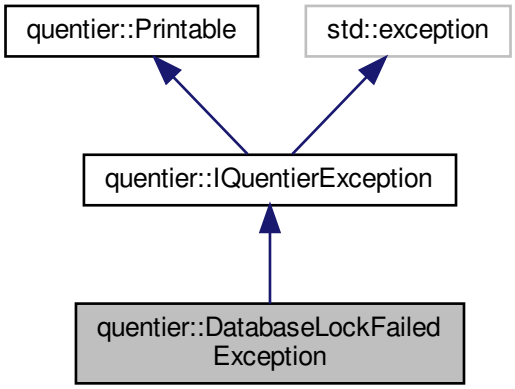
Implements quentier::IQuentierException.

5.8 quentier::DatabaseLockFailedException Class Reference

Inheritance diagram for quentier::DatabaseLockFailedException:



Collaboration diagram for quentier::DatabaseLockFailedException:



Public Member Functions

- **DatabaseLockFailedException** (const ErrorString &message)

Protected Member Functions

- virtual const QString exceptionDisplayName () const override

5.8.1 Member Function Documentation

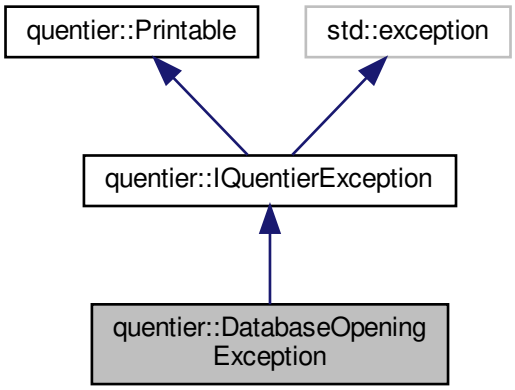
5.8.1.1 exceptionDisplayName()

```
virtual const QString quentier::DatabaseLockFailedException::exceptionDisplayName ( ) const
[override], [protected], [virtual]
```

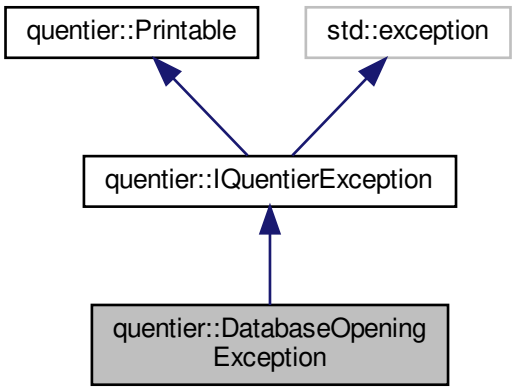
Implements quentier::IQuentierException.

5.9 quentier::DatabaseOpeningException Class Reference

Inheritance diagram for quentier::DatabaseOpeningException:



Collaboration diagram for quentier::DatabaseOpeningException:



Public Member Functions

- **DatabaseOpeningException** (const ErrorString &message)

Protected Member Functions

- virtual const QString exceptionDisplayName () const override

5.9.1 Member Function Documentation

5.9.1.1 exceptionDisplayName()

```
virtual const QString quentier::DatabaseOpeningException::exceptionDisplayName ( ) const  [override],
[protected], [virtual]
```

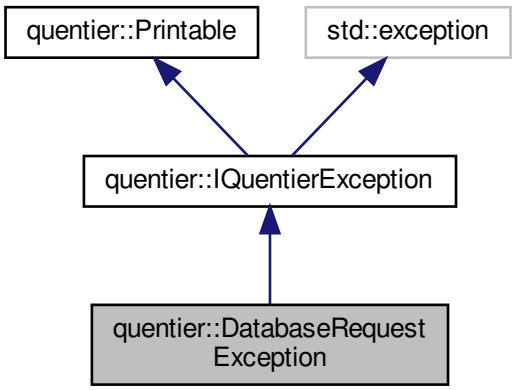
Implements quentier::IQuentierException.

5.10 quentier::DatabaseRequestException Class Reference

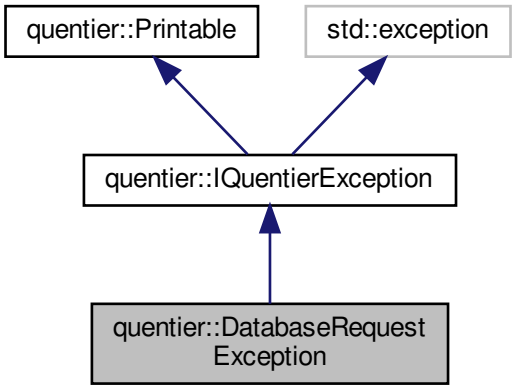
The DatabaseRequestException is thrown when the local storage database encounters some internal error during the attemt to serve a request.

```
#include <DatabaseRequestException.h>
```

Inheritance diagram for quentier::DatabaseRequestException:



Collaboration diagram for quentier::DatabaseRequestException:



Public Member Functions

- **DatabaseRequestException** (const ErrorString &message)

Protected Member Functions

- virtual const QString exceptionDisplayName () const override

5.10.1 Detailed Description

The DatabaseRequestException is thrown when the local storage database encounters some internal error during the attemt to serve a request.

5.10.2 Member Function Documentation

5.10.2.1 exceptionDisplayName()

```
virtual const QString quentier::DatabaseRequestException::exceptionDisplayName ( ) const  [override],
[protected], [virtual]
```

Implements quentier::IQuentierException.

5.11 quentier::DateTimePrint Class Reference

The DateTimePrint class simply wraps the enum containing datetime printing options.

`#include <DateTime.h>`

Public Types

- enum Option { IncludeNumericTimestamp = 1 << 1 , IncludeMilliseconds = 1 << 2 , IncludeTimezone = 1 << 3 }

5.11.1 Detailed Description

The DateTimePrint class simply wraps the enum containing datetime printing options.

5.11.2 Member Enumeration Documentation

5.11.2.1 Option

`enum quentier::DateTimePrint::Option`

Available printing options for datetime

Enumerator

IncludeNumericTimestamp	Include the numeric representation of the timestamp into the printed string
IncludeMilliseconds	Include milliseconds into the printed string
IncludeTimezone	Include timezone into the printed string WARNING: currently this option has no effect on Windows platform, the timezone is not included anyway.

5.12 quentier::DecryptedTextManager Class Reference

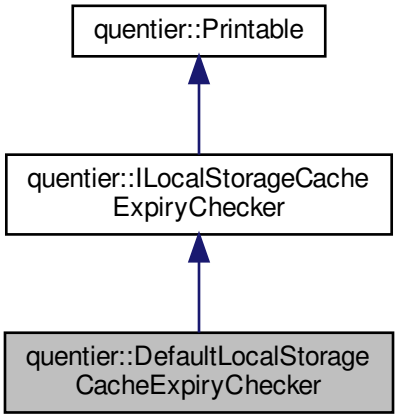
Public Member Functions

- void **addEntry** (const QString &hash, const QString &decryptedText, const bool rememberForSession, const QString &passphrase, const QString &cipher, const size_t keyLength)
- void **removeEntry** (const QString &hash)
- void **clearNonRememberedForSessionEntries** ()
- bool **findDecryptedTextByEncryptedText** (const QString &encryptedText, QString &decryptedText, bool &rememberForSession) const
- bool **modifyDecryptedText** (const QString &originalEncryptedText, const QString &newDecryptedText, QString &newEncryptedText)

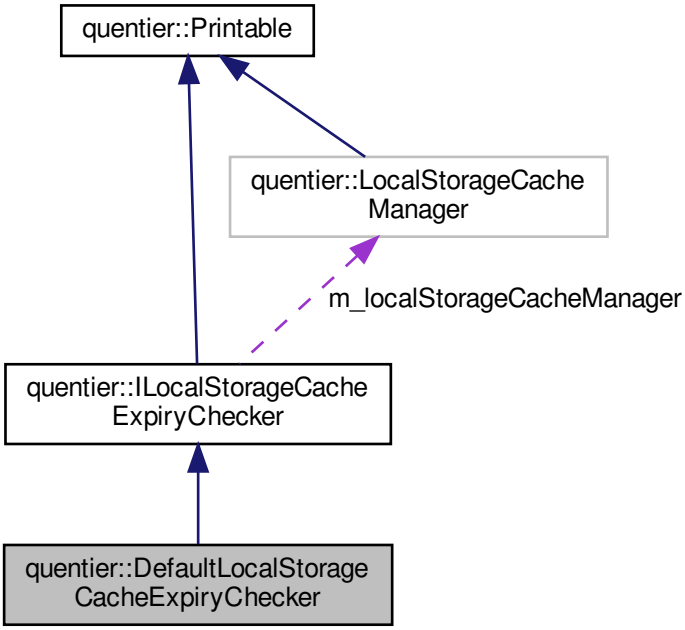
5.13 quentier::DefaultLocalStorageCacheExpiryChecker Class Reference

`#include <DefaultLocalStorageCacheExpiryChecker.h>`

Inheritance diagram for quentier::DefaultLocalStorageCacheExpiryChecker:



Collaboration diagram for quentier::DefaultLocalStorageCacheExpiryChecker:



Public Member Functions

- **DefaultLocalStorageCacheExpiryChecker** (const LocalStorageCacheManager &cacheManager)
- virtual DefaultLocalStorageCacheExpiryChecker * clone () const override
- virtual bool checkNotes () const override
- virtual bool checkResources () const override
- virtual bool checkNotebooks () const override
- virtual bool checkTags () const override
- virtual bool checkLinkedNotebooks () const override
- virtual bool checkSavedSearches () const override
- virtual QTextStream & print (QTextStream &strm) const override

  Print the internal information about the current DefaultLocalStorageCacheExpiryChecker instance to the text stream.

Additional Inherited Members

5.13.1 Detailed Description

brief The DefaultLocalStorageCacheExpiryChecker class is the implementation of ILocalStorageCacheExpiryChecker interface used by LocalStorageCacheManager by default, if no another implementation of ILocalStorageCacheExpiryChecker is set to be used by LocalStorageCacheManager

5.13.2 Member Function Documentation

5.13.2.1 checkLinkedNotebooks()

```
virtual bool quentier::DefaultLocalStorageCacheExpiryChecker::checkLinkedNotebooks ( ) const
[override], [virtual]
```

Returns

False if the current number of cached linked notebooks is higher than a reasonable limit, true otherwise

Implements quentier::ILocalStorageCacheExpiryChecker.

5.13.2.2 checkNotebooks()

```
virtual bool quentier::DefaultLocalStorageCacheExpiryChecker::checkNotebooks ( ) const  [override],
[virtual]
```

Returns

False if the current number of cached notebooks is higher than a reasonable limit, true otherwise

Implements quentier::ILocalStorageCacheExpiryChecker.

5.13.2.3 checkNotes()

```
virtual bool quentier::DefaultLocalStorageCacheExpiryChecker::checkNotes ( ) const  [override],
[virtual]
```

Returns

False if the current number of cached notes is higher than a reasonable limit, true otherwise

Implements quentier::ILocalStorageCacheExpiryChecker.

5.13.2.4 checkResources()

```
virtual bool quentier::DefaultLocalStorageCacheExpiryChecker::checkResources ( ) const  [override],
[virtual]
```

Returns

False if the current number of cached resource is higher than a reasonable limit, true otherwise

Implements quentier::ILocalStorageCacheExpiryChecker.

5.13.2.5 checkSavedSearches()

```
virtual bool quentier::DefaultLocalStorageCacheExpiryChecker::checkSavedSearches ( ) const
[override], [virtual]
```

Returns

False if the current number of cached saved searches is higher than a reasonable limit, true otherwise

Implements quentier::ILocalStorageCacheExpiryChecker.

5.13.2.6 checkTags()

```
virtual bool quentier::DefaultLocalStorageCacheExpiryChecker::checkTags ( ) const  [override],
[virtual]
```

Returns

False if the current number of cached tags is higher than a reasonable limit, true otherwise

Implements quentier::ILocalStorageCacheExpiryChecker.

5.13.2.7 clone()

```
virtual DefaultLocalStorageCacheExpiryChecker * quentier::DefaultLocalStorageCacheExpiry↩
Checker::clone ( ) const  [override], [virtual]
```

Returns

A pointer to the newly allocated copy of the current DefaultLocalStorageCacheExpiryChecker

Implements quentier::ILocalStorageCacheExpiryChecker.

5.13.2.8 print()

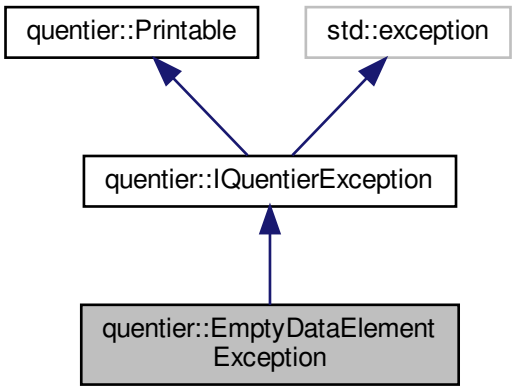
```
virtual QTextStream & quentier::DefaultLocalStorageCacheExpiryChecker::print (
            QTextStream & strm ) const  [override], [virtual]
```

Print the internal information about the current DefaultLocalStorageCacheExpiryChecker instance to the text stream.

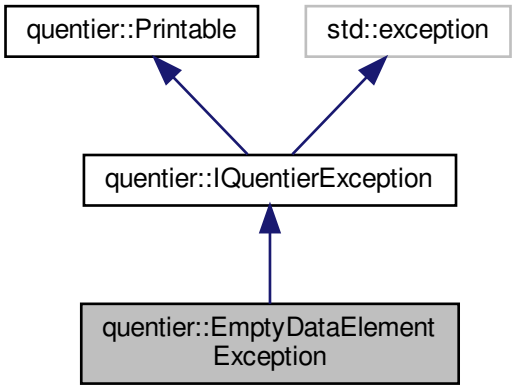
Implements quentier::ILocalStorageCacheExpiryChecker.

5.14 quentier::EmptyDataElementException Class Reference

Inheritance diagram for quentier::EmptyDataElementException:



Collaboration diagram for quentier::EmptyDataElementException:



Public Member Functions

- **EmptyDataElementException** (const ErrorString &message)

Protected Member Functions

- virtual const QString exceptionDisplayName () const override

5.14.1 Member Function Documentation

5.14.1.1 exceptionDisplayName()

```
virtual const QString quentier::EmptyDataElementException::exceptionDisplayName ( ) const
[override], [protected], [virtual]
```

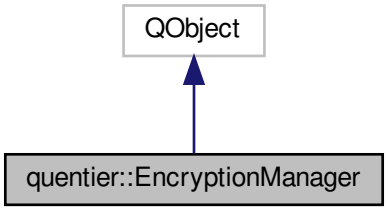
Implements quentier::IQuentierException.

5.15 quentier::EncryptionManager Class Reference

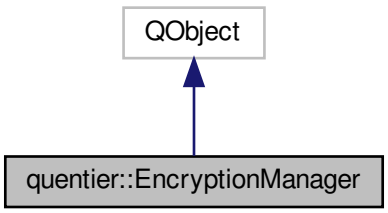
The EncryptionManager class provides both synchronous methods to encrypt or decrypt given text with password, cipher and key length and their signal-slot based potentially asynchronous counterparts.

`#include <EncryptionManager.h>`

Inheritance diagram for quentier::EncryptionManager:



Collaboration diagram for quentier::EncryptionManager:



Public Slots

- void **onDecryptTextRequest** (QString encryptedText, QString passphrase, QString cipher, size_t keyLength, QUuid requestId)
- void **onEncryptTextRequest** (QString textToEncrypt, QString passphrase, QString cipher, size_t keyLength, QUuid requestId)

Signals

- void **decryptedText** (QString text, bool success, ErrorString errorDescription, QUuid requestId)
- void **encryptedText** (QString encryptedText, bool success, ErrorString errorDescription, QUuid requestId)

Public Member Functions

- **EncryptionManager** (QObject *parent=nullptr)
- bool **decrypt** (const QString &encryptedText, const QString &passphrase, const QString &cipher, const size_t keyLength, QString &decryptedText, ErrorString &errorDescription)
- bool **encrypt** (const QString &textToEncrypt, const QString &passphrase, QString &cipher, size_t &keyLength, QString &encryptedText, ErrorString &errorDescription)

5.15.1 Detailed Description

The EncryptionManager class provides both synchronous methods to encrypt or decrypt given text with password, cipher and key length and their signal-slot based potentially asynchronous counterparts.

5.16 quentier::ENMLConverter Class Reference

The ENMLConverter class encapsulates a set of methods and helper data structures for performing the conversions between ENML and other note content formats, namely HTML.

```
#include <ENMLConverter.h>
```

Classes

- struct NoteContentToHtmlExtraData
- class SkipHtmlElementRule

  The SkipHtmlElementRule class describes the set of rules for HTML -> ENML conversion about the HTML elements that should not be actually converted to ENML due to their nature of being "helper" elements for the display or functioning of something within the note editor's page. The HTML -> ENML conversion would ignore tags and attributes forbidden by ENML even without these rules conditionally preserving or skipping the contents and nested elements of skipped elements.

Public Types

- enum class EnexExportTags { **Yes** = 0 , **No** }

  The EnexExportTags enum allows to specify whether export of note(s) to ENEX should include the names of note's tags.

Public Member Functions

- bool **htmlToNoteContent** (const QString &html, QString &noteContent, DecryptedTextManager &decryptedTextManager, ErrorString &errorDescription, const QVector< SkipHtmlElementRule > &skipRules={}) const
- bool cleanupExternalHtml (const QString &inputHtml, QString &cleanedUpHtml, ErrorString &errorDescription) const

  cleanupExternalHtml method cleans up a piece of HTML coming from some external source: the cleanup includes the removal (or replacement with equivalents/alternatives) of any tags and attributes not supported by the ENML representation of note page's HTML
- bool htmlToQTextDocument (const QString &html, QTextDocument &doc, ErrorString &errorDescription, const QVector< SkipHtmlElementRule > &skipRules={}) const

- bool **noteContentToHtml** (const QString &noteContent, QString &html, ErrorString &errorDescription, DecryptedTextManager &decryptedTextManager, NoteContentToHtmlExtraData &extraData) const
- bool **validateEnml** (const QString &enml, ErrorString &errorDescription) const
- bool **validateAndFixupEnml** (QString &enml, ErrorString &errorDescription) const
- bool exportNotesToEnex (const QVector< Note > &notes, const QHash< QString, QString > &tagNames↩ ByTagLocalUids, const EnexExportTags exportTagsOption, QString &enex, ErrorString &errorDescription, const QString &version={}) const

  exportNotesToEnex exports either a single note or a set of notes into ENEX format
- bool importEnex (const QString &enex, QVector< Note > &notes, QHash< QString, QStringList > &tag↩ NamesByNoteLocalUid, ErrorString &errorDescription) const

  importEnex reads the content of input ENEX file and converts it into a set of notes and tag names.

Static Public Member Functions

- static bool **noteContentToPlainText** (const QString &noteContent, QString &plainText, ErrorString &error↩ Message)
- static bool **noteContentToListOfWords** (const QString &noteContent, QStringList &listOfWords, ErrorString &errorMessage, QString *plainText=nullptr)
- static QStringList **plainTextToListOfWords** (const QString &plainText)
- static QString **toDoCheckboxHtml** (const bool checked, const quint64 idNumber)
- static QString **encryptedTextHtml** (const QString &encryptedText, const QString &hint, const QString &cipher, const size_t keyLength, const quint64 enCryptIndex)
- static QString **decryptedTextHtml** (const QString &decryptedText, const QString &encryptedText, const QString &hint, const QString &cipher, const size_t keyLength, const quint64 enDecryptedIndex)
- static QString **resourceHtml** (const Resource &resource, ErrorString &errorDescription)
- static void **escapeString** (QString &string, const bool simplify=true)

5.16.1 Detailed Description

The ENMLConverter class encapsulates a set of methods and helper data structures for performing the conversions between ENML and other note content formats, namely HTML.

5.16.2 Member Function Documentation

5.16.2.1 cleanupExternalHtml()

```
bool quentier::ENMLConverter::cleanupExternalHtml (
            const QString & inputHtml,
            QString & cleanedUpHtml,
            ErrorString & errorDescription ) const
```

cleanupExternalHtml method cleans up a piece of HTML coming from some external source: the cleanup includes the removal (or replacement with equivalents/alternatives) of any tags and attributes not supported by the ENML representation of note page's HTML

Parameters

inputHtml	- the input HTML to be cleaned up
cleanedUpHtml	- the result of the method's work
errorDescription	- the textual description of the error if conversion of input HTML into QTextDocument has failed

Returns

true in case of successful conversion, false otherwise

5.16.2.2 exportNotesToEnex()

```
bool quentier::ENMLConverter::exportNotesToEnex (
            const QVector< Note > & notes,
            const QHash< QString, QString > & tagNamesByTagLocalUids,
            const EnexExportTags exportTagsOption,
            QString & enex,
            ErrorString & errorDescription,
            const QString & version = {} ) const
```

exportNotesToEnex exports either a single note or a set of notes into ENEX format

Parameters

notes	The notes to be exported into the enex format. The connection of particular notes to tags is expected to follow from note's tag local uids. In other words, if some note has no tag local uids, its corresponding fragment of ENEX won't contain tag names associated with the note
tagNamesByTagLocalUids	Tag names for all tag local uids across all passed in notes. The lack of any tag name for any tag local uid is considered an error and the overall export attempt fails
exportTagsOption	Whether the export to ENEX should include the names of notes' tags
enex	The output of the method
errorDescription	The textual description of the error, if any
version	Optional "version" tag for the ENEX. If not set, the corresponding ENEX tag is set to empty value

Returns

True if the export completed successfully, false otherwise

5.16.2.3 htmlToQTextDocument()

```
bool quentier::ENMLConverter::htmlToQTextDocument (
            const QString & html,
            QTextDocument & doc,
            ErrorString & errorDescription,
            const QVector< SkipHtmlElementRule > & skipRules = {} ) const
```

Converts the passed in HTML into its simplified form acceptable by QTextDocument (see http://doc.qt.↩io/qt-5/richtext-html-subset.html for the list of elements supported by QTextDocument)

Parameters

html	- the input HTML which needs to be converted to QTextDocument
doc	- QTextDocument filled with the result of the method's work
errorDescription	- the textual description of the error if conversion of input HTML into QTextDocument has failed
skipRules	- rules for skipping the particular elements

Returns

true in case of successful conversion, false otherwise

5.16.2.4 importEnex()

```
bool quentier::ENMLConverter::importEnex (
            const QString & enex,
            QVector< Note > & notes,
            QHash< QString, QStringList > & tagNamesByNoteLocalUid,
            ErrorString & errorDescription ) const
```

importEnex reads the content of input ENEX file and converts it into a set of notes and tag names.

Parameters

enex	The input ENEX file contents
notes	Notes read from the ENEX
tagNamesByNoteLocalUid	Tag names per each read note; it is the responsibility of the method caller to find the actual tags corresponding to these names and set the tag local uids and/or guids to the note
errorDescription	The textual descrition of the error if the ENEX file could not be read and converted into a set of notes and tag names for them

Returns

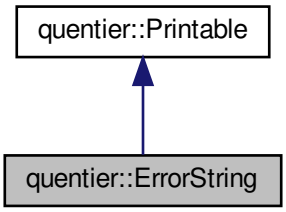
True of the ENEX file was read and converted into a set of notes and tag names successfully, false otherwise

5.17 quentier::ErrorString Class Reference

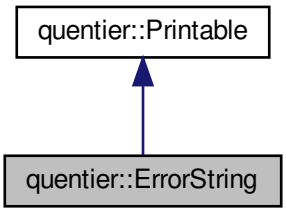
The ErrorString class encapsulates two (or more) strings which are meant to contain translatable (base) and non-translatable (details) parts of the error description.

```
#include <ErrorString.h>
```

Inheritance diagram for quentier::ErrorString:



Collaboration diagram for quentier::ErrorString:



Public Member Functions

- **ErrorString** (const char ∗error=nullptr)
- **ErrorString** (const QString &error)
- **ErrorString** (const ErrorString &other)
- ErrorString & **operator=** (const ErrorString &other)
- const QString & **base** () const
- QString & **base** ()
- const QStringList & **additionalBases** () const
- QStringList & **additionalBases** ()
- const QString & **details** () const
- QString & **details** ()
- void **setBase** (const QString &error)
- void **setBase** (const char ∗error)
- void **appendBase** (const QString &error)
- void **appendBase** (const QStringList &errors)
- void **appendBase** (const char ∗error)
- void **setDetails** (const QString &error)
- void **setDetails** (const char ∗error)
- bool **isEmpty** () const
- void **clear** ()
- QString **localizedString** () const
- QString **nonLocalizedString** () const
- virtual QTextStream & print (QTextStream &strm) const override

Additional Inherited Members

5.17.1 Detailed Description

The ErrorString class encapsulates two (or more) strings which are meant to contain translatable (base) and non-translatable (details) parts of the error description.

1. base() methods return const and non-const links to the primary translatable string
2. details() methods ruturn const and non-const links to non-translatable string (coming from some third party library etc)
3. additionalBases() methods return const and non-const links to additional translatable strings; one translatable string is not always enough because the error message might be composed from different parts

5.17.2 Member Function Documentation

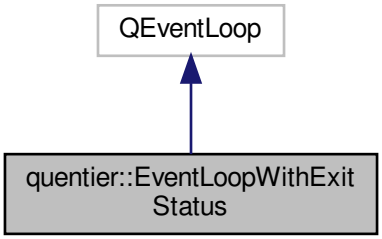
5.17.2.1 print()

```
virtual QTextStream & quentier::ErrorString::print (
            QTextStream & strm ) const  [override], [virtual]
```

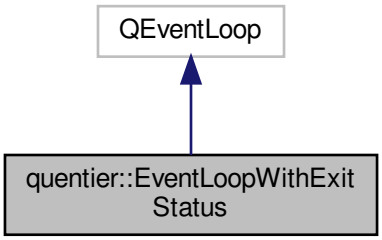
Implements quentier::Printable.

5.18 quentier::EventLoopWithExitStatus Class Reference

Inheritance diagram for quentier::EventLoopWithExitStatus:



Collaboration diagram for quentier::EventLoopWithExitStatus:



Public Types

- enum class **ExitStatus** { **Success** , **Failure** , **Timeout** }

Public Slots

- void **exitAsSuccess** ()
- void **exitAsFailure** ()
- void **exitAsFailureWithError** (QString errorDescription)
- void **exitAsFailureWithErrorString** (ErrorString errorDescription)
- void **exitAsTimeout** ()

Public Member Functions

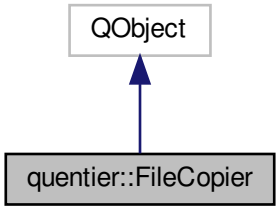
- **EventLoopWithExitStatus** (QObject ∗parent=nullptr)
- ExitStatus **exitStatus** () const
- const ErrorString & **errorDescription** () const

Friends

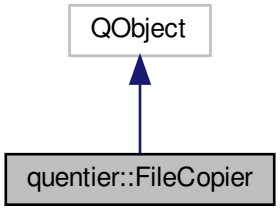
- QDebug & **operator**<< (QDebug &dbg, const ExitStatus status)
- QTextStream & **operator**<< (QTextStream &strm, const ExitStatus status)

5.19 quentier::FileCopier Class Reference

Inheritance diagram for quentier::FileCopier:



Collaboration diagram for quentier::FileCopier:



Public Types

- enum class **State** { **Idle** = 0 , **Copying** , **Cancelling** }

Public Slots

- void **copyFile** (QString sourcePath, QString destPath)
- void **cancel** ()

Signals

- void **progressUpdate** (double progress)
- void **finished** (QString sourcePath, QString destPath)
- void **cancelled** (QString sourcePath, QString destPath)
- void **notifyError** (ErrorString error)

Public Member Functions

- **FileCopier** (QObject *parent=nullptr)
- State **state** () const
- QString **sourceFilePath** () const
- QString **destinationFilePath** () const
- double **currentProgress** () const

Friends

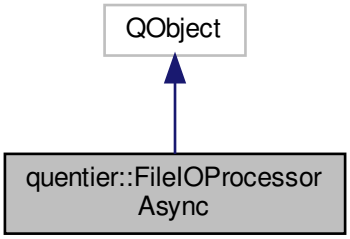
- QDebug & **operator**<< (QDebug &dbg, const State state)
- QTextStream & **operator**<< (QTextStream &strm, const State state)

5.20 quentier::FileIOProcessorAsync Class Reference

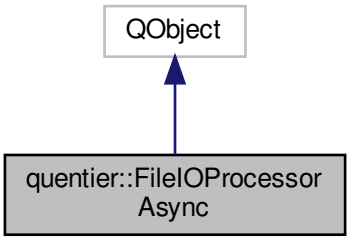
The FileIOProcessorAsync class is a wrapper under simple file IO operations, it is meant to be used for simple asynchronous IO.

`#include <FileIOProcessorAsync.h>`

Inheritance diagram for quentier::FileIOProcessorAsync:



Collaboration diagram for quentier::FileIOProcessorAsync:



Public Slots

- void onWriteFileRequest (QString absoluteFilePath, QByteArray data, QUuid requestId, bool append)

  onWriteFileRequest slot processes file write requests with given request ids
- void onReadFileRequest (QString absoluteFilePath, QUuid requestId)

  onReadFileRequest slot processes file read requests with given request ids

Signals

- void **readyForIO** ()

  readyForIO signal is emitted when the queue for file IO is empty for some time (30 seconds by default, can also be configured via setIdleTimePeriod method) after the last IO event to signal listeners that they can perform some IO via the FileIOProcessorAsync
- void writeFileRequestProcessed (bool success, ErrorString errorDescription, QUuid requestId)

  writeFileRequestProcessed signal is emitted when the file write request with given id is finished
- void readFileRequestProcessed (bool success, ErrorString errorDescription, QByteArray data, QUuid requestId)

  readFileRequestProcessed signal is emitted when the file read request with given id is finished

Public Member Functions

- **FileIOProcessorAsync** (QObject *parent=nullptr)
- void setIdleTimePeriod (qint32 seconds)

  setIdleTimePeriod sets time period defining the idle state of FileIOProcessorAsync: once the time measured since the last IO operation is over the specified number of seconds, the class emits readyForIO signal to any interested listeners of this event. If this method is not called ever, the default idle time period would be 30 seconds.

5.20.1 Detailed Description

The FileIOProcessorAsync class is a wrapper under simple file IO operations, it is meant to be used for simple asynchronous IO.

5.20.2 Member Function Documentation

5.20.2.1 onReadFileRequest

```
void quentier::FileIOProcessorAsync::onReadFileRequest (
            QString absoluteFilePath,
            QUuid requestId )  [slot]
```

onReadFileRequest slot processes file read requests with given request ids

Parameters

absoluteFilePath	Absolute file path to be read
requestId	Unique identifier of the file read request

5.20.2.2 onWriteFileRequest

```
void quentier::FileIOProcessorAsync::onWriteFileRequest (
            QString absoluteFilePath,
            QByteArray data,
            QUuid requestId,
            bool append )  [slot]
```

onWriteFileRequest slot processes file write requests with given request ids

Parameters

absoluteFilePath	Absolute file path to be written
data	Data to be written to the file
requestId	Unique identifier of the file write request
append	If true, the data would be appended to file, otherwise the entire file would be erased before with the data is written

5.20.2.3 readFileRequestProcessed

```
void quentier::FileIOProcessorAsync::readFileRequestProcessed (
            bool success,
            ErrorString errorDescription,
            QByteArray data,
            QUuid requestId )  [signal]
```

readFileRequestProcessed signal is emitted when the file read request with given id is finished

Parameters

success	True if read operation was successful, false otherwise
errorDescription	Textual description of the error
data	Data read from file
requestId	Unique identifier of the file read request

5.20.2.4 setIdleTimePeriod()

```
void quentier::FileIOProcessorAsync::setIdleTimePeriod (
            qint32 seconds )
```

setIdleTimePeriod sets time period defining the idle state of FileIOProcessorAsync: once the time measured since the last IO operation is over the specified number of seconds, the class emits readyForIO signal to any interested listeners of this event. If this method is not called ever, the default idle time period would be 30 seconds.

Parameters

seconds	Number of seconds for idle time period

5.20.2.5 writeFileRequestProcessed

```
void quentier::FileIOProcessorAsync::writeFileRequestProcessed (
            bool success,
            ErrorString errorDescription,
            QUuid requestId )  [signal]
```

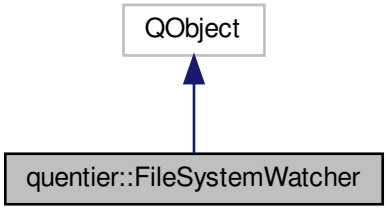
writeFileRequestProcessed signal is emitted when the file write request with given id is finished

Parameters

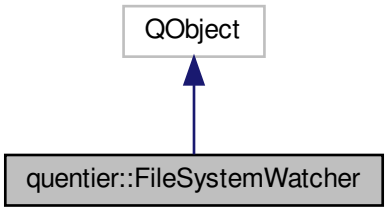
success	True if write operation was successful, false otherwise
errorDescription	Textual description of the error
requestId	Unique identifier of the file write request

5.21 quentier::FileSystemWatcher Class Reference

Inheritance diagram for quentier::FileSystemWatcher:



Collaboration diagram for quentier::FileSystemWatcher:



Signals

- void **directoryChanged** (const QString &path)
- void **directoryRemoved** (const QString &path)
- void **fileChanged** (const QString &path)
- void **fileRemoved** (const QString &path)

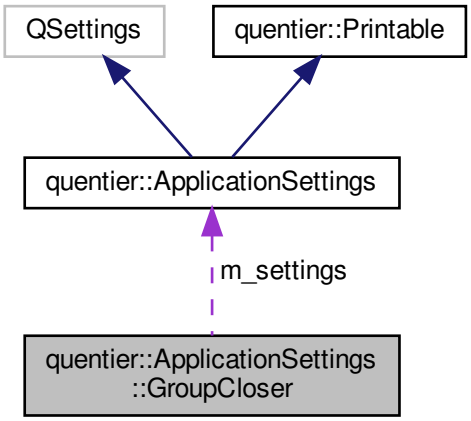
Public Member Functions

- **FileSystemWatcher** (const int removalTimeoutMSec=FILE_SYSTEM_WATCHER_DEFAULT_REMOVAL↩ _TIMEOUT_MSEC, QObject ∗parent=nullptr)
- **FileSystemWatcher** (const QStringList &paths, const int removalTimeoutMSec=FILE_SYSTEM_↩ WATCHER_DEFAULT_REMOVAL_TIMEOUT_MSEC, QObject ∗parent=nullptr)
- void **addPath** (const QString &path)
- void **addPaths** (const QStringList &paths)
- QStringList **directories** () const
- QStringList **files** () const
- void **removePath** (const QString &path)
- void **removePaths** (const QStringList &paths)

5.22 quentier::ApplicationSettings::GroupCloser Struct Reference

`#include <ApplicationSettings.h>`

Collaboration diagram for quentier::ApplicationSettings::GroupCloser:



Public Member Functions

- **GroupCloser** (ApplicationSettings &settings)

Public Attributes

- ApplicationSettings & **m_settings**

5.22.1 Detailed Description

Helper struct for RAII style of ensuring the group once opened would be closed even if exception is thrown after beginning the group

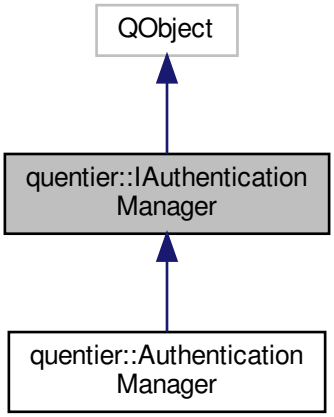
5.23 quentier::HTMLCleaner Class Reference

Public Member Functions

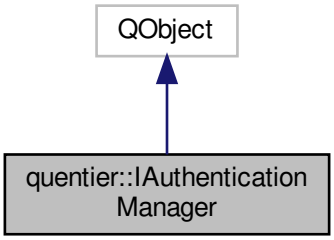
- bool **htmlToXml** (const QString &html, QString &output, QString &errorDescription)
- bool **htmlToXhtml** (const QString &html, QString &output, QString &errorDescription)
- bool **cleanupHtml** (QString &html, QString &errorDescription)

5.24 quentier::IAuthenticationManager Class Reference

Inheritance diagram for quentier::IAuthenticationManager:



Collaboration diagram for quentier::IAuthenticationManager:



Public Slots

- virtual void **onAuthenticationRequest** ()=0

Signals

- void **sendAuthenticationResult** (bool success, qevercloud::UserID userId, QString authToken, qevercloud::Timestamp authTokenExpirationTime, QString shardId, QString noteStoreUrl, QString webApi↩ UrlPrefix, QList< QNetworkCookie > userStoreCookies, ErrorString errorDescription)

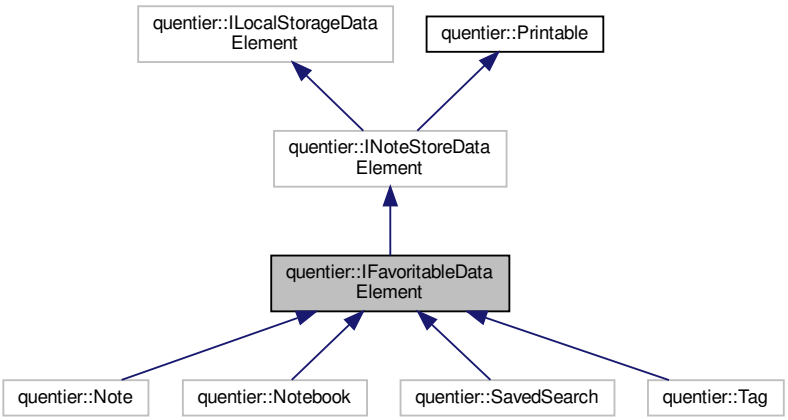
Protected Member Functions

- **IAuthenticationManager** (QObject ∗parent=nullptr)

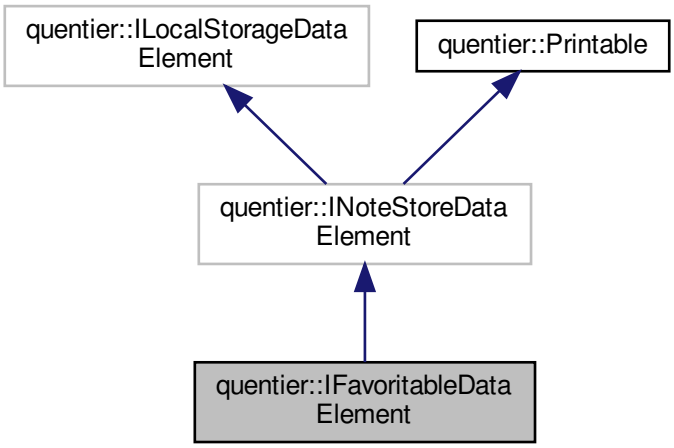
5.25 quentier::IFavoritableDataElement Class Reference

`#include <IFavoritableDataElement.h>`

Inheritance diagram for quentier::IFavoritableDataElement:



Collaboration diagram for quentier::IFavoritableDataElement:



Public Member Functions

- virtual bool **isFavorited** () const =0
- virtual void **setFavorited** (const bool favorited)=0

Additional Inherited Members

5.25.1 Detailed Description

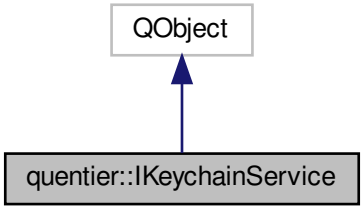
Class adding one more attribute to each note store data element subclassing it: "favorited" flag. Favorited data elements are expected to be somehow arranged for quick access in the client application's UI.

5.26 quentier::IKeychainService Class Reference

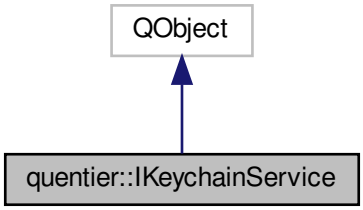
The IKeychainService interface provides methods intended to start potentially asynchronous interaction with the keychain and signals intended to notify listeners about the completion of asynchronous interactions.

`#include <IKeychainService.h>`

Inheritance diagram for quentier::IKeychainService:



Collaboration diagram for quentier::IKeychainService:



Public Types

- enum class ErrorCode {
  NoError , EntryNotFound , CouldNotDeleteEntry , AccessDeniedByUser ,
  AccessDenied , NoBackendAvailable , NotImplemented , OtherError }

Signals

- void writePasswordJobFinished (QUuid requestId, ErrorCode errorCode, ErrorString errorDescription)
- void readPasswordJobFinished (QUuid requestId, ErrorCode errorCode, ErrorString errorDescription, QString password)
- void deletePasswordJobFinished (QUuid requestId, ErrorCode errorCode, ErrorString errorDescription)

Public Member Functions

- virtual QUuid startWritePasswordJob (const QString &service, const QString &key, const QString &password)=0
- virtual QUuid startReadPasswordJob (const QString &service, const QString &key)=0
- virtual QUuid startDeletePasswordJob (const QString &service, const QString &key)=0

Protected Member Functions

- **IKeychainService** (QObject *parent=nullptr)

Friends

- QTextStream & **operator**<< (QTextStream &strm, const ErrorCode errorCode)
- QDebug & **operator**<< (QDebug &dbg, const ErrorCode errorCode)

5.26.1 Detailed Description

The IKeychainService interface provides methods intended to start potentially asynchronous interaction with the keychain and signals intended to notify listeners about the completion of asynchronous interactions.

5.26.2 Member Enumeration Documentation

5.26.2.1 ErrorCode

```
enum class quentier::IKeychainService::ErrorCode  [strong]
```

Error codes for results of operations with the keychain service

Enumerator

NoError	No error occurred, operation was successful
EntryNotFound	For the given key no data was found
CouldNotDeleteEntry	Could not delete existing secret data
AccessDeniedByUser	User denied access to keychain
AccessDenied	Access denied for some reason
NoBackendAvailable	No platform-specific keychain service available
NotImplemented	Not implemented on platform
OtherError	Something else went wrong, the error description specifies what

5.26.3 Member Function Documentation

5.26.3.1 deletePasswordJobFinished

```
void quentier::IKeychainService::deletePasswordJobFinished (
            QUuid requestId,
            ErrorCode errorCode,
            ErrorString errorDescription )  [signal]
```

deletePasswordJobFinished signal should be emitted in response to the call of startDeletePasswordJob method

Parameters

requestId	Request id returned from startDeletePasswordJob method
errorCode	Error code determining whether the operation was successful or some error has occurred
errorDescription	Textual description of error in case of unsuccessful execution

5.26.3.2 readPasswordJobFinished

```
void quentier::IKeychainService::readPasswordJobFinished (
            QUuid requestId,
            ErrorCode errorCode,
            ErrorString errorDescription,
            QString password )  [signal]
```

readPasswordJobFinished signal should be emitted in response to the call of startReadPasswordJob method

Parameters

requestId	Request id returned from startReadPasswordJob method
errorCode	Error code determining whether the operation was successful or some error has occurred
errorDescription	Textual description of error in case of unsuccessful execution
password	Password read from the keychain

5.26.3.3 startDeletePasswordJob()

```
virtual QUuid quentier::IKeychainService::startDeletePasswordJob (
            const QString & service,
            const QString & key )  [pure virtual]
```

startDeletePasswordJob slot should start the potentially asynchronous process of deleting the password from the keychain. When ready, this slot is expected to emit deletePasswordJobFinished signal.

Parameters

service	Name of service within the keychain
key	Key under which the password is stored

Returns

Unique identifier assigned to this delete password request

5.26.3.4 startReadPasswordJob()

```
virtual QUuid quentier::IKeychainService::startReadPasswordJob (
            const QString & service,
            const QString & key )  [pure virtual]
```

startReadPasswordJob slot should start the potentially asynchronous process of reading the password from the keychain. When ready, this slot is expected to emit readPasswordJobFinished signal.

Parameters

service	Name of service within the keychain
key	Key under which the password is stored

Returns

Unique identifier assigned to this read password request

5.26.3.5 startWritePasswordJob()

```
virtual QUuid quentier::IKeychainService::startWritePasswordJob (
            const QString & service,
            const QString & key,
            const QString & password )  [pure virtual]
```

startWritePasswordJob slot should start the potentially asynchronous process of storing the password in the keychain. When ready, this slot is expected to emit writePasswordJobFinished signal.

Parameters

service	Name of service within the keychain
key	Key to store the password under
password	Password to store in the keychain

Returns

Unique identifier assigned to this write password request

5.26.3.6 writePasswordJobFinished

```
void quentier::IKeychainService::writePasswordJobFinished (
            QUuid requestId,
            ErrorCode errorCode,
            ErrorString errorDescription )  [signal]
```

writePasswordJobFinished signal should be emitted in response to the call of startWritePasswordJob method

Parameters

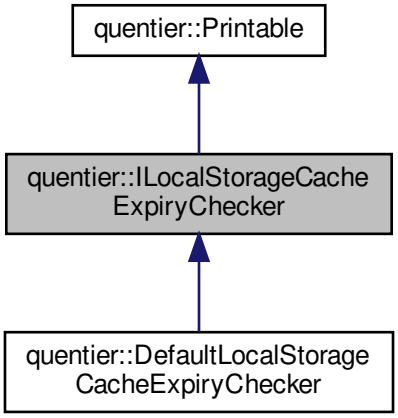
requestId	Request id returned from startWritePasswordJob method
errorCode	Error code determining whether the operation was successful or some error has occurred
errorDescription	Textual description of error in case of unsuccessful execution

5.27 quentier::ILocalStorageCacheExpiryChecker Class Reference

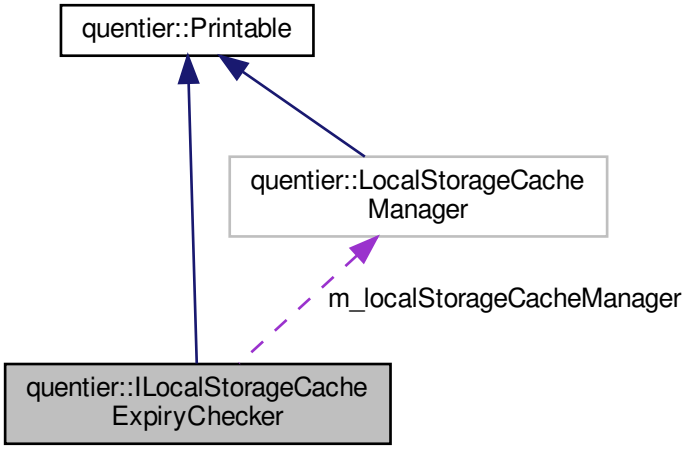
The ILocalStorageCacheExpiryChecker class represents the interface for cache expiry checker used by LocalStorageCacheManager to see whether particular caches (of notes, notebooks, tags, linked notebooks and/or saved searches) need to be shrunk.

```
#include <ILocalStorageCacheExpiryChecker.h>
```

Inheritance diagram for quentier::ILocalStorageCacheExpiryChecker:



Collaboration diagram for quentier::ILocalStorageCacheExpiryChecker:



Public Member Functions

- virtual ILocalStorageCacheExpiryChecker * clone () const =0
- virtual bool checkNotes () const =0
- virtual bool checkResources () const =0
- virtual bool checkNotebooks () const =0
- virtual bool checkTags () const =0
- virtual bool checkLinkedNotebooks () const =0

- virtual bool checkSavedSearches () const =0
- virtual QTextStream & print (QTextStream &strm) const =0

  Print the internal information about ILocalStorageCacheExpiryChecker implementation instance to the text stream.

Protected Member Functions

- **ILocalStorageCacheExpiryChecker** (const LocalStorageCacheManager &cacheManager)

Protected Attributes

- const LocalStorageCacheManager & **m_localStorageCacheManager**

5.27.1 Detailed Description

The ILocalStorageCacheExpiryChecker class represents the interface for cache expiry checker used by LocalStorageCacheManager to see whether particular caches (of notes, notebooks, tags, linked notebooks and/or saved searches) need to be shrunk.

5.27.2 Member Function Documentation

5.27.2.1 checkLinkedNotebooks()

```
virtual bool quentier::ILocalStorageCacheExpiryChecker::checkLinkedNotebooks ( ) const  [pure virtual]
```

Returns

False if the cache of linked notebooks needs to be shrunk (due to its size or whatever other reason), true otherwise

Implemented in quentier::DefaultLocalStorageCacheExpiryChecker.

5.27.2.2 checkNotebooks()

```
virtual bool quentier::ILocalStorageCacheExpiryChecker::checkNotebooks ( ) const  [pure virtual]
```

Returns

False if the cache of notebooks needs to be shrunk (due to its size or whatever other reason), true otherwise

Implemented in quentier::DefaultLocalStorageCacheExpiryChecker.

5.27.2.3 checkNotes()

```
virtual bool quentier::ILocalStorageCacheExpiryChecker::checkNotes ( ) const  [pure virtual]
```

Returns

False if the cache of notes needs to be shrunk (due to its size or whatever other reason), true otherwise

Implemented in quentier::DefaultLocalStorageCacheExpiryChecker.

5.27.2.4 checkResources()

```
virtual bool quentier::ILocalStorageCacheExpiryChecker::checkResources ( ) const  [pure virtual]
```

Returns

False if the cache of resources needs to be shrunk (due to its size or whatever other reason), true otherwise

Implemented in quentier::DefaultLocalStorageCacheExpiryChecker.

5.27.2.5 checkSavedSearches()

```
virtual bool quentier::ILocalStorageCacheExpiryChecker::checkSavedSearches ( ) const  [pure
virtual]
```

Returns

False if the cache of saved searches needs to be shrunk (due to its size or whatever other reason), true otherwise

Implemented in quentier::DefaultLocalStorageCacheExpiryChecker.

5.27.2.6 checkTags()

```
virtual bool quentier::ILocalStorageCacheExpiryChecker::checkTags ( ) const  [pure virtual]
```

Returns

False if the cache of tags needs to be shrunk (due to its size or whatever other reason), true otherwise

Implemented in quentier::DefaultLocalStorageCacheExpiryChecker.

5.27.2.7 clone()

```
virtual ILocalStorageCacheExpiryChecker * quentier::ILocalStorageCacheExpiryChecker::clone ( )
const  [pure virtual]
```

Returns

A pointer to the newly allocated copy of a particular ILocalStorageCacheExpiryChecker implementation

Implemented in quentier::DefaultLocalStorageCacheExpiryChecker.

5.27.2.8 print()

```
virtual QTextStream & quentier::ILocalStorageCacheExpiryChecker::print (
            QTextStream & strm ) const  [pure virtual]
```

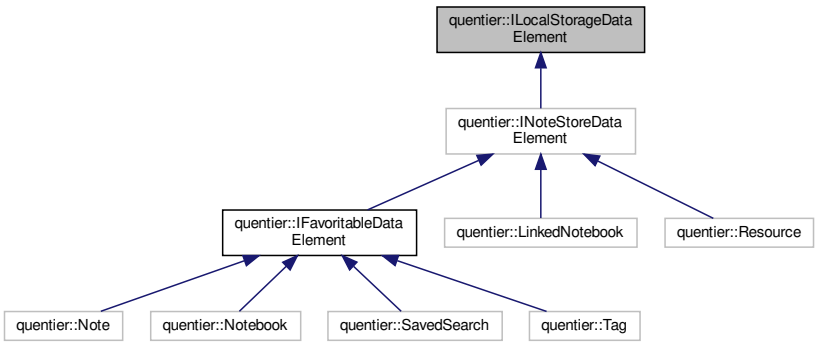
Print the internal information about ILocalStorageCacheExpiryChecker implementation instance to the text stream.

Implements quentier::Printable.

Implemented in quentier::DefaultLocalStorageCacheExpiryChecker.

5.28 quentier::ILocalStorageDataElement Class Reference

Inheritance diagram for quentier::ILocalStorageDataElement:



Public Member Functions

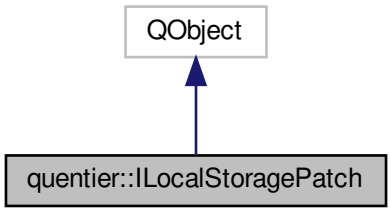
- virtual const QString **localUid** () const =0
- virtual void **setLocalUid** (const QString &guid)=0
- virtual void **unsetLocalUid** ()=0

5.29 quentier::ILocalStoragePatch Class Reference

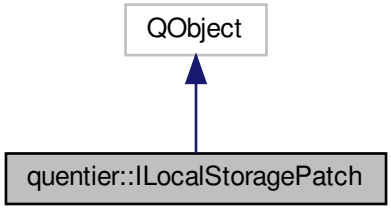
The ILocalStoragePatch class represents the interface for patches of local storage. Each such patch somehow changes the layout of local storage persistence so that only compliant & corresponding versions of libquentier can be used to work with it.

`#include <ILocalStoragePatch.h>`

Inheritance diagram for quentier::ILocalStoragePatch:



Collaboration diagram for quentier::ILocalStoragePatch:



Signals

- void progress (double progress)
- void backupProgress (double progress)
- void restoreBackupProgress (double progress)

Public Member Functions

- virtual int fromVersion () const =0
- virtual int toVersion () const =0
- virtual QString patchShortDescription () const =0
- virtual QString patchLongDescription () const =0
- virtual bool backupLocalStorage (ErrorString &errorDescription)=0
- virtual bool restoreLocalStorageFromBackup (ErrorString &errorDescription)=0
- virtual bool removeLocalStorageBackup (ErrorString &errorDescription)=0
- virtual bool apply (ErrorString &errorDescription)=0

Protected Member Functions

- **ILocalStoragePatch** (QObject *parent=nullptr)

Friends

- class **LocalStorageDatabaseUpgrader**

5.29.1 Detailed Description

The ILocalStoragePatch class represents the interface for patches of local storage. Each such patch somehow changes the layout of local storage persistence so that only compliant & corresponding versions of libquentier can be used to work with it.

5.29.2 Member Function Documentation

5.29.2.1 apply()

```
virtual bool quentier::ILocalStoragePatch::apply (
            ErrorString & errorDescription )  [pure virtual]
```

Apply the patch to local storage

Parameters

errorDescription	The textual description of the error in case of patch application failure

Returns

True in case of successful patch application, false otherwise

5.29.2.2 backupLocalStorage()

```
virtual bool quentier::ILocalStoragePatch::backupLocalStorage (
            ErrorString & errorDescription )  [pure virtual]
```

Backup either the entire local storage or its parts affected by the particular patch, should be called before applying the patch (but can be skipped if not desired).

Parameters

errorDescription	The textual description of the error in case of backup preparation failure

Returns

True if the local storage was backed up for the patch successfully, false otherwise

5.29.2.3 backupProgress

```
void quentier::ILocalStoragePatch::backupProgress (
            double progress )  [signal]
```

Local storage backup preparation progress

Parameters

progress	Backup preparation progress value, from 0 to 1

5.29.2.4 fromVersion()

```
virtual int quentier::ILocalStoragePatch::fromVersion ( ) const  [pure virtual]
```

Returns

Version of local storage to which the patch needs to be applied

5.29.2.5 patchLongDescription()

```
virtual QString quentier::ILocalStoragePatch::patchLongDescription ( ) const  [pure virtual]
```

Returns

Long i.e. detailed description of the patch

5.29.2.6 patchShortDescription()

```
virtual QString quentier::ILocalStoragePatch::patchShortDescription ( ) const  [pure virtual]
```

Returns

Short description of the patch

5.29.2.7 progress

```
void quentier::ILocalStoragePatch::progress (
            double progress )  [signal]
```

Patch application progress signal

Parameters

progress	Patch application progress value, from 0 to 1

5.29.2.8 removeLocalStorageBackup()

```
virtual bool quentier::ILocalStoragePatch::removeLocalStorageBackup (
            ErrorString & errorDescription )  [pure virtual]
```

Remove the previously made backup of local storage, presumably after successful application of the patch so the backup is no longer needed. It won't work if no backup was made before applying a patch, obviously.

Parameters

errorDescription	The textual description of the error in case of failure to remove the local storage backup

Returns

True if local storage backup was successfully removed, false otherwise

5.29.2.9 restoreBackupProgress

```
void quentier::ILocalStoragePatch::restoreBackupProgress (
            double progress )  [signal]
```

Local storage restoration from backup progress

Parameters

progress	Local storage restoration from backup progress value, from 0 to 1

5.29.2.10 restoreLocalStorageFromBackup()

```
virtual bool quentier::ILocalStoragePatch::restoreLocalStorageFromBackup (
            ErrorString & errorDescription )  [pure virtual]
```

Restore local storage from previously made backup, presumably after the failed attempt to apply a patch. Won't work if no backup was made before applying a patch, obviously.

Parameters

errorDescription	The textual description of the error in case of failure to restore the local storage from backup

Returns

True if local storage was successfully restored from backup, false otherwise

5.29.2.11 toVersion()

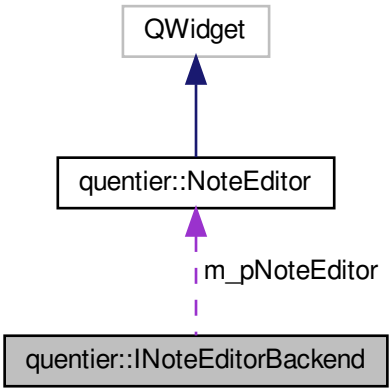
```
virtual int quentier::ILocalStoragePatch::toVersion ( ) const  [pure virtual]
```

Returns

Version of local storage to which the patch would upgrade the local storage

5.30 quentier::INoteEditorBackend Class Reference

Collaboration diagram for quentier::INoteEditorBackend:



Public Types

- enum class **Rotation** { **Clockwise** = 0 , **Counterclockwise** }

Public Member Functions

- virtual void **initialize** (LocalStorageManagerAsync &localStorageManager, SpellChecker &spellChecker, const Account &account, QThread *pBackgroundJobsThread)=0
- virtual QObject * **object** ()=0
- virtual QWidget * **widget** ()=0
- virtual void **setAccount** (const Account &account)=0
- virtual void **setUndoStack** (QUndoStack *pUndoStack)=0
- virtual void **setInitialPageHtml** (const QString &html)=0
- virtual void **setNoteNotFoundPageHtml** (const QString &html)=0
- virtual void **setNoteDeletedPageHtml** (const QString &html)=0
- virtual void **setNoteLoadingPageHtml** (const QString &html)=0
- virtual bool **isNoteLoaded** () const =0
- virtual qint64 **idleTime** () const =0
- virtual void **convertToNote** ()=0
- virtual void **saveNoteToLocalStorage** ()=0
- virtual void **setNoteTitle** (const QString &noteTitle)=0
- virtual void **setTagIds** (const QStringList &tagLocalUids, const QStringList &tagGuids)=0
- virtual void **undo** ()=0
- virtual void **redo** ()=0
- virtual void **cut** ()=0
- virtual void **copy** ()=0
- virtual void **paste** ()=0
- virtual void **pasteUnformatted** ()=0
- virtual void **selectAll** ()=0
- virtual void **formatSelectionAsSourceCode** ()=0
- virtual void **fontMenu** ()=0
- virtual void **textBold** ()=0
- virtual void **textItalic** ()=0
- virtual void **textUnderline** ()=0
- virtual void **textStrikethrough** ()=0
- virtual void **textHighlight** ()=0
- virtual void **alignLeft** ()=0
- virtual void **alignCenter** ()=0
- virtual void **alignRight** ()=0
- virtual void **alignFull** ()=0
- virtual QString **selectedText** () const =0
- virtual bool **hasSelection** () const =0
- virtual void **findNext** (const QString &text, const bool matchCase) const =0
- virtual void **findPrevious** (const QString &text, const bool matchCase) const =0
- virtual void **replace** (const QString &textToReplace, const QString &replacementText, const bool matchCase)=0
- virtual void **replaceAll** (const QString &textToReplace, const QString &replacementText, const bool matchCase)=0
- virtual void **insertToDoCheckbox** ()=0
- virtual void **insertInAppNoteLink** (const QString &userId, const QString &shardId, const QString &noteGuid, const QString &linkText)=0
- virtual void **setSpellcheck** (const bool enabled)=0
- virtual bool **spellCheckEnabled** () const =0
- virtual void **setFont** (const QFont &font)=0
- virtual void **setFontHeight** (const int height)=0
- virtual void **setFontColor** (const QColor &color)=0
- virtual void **setBackgroundColor** (const QColor &color)=0
- virtual QPalette **defaultPalette** () const =0
- virtual void **setDefaultPalette** (const QPalette &pal)=0

- virtual const QFont * **defaultFont** () const =0
- virtual void **setDefaultFont** (const QFont &font)=0
- virtual void **insertHorizontalLine** ()=0
- virtual void **increaseFontSize** ()=0
- virtual void **decreaseFontSize** ()=0
- virtual void **increaseIndentation** ()=0
- virtual void **decreaseIndentation** ()=0
- virtual void **insertBulletedList** ()=0
- virtual void **insertNumberedList** ()=0
- virtual void **insertTableDialog** ()=0
- virtual void **insertFixedWidthTable** (const int rows, const int columns, const int widthInPixels)=0
- virtual void **insertRelativeWidthTable** (const int rows, const int columns, const double relativeWidth)=0
- virtual void **insertTableRow** ()=0
- virtual void **insertTableColumn** ()=0
- virtual void **removeTableRow** ()=0
- virtual void **removeTableColumn** ()=0
- virtual void **addAttachmentDialog** ()=0
- virtual void **saveAttachmentDialog** (const QByteArray &resourceHash)=0
- virtual void **saveAttachmentUnderCursor** ()=0
- virtual void **openAttachment** (const QByteArray &resourceHash)=0
- virtual void **openAttachmentUnderCursor** ()=0
- virtual void **copyAttachment** (const QByteArray &resourceHash)=0
- virtual void **copyAttachmentUnderCursor** ()=0
- virtual void **removeAttachment** (const QByteArray &resourceHash)=0
- virtual void **removeAttachmentUnderCursor** ()=0
- virtual void **renameAttachment** (const QByteArray &resourceHash)=0
- virtual void **renameAttachmentUnderCursor** ()=0
- virtual void **rotateImageAttachment** (const QByteArray &resourceHash, const Rotation rotationDirection)=0
- virtual void **rotateImageAttachmentUnderCursor** (const Rotation rotationDirection)=0
- virtual void **encryptSelectedText** ()=0
- virtual void **decryptEncryptedTextUnderCursor** ()=0
- virtual void **decryptEncryptedText** (QString encryptedText, QString cipher, QString keyLength, QString hint, QString enCryptIndex)=0
- virtual void **hideDecryptedTextUnderCursor** ()=0
- virtual void **hideDecryptedText** (QString encryptedText, QString decryptedText, QString cipher, QString keyLength, QString hint, QString enDecryptedIndex)=0
- virtual void **editHyperlinkDialog** ()=0
- virtual void **copyHyperlink** ()=0
- virtual void **removeHyperlink** ()=0
- virtual void **onNoteLoadCancelled** ()=0
- virtual bool **print** (QPrinter &printer, ErrorString &errorDescription)=0
- virtual bool **exportToPdf** (const QString &absoluteFilePath, ErrorString &errorDescription)=0
- virtual bool **exportToEnex** (const QStringList &tagNames, QString &enex, ErrorString &errorDescription)=0
- virtual QString **currentNoteLocalUid** () const =0
- virtual void **setCurrentNoteLocalUid** (const QString &noteLocalUid)=0
- virtual void **clear** ()=0
- virtual bool **isModified** () const =0
- virtual bool **isEditorPageModified** () const =0
- virtual void **setFocusToEditor** ()=0

Protected Member Functions

- **INoteEditorBackend** (NoteEditor *parent)

Protected Attributes

- NoteEditor * **m_pNoteEditor**

Friends

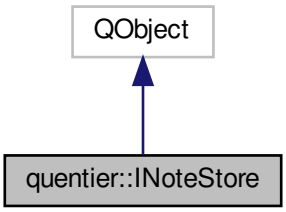
- QUENTIER_EXPORT QTextStream & **operator<<** (QTextStream &strm, const Rotation rotation)
- QUENTIER_EXPORT QDebug & **operator<<** (QDebug &dbg, const Rotation rotation)

5.31 quentier::INoteStore Class Reference

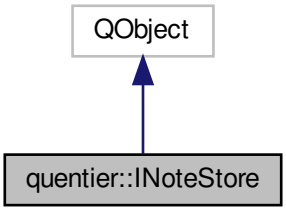
INoteStore is the interface which provides methods required for the implementation of NoteStore part of Evernote EDAM sync protocol.

`#include <INoteStore.h>`

Inheritance diagram for quentier::INoteStore:



Collaboration diagram for quentier::INoteStore:



Signals

- void **getNoteAsyncFinished** (qint32 errorCode, qevercloud::Note note, qint32 rateLimitSeconds, ErrorString errorDescription)
- void **getResourceAsyncFinished** (qint32 errorCode, qevercloud::Resource resource, qint32 rateLimitSeconds, ErrorString errorDescription)

Public Member Functions

- virtual INoteStore * **create** () const =0
- virtual QString noteStoreUrl () const =0
- virtual void setNoteStoreUrl (QString noteStoreUrl)=0
- virtual void setAuthData (QString authenticationToken, QList< QNetworkCookie > cookies)=0
- virtual void stop ()=0
- virtual qint32 createNotebook (Notebook &notebook, ErrorString &errorDescription, qint32 &rateLimitSeconds, QString linkedNotebookAuthToken={})=0
- virtual qint32 updateNotebook (Notebook &notebook, ErrorString &errorDescription, qint32 &rateLimitSeconds, QString linkedNotebookAuthToken={})=0
- virtual qint32 createNote (Note &note, ErrorString &errorDescription, qint32 &rateLimitSeconds, QString linkedNotebookAuthToken={})=0
- virtual qint32 updateNote (Note &note, ErrorString &errorDescription, qint32 &rateLimitSeconds, QString linkedNotebookAuthToken={})=0
- virtual qint32 createTag (Tag &tag, ErrorString &errorDescription, qint32 &rateLimitSeconds, QString linkedNotebookAuthToken={})=0
- virtual qint32 updateTag (Tag &tag, ErrorString &errorDescription, qint32 &rateLimitSeconds, QString linkedNotebookAuthToken={})=0
- virtual qint32 createSavedSearch (SavedSearch &savedSearch, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0
- virtual qint32 updateSavedSearch (SavedSearch &savedSearch, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0
- virtual qint32 getSyncState (qevercloud::SyncState &syncState, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0
- virtual qint32 getSyncChunk (const qint32 afterUSN, const qint32 maxEntries, const qevercloud::SyncChunkFilter &filter, qevercloud::SyncChunk &syncChunk, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0
- virtual qint32 getLinkedNotebookSyncState (const qevercloud::LinkedNotebook &linkedNotebook, const QString &authToken, qevercloud::SyncState &syncState, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0
- virtual qint32 getLinkedNotebookSyncChunk (const qevercloud::LinkedNotebook &linkedNotebook, const qint32 afterUSN, const qint32 maxEntries, const QString &linkedNotebookAuthToken, const bool fullSyncOnly, qevercloud::SyncChunk &syncChunk, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0
- virtual qint32 getNote (const bool withContent, const bool withResourcesData, const bool withResourcesRecognition, const bool withResourceAlternateData, Note &note, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0
- virtual bool getNoteAsync (const bool withContent, const bool withResourceData, const bool withResourcesRecognition, const bool withResourceAlternateData, const bool withSharedNotes, const bool withNoteAppDataValues, const bool withResourceAppDataValues, const bool withNoteLimits, const QString &noteGuid, const QString &authToken, ErrorString &errorDescription)=0
- virtual qint32 getResource (const bool withDataBody, const bool withRecognitionDataBody, const bool withAlternateDataBody, const bool withAttributes, const QString &authToken, Resource &resource, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0
- virtual bool getResourceAsync (const bool withDataBody, const bool withRecognitionDataBody, const bool withAlternateDataBody, const bool withAttributes, const QString &resourceGuid, const QString &authToken, ErrorString &errorDescription)=0
- virtual qint32 authenticateToSharedNotebook (const QString &shareKey, qevercloud::AuthenticationResult &authResult, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0

Protected Member Functions

- **INoteStore** (QObject *parent=nullptr)

5.31.1 Detailed Description

INoteStore is the interface which provides methods required for the implementation of NoteStore part of Evernote EDAM sync protocol.

5.31.2 Member Function Documentation

5.31.2.1 authenticateToSharedNotebook()

```
virtual qint32 quentier::INoteStore::authenticateToSharedNotebook (
            const QString & shareKey,
            qevercloud::AuthenticationResult & authResult,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds )  [pure virtual]
```

Authenticate to shared notebook

Parameters

shareKey	The shared notebook global identifier
authResult	Output parameter, the result of authentication
errorDescription	The textual description of the error if authentication to shared notebook could not be performed
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful authentication to shared notebook, other values corresponding to qevercloud::EDAMErrorCode enumeration instead

5.31.2.2 createNote()

```
virtual qint32 quentier::INoteStore::createNote (
            Note & note,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds,
            QString linkedNotebookAuthToken = {} )  [pure virtual]
```

Create note

Parameters

note	Note to be created
errorDescription	The textual description of the error in case note could not be created
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED
linkedNotebookAuthToken	If a note is created within another user's account, the corresponding auth token should be set, otherwise the note would be created in user's own account

Returns

Error code, 0 in case of successful note creation, other values corresponding to qevercloud::EDAMErrorCode enumeration instead

5.31.2.3 createNotebook()

```
virtual qint32 quentier::INoteStore::createNotebook (
            Notebook & notebook,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds,
            QString linkedNotebookAuthToken = {} )  [pure virtual]
```

Create notebook

Parameters

notebook	Notebook to be created, must have name set and either "active" or "default notebook" fields may be set
errorDescription	The textual description of the error in case notebook could not be created
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED
linkedNotebookAuthToken	If a notebook is created within another user's account, the corresponding auth token should be set, otherwise the notebook would be created in user's own account

Returns

Error code, 0 in case of successful notebook creation, other values corresponding to qevercloud::↩ EDAMErrorCode enumeration instead

5.31.2.4 createSavedSearch()

```
virtual qint32 quentier::INoteStore::createSavedSearch (
            SavedSearch & savedSearch,
```

```
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds )  [pure virtual]
```

Create saved search

Parameters

savedSearch	Saved search to be created, must have name and query set, can also have search scope set
errorDescription	The textual description of the error in case saved search could not be created
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful saved search creation, other values corresponding to qevercloud::↩ EDAMErrorCode enumeration instead

5.31.2.5 createTag()

```
virtual qint32 quentier::INoteStore::createTag (
            Tag & tag,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds,
            QString linkedNotebookAuthToken = {} )  [pure virtual]
```

Create tag

Parameters

note	Tag to be created, must have name set, can also have parent guid set
errorDescription	The textual description of the error in case tag could not be created
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED
linkedNotebookAuthToken	If a tag is created within another user's account, the corresponding auth token should be set, otherwise the tag would be created in user's own account

Returns

Error code, 0 in case of successful tag creation, other values corresponding to qevercloud::EDAMErrorCode enumeration instead

5.31.2.6 getLinkedNotebookSyncChunk()

```
virtual qint32 quentier::INoteStore::getLinkedNotebookSyncChunk (
            const qevercloud::LinkedNotebook & linkedNotebook,
            const qint32 afterUSN,
            const qint32 maxEntries,
            const QString & linkedNotebookAuthToken,
            const bool fullSyncOnly,
            qevercloud::SyncChunk & syncChunk,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds ) [pure virtual]
```

Get linked notebook sync chunk

Parameters

linkedNotebook	The linked notebook for which the sync chunk is being retrieved, must contain identifying information and permissions to access the notebook in question
afterUSN	The USN after which the sync chunks are being requested
maxEntries	Max number of items within the sync chunk to be returned
linkedNotebookAuthToken	The authentication token to use for the data from the linked notebook
fullSyncOnly	If true then client only wants initial data for a full sync. In this case Evernote service will not return any expunged objects and will not return any resources since these are also provided in their corresponding notes
syncChunk	Output parameter, the sync chunk
errorDescription	The textual description of the error in case linked notebook sync chunk could not be retrieved
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful linked notebook sync chunk retrieval, other values corresponding to qevercloud::EDAMErrorCode enumeration instead

5.31.2.7 getLinkedNotebookSyncState()

```
virtual qint32 quentier::INoteStore::getLinkedNotebookSyncState (
            const qevercloud::LinkedNotebook & linkedNotebook,
            const QString & authToken,
            qevercloud::SyncState & syncState,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds ) [pure virtual]
```

Get linked notebook sync state

Parameters

linkedNotebook	The linked notebook for which the sync state is being retrieved, must contain identifying information and permissions to access the notebook in question
authToken	The authentication token to use for the data from the linked notebook
syncState	Output parameter, the sync state
errorDescription	The textual description of the error in case linked notebook sync state could not be retrieved
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful linked notebook sync state retrieval, other values corresponding to qevercloud::EDAMErrorCode enumeration instead

5.31.2.8 getNote()

```
virtual qint32 quentier::INoteStore::getNote (
            const bool withContent,
            const bool withResourcesData,
            const bool withResourcesRecognition,
            const bool withResourceAlternateData,
            Note & note,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds )  [pure virtual]
```

Get note synchronously

Parameters

withContent	If true, the returned note would include the content
withResourcesData	If true, any resources the note might have would include their full data
withResourcesRecognition	If true, any resources the note might have and which have Evernote supplied recognition would include their full recognition data
withResourceAlternateData	If true, any resources the note might have would include their full alternate data
note	Input and output parameter, the retrieved note, must have guid set
errorDescription	The textual description of the error in case the note could not be retrieved
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful note retrieval, other values corresponding to qevercloud::EDAMErrorCode enumeration instead

5.31.2.9 getNoteAsync()

```
virtual bool quentier::INoteStore::getNoteAsync (
            const bool withContent,
            const bool withResourceData,
            const bool withResourcesRecognition,
            const bool withResourceAlternateData,
            const bool withSharedNotes,
            const bool withNoteAppDataValues,
            const bool withResourceAppDataValues,
            const bool withNoteLimits,
            const QString & noteGuid,
            const QString & authToken,
            ErrorString & errorDescription )  [pure virtual]
```

Get note asynchronously

If the method returned true, the actual result of the method invokation would be returned via the emission of getNoteAsyncFinished signal.

Parameters

withContent	If true, the returned note would include the content
withResourcesData	If true, any resources the note might have would include their full data
withResourcesRecognition	If true, any resources the note might have and which have Evernote supplied recognition would include their full recognition data
withResourceAlternateData	If true, any resources the note might have would include their full alternate data
withSharedNotes	If true, any shared notes contained within the note would be provided along with the asynchronously fetched result
withNoteAppDataValues	If true, the asynchronously fetched note would contain the app data values
withResourceAppDataValues	If true, the resources of asynchronously fetched note would contain the app data values
withNoteLimits	If true, the asynchronously fetched note would contain note limits
noteGuid	The guid of the note to be retrieved
authToken	Authentication token to use for note retrieval
errorDescription	The textual description of the error if the launch of async note retrieval has failed

Returns

True if the launch of async note retrieval was successful, false otherwise

5.31.2.10 getResource()

```
virtual qint32 quentier::INoteStore::getResource (
            const bool withDataBody,
            const bool withRecognitionDataBody,
            const bool withAlternateDataBody,
            const bool withAttributes,
            const QString & authToken,
```

```
            Resource & resource,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds )  [pure virtual]
```

Get resource synchronously

Parameters

withDataBody	If true, the returned resource would include its data body
withRecognitionDataBody	If true, the returned resource would include its recognition data body
withAlternateDataBody	If true, the returned resource would include its alternate data body
withAttributes	If true, the returned resource would include its attributes
authToken	Authentication token to use for resource retrieval
resource	Input and output parameter, the retrieved resource, must have guid set
errorDescription	The textual description of the error in case the resource could not be retrieved
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful resource retrieval, other values corresponding to qevercloud::EDAMError↩ Code enumeration instead

5.31.2.11 getResourceAsync()

```
virtual bool quentier::INoteStore::getResourceAsync (
            const bool withDataBody,
            const bool withRecognitionDataBody,
            const bool withAlternateDataBody,
            const bool withAttributes,
            const QString & resourceGuid,
            const QString & authToken,
            ErrorString & errorDescription )  [pure virtual]
```

Get resource asynchronously

If the method returned true, the actual result of the method invokation would be returned via the emission of get↩ ResourceAsyncFinished signal.

Parameters

withDataBody	If true, the returned resource would include its data body
withRecognitionDataBody	If true, the returned resource would include its recognition data body
withAlternateDataBody	If true, the returned resource would include its alternate data body
withAttributes	If true, the returned resource would include its attributes
resourceGuid	The guid of the resource to be retrieved
authToken	Authentication token to use for resource retrieval
errorDescription	The textual description of the error if the launch of async resource retrieval has failed

Returns

True if the launch of async resource retrieval was successful, false otherwise

5.31.2.12 getSyncChunk()

```
virtual qint32 quentier::INoteStore::getSyncChunk (
            const qint32 afterUSN,
            const qint32 maxEntries,
            const qevercloud::SyncChunkFilter & filter,
            qevercloud::SyncChunk & syncChunk,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds ) [pure virtual]
```

Get sync chunk

Parameters

afterUSN	The USN after which the sync chunks are being requested
maxEntries	Max number of items within the sync chunk to be returned
filter	Filter for items to be returned within the sync chunks
syncChunk	Output parameter, the sync chunk
errorDescription	The textual description of the error in case sync chunk could not be retrieved
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful sync chunk retrieval, other values corresponding to qevercloud::↩ EDAMErrorCode enumeration instead

5.31.2.13 getSyncState()

```
virtual qint32 quentier::INoteStore::getSyncState (
            qevercloud::SyncState & syncState,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds ) [pure virtual]
```

Get sync state

Parameters

syncState	Output parameter, the sync state
errorDescription	The textual description of the error in case sync state could not be retrieved
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful sync state retrieval, other values corresponding to qevercloud::↩ EDAMErrorCode enumeration instead

5.31.2.14 noteStoreUrl()

```
virtual QString quentier::INoteStore::noteStoreUrl ( ) const  [pure virtual]
```

Provide note store URL used by this INoteStore instance

5.31.2.15 setAuthData()

```
virtual void quentier::INoteStore::setAuthData (
            QString authenticationToken,
            QList< QNetworkCookie > cookies )  [pure virtual]
```

Set authentication data to be used by this INoteStore instance

5.31.2.16 setNoteStoreUrl()

```
virtual void quentier::INoteStore::setNoteStoreUrl (
            QString noteStoreUrl )  [pure virtual]
```

Set note store URL to be used by this INoteStore instance

5.31.2.17 stop()

```
virtual void quentier::INoteStore::stop ( )  [pure virtual]
```

Stop asynchronous queries for notes or resources which might be running at the moment

5.31.2.18 updateNote()

```
virtual qint32 quentier::INoteStore::updateNote (
            Note & note,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds,
            QString linkedNotebookAuthToken = {} )  [pure virtual]
```

Update note

Parameters

note	Note to be updated, must have guid set
errorDescription	The textual description of the error in case note could not be updated
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED
linkedNotebookAuthToken	If a note is updated within another user's account, the corresponding auth token should be set, otherwise the note would be updated within user's own account

Returns

Error code, 0 in case of successful note update, other values corresponding to qevercloud::EDAMErrorCode enumeration instead

5.31.2.19 updateNotebook()

```
virtual qint32 quentier::INoteStore::updateNotebook (
            Notebook & notebook,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds,
            QString linkedNotebookAuthToken = {} )  [pure virtual]
```

Update notebook

Parameters

notebook	Notebook to be updated, must have guid set
errorDescription	The textual description of the error in case notebook could not be updated
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED
linkedNotebookAuthToken	If a notebook is updated within another user's account, the corresponding auth token should be set, otherwise the notebook would be updated within user's own account

Returns

Error code, 0 in case of successful notebook update, other values corresponding to qevercloud::EDAMError↩ Code enumeration instead

5.31.2.20 updateSavedSearch()

```
virtual qint32 quentier::INoteStore::updateSavedSearch (
            SavedSearch & savedSearch,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds )  [pure virtual]
```

Update saved search

Parameters

savedSearch	Saved search to be updated, must have guid set
errorDescription	The textual description of the error in case saved search could not be updated
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful saved search update, other values corresponding to qevercloud::↩ EDAMErrorCode enumeration instead

5.31.2.21 updateTag()

```
virtual qint32 quentier::INoteStore::updateTag (
            Tag & tag,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds,
            QString linkedNotebookAuthToken = {} )  [pure virtual]
```

Update tag

Parameters

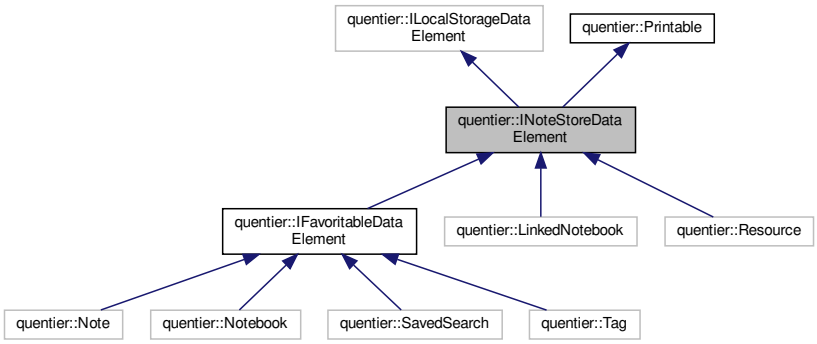
tag	Tag to be updated, must have guid set
errorDescription	The textual description of the error in case tag could not be updated
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED
linkedNotebookAuthToken	If a tag is updated within another user's account, the corresponding auth token should be set, otherwise the tag would be updated within user's own account

Returns

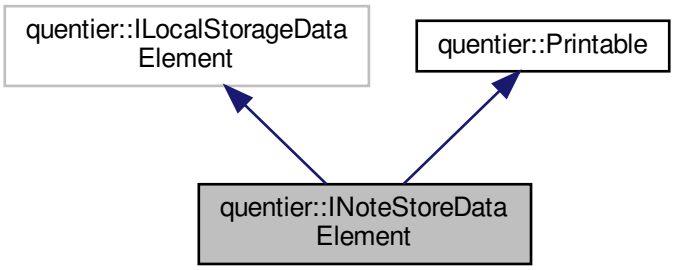
Error code, 0 in case of successful tag update, other values corresponding to qevercloud::EDAMErrorCode enumeration instead

5.32 quentier::INoteStoreDataElement Class Reference

Inheritance diagram for quentier::INoteStoreDataElement:



Collaboration diagram for quentier::INoteStoreDataElement:



Public Member Functions

- virtual void **clear** ()=0
- virtual bool **hasGuid** () const =0
- virtual const QString & **guid** () const =0
- virtual void **setGuid** (const QString &guid)=0
- virtual bool **hasUpdateSequenceNumber** () const =0
- virtual qint32 **updateSequenceNumber** () const =0
- virtual void **setUpdateSequenceNumber** (const qint32 usn)=0
- virtual bool **checkParameters** (ErrorString &errorDescription) const =0
- virtual bool **isDirty** () const =0
- virtual void **setDirty** (const bool dirty)=0
- virtual bool **isLocal** () const =0
- virtual void **setLocal** (const bool local)=0

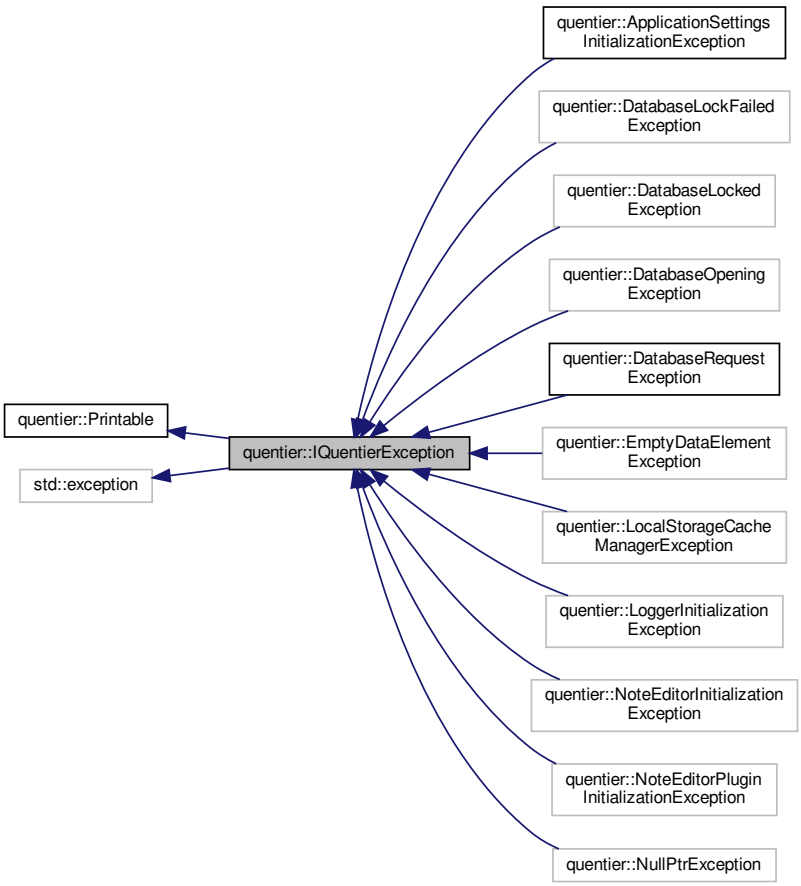
Additional Inherited Members

5.33 quentier::IQuentierException Class Reference

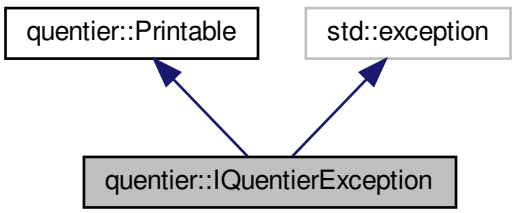
The IQuentierException class represents the interface for exceptions specific to libquentier and applications based on it.

```
#include <IQuentierException.h>
```

Inheritance diagram for quentier::IQuentierException:



Collaboration diagram for quentier::IQuentierException:



Public Member Functions

- **IQuentierException** (const ErrorString &message)

- QString **localizedErrorMessage** () const
- QString **nonLocalizedErrorMessage** () const
- virtual const char * **what** () const noexcept override
- virtual QTextStream & print (QTextStream &strm) const override

Protected Member Functions

- **IQuentierException** (const IQuentierException &other)
- IQuentierException & **operator=** (const IQuentierException &other)
- virtual const QString **exceptionDisplayName** () const =0

5.33.1 Detailed Description

The IQuentierException class represents the interface for exceptions specific to libquentier and applications based on it.

In addition to standard exception features inherited from std::exception, IQuentierException based exceptions can provide both localized and non-localized error messages.

5.33.2 Member Function Documentation

5.33.2.1 print()

```
virtual QTextStream & quentier::IQuentierException::print (
            QTextStream & strm ) const  [override], [virtual]
```

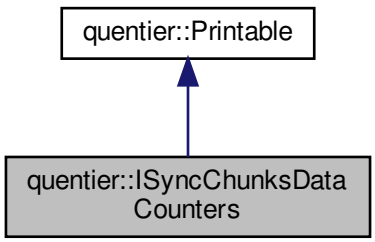
Implements quentier::Printable.

5.34 quentier::ISyncChunksDataCounters Struct Reference

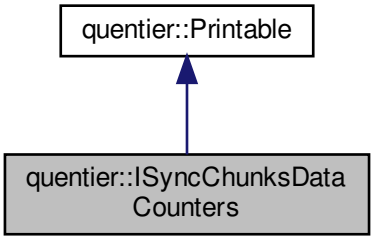
The ISyncChunksDataCounters interface provides integer counters representing the current progress on processing the data from downloaded sync chunks.

```
#include <ISyncChunksDataCounters.h>
```

Inheritance diagram for quentier::ISyncChunksDataCounters:



Collaboration diagram for quentier::ISyncChunksDataCounters:



Public Member Functions

- virtual quint64 totalSavedSearches () const noexcept=0
- virtual quint64 totalExpungedSavedSearches () const noexcept=0
- virtual quint64 addedSavedSearches () const noexcept=0
- virtual quint64 updatedSavedSearches () const noexcept=0
- virtual quint64 expungedSavedSearches () const noexcept=0
- virtual quint64 totalTags () const noexcept=0
- virtual quint64 totalExpungedTags () const noexcept=0
- virtual quint64 addedTags () const noexcept=0
- virtual quint64 updatedTags () const noexcept=0
- virtual quint64 expungedTags () const noexcept=0
- virtual quint64 totalLinkedNotebooks () const noexcept=0
- virtual quint64 totalExpungedLinkedNotebooks () const noexcept=0
- virtual quint64 addedLinkedNotebooks () const noexcept=0
- virtual quint64 updatedLinkedNotebooks () const noexcept=0
- virtual quint64 expungedLinkedNotebooks () const noexcept=0
- virtual quint64 totalNotebooks () const noexcept=0
- virtual quint64 totalExpungedNotebooks () const noexcept=0
- virtual quint64 addedNotebooks () const noexcept=0
- virtual quint64 updatedNotebooks () const noexcept=0
- virtual quint64 expungedNotebooks () const noexcept=0

Additional Inherited Members

5.34.1 Detailed Description

The ISyncChunksDataCounters interface provides integer counters representing the current progress on processing the data from downloaded sync chunks.

5.34.2 Member Function Documentation

5.34.2.1 addedLinkedNotebooks()

```
virtual quint64 quentier::ISyncChunksDataCounters::addedLinkedNotebooks ( ) const  [pure virtual],
[noexcept]
```

Number of linked notebooks from sync chunks added to the local storage so far

5.34.2.2 addedNotebooks()

```
virtual quint64 quentier::ISyncChunksDataCounters::addedNotebooks ( ) const  [pure virtual],
[noexcept]
```

Number of notebooks from sync chunks added to the local storage so far

5.34.2.3 addedSavedSearches()

```
virtual quint64 quentier::ISyncChunksDataCounters::addedSavedSearches ( ) const  [pure virtual],
[noexcept]
```

Number of saved searches from sync chunks added to the local storage so far

5.34.2.4 addedTags()

```
virtual quint64 quentier::ISyncChunksDataCounters::addedTags ( ) const  [pure virtual], [noexcept]
```

Number of tags from sync chunks added to the local storage so far

5.34.2.5 expungedLinkedNotebooks()

```
virtual quint64 quentier::ISyncChunksDataCounters::expungedLinkedNotebooks ( ) const  [pure
virtual], [noexcept]
```

Number of linked notebooks from sync chunks expunged from the local storage so far

5.34.2.6 expungedNotebooks()

```
virtual quint64 quentier::ISyncChunksDataCounters::expungedNotebooks ( ) const  [pure virtual],
[noexcept]
```

Number of notebooks from sync chunks expunged from the local storage so far

5.34.2.7 expungedSavedSearches()

```
virtual quint64 quentier::ISyncChunksDataCounters::expungedSavedSearches ( ) const  [pure
virtual], [noexcept]
```

Number of saved searches from sync chunks expunged from the local storage so far

5.34.2.8 expungedTags()

```
virtual quint64 quentier::ISyncChunksDataCounters::expungedTags ( ) const  [pure virtual],
[noexcept]
```

Number of tags from sync chunks expunged from the local storage so far

5.34.2.9 totalExpungedLinkedNotebooks()

```
virtual quint64 quentier::ISyncChunksDataCounters::totalExpungedLinkedNotebooks ( ) const
[pure virtual], [noexcept]
```

Total number of expunged saved searches in downloaded sync chunks

5.34.2.10 totalExpungedNotebooks()

```
virtual quint64 quentier::ISyncChunksDataCounters::totalExpungedNotebooks ( ) const  [pure
virtual], [noexcept]
```

Total number of expunged notebooks in downloaded sync chunks

5.34.2.11 totalExpungedSavedSearches()

```
virtual quint64 quentier::ISyncChunksDataCounters::totalExpungedSavedSearches ( ) const  [pure
virtual], [noexcept]
```

Total number of expunged saved searches in downloaded sync chunks

5.34.2.12 totalExpungedTags()

```
virtual quint64 quentier::ISyncChunksDataCounters::totalExpungedTags ( ) const  [pure virtual],
[noexcept]
```

Total number of expunged tags in downloaded sync chunks

5.34.2.13 totalLinkedNotebooks()

```
virtual quint64 quentier::ISyncChunksDataCounters::totalLinkedNotebooks ( ) const  [pure virtual],
[noexcept]
```

Total number of new or updated linked notebooks in downloaded sync chunks

5.34.2.14 totalNotebooks()

```
virtual quint64 quentier::ISyncChunksDataCounters::totalNotebooks ( ) const  [pure virtual],
[noexcept]
```

Total number of new or updated notebooks in downloaded sync chunks

5.34.2.15 totalSavedSearches()

```
virtual quint64 quentier::ISyncChunksDataCounters::totalSavedSearches ( ) const  [pure virtual],
[noexcept]
```

Total number of new or updated saved searches in downloaded sync chunks

5.34.2.16 totalTags()

```
virtual quint64 quentier::ISyncChunksDataCounters::totalTags ( ) const  [pure virtual], [noexcept]
```

Total number of new or updated tags in downloaded sync chunks

5.34.2.17 updatedLinkedNotebooks()

```
virtual quint64 quentier::ISyncChunksDataCounters::updatedLinkedNotebooks ( ) const  [pure
virtual], [noexcept]
```

Number of linked notebooks from sync chunks updated in the local storage so far

5.34.2.18 updatedNotebooks()

```
virtual quint64 quentier::ISyncChunksDataCounters::updatedNotebooks ( ) const  [pure virtual],
[noexcept]
```

Number of notebooks from sync chunks updated in the local storage so far

5.34.2.19 updatedSavedSearches()

```
virtual quint64 quentier::ISyncChunksDataCounters::updatedSavedSearches ( ) const  [pure virtual],
[noexcept]
```

Number of saved searches from sync chunks updated in the local storage so far

5.34.2.20 updatedTags()

```
virtual quint64 quentier::ISyncChunksDataCounters::updatedTags ( ) const  [pure virtual],
[noexcept]
```

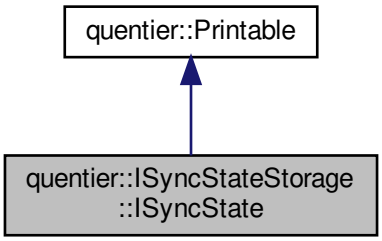
Number of tags from sync chunks updated in the local storage so far

5.35 quentier::ISyncStateStorage::ISyncState Class Reference

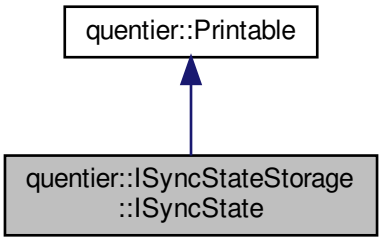
The ISyncState interface provides accessory methods to determine the sync state for the account.

`#include <ISyncStateStorage.h>`

Inheritance diagram for quentier::ISyncStateStorage::ISyncState:



Collaboration diagram for quentier::ISyncStateStorage::ISyncState:



Public Member Functions

- virtual qint32 **userDataUpdateCount** () const =0
- virtual qevercloud::Timestamp **userDataLastSyncTime** () const =0
- virtual QHash< QString, qint32 > **linkedNotebookUpdateCounts** () const =0
- virtual QHash< QString, qevercloud::Timestamp > **linkedNotebookLastSyncTimes** () const =0
- virtual QTextStream & print (QTextStream &strm) const override

Additional Inherited Members

5.35.1 Detailed Description

The ISyncState interface provides accessory methods to determine the sync state for the account.

5.35.2 Member Function Documentation

5.35.2.1 print()

```
virtual QTextStream & quentier::ISyncStateStorage::ISyncState::print (
            QTextStream & strm ) const  [override], [virtual]
```

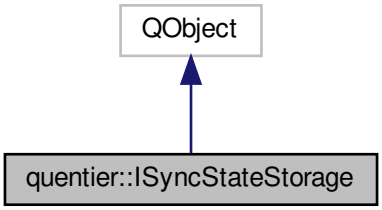
Implements quentier::Printable.

5.36 quentier::ISyncStateStorage Class Reference

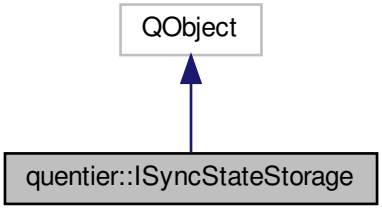
The ISyncStateStorage interface represents the interface of a class which stores sync state for given accounts persistently and provides access to previously stores sync states.

```
#include <ISyncStateStorage.h>
```

Inheritance diagram for quentier::ISyncStateStorage:



Collaboration diagram for quentier::ISyncStateStorage:



Classes

- class ISyncState

  The ISyncState interface provides accessory methods to determine the sync state for the account.

Public Types

- using **ISyncStatePtr** = std::shared_ptr< ISyncState >

Signals

- void notifySyncStateUpdated (Account account, ISyncStatePtr syncState)

Public Member Functions

- **ISyncStateStorage** (QObject *parent=nullptr)
- virtual ISyncStatePtr **getSyncState** (const Account &account)=0
- virtual void **setSyncState** (const Account &account, ISyncStatePtr syncState)=0

5.36.1 Detailed Description

The ISyncStateStorage interface represents the interface of a class which stores sync state for given accounts persistently and provides access to previously stores sync states.

5.36.2 Member Function Documentation

5.36.2.1 notifySyncStateUpdated

```
void quentier::ISyncStateStorage::notifySyncStateUpdated (
            Account account,
            ISyncStatePtr syncState )  [signal]
```

Classes implementing ISyncStateStorage interface are expected to emit notifySyncStateUpdated signal each time when sync state for the corresponding account is updated

5.37 quentier::IUserStore Class Reference

IUserStore is the interface which provides methods required for the implementation of UserStore part of Evernote EDAM sync protocol.

```
#include <IUserStore.h>
```

Public Member Functions

- virtual void setAuthData (QString authenticationToken, QList< QNetworkCookie > cookies)=0
- virtual bool checkVersion (const QString &clientName, qint16 edamVersionMajor, qint16 edamVersionMinor, ErrorString &errorDescription)=0
- virtual qint32 getUser (User &user, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0
- virtual qint32 getAccountLimits (const qevercloud::ServiceLevel serviceLevel, qevercloud::AccountLimits &limits, ErrorString &errorDescription, qint32 &rateLimitSeconds)=0

5.37.1 Detailed Description

IUserStore is the interface which provides methods required for the implementation of UserStore part of Evernote EDAM sync protocol.

5.37.2 Member Function Documentation

5.37.2.1 checkVersion()

```
virtual bool quentier::IUserStore::checkVersion (
            const QString & clientName,
            qint16 edamVersionMajor,
            qint16 edamVersionMinor,
            ErrorString & errorDescription )  [pure virtual]
```

Check the version of EDAM protocol

Parameters

clientName	Application name + application version + platform name string
edamVersionMajor	The major version of EDAM protocol the application wants to use to connect to Evernote
edamVersionMinor	The minor version of EDAM protocol the application wants to use to connect to Evernote
errorDescription	The textual description of the error if the supplied protocol version cannot be used to connect to Evernote

Returns

True if protocol check was successful i.e. the service can talk to the client using the supplied protocol version, false otherwise

5.37.2.2 getAccountLimits()

```
virtual qint32 quentier::IUserStore::getAccountLimits (
            const qevercloud::ServiceLevel serviceLevel,
```

```
            qevercloud::AccountLimits & limits,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds )  [pure virtual]
```

Retrieve account limits corresponding to certain provided service level

Parameters

serviceLevel	The level of Evernote service for which account limits are requested
limits	Output account limits
errorDescription	The textual description of the error if account limits could not be retrieved
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful retrieval of account limits for the given service level, other values corresponding to qevercoud::EDAMErrorCode::type enumeration instead

5.37.2.3 getUser()

```
virtual qint32 quentier::IUserStore::getUser (
            User & user,
            ErrorString & errorDescription,
            qint32 & rateLimitSeconds )  [pure virtual]
```

Retrieve full information about user (account)

Parameters

user	Input and output parameter; on input needs to have user id set
errorDescription	The textual description of the error if full user information could not be retrieved
rateLimitSeconds	Output parameter, the number of seconds the client needs to wait before attempting to call this method or any other method calling Evernote API again; only meaningful if returned value matches qevercloud::EDAMErrorCode::RATE_LIMIT_REACHED

Returns

Error code, 0 in case of successful retrieval of full user information, other values corresponding to qevercloud↩ ::EDAMErrorCode enumeration instead

5.37.2.4 setAuthData()

```
virtual void quentier::IUserStore::setAuthData (
            QString authenticationToken,
            QList< QNetworkCookie > cookies )  [pure virtual]
```

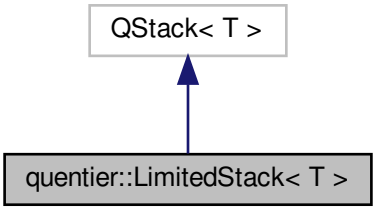
Set authentication data to be used by this IUserStore instance

5.38 quentier::LimitedStack< T > Class Template Reference

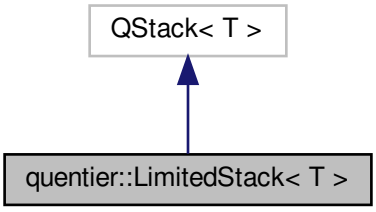
The LimitedStack template class implements a stack which may have a limitation for its size; when the size becomes too much according to the limit, the bottom element of the stack gets erased from it. Only limits greater than zero are considered.

`#include <LimitedStack.h>`

Inheritance diagram for quentier::LimitedStack< T >:



Collaboration diagram for quentier::LimitedStack< T >:



Public Member Functions

- **LimitedStack** (void(*deleter)(T &)=nullptr)
- **LimitedStack** (const LimitedStack< T > &other)
- **LimitedStack** (LimitedStack< T > &&other)
- LimitedStack< T > & **operator=** (const LimitedStack< T > &other)
- LimitedStack< T > & **operator=** (LimitedStack< T > &&other)
- void **swap** (const LimitedStack< T > &other)
- int **limit** () const
- void **setLimit** (const int limit)
- void **push** (const T &t)

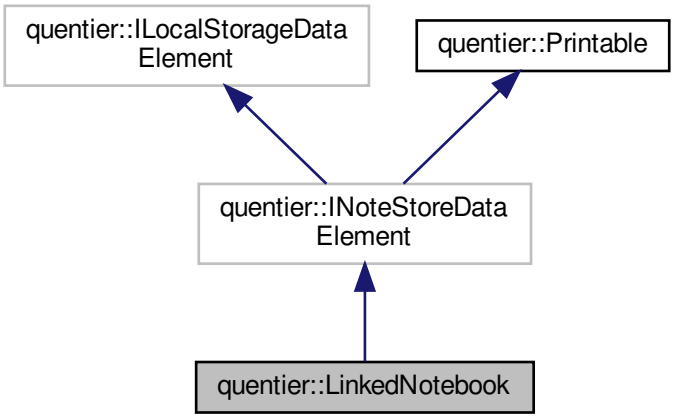
5.38.1 Detailed Description

template<class T>
class quentier::LimitedStack< T >

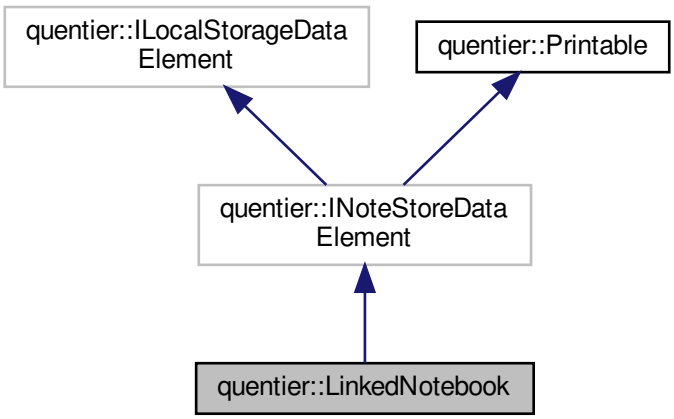
The LimitedStack template class implements a stack which may have a limitation for its size; when the size becomes too much according to the limit, the bottom element of the stack gets erased from it. Only limits greater than zero are considered.

5.39 quentier::LinkedNotebook Class Reference

Inheritance diagram for quentier::LinkedNotebook:



Collaboration diagram for quentier::LinkedNotebook:



Public Member Functions

- **LinkedNotebook** (const LinkedNotebook &other)
- **LinkedNotebook** (LinkedNotebook &&other)
- LinkedNotebook & **operator=** (const LinkedNotebook &other)
- LinkedNotebook & **operator=** (LinkedNotebook &&other)
- **LinkedNotebook** (const qevercloud::LinkedNotebook &linkedNotebook)
- **LinkedNotebook** (qevercloud::LinkedNotebook &&linkedNotebook)
- const qevercloud::LinkedNotebook & **qevercloudLinkedNotebook** () const
- qevercloud::LinkedNotebook & **qevercloudLinkedNotebook** ()
- bool **operator==** (const LinkedNotebook &other) const
- bool **operator!=** (const LinkedNotebook &other) const
- virtual void clear () override
- virtual bool hasGuid () const override
- virtual const QString & guid () const override
- virtual void setGuid (const QString &guid) override
- virtual bool hasUpdateSequenceNumber () const override
- virtual qint32 updateSequenceNumber () const override
- virtual void setUpdateSequenceNumber (const qint32 usn) override
- virtual bool checkParameters (ErrorString &errorDescription) const override
- bool **hasShareName** () const
- const QString & **shareName** () const
- void **setShareName** (const QString &shareName)
- bool **hasUsername** () const
- const QString & **username** () const
- void **setUsername** (const QString &username)
- bool **hasShardId** () const
- const QString & **shardId** () const
- void **setShardId** (const QString &shardId)
- bool **hasSharedNotebookGlobalId** () const
- const QString & **sharedNotebookGlobalId** () const
- void **setSharedNotebookGlobalId** (const QString &sharedNotebookGlobalId)
- bool **hasUri** () const
- const QString & **uri** () const
- void **setUri** (const QString &uri)
- bool **hasNoteStoreUrl** () const
- const QString & **noteStoreUrl** () const
- void **setNoteStoreUrl** (const QString &noteStoreUrl)
- bool **hasWebApiUrlPrefix** () const
- const QString & **webApiUrlPrefix** () const
- void **setWebApiUrlPrefix** (const QString &webApiUrlPrefix)
- bool **hasStack** () const
- const QString & **stack** () const
- void **setStack** (const QString &stack)
- bool **hasBusinessId** () const
- qint32 **businessId** () const
- void **setBusinessId** (const qint32 businessId)
- virtual QTextStream & print (QTextStream &strm) const override

Additional Inherited Members

5.39.1 Member Function Documentation

5.39.1.1 checkParameters()

```
virtual bool quentier::LinkedNotebook::checkParameters (
            ErrorString & errorDescription ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.39.1.2 clear()

```
virtual void quentier::LinkedNotebook::clear ( )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.39.1.3 guid()

```
virtual const QString & quentier::LinkedNotebook::guid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.39.1.4 hasGuid()

```
virtual bool quentier::LinkedNotebook::hasGuid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.39.1.5 hasUpdateSequenceNumber()

```
virtual bool quentier::LinkedNotebook::hasUpdateSequenceNumber ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.39.1.6 print()

```
virtual QTextStream & quentier::LinkedNotebook::print (
            QTextStream & strm ) const  [override], [virtual]
```

Implements quentier::Printable.

5.39.1.7 setGuid()

```
virtual void quentier::LinkedNotebook::setGuid (
            const QString & guid )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.39.1.8 setUpdateSequenceNumber()

```
virtual void quentier::LinkedNotebook::setUpdateSequenceNumber (
            const qint32 usn )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

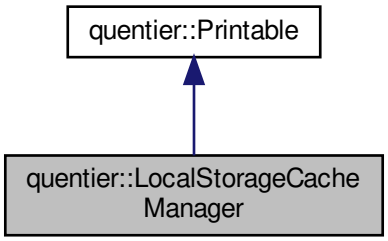
5.39.1.9 updateSequenceNumber()

```
virtual qint32 quentier::LinkedNotebook::updateSequenceNumber ( ) const  [override], [virtual]
```

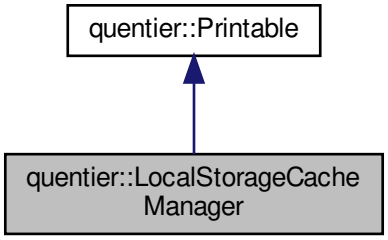
Implements quentier::INoteStoreDataElement.

5.40 quentier::LocalStorageCacheManager Class Reference

Inheritance diagram for quentier::LocalStorageCacheManager:



Collaboration diagram for quentier::LocalStorageCacheManager:



Public Types

- enum **WhichUid** { **LocalUid** , **Guid** }

Public Member Functions

- void **clear** ()
- bool **empty** () const
- size_t **numCachedNotes** () const
- void **cacheNote** (const Note &note)
- void **expungeNote** (const Note &note)
- const Note * **findNote** (const QString &uid, const WhichUid whichUid) const
- void **clearAllNotes** ()
- size_t **numCachedResources** () const
- void **cacheResource** (const Resource &resource)
- void **expungeResource** (const Resource &resource)
- const Resource * **findResource** (const QString &id, const WhichUid whichUid) const
- void **clearAllResources** ()
- size_t **numCachedNotebooks** () const
- void **cacheNotebook** (const Notebook &notebook)
- void **expungeNotebook** (const Notebook &notebook)
- const Notebook * **findNotebook** (const QString &uid, const WhichUid whichUid) const
- const Notebook * **findNotebookByName** (const QString &name) const
- void **clearAllNotebooks** ()
- size_t **numCachedTags** () const
- void **cacheTag** (const Tag &tag)
- void **expungeTag** (const Tag &tag)
- const Tag * **findTag** (const QString &uid, const WhichUid whichUid) const
- const Tag * **findTagByName** (const QString &name) const
- void **clearAllTags** ()
- size_t **numCachedLinkedNotebooks** () const
- void **cacheLinkedNotebook** (const LinkedNotebook &linkedNotebook)
- void **expungeLinkedNotebook** (const LinkedNotebook &linkedNotebook)
- const LinkedNotebook * **findLinkedNotebook** (const QString &guid) const
- void **clearAllLinkedNotebooks** ()
- size_t **numCachedSavedSearches** () const

- void **cacheSavedSearch** (const SavedSearch &savedSearch)
- void **expungeSavedSearch** (const SavedSearch &savedSearch)
- const SavedSearch * **findSavedSearch** (const QString &uid, const WhichUid whichUid) const
- const SavedSearch * **findSavedSearchByName** (const QString &name) const
- void **clearAllSavedSearches** ()
- void **installCacheExpiryFunction** (const ILocalStorageCacheExpiryChecker &checker)
- virtual QTextStream & print (QTextStream &strm) const override

Additional Inherited Members

5.40.1 Member Function Documentation

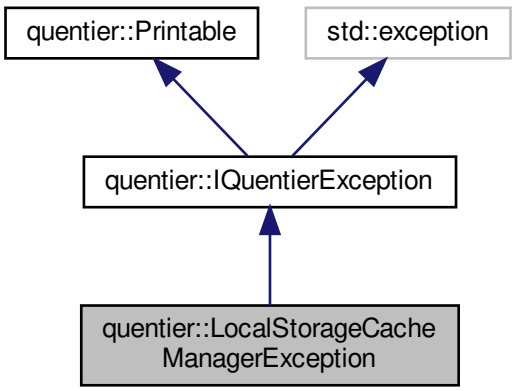
5.40.1.1 print()

```
virtual QTextStream & quentier::LocalStorageCacheManager::print (
            QTextStream & strm ) const  [override], [virtual]
```

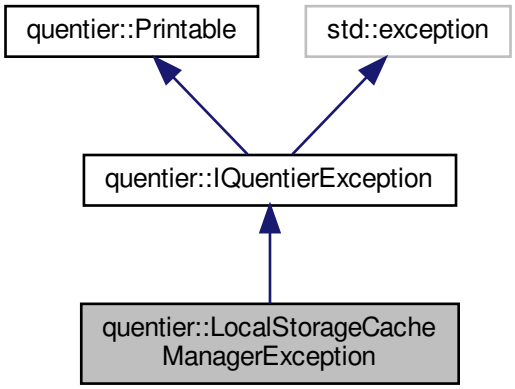
Implements quentier::Printable.

5.41 quentier::LocalStorageCacheManagerException Class Reference

Inheritance diagram for quentier::LocalStorageCacheManagerException:



Collaboration diagram for quentier::LocalStorageCacheManagerException:



Public Member Functions

- **LocalStorageCacheManagerException** (const ErrorString &message)

Protected Member Functions

- virtual const QString exceptionDisplayName () const override

5.41.1 Member Function Documentation

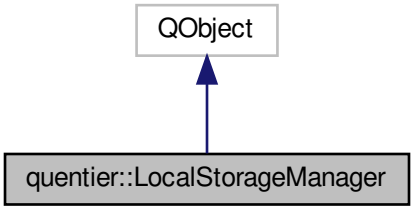
5.41.1.1 exceptionDisplayName()

```
virtual const QString quentier::LocalStorageCacheManagerException::exceptionDisplayName ( )
const  [override], [protected], [virtual]
```

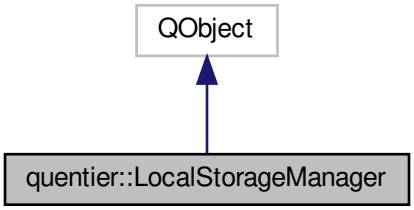
Implements quentier::IQuentierException.

5.42 quentier::LocalStorageManager Class Reference

Inheritance diagram for quentier::LocalStorageManager:



Collaboration diagram for quentier::LocalStorageManager:



Public Types

- enum class StartupOption { ClearDatabase = 1 , OverrideLock = 2 }

  The StartupOption enum is a QFlags enum which allows to specify some options to be applied to the local storage database on startup or on call to switchUser method.
- enum class ListObjectsOption {
  ListAll = 0 , **ListDirty** = 1 , **ListNonDirty** = 2 , **ListElementsWithoutGuid** = 4 ,
  ListElementsWithGuid = 8 , **ListLocal** = 16 , **ListNonLocal** = 32 , **ListFavoritedElements** = 64 ,
  ListNonFavoritedElements = 128 }

  The ListObjectsOption enum is a QFlags enum which allows to specify the desired local storage elements in calls to methods listing them from the database.
- enum class OrderDirection { **Ascending** = 0 , **Descending** }

  The OrderDirection enum specifies the direction of ordering of the results for methods listing the objects from the local storage database.
- enum class ListNotebooksOrder {
  ByUpdateSequenceNumber = 0 , **ByNotebookName** , **ByCreationTimestamp** , **ByModification↩ Timestamp** ,
  NoOrder }

The ListNotebooksOrder allows to specify the results ordering for methods listing notebooks from the local storage database.

- enum class ListLinkedNotebooksOrder { **ByUpdateSequenceNumber** = 0 , **ByShareName** , **ByUsername** , **NoOrder** }

  The ListLinkedNotebooksOrder enum allows to specify the results ordering for methods listing linked notebooks from local storage.

- enum class NoteCountOption { **IncludeNonDeletedNotes** = 1 , **IncludeDeletedNotes** = 2 }

  The NoteCountOption enum is a QFlags enum which allows to specify some options for methods returning note counts from local storage.

- enum class UpdateNoteOption { UpdateResourceMetadata = 1 , UpdateResourceBinaryData = 2 , UpdateTags = 4 }

  The UpdateNoteOption enum is a QFlags enum which allows to specify which note fields should be updated when updateNote method is called.

- enum class GetNoteOption { WithResourceMetadata = 1 , WithResourceBinaryData = 2 }

  The GetNoteOption enum is a QFlags enum which allows to specify which note fields should be included when findNote or one of listNote∗ methods is called.

- enum class ListNotesOrder { **ByUpdateSequenceNumber** = 0 , **ByTitle** , **ByCreationTimestamp** , **ByModificationTimestamp** , **ByDeletionTimestamp** , **ByAuthor** , **BySource** , **BySourceApplication** , **ByReminderTime** , **ByPlaceName** , **NoOrder** }

  The ListNotesOrder enum allows to specify the results ordering for methods listing notes from the local storage database.

- enum class ListTagsOrder { **ByUpdateSequenceNumber** , **ByName** , **NoOrder** }

  The ListTagsOrder enum allows to specify the results ordering for methods listing tags from the local storage database.

- enum class GetResourceOption { WithBinaryData = 1 }

  The GetResourceOption enum is a QFlags enum which allows to specify which resource fields should be included when findEnResource method is called.

- enum class ListSavedSearchesOrder { **ByUpdateSequenceNumber** = 0 , **ByName** , **ByFormat** , **NoOrder** }

  The ListSavedSearchesOrder enum allows to specify the results ordering for methods listing saved searches from local storage.

Signals

- void upgradeProgress (double progress)

  LocalStorageManager is capable of performing automatic database upgrades if/when it is necessary.

Public Member Functions

- LocalStorageManager (const Account &account, const StartupOptions options={}, QObject ∗parent=nullptr)

  LocalStorageManager - constructor. Takes in the account for which the LocalStorageManager instance is created plus some other parameters determining the startup behaviour.

- void switchUser (const Account &account, const StartupOptions options={})

  switchUser - switches to another local storage database file associated with the passed in account

- bool isLocalStorageVersionTooHigh (ErrorString &errorDescription)
- bool localStorageRequiresUpgrade (ErrorString &errorDescription)
- QVector< std::shared_ptr< ILocalStoragePatch > > requiredLocalStoragePatches ()
- qint32 localStorageVersion (ErrorString &errorDescription)
- qint32 highestSupportedLocalStorageVersion () const
- int userCount (ErrorString &errorDescription) const

  userCount returns the number of non-deleted users currently stored in the local storage database

- bool addUser (const User &user, ErrorString &errorDescription)

addUser adds the passed in User object to the local storage database

- bool updateUser (const User &user, ErrorString &errorDescription)

  updateUser updates the passed in User object in the local storage database

- bool findUser (User &user, ErrorString &errorDescription) const

  findUser attempts to find and fill the fields of the passed in User object which must have "id" field set as this value is used as the identifier of User objects in the local storage database

- bool deleteUser (const User &user, ErrorString &errorDescription)

  deleteUser marks the user as deleted in local storage

- bool expungeUser (const User &user, ErrorString &errorDescription)

  expungeUser permanently deletes the user from the local storage database

- int notebookCount (ErrorString &errorDescription) const

  notebookCount returns the number of notebooks currently stored in the local storage database

- bool addNotebook (Notebook &notebook, ErrorString &errorDescription)

  addNotebook adds the passed in Notebook to the local storage database

- bool updateNotebook (Notebook &notebook, ErrorString &errorDescription)

  updateNotebook updates the passed in Notebook in the local storage database

- bool findNotebook (Notebook &notebook, ErrorString &errorDescription) const

  findNotebook attempts to find and set all found fields of the passed in Notebook object

- bool findDefaultNotebook (Notebook &notebook, ErrorString &errorDescription) const

  findDefaultNotebook attempts to find the default notebook in the local storage database.

- bool findLastUsedNotebook (Notebook &notebook, ErrorString &errorDescription) const

  findLastUsedNotebook attempts to find the last used notebook in the local storage database.

- bool findDefaultOrLastUsedNotebook (Notebook &notebook, ErrorString &errorDescription) const

  findDefaultOrLastUsedNotebook attempts to find either the default or the last used notebook in the local storage database.

- QList< Notebook > listAllNotebooks (ErrorString &errorDescription, const size_t limit=0, const size_t offset=0, const ListNotebooksOrder order=ListNotebooksOrder::NoOrder, const OrderDirection orderDirection=OrderDirection::Ascending, const QString &linkedNotebookGuid=QString()) const

  listAllNotebooks attempts to list all notebooks within the current account from the local storage database.

- QList< Notebook > listNotebooks (const ListObjectsOptions flag, ErrorString &errorDescription, const size_t limit=0, const size_t offset=0, const ListNotebooksOrder order=ListNotebooksOrder::NoOrder, const OrderDirection orderDirection=OrderDirection::Ascending, const QString &linkedNotebookGuid=QString()) const

  listNotebooks attempts to list notebooks within the account according to the specified input flag

- QList< SharedNotebook > listAllSharedNotebooks (ErrorString &errorDescription) const

  listAllSharedNotebooks attempts to list all shared notebooks within the account.

- QList< SharedNotebook > listSharedNotebooksPerNotebookGuid (const QString &notebookGuid, ErrorString &errorDescription) const

  listSharedNotebooksPerNotebookGuid - attempts to list all shared notebooks per given notebook's remote guid (not local uid, it's important).

- bool expungeNotebook (Notebook &notebook, ErrorString &errorDescription)

  expungeNotebook permanently deletes the specified notebook from the local storage database.

- int linkedNotebookCount (ErrorString &errorDescription) const

  linkedNotebookCount returns the number of linked notebooks stored in the local storage database.

- bool addLinkedNotebook (const LinkedNotebook &linkedNotebook, ErrorString &errorDescription)

  addLinkedNotebook adds passed in LinkedNotebook to the local storage database; LinkedNotebook must have "remote" Evernote service's guid set. It is not possible to add a linked notebook in offline mode so it doesn't make sense for LinkedNotebook objects to not have guid.

- bool updateLinkedNotebook (const LinkedNotebook &linkedNotebook, ErrorString &errorDescription)

  updateLinkedNotebook updates passd in LinkedNotebook in the local storage database; LinkedNotebook must have "remote" Evernote service's guid set.

- bool findLinkedNotebook (LinkedNotebook &linkedNotebook, ErrorString &errorDescription) const

findLinkedNotebook attempts to find and set all found fields for passed in by reference LinkedNotebook object. For LinkedNotebook local uid doesn't mean anything because it can only be considered valid if it has "remote" Evernote service's guid set. So this passed in LinkedNotebook object must have guid set to identify the linked notebook in the local storage database.

- QList< LinkedNotebook > listAllLinkedNotebooks (ErrorString &errorDescription, const size_t limit=0, const size_t offset=0, const ListLinkedNotebooksOrder order=ListLinkedNotebooksOrder::NoOrder, const OrderDirection orderDirection=OrderDirection::Ascending) const

  listAllLinkedNotebooks - attempts to list all linked notebooks within the account.

- QList< LinkedNotebook > listLinkedNotebooks (const ListObjectsOptions flag, ErrorString &error↩ Description, const size_t limit=0, const size_t offset=0, const ListLinkedNotebooksOrder order=ListLinked↩ NotebooksOrder::NoOrder, const OrderDirection orderDirection=OrderDirection::Ascending) const

  listLinkedNotebooks attempts to list linked notebooks within the account according to the specified input flag.

- bool expungeLinkedNotebook (const LinkedNotebook &linkedNotebook, ErrorString &errorDescription)

  expungeLinkedNotebook permanently deletes specified linked notebook from the local storage database.

- int noteCount (ErrorString &errorDescription, const NoteCountOptions options=NoteCountOption::Include↩ NonDeletedNotes) const

  noteCount returns the number of notes currently stored in the local storage database.

- int noteCountPerNotebook (const Notebook &notebook, ErrorString &errorDescription, const NoteCount↩ Options options=NoteCountOption::IncludeNonDeletedNotes) const

  noteCountPerNotebook returns the number of notes currently stored in the local storage database per given notebook.

- int noteCountPerTag (const Tag &tag, ErrorString &errorDescription, const NoteCountOptions options=Note↩ CountOption::IncludeNonDeletedNotes) const

  noteCountPerTag returns the number of notes currently stored in local storage database labeled with given tag.

- bool noteCountsPerAllTags (QHash< QString, int > &noteCountsPerTagLocalUid, ErrorString &error↩ Description, const NoteCountOptions options=NoteCountOption::IncludeNonDeletedNotes) const

  noteCountsPerAllTags returns the number of notes currently stored in local storage database labeled with each tag stored in the local storage database.

- int noteCountPerNotebooksAndTags (const QStringList &notebookLocalUids, const QStringList &tag↩ LocalUids, ErrorString &errorDescription, const NoteCountOptions options=NoteCountOption::IncludeNon↩ DeletedNotes) const

  noteCountPerNotebooksAndTags returns the number of notes currently stored in local storage database belonging to one of notebooks corresponding to given notebook local uids and labeled by at least one of tags corresponding to given tag local uids

- bool addNote (Note &note, ErrorString &errorDescription)

  addNote adds passed in Note to the local storage database.

- bool updateNote (Note &note, const UpdateNoteOptions options, ErrorString &errorDescription)

  updateNote updates passed in Note in the local storage database.

- bool findNote (Note &note, const GetNoteOptions options, ErrorString &errorDescription) const

  findNote - attempts to find note in the local storage database

- QList< Note > listNotesPerNotebook (const Notebook &notebook, const GetNoteOptions options, ErrorString &errorDescription, const ListObjectsOptions &flag=ListObjectsOption::ListAll, const size_↩ t limit=0, const size_t offset=0, const ListNotesOrder &order=ListNotesOrder::NoOrder, const OrderDirection &orderDirection=OrderDirection::Ascending) const

  listNotesPerNotebook attempts to list notes per given notebook

- QList< Note > listNotesPerTag (const Tag &tag, const GetNoteOptions options, ErrorString &error↩ Description, const ListObjectsOptions &flag=ListObjectsOption::ListAll, const size_t limit=0, const size↩ _t offset=0, const ListNotesOrder &order=ListNotesOrder::NoOrder, const OrderDirection &order↩ Direction=OrderDirection::Ascending) const

  listNotesPerTag attempts to list notes labeled with a given tag

- QList< Note > listNotesPerNotebooksAndTags (const QStringList &notebookLocalUids, const QString↩ List &tagLocalUids, const GetNoteOptions options, ErrorString &errorDescription, const ListObjects↩ Options &flag=ListObjectsOption::ListAll, const size_t limit=0, const size_t offset=0, const ListNotesOrder &order=ListNotesOrder::NoOrder, const OrderDirection &orderDirection=OrderDirection::Ascending) const

  listNotesPerNotebooksAndTags attempts to list notes which are present within one of specified notebooks and are labeled with at least one of specified tags

- QList< Note > listNotesByLocalUids (const QStringList &noteLocalUids, const GetNoteOptions options, ErrorString &errorDescription, const ListObjectsOptions &flag=ListObjectsOption::ListAll, const size_t limit=0, const size_t offset=0, const ListNotesOrder &order=ListNotesOrder::NoOrder, const OrderDirection &orderDirection=OrderDirection::Ascending) const

  listNotesByLocalUids attempts to list notes given their local uids
- QList< Note > listNotes (const ListObjectsOptions flag, const GetNoteOptions options, ErrorString &errorDescription, const size_t limit=0, const size_t offset=0, const ListNotesOrder order=ListNotesOrder::NoOrder, const OrderDirection orderDirection=OrderDirection::Ascending, const QString &linkedNotebookGuid=QString()) const

  listNotes attempts to list notes within the account according to the specified input flag.
- QStringList findNoteLocalUidsWithSearchQuery (const NoteSearchQuery &noteSearchQuery, ErrorString &errorDescription) const

  findNoteLocalUidsWithSearchQuery attempts to find note local uids of notes corresponding to the passed in NoteSearchQuery object.
- NoteList findNotesWithSearchQuery (const NoteSearchQuery &noteSearchQuery, const GetNoteOptions options, ErrorString &errorDescription) const

  findNotesWithSearchQuery attempts to find notes corresponding to the passed in NoteSearchQuery object.
- bool expungeNote (Note &note, ErrorString &errorDescription)

  expungeNote permanently deletes note from local storage.
- int tagCount (ErrorString &errorDescription) const

  tagCount returns the number of non-deleted tags currently stored in the local storage database.
- bool addTag (Tag &tag, ErrorString &errorDescription)

  addTag adds passed in Tag to the local storage database. If tag has "remote" Evernote service's guid set, it is identified in the database by this guid. Otherwise it is identified by local uid.
- bool updateTag (Tag &tag, ErrorString &errorDescription)

  updateTag updates passed in Tag in the local storage database.
- bool findTag (Tag &tag, ErrorString &errorDescription) const

  findTag attempts to find and fill the fields of passed in tag object.
- QList< Tag > listAllTagsPerNote (const Note &note, ErrorString &errorDescription, const ListObjectsOptions &flag=ListObjectsOption::ListAll, const size_t limit=0, const size_t offset=0, const ListTagsOrder &order=ListTagsOrder::NoOrder, const OrderDirection &orderDirection=OrderDirection::Ascending) const

  listAllTagsPerNote lists all tags per given note
- QList< Tag > listAllTags (ErrorString &errorDescription, const size_t limit=0, const size_t offset=0, const ListTagsOrder order=ListTagsOrder::NoOrder, const OrderDirection orderDirection=OrderDirection::Ascending, const QString &linkedNotebookGuid=QString()) const

  listAllTags lists all tags within the current user's account.
- QList< Tag > listTags (const ListObjectsOptions flag, ErrorString &errorDescription, const size_t limit=0, const size_t offset=0, const ListTagsOrder &order=ListTagsOrder::NoOrder, const OrderDirection orderDirection=OrderDirection::Ascending, const QString &linkedNotebookGuid=QString()) const

  listTags attempts to list tags within the account according to the specified input flag.
- QList< std::pair< Tag, QStringList > > listTagsWithNoteLocalUids (const ListObjectsOptions flag, ErrorString &errorDescription, const size_t limit=0, const size_t offset=0, const ListTagsOrder &order=ListTagsOrder::NoOrder, const OrderDirection orderDirection=OrderDirection::Ascending, const QString &linkedNotebookGuid=QString()) const

  listTagsWithNoteLocalUids attempts to list tags and their corresponding local uids within the account according to the specified input flag
- bool expungeTag (Tag &tag, QStringList &expungedChildTagLocalUids, ErrorString &errorDescription)

  expungeTag permanently deletes tag from the local storage database.
- bool expungeNotelessTagsFromLinkedNotebooks (ErrorString &errorDescription)

  expungeNotelessTagsFromLinkedNotebooks permanently deletes from the local storage database those tags which belong to some linked notebook and are not linked with any notes.
- int enResourceCount (ErrorString &errorDescription) const

  enResourceCount (the name is not Resource to prevent problems with macro defined on some versions of Windows) returns the number of resources currently stored in the local storage database.

- bool addEnResource (Resource &resource, ErrorString &errorDescription)

  addEnResource adds passed in resource to the local storage database.
- bool updateEnResource (Resource &resource, ErrorString &errorDescription)

  updateEnResource updates passed in resource in the local storage database.
- bool findEnResource (Resource &resource, const GetResourceOptions options, ErrorString &error↩ Description) const

  findEnResource method attempts to find resource in the local storage database
- bool expungeEnResource (Resource &resource, ErrorString &errorDescription)

  expungeResource permanently deletes resource from the local storage database.
- int savedSearchCount (ErrorString &errorDescription) const

  savedSearchCount returns the number of saved seacrhes currently stored in local storage database.
- bool addSavedSearch (SavedSearch &search, ErrorString &errorDescription)

  addSavedSearch adds passed in SavedSearch to the local storage database; if search has "remote" Evernote service's guid set, it is identified in the database by this guid. Otherwise it is identified by local uid.
- bool updateSavedSearch (SavedSearch &search, ErrorString &errorDescription)

  updateSavedSearch updates passed in SavedSearch in the local storage database.
- bool findSavedSearch (SavedSearch &search, ErrorString &errorDescription) const

  findSavedSearch attempts to find and fill the fields of passed in saved search object.
- QList< SavedSearch > listAllSavedSearches (ErrorString &errorDescription, const size_t limit=0, const size_t offset=0, const ListSavedSearchesOrder order=ListSavedSearchesOrder::NoOrder, const OrderDirection orderDirection=OrderDirection::Ascending) const

  listAllSavedSearches lists all saved searches within the account.
- QList< SavedSearch > listSavedSearches (const ListObjectsOptions flag, ErrorString &errorDescription, const size_t limit=0, const size_t offset=0, const ListSavedSearchesOrder order=ListSavedSearchesOrder↩ ::NoOrder, const OrderDirection orderDirection=OrderDirection::Ascending) const

  listSavedSearches attempts to list saved searches within the account according to the specified input flag.
- bool expungeSavedSearch (SavedSearch &search, ErrorString &errorDescription)

  expungeSavedSearch permanently deletes saved search from the local storage database.
- qint32 accountHighUsn (const QString &linkedNotebookGuid, ErrorString &errorDescription)

  accountHighUsn returns the highest update sequence number within the data elements stored in the local storage database, either for user's own account or for some linked notebook.

Friends

- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const StartupOption option)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &dbg, const StartupOption option)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const StartupOptions options)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &dbg, const StartupOptions options)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const ListObjectsOption option)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &dbg, const ListObjectsOption option)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const ListObjectsOptions options)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &dbg, const ListObjectsOptions options)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const OrderDirection order↩ Direction)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &dbg, const OrderDirection orderDirection)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const ListNotebooksOrder order)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &dbg, const ListNotebooksOrder order)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const ListLinkedNotebooksOrder order)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &strm, const ListLinkedNotebooksOrder order)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const NoteCountOption option)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &dbg, const NoteCountOption option)

- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const NoteCountOptions options)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &strm, const NoteCountOptions options)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const UpdateNoteOption option)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &strm, const UpdateNoteOption option)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const UpdateNoteOptions options)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &strm, const UpdateNoteOptions options)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const GetNoteOption option)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &dbg, const GetNoteOption option)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const GetNoteOptions options)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &strm, const GetNoteOptions options)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const ListNotesOrder order)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &strm, const ListNotesOrder order)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const ListTagsOrder order)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &strm, const ListTagsOrder order)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const GetResourceOption option)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &strm, const GetResourceOption option)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const GetResourceOptions options)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &strm, const GetResourceOptions options)
- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const ListSavedSearchesOrder order)
- QUENTIER_EXPORT QDebug & **operator**<< (QDebug &strm, const ListSavedSearchesOrder order)

5.42.1 Member Enumeration Documentation

5.42.1.1 GetNoteOption

```
enum class quentier::LocalStorageManager::GetNoteOption  [strong]
```

The GetNoteOption enum is a QFlags enum which allows to specify which note fields should be included when findNote or one of listNote∗ methods is called.

Most note data is included unconditionally - note title, content, attributes (if any) etc. However, some specific data can be opted to not be included into the returned note data - notably, metadata of resources and binary data of resources. If these are omitted, findNote or any of listNote∗ methods might work faster than otherwise

Enumerator

WithResourceMetadata	WithResourceMetadata value specifies that fields aside dataBody, dataSize, dataHash, alternateDataBody, alternateDataSize, alternateDataHash for each note's resource should be included
WithResourceBinaryData	WithResourceBinaryData value specifies that dataBody, its size and hash and alternateDataBody, its size and hash should be included into each of note's resources; this value only has effect if flags also have WithResourceMetadata value enabled!

5.42.1.2 GetResourceOption

```
enum class quentier::LocalStorageManager::GetResourceOption [strong]
```

The GetResourceOption enum is a QFlags enum which allows to specify which resource fields should be included when findEnResource method is called.

Most resource data is included unconditionally but some specific data can be opted to not be included into the returned resource data - notably, binary data of the resource. If it is omitted, findEnResource method might work faster than otherwise

Enumerator

WithBinaryData	WithBinaryData value specifies than dataBody and alternateDataBody should be included into the returned resource

5.42.1.3 ListObjectsOption

```
enum class quentier::LocalStorageManager::ListObjectsOption [strong]
```

The ListObjectsOption enum is a QFlags enum which allows to specify the desired local storage elements in calls to methods listing them from the database.

For example, one can either list all available elements of certain type from local storage or only elements marked as dirty (modified locally, not yet synchronized) or elements never synchronized with the remote storage or elements which are synchronizable with the remote storage etc.

5.42.1.4 StartupOption

```
enum class quentier::LocalStorageManager::StartupOption [strong]
```

The StartupOption enum is a QFlags enum which allows to specify some options to be applied to the local storage database on startup or on call to switchUser method.

Enumerator

ClearDatabase	If ClearDatabase flag is active, LocalStorageManager would wipe any existing database contents; the net effect would be as if no database existed for the given user before the creation of LocalStorageManager or before the call to its switchUser method
OverrideLock	If OverrideLock flag is active, LocalStorageManager would ignore the existing advisory lock (if any) put on the database file; if this flag is not active, the attempt to create LocalStorageManager (or the attempt to call its switchUser method) with the advisory lock on the database file put by someone else would cause the throwing of DatabaseLockedException

5.42.1.5 UpdateNoteOption

```
enum class quentier::LocalStorageManager::UpdateNoteOption  [strong]
```

The UpdateNoteOption enum is a QFlags enum which allows to specify which note fields should be updated when updateNote method is called.

Most note data is updated unconditionally - note title, content, attributes (if any) etc. However, some specific data can be chosen to not update - notably, metadata of resources, binary data of resources or lists of note's tags

Enumerator

UpdateResourceMetadata	UpdateResourceMetadata value specifies that fields aside dataBody, dataSize, dataHash, alternateDataBody, alternateDataSize, alternateDataHash for each note's resource should be updated
UpdateResourceBinaryData	UpdateResourceBinaryData value specifies that dataBody, its size and hash and alternateDataBody, its size and hash should be updated for each of note's resources; this value only has effect if flags also have UpdateResourceMetadata value enabled!
UpdateTags	UpdateTags value specifies that note's tag lists should be updated

5.42.2 Constructor & Destructor Documentation

5.42.2.1 LocalStorageManager()

```
quentier::LocalStorageManager::LocalStorageManager (
            const Account & account,
            const StartupOptions options = {},
            QObject * parent = nullptr )  [explicit]
```

LocalStorageManager - constructor. Takes in the account for which the LocalStorageManager instance is created plus some other parameters determining the startup behaviour.

Parameters

account	The account for which the local storage is being created and initialized
options	Startup options for the local storage, none enabled by default
parent	Parent QObject

5.42.3 Member Function Documentation

5.42.3.1 accountHighUsn()

```
qint32 quentier::LocalStorageManager::accountHighUsn (
            const QString & linkedNotebookGuid,
            ErrorString & errorDescription )
```

accountHighUsn returns the highest update sequence number within the data elements stored in the local storage database, either for user's own account or for some linked notebook.

Parameters

linkedNotebookGuid	The guid of the linked notebook for which the highest update sequence number is requested; if null or empty, the highest update sequence number for user's own account is returned
errorDescription	Error description if account's highest update sequence number could not be returned

Returns

Either the highest update sequence number - a non-negative value - or a negative number in case of error

5.42.3.2 addEnResource()

```
bool quentier::LocalStorageManager::addEnResource (
            Resource & resource,
            ErrorString & errorDescription )
```

addEnResource adds passed in resource to the local storage database.

Parameters

resource	Resource to be added to the database, must have either note's local uid set or note's "remote" Evernote service's guid set; may be changed as a result of the call, filled with autogenerated fields like local uid if it was empty before the call
errorDescription	Error description if resource could not be added

Returns

True if resource was added successfully, false otherwise

5.42.3.3 addLinkedNotebook()

```
bool quentier::LocalStorageManager::addLinkedNotebook (
            const LinkedNotebook & linkedNotebook,
            ErrorString & errorDescription )
```

addLinkedNotebook adds passed in LinkedNotebook to the local storage database; LinkedNotebook must have "remote" Evernote service's guid set. It is not possible to add a linked notebook in offline mode so it doesn't make sense for LinkedNotebook objects to not have guid.

Parameters

linkedNotebook	LinkedNotebook to be added to the local storage database
errorDescription	Error description if linked notebook could not be added

Returns

True if linked notebook was added successfully, false otherwise

5.42.3.4 addNote()

```
bool quentier::LocalStorageManager::addNote (
            Note & note,
            ErrorString & errorDescription )
```

addNote adds passed in Note to the local storage database.

Parameters

note	Note to be added to local storage database; required to contain either "remote" notebook guid or local notebook uid; may be changed as a result of the call, filled with autogenerated fields like local uid if it was empty before the call; also tag guids are filled if the note passed in contained only tag local uids and tag local uids are filled if the note passed in contained only tag guids
errorDescription	Error description if note could not be added

Returns

True if note was added successfully, false otherwise

5.42.3.5 addNotebook()

```
bool quentier::LocalStorageManager::addNotebook (
            Notebook & notebook,
            ErrorString & errorDescription )
```

addNotebook adds the passed in Notebook to the local storage database

If the notebook has "remote" Evernote service's guid set, it is identified by this guid in the local storage database. Otherwise it is identified by the local uid

Parameters

notebook	The notebook to be added to the local storage database; the object is passed by reference and may be changed as a result of the call (filled with autocompleted fields like local uid if it was empty before the call)
errorDescription	Error description if the notebook could not be added

Returns

True if the notebook was added successfully, false otherwise

5.42.3.6 addSavedSearch()

```
bool quentier::LocalStorageManager::addSavedSearch (
            SavedSearch & search,
            ErrorString & errorDescription )
```

addSavedSearch adds passed in SavedSearch to the local storage database; if search has "remote" Evernote service's guid set, it is identified in the database by this guid. Otherwise it is identified by local uid.

Parameters

search	SavedSearch to be added to the local storage; may be changed as a result of the call, filled with autogenerated fields like local uid if it was empty before the call
errorDescription	Error description if SavedSearch could not be added

Returns

True if SavedSearch was added successfully, false otherwise

5.42.3.7 addTag()

```
bool quentier::LocalStorageManager::addTag (
            Tag & tag,
            ErrorString & errorDescription )
```

addTag adds passed in Tag to the local storage database. If tag has "remote" Evernote service's guid set, it is identified in the database by this guid. Otherwise it is identified by local uid.

Parameters

tag	Tag to be added to the local storage; may be changed as a result of the call, filled with autogenerated fields like local uid if it was empty before the call
errorDescription	Error description if Tag could not be added

Returns

True if Tag was added successfully, false otherwise

5.42.3.8 addUser()

```
bool quentier::LocalStorageManager::addUser (
            const User & user,
            ErrorString & errorDescription )
```

addUser adds the passed in User object to the local storage database

The table with Users is only involved in operations with notebooks which have "contact" field set which in turn is used with business accounts

Parameters

user	The user to be added to the local storage database
errorDescription	Error description if the user could not be added

Returns

True if the user was added successfully, false otherwise

5.42.3.9 deleteUser()

```
bool quentier::LocalStorageManager::deleteUser (
            const User & user,
            ErrorString & errorDescription )
```

deleteUser marks the user as deleted in local storage

Parameters

user	The user to be marked as deleted
errorDescription	Error description if the user could not be marked as deleted

Returns

True if the user was marked as deleted successfully, false otherwise

5.42.3.10 enResourceCount()

```
int quentier::LocalStorageManager::enResourceCount (
            ErrorString & errorDescription ) const
```

enResourceCount (the name is not Resource to prevent problems with macro defined on some versions of Windows) returns the number of resources currently stored in the local storage database.

Parameters

errorDescription	Error description if the number of resources could not be returned

Returns

Either non-negative value with the number of resources or -1 which means some error occurred

5.42.3.11 expungeEnResource()

```
bool quentier::LocalStorageManager::expungeEnResource (
            Resource & resource,
            ErrorString & errorDescription )
```

expungeResource permanently deletes resource from the local storage database.

Parameters

resource	Resource to be expunged; may be changed as a result of the call, automatically filled with local uid and note local uid and/or guid if these were empty before the call
errorDescription	Error description if resource could not be expunged

Returns

True if resource was expunged successfully, false otherwise

5.42.3.12 expungeLinkedNotebook()

```
bool quentier::LocalStorageManager::expungeLinkedNotebook (
            const LinkedNotebook & linkedNotebook,
            ErrorString & errorDescription )
```

expungeLinkedNotebook permanently deletes specified linked notebook from the local storage database.

Evernote API doesn't allow to delete linked notebooks from the remote storage, it can only be done by official desktop client or web client. So this method should be called only during the synchronization with remote service, when some linked notebook is found to be deleted via either official desktop client or web cient.

Parameters

linkedNotebook	Linked notebook to be expunged. Must have "remote" guid set
errorDescription	Error description if linked notebook could not be expunged

Returns

True if linked notebook was expunged successfully, false otherwise

5.42.3.13 expungeNote()

```
bool quentier::LocalStorageManager::expungeNote (
            Note & note,
            ErrorString & errorDescription )
```

expungeNote permanently deletes note from local storage.

Evernote API doesn't allow to delete notes from the remote storage, it can only be done by official desktop client or web client. So this method should be called only during the synchronization with remote database, when some note is found to be deleted via either official desktop client or web client.

Parameters

note	Note to be expunged; may be changed as a result of the call, filled with fields like local uid or notebook guid or local uid
errorDescription	Error description if note could not be expunged

Returns

True if note was expunged successfully, false otherwise

5.42.3.14 expungeNotebook()

```
bool quentier::LocalStorageManager::expungeNotebook (
            Notebook & notebook,
            ErrorString & errorDescription )
```

expungeNotebook permanently deletes the specified notebook from the local storage database.

Evernote API doesn't allow to delete the notebooks from the remote storage, it can only be done by the official desktop Evernote client or via its web client. So this method should be called only during the synchronization with the remote storage, when some notebook is found to be deleted via either the official desktop client or via the web client; also, this method can be called for local notebooks not synchronized with Evernote at all.

Parameters

notebook	The notebook to be expunged. Must have either "remote" guid or local uid set; the object is passed by reference and may be changed as a result of the call (filled with local uid if it was empty before the call)
errorDescription	Error description if the notebook could not be expunged

Returns

True if the notebook was expunged successfully, false otherwise

5.42.3.15 expungeNotelessTagsFromLinkedNotebooks()

```
bool quentier::LocalStorageManager::expungeNotelessTagsFromLinkedNotebooks (
            ErrorString & errorDescription )
```

expungeNotelessTagsFromLinkedNotebooks permanently deletes from the local storage database those tags which belong to some linked notebook and are not linked with any notes.

Parameters

errorDescription	Error description if tag could not be expunged

Returns

True if relevant tags were expunged successfully, false otherwise

5.42.3.16 expungeSavedSearch()

```
bool quentier::LocalStorageManager::expungeSavedSearch (
            SavedSearch & search,
            ErrorString & errorDescription )
```

expungeSavedSearch permanently deletes saved search from the local storage database.

Parameters

search	Saved search to be expunged; may be changed as a result of the call filled local uid if it was empty before the call
errorDescription	Error description if saved search could not be expunged

Returns

True if saved search was expunged successfully, false otherwise

5.42.3.17 expungeTag()

```
bool quentier::LocalStorageManager::expungeTag (
            Tag & tag,
```

```
            QStringList & expungedChildTagLocalUids,
            ErrorString & errorDescription )
```

expungeTag permanently deletes tag from the local storage database.

Evernote API doesn't allow to delete tags from remote storage, it can only be done by official desktop client or web client. So this method should be called only during the synchronization with remote database, when some tag is found to be deleted via either official desktop client or web client.

Parameters

tag	Tag to be expunged; may be changed as a result of the call, automatically filled with local uid if it was empty before the call
expungedChildTagLocalUids	If the expunged tag was a parent of some other tags, these were expunged as well; this parameter would contain the local uids of expunged child tags
errorDescription	Error description if tag could not be expunged

Returns

True if tag was expunged successfully, false otherwise

5.42.3.18 expungeUser()

```
bool quentier::LocalStorageManager::expungeUser (
            const User & user,
            ErrorString & errorDescription )
```

expungeUser permanently deletes the user from the local storage database

Parameters

user	The user to be expunged
errorDescription	Error description if the user could not be expunged

Returns

True if the user was expunged successfully, false otherwise

5.42.3.19 findDefaultNotebook()

```
bool quentier::LocalStorageManager::findDefaultNotebook (
            Notebook & notebook,
            ErrorString & errorDescription ) const
```

findDefaultNotebook attempts to find the default notebook in the local storage database.

Parameters

notebook	The default notebook to be found
errorDescription	Error description if the default notebook could not be found

Returns

True if the default notebook was found, false otherwise

5.42.3.20 findDefaultOrLastUsedNotebook()

```
bool quentier::LocalStorageManager::findDefaultOrLastUsedNotebook (
            Notebook & notebook,
            ErrorString & errorDescription ) const
```

findDefaultOrLastUsedNotebook attempts to find either the default or the last used notebook in the local storage database.

Parameters

notebook	Either the default or the last used notebook to be found
errorDescription	Error description if the default or the last used notebook could not be found

Returns

True if the default or the last used notebook were found, false otherwise

5.42.3.21 findEnResource()

```
bool quentier::LocalStorageManager::findEnResource (
            Resource & resource,
            const GetResourceOptions options,
            ErrorString & errorDescription ) const
```

findEnResource method attempts to find resource in the local storage database

Parameters

resource	Resource to be found in the local storage database. If it has the "remote" Evernote service's guid set, this guid is used to identify the resource in the local storage database. Otherwise resource's local uid is used
options	Options specifying which optionally includable fields of the resource should actually be included
errorDescription	Error description if resource could not be found

Returns

True if resource was found successfully, false otherwise

5.42.3.22 findLastUsedNotebook()

```
bool quentier::LocalStorageManager::findLastUsedNotebook (
            Notebook & notebook,
            ErrorString & errorDescription ) const
```

findLastUsedNotebook attempts to find the last used notebook in the local storage database.

Parameters

notebook	The last used notebook to be found
errorDescription	Error description if the last used notebook could not be found

Returns

True if the last used notebook was found, false otherwise

5.42.3.23 findLinkedNotebook()

```
bool quentier::LocalStorageManager::findLinkedNotebook (
            LinkedNotebook & linkedNotebook,
            ErrorString & errorDescription ) const
```

findLinkedNotebook attempts to find and set all found fields for passed in by reference LinkedNotebook object. For LinkedNotebook local uid doesn't mean anything because it can only be considered valid if it has "remote" Evernote service's guid set. So this passed in LinkedNotebook object must have guid set to identify the linked notebook in the local storage database.

Parameters

linkedNotebook	Linked notebook to be found. Must have "remote" guid set
errorDescription	Error description if linked notebook could not be found

Returns

True if linked notebook was found, false otherwise

5.42.3.24 findNote()

```
bool quentier::LocalStorageManager::findNote (
            Note & note,
            const GetNoteOptions options,
            ErrorString & errorDescription ) const
```

findNote - attempts to find note in the local storage database

Parameters

note	- note to be found in the local storage database. Must have either local or "remote" Evernote service's guid set
options	- options specifying which optionally includable fields of the note should actually be included
errorDescription	- error description if note could not be found

Returns

true if note was found successfully, false otherwise

5.42.3.25 findNotebook()

```
bool quentier::LocalStorageManager::findNotebook (
            Notebook & notebook,
            ErrorString & errorDescription ) const
```

findNotebook attempts to find and set all found fields of the passed in Notebook object

If "remote" Evernote service's guid for the notebook is set, it is used to identify the notebook in the local storage database. Otherwise the notebook is identified by its local uid. If it's empty, the search would attempt to find the notebook by its name. If the name is also not set, the search would attempt to find the notebook by linked notebook guid assuming that no more than one notebook corresponds to the linked notebook guid. If linked notebook guid is also not set, the search would fail.

Important! Due to the fact that the notebook name is only unique within the users's own account as well as within each linked notebook, the result of the search by name depends on the notebook's linked notebook guid: if it is not set, the search by name would only search for the notebook with the specified name within the user's own account. If it is set, the search would only consider the linked notebook with the corresponding guid.

Parameters

notebook	The notebook to be found. Must have either "remote" or local uid or name or linked notebook guid set
errorDescription	Error description if the notebook could not be found

Returns

True if the notebook was found, false otherwise

5.42.3.26 findNoteLocalUidsWithSearchQuery()

```
QStringList quentier::LocalStorageManager::findNoteLocalUidsWithSearchQuery (
            const NoteSearchQuery & noteSearchQuery,
            ErrorString & errorDescription ) const
```

findNoteLocalUidsWithSearchQuery attempts to find note local uids of notes corresponding to the passed in NoteSearchQuery object.

Parameters

noteSearchQuery	Filled NoteSearchQuery object used to filter the notes
errorDescription	Error description in case note local uids could not be listed

Returns

The list of found notes' local uids or empty list in case of error

5.42.3.27 findNotesWithSearchQuery()

```
NoteList quentier::LocalStorageManager::findNotesWithSearchQuery (
            const NoteSearchQuery & noteSearchQuery,
            const GetNoteOptions options,
            ErrorString & errorDescription ) const
```

findNotesWithSearchQuery attempts to find notes corresponding to the passed in NoteSearchQuery object.

Parameters

noteSearchQuery	Filled NoteSearchQuery object used to filter the notes
options	Options specifying which optionally includable fields of the note should actually be included
errorDescription	Error description in case notes could not be listed

Returns

Either list of notes per NoteSearchQuery or empty list in case of error or no notes presence for the given NoteSearchQuery

5.42.3.28 findSavedSearch()

```
bool quentier::LocalStorageManager::findSavedSearch (
            SavedSearch & search,
            ErrorString & errorDescription ) const
```

findSavedSearch attempts to find and fill the fields of passed in saved search object.

If "remote" Evernote services's guid for the saved search is set, it would be used to identify the saved search in the local storage. Otherwise the local uid would be used. If neither guid not local uid are set, saved search's name would be used. If the name is also not set, the search for saved search would fail.

Parameters

search	SavedSearch to be found in the local storage database
errorDescription	Error description if SavedSearch could not be found

Returns

True if SavedSearch was found, false otherwise

5.42.3.29 findTag()

```
bool quentier::LocalStorageManager::findTag (
            Tag & tag,
            ErrorString & errorDescription ) const
```

findTag attempts to find and fill the fields of passed in tag object.

If "remote" Evernote service's guid for the tag is set, it would be used to identify the tag in the local storage database. Otherwise the local uid would be used. If neither guid nor local uid are set, tag's name would be used. If the name is also not set, the search would fail.

Important! Due to the fact that the tag name is only unique within the users's own account as well as within each linked notebook, the result of the search by name depends on the tag's linked notebook guid: if it is not set, the search by name would only search for the tag with the specified name within the user's own account. If it is set, the search would only consider tags from a linked notebook with the corresponding guid.

Parameters

tag	Tag to be found in the local storage database; must have either guid, local uid or name set
errorDescription	Error description in case tag could not be found

Returns

True if tag was found, false otherwise

5.42.3.30 findUser()

```
bool quentier::LocalStorageManager::findUser (
            User & user,
            ErrorString & errorDescription ) const
```

findUser attempts to find and fill the fields of the passed in User object which must have "id" field set as this value is used as the identifier of User objects in the local storage database

Parameters

user	The user to be found. Must have "id" field set
errorDescription	Error description if the user could not be found

Returns

True if the user was found successfully, false otherwise

5.42.3.31 highestSupportedLocalStorageVersion()

```
qint32 quentier::LocalStorageManager::highestSupportedLocalStorageVersion ( ) const
```

highestSupportedLocalStorageVersion returns the highest version of local storage persistence which the current build of libquentier is capable of working with

Returns

Highest supported local storage version

5.42.3.32 isLocalStorageVersionTooHigh()

```
bool quentier::LocalStorageManager::isLocalStorageVersionTooHigh (
            ErrorString & errorDescription )
```

isLocalStorageVersionTooHigh method checks whether the existing local storage persistence has version which is too high for the currenly run version of libquentier to work with i.e. whether the local storage has already been upgraded using a new version of libquentier.

NOTE: it is libquentier client code's responsibility to call this method and/or localStorageRequiresUpgrade method, libquentier won't call any of these on its own and will just attempt to work with the existing local storage, whatever version it is of. If version is too high, things can fail in most mysterious way, so the client code is obliged to call these methods to ensure the local storage version is checked properly.

Parameters

errorDescription	Textual description of the error if the method was unable to determine whether the local storage version is too high for the currently run version of libquentier to work with, otherwise this parameter is not touched by the method

Returns

True if local storage version is too high for the currently run version of libquentier to work with, false otherwise

5.42.3.33 linkedNotebookCount()

```
int quentier::LocalStorageManager::linkedNotebookCount (
            ErrorString & errorDescription ) const
```

linkedNotebookCount returns the number of linked notebooks stored in the local storage database.

Parameters

errorDescription	Error description if the number of linked notebooks count not be returned

Returns

Either non-negative number of linked notebooks or -1 if some error has occurred

5.42.3.34 listAllLinkedNotebooks()

```
QList< LinkedNotebook > quentier::LocalStorageManager::listAllLinkedNotebooks (
            ErrorString & errorDescription,
            const size_t limit = 0,
            const size_t offset = 0,
            const ListLinkedNotebooksOrder order = ListLinkedNotebooksOrder::NoOrder,
            const OrderDirection orderDirection = OrderDirection::Ascending ) const
```

listAllLinkedNotebooks - attempts to list all linked notebooks within the account.

Parameters

errorDescription	Error description if linked notebooks could not be listed, otherwise this parameter is untouched
limit	Limit for the max number of linked notebooks in the result, zero by default which means no limit is set
offset	Number of linked notebooks to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of linked notebooks in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used; this parameter has no meaning if order is equal to NoOrder

Returns

Either list of all linked notebooks or empty list in case of error or no linked notebooks presence within the account

5.42.3.35 listAllNotebooks()

```
QList< Notebook > quentier::LocalStorageManager::listAllNotebooks (
            ErrorString & errorDescription,
```

```
            const size_t limit = 0,
            const size_t offset = 0,
            const ListNotebooksOrder order = ListNotebooksOrder::NoOrder,
            const OrderDirection orderDirection = OrderDirection::Ascending,
            const QString & linkedNotebookGuid = QString() ) const
```

listAllNotebooks attempts to list all notebooks within the current account from the local storage database.

Parameters

errorDescription	Error description if all notebooks could not be listed; if no error happens, this parameter is untouched
limit	The limit for the max number of notebooks in the result, zero by default which means no limit is set
offset	The number of notebooks to skip in the beginning of the result, zero by default
order	Allows to specify a particular ordering of notebooks in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used; this parameter has no meaning if order is equal to NoOrder
linkedNotebookGuid	If it's null, the method would list the notebooks ignoring their belonging to the current account or to some linked notebook; if it's empty, only the non-linked notebooks would be listed; otherwise, the only one notebook from the corresponding linked notebook would be listed

Returns

Either the list of all notebooks within the account or empty list in cases of error or no notebooks presence within the account

5.42.3.36 listAllSavedSearches()

```
QList< SavedSearch > quentier::LocalStorageManager::listAllSavedSearches (
            ErrorString & errorDescription,
            const size_t limit = 0,
            const size_t offset = 0,
            const ListSavedSearchesOrder order = ListSavedSearchesOrder::NoOrder,
            const OrderDirection orderDirection = OrderDirection::Ascending ) const
```

listAllSavedSearches lists all saved searches within the account.

Parameters

errorDescription	Error description if all saved searches could not be listed; otherwise this parameter is untouched
limit	Limit for the max number of saved searches in the result, zero by default which means no limit is set
offset	Number of saved searches to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of saved searches in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used; this parameter has no meaning if order is equal to NoOrder

Returns

Either the list of all saved searches within the account or empty list in case of error or if there are no saved searches within the account

5.42.3.37 listAllSharedNotebooks()

```
QList< SharedNotebook > quentier::LocalStorageManager::listAllSharedNotebooks (
            ErrorString & errorDescription ) const
```

listAllSharedNotebooks attempts to list all shared notebooks within the account.

Parameters

errorDescription	Error description if shared notebooks could not be listed; if no error happens, this parameter is untouched

Returns

Either the list of all shared notebooks within the account or empty list in cases of error or no shared notebooks presence within the account

5.42.3.38 listAllTags()

```
QList< Tag > quentier::LocalStorageManager::listAllTags (
             ErrorString & errorDescription,
             const size_t limit = 0,
             const size_t offset = 0,
             const ListTagsOrder order = ListTagsOrder::NoOrder,
             const OrderDirection orderDirection = OrderDirection::Ascending,
             const QString & linkedNotebookGuid = QString() ) const
```

listAllTags lists all tags within the current user's account.

Parameters

errorDescription	Error description if tags were not listed successfully. In such case the returned list of tags would be empty and error description won't be empty. However, if, for example, the list of tags is empty and error description is empty too, it means the current account does not have any tags created.
limit	Limit for the max number of tags in the result, zero by default which means no limit is set
offset	Number of tags to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of tags in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used; this parameter has no meaning if order is equal to NoOrder
linkedNotebookGuid	If it's null, the method would list tags ignoring their belonging to the current account or to some linked notebook; if it's empty, only the tags from user's own account would be listed; otherwise, only the tags corresponding to the certain linked notebook would be listed

Returns

The list of found tags within the account

5.42.3.39 listAllTagsPerNote()

```
QList< Tag > quentier::LocalStorageManager::listAllTagsPerNote (
             const Note & note,
             ErrorString & errorDescription,
             const ListObjectsOptions & flag = ListObjectsOption::ListAll,
             const size_t limit = 0,
             const size_t offset = 0,
             const ListTagsOrder & order = ListTagsOrder::NoOrder,
             const OrderDirection & orderDirection = OrderDirection::Ascending ) const
```

listAllTagsPerNote lists all tags per given note

Parameters

note	Note for which the list of tags is requested. If it has "remote" Evernote service's guid set, it is used to identify the note in the local storage database. Otherwise its local uid is used for that.
errorDescription	Error description if tags were not listed successfully. In such case the returned list of tags would be empty and error description won't be empty. However, if, for example, the list of tags is empty and error description is empty too, it means the provided note does not have any tags assigned to it.
flag	Input parameter used to set the filter for the desired tags to be listed
limit	Limit for the max number of tags in the result, zero by default which means no limit is set
offset	Number of tags to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of tags in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used;

Returns

The list of found tags per note

5.42.3.40 listLinkedNotebooks()

```
QList< LinkedNotebook > quentier::LocalStorageManager::listLinkedNotebooks (
             const ListObjectsOptions flag,
             ErrorString & errorDescription,
             const size_t limit = 0,
             const size_t offset = 0,
             const ListLinkedNotebooksOrder order = ListLinkedNotebooksOrder::NoOrder,
             const OrderDirection orderDirection = OrderDirection::Ascending ) const
```

listLinkedNotebooks attempts to list linked notebooks within the account according to the specified input flag.

Parameters

flag	Input parameter used to set the filter for the desired linked notebooks to be listed
errorDescription	Error description if linked notebooks within the account could not be listed; if no error happens, this parameter is untouched
limit	Limit for the max number of linked notebooks in the result, zero by default which means no limit is set
offset	Number of linked notebooks to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of linked notebooks in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used; this parameter has no meaning if order is equal to NoOrder

Returns

Either list of linked notebooks within the account conforming to the filter or empty list in cases of error or no linked notebooks conforming to the filter exist within the account

5.42.3.41 listNotebooks()

```
QList< Notebook > quentier::LocalStorageManager::listNotebooks (
            const ListObjectsOptions flag,
            ErrorString & errorDescription,
            const size_t limit = 0,
            const size_t offset = 0,
            const ListNotebooksOrder order = ListNotebooksOrder::NoOrder,
            const OrderDirection orderDirection = OrderDirection::Ascending,
            const QString & linkedNotebookGuid = QString() ) const
```

listNotebooks attempts to list notebooks within the account according to the specified input flag

Parameters

flag	Input parameter used to set the filter for the desired notebooks to be listed
errorDescription	Error description if notebooks within the account could not be listed; if no error happens, this parameter is untouched
limit	The limit for the max number of notebooks in the result, zero by default which means no limit is set
offset	The number of notebooks to skip in the beginning of the result, zero by default
order	Allows to specify a particular ordering of notebooks in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used; this parameter has no meaning if order is equal to NoOrder
linkedNotebookGuid	If it's null, the method would list notebooks ignoring their belonging to the current account or to some linked notebook; if it's empty, only the non-linked notebooks would be listed; otherwise, the only one notebook from the corresponding linked notebook would be listed

Returns

Either the list of notebooks within the account conforming to the filter or empty list in cases of error or no notebooks conforming to the filter exist within the account

5.42.3.42 listNotes()

```
QList< Note > quentier::LocalStorageManager::listNotes (
            const ListObjectsOptions flag,
            const GetNoteOptions options,
            ErrorString & errorDescription,
            const size_t limit = 0,
            const size_t offset = 0,
            const ListNotesOrder order = ListNotesOrder::NoOrder,
            const OrderDirection orderDirection = OrderDirection::Ascending,
            const QString & linkedNotebookGuid = QString() ) const
```

listNotes attempts to list notes within the account according to the specified input flag.

Parameters

flag	Input parameter used to set the filter for the desired notes to be listed
options	Options specifying which optionally includable fields of the note should actually be included
errorDescription	Error description if notes within the account could not be listed; if no error happens, this parameter is untouched
limit	Limit for the max number of notes in the result, zero by default which means no limit is set
offset	Number of notes to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of notes in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used; this parameter has no meaning if order is equal to NoOrder
linkedNotebookGuid	If it's null, notes from both user's own notebooks and linked notebooks would be listed; if it's empty, only the notes from non-linked notebooks would be listed; otherwise, only the notes from the specified linked notebook would be listed

Returns

Either list of notes within the account conforming to the filter or empty list in cases of error or no notes conforming to the filter exist within the account

5.42.3.43 listNotesByLocalUids()

```
QList< Note > quentier::LocalStorageManager::listNotesByLocalUids (
            const QStringList & noteLocalUids,
            const GetNoteOptions options,
            ErrorString & errorDescription,
```

```
            const ListObjectsOptions & flag = ListObjectsOption::ListAll,
            const size_t limit = 0,
            const size_t offset = 0,
            const ListNotesOrder & order = ListNotesOrder::NoOrder,
            const OrderDirection & orderDirection = OrderDirection::Ascending ) const
```

listNotesByLocalUids attempts to list notes given their local uids

The method would only return notes which it managed to find within the local storage i.e. having an invalid local uid in the list won't result in an error, just in the corresponding note not returned within the result

Notes within the result can be additionally filtered with flag parameter

Parameters

noteLocalUids	Local uids of notes to be listed
options	Options specifying which optionally includable fields of the note should actually be included
errorDescription	Error description in case notes could not be listed
flag	Input parameter used to set the filter for the desired notes to be listed
limit	Limit for the max number of notes in the result, zero by default which means no limit is set
offset	Number of notes to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of notes in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used;

Returns

Either list of notes by local uids or empty list in case of error or no notes corresponding to given local uids presence

5.42.3.44 listNotesPerNotebook()

```
QList< Note > quentier::LocalStorageManager::listNotesPerNotebook (
            const Notebook & notebook,
            const GetNoteOptions options,
            ErrorString & errorDescription,
            const ListObjectsOptions & flag = ListObjectsOption::ListAll,
            const size_t limit = 0,
            const size_t offset = 0,
            const ListNotesOrder & order = ListNotesOrder::NoOrder,
            const OrderDirection & orderDirection = OrderDirection::Ascending ) const
```

listNotesPerNotebook attempts to list notes per given notebook

Parameters

notebook	Notebook for which the list of notes is requested. If it has the "remote" Evernote service's guid set, it would be used to identify the notebook in the local storage database, otherwise its local uid would be used
options	Options specifying which optionally includable fields of the note should actually be included
errorDescription	Error description in case notes could not be listed
flag	Input parameter used to set the filter for the desired notes to be listed

Parameters

limit	Limit for the max number of notes in the result, zero by default which means no limit is set
offset	Number of notes to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of notes in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used;

Returns

Either list of notes per notebook or empty list in case of error or no notes presence in the given notebook

5.42.3.45 listNotesPerNotebooksAndTags()

```
QList< Note > quentier::LocalStorageManager::listNotesPerNotebooksAndTags (
             const QStringList & notebookLocalUids,
             const QStringList & tagLocalUids,
             const GetNoteOptions options,
             ErrorString & errorDescription,
             const ListObjectsOptions & flag = ListObjectsOption::ListAll,
             const size_t limit = 0,
             const size_t offset = 0,
             const ListNotesOrder & order = ListNotesOrder::NoOrder,
             const OrderDirection & orderDirection = OrderDirection::Ascending ) const
```

listNotesPerNotebooksAndTags attempts to list notes which are present within one of specified notebooks and are labeled with at least one of specified tags

Parameters

notebookLocalUids	Local uids of notebooks to which the listed notes might belong
tagLocalUids	Local uids of tags with which the listed notes might be labeled
options	Options specifying which optionally includable fields of the note should actually be included
errorDescription	Error description in case notes could not be listed
flag	Input parameter used to set the filter for the desired notes to be listed
limit	Limit for the max number of notes in the result, zero by default which means no limit is set
offset	Number of notes to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of notes in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used;

Returns

Either list of notes per notebooks and tags or empty list in case of error or no notes corresponding to given notebooks and tags presence

5.42.3.46 listNotesPerTag()

```
QList< Note > quentier::LocalStorageManager::listNotesPerTag (
            const Tag & tag,
            const GetNoteOptions options,
            ErrorString & errorDescription,
            const ListObjectsOptions & flag = ListObjectsOption::ListAll,
            const size_t limit = 0,
            const size_t offset = 0,
            const ListNotesOrder & order = ListNotesOrder::NoOrder,
            const OrderDirection & orderDirection = OrderDirection::Ascending ) const
```

listNotesPerTag attempts to list notes labeled with a given tag

Parameters

tag	Tag for which the list of notes labeled with it is requested. If it has the "remote" Evernote service's guid set, it is used to identify the tag in the local storage database, otherwise its local uid is used
options	Options specifying which optionally includable fields of the note should actually be included
errorDescription	Error description in case notes could not be listed
flag	Input parameter used to set the filter for the desired notes to be listed
limit	Limit for the max number of notes in the result, zero by default which means no limit is set
offset	Number of notes to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of notes in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used;

Returns

Either list of notes per tag or empty list in case of error or no notes labeled with the given tag presence

5.42.3.47 listSavedSearches()

```
QList< SavedSearch > quentier::LocalStorageManager::listSavedSearches (
            const ListObjectsOptions flag,
            ErrorString & errorDescription,
            const size_t limit = 0,
            const size_t offset = 0,
            const ListSavedSearchesOrder order = ListSavedSearchesOrder::NoOrder,
            const OrderDirection orderDirection = OrderDirection::Ascending ) const
```

listSavedSearches attempts to list saved searches within the account according to the specified input flag.

Parameters

flag	Input parameter used to set the filter for the desired saved searches to be listed
errorDescription	Error description if saved searches within the account could not be listed; if no error happens, this parameter is untouched
limit	Limit for the max number of saved searches in the result, zero by default which means no limit is set
offset	Number of saved searches to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of saved searches in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used; this parameter has no meaning if order is equal to NoOrder

Returns

Either list of saved searches within the account conforming to the filter or empty list in cases of error or no saved searches conforming to the filter exist within the account

5.42.3.48 listSharedNotebooksPerNotebookGuid()

```
QList< SharedNotebook > quentier::LocalStorageManager::listSharedNotebooksPerNotebookGuid (
            const QString & notebookGuid,
            ErrorString & errorDescription ) const
```

listSharedNotebooksPerNotebookGuid - attempts to list all shared notebooks per given notebook's remote guid (not local uid, it's important).

Parameters

notebookGuid	Remote Evernote service's guid of the notebook for which the shared notebooks are requested
errorDescription	Error description if shared notebooks per notebook guid could not be listed; if no error happens, this parameter is untouched

Returns

Either the list of shared notebooks per notebook guid or empty list in case of error or no shared notebooks presence per given notebook guid

5.42.3.49 listTags()

```
QList< Tag > quentier::LocalStorageManager::listTags (
            const ListObjectsOptions flag,
            ErrorString & errorDescription,
            const size_t limit = 0,
            const size_t offset = 0,
            const ListTagsOrder & order = ListTagsOrder::NoOrder,
            const OrderDirection orderDirection = OrderDirection::Ascending,
            const QString & linkedNotebookGuid = QString() ) const
```

listTags attempts to list tags within the account according to the specified input flag.

Parameters

flag	Input parameter used to set the filter for the desired tags to be listed
errorDescription	Error description if notes within the account could not be listed; if no error happens, this parameter is untouched
limit	Limit for the max number of tags in the result, zero by default which means no limit is set
offset	Number of tags to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of tags in the result, NoOrder by default

Parameters

orderDirection	Specifies the direction of ordering, by default ascending direction is used; this parameter has no meaning if order is equal to NoOrder
linkedNotebookGuid	If it's null, the method would list tags ignoring their belonging to the current account or to some linked notebook; if it's empty, only the tags from user's own account would be listed; otherwise, only the tags corresponding to the certain linked notebook would be listed

Returns

Either list of tags within the account conforming to the filter or empty list in cases of error or no tags conforming to the filter exist within the account

5.42.3.50 listTagsWithNoteLocalUids()

```
QList< std::pair< Tag, QStringList > > quentier::LocalStorageManager::listTagsWithNoteLocal↩
Uids (
            const ListObjectsOptions flag,
            ErrorString & errorDescription,
            const size_t limit = 0,
            const size_t offset = 0,
            const ListTagsOrder & order = ListTagsOrder::NoOrder,
            const OrderDirection orderDirection = OrderDirection::Ascending,
            const QString & linkedNotebookGuid = QString() ) const
```

listTagsWithNoteLocalUids attempts to list tags and their corresponding local uids within the account according to the specified input flag

The method is very similar to listTags only for each listed tag it returns the list of note local uids corresponding to notes labeled with the respective tag.

Parameters

flag	Input parameter used to set the filter for the desired tags to be listed
errorDescription	Error description if notes within the account could not be listed; if no error happens, this parameter is untouched
limit	Limit for the max number of tags in the result, zero by default which means no limit is set
offset	Number of tags to skip in the beginning of the result, zero by default
order	Allows to specify particular ordering of tags in the result, NoOrder by default
orderDirection	Specifies the direction of ordering, by default ascending direction is used; this parameter has no meaning if order is equal to NoOrder
linkedNotebookGuid	If it's null, the method would list tags ignoring their belonging to the current account or to some linked notebook; if it's empty, only the tags from user's own account would be listed; otherwise, only the tags corresponding to the certain linked notebook would be listed

Returns

Either list of tags and note local uids within the account conforming to the filter or empty list in cases of error or no tags conforming to the filter exist within the account

5.42.3.51 localStorageRequiresUpgrade()

```
bool quentier::LocalStorageManager::localStorageRequiresUpgrade (
            ErrorString & errorDescription )
```

localStorageRequiresUpgrade method checks whether the existing local storage persistence requires to be upgraded. The upgrades may be required sometimes when new version of libquentier is rolled out which changes something in the internals of local storage organization. This method only checks for changes which are backwards incompatible i.e. once the local storage is upgraded, previous version of libquentier won't be able to work with it properly!

NOTE: it is libquentier client code's responsibility to call this method and/or isLocalStorageVersionTooHigh method, libquentier won't call any of these on its own and will just attempt to work with the existing local storage, whatever version it is of. If version is too high, things can fail in most mysterious way, so the client code is obliged to call these methods to ensure the local storage version is checked properly.

Parameters

errorDescription	Textual description of the error if the method was unable to determine whether the local storage requires upgrade, otherwise this parameter is not touched by the method

Returns

True if local storage requires upgrade, false otherwise

5.42.3.52 localStorageVersion()

```
qint32 quentier::LocalStorageManager::localStorageVersion (
            ErrorString & errorDescription )
```

localStorageVersion method fetches the current version of local storage persistence which can be used for informational purposes.

Parameters

errorDescription	Textual description of the error if the method was unable to determine the current version of local storage persistence

Returns

Positive number indication local storage version or negative number in case of error retrieving the local storage version

5.42.3.53 notebookCount()

```
int quentier::LocalStorageManager::notebookCount (
            ErrorString & errorDescription ) const
```

notebookCount returns the number of notebooks currently stored in the local storage database

Parameters

errorDescription	Error description if the number of notebooks could not be returned

Returns

Either non-negative value with the number of notebooks or -1 which means some error has occurred

5.42.3.54 noteCount()

```
int quentier::LocalStorageManager::noteCount (
            ErrorString & errorDescription,
            const NoteCountOptions options = NoteCountOption::IncludeNonDeletedNotes ) const
```

noteCount returns the number of notes currently stored in the local storage database.

Parameters

errorDescription	Error description if the number of notes could not be returned
options	Options clarifying which notes to list; by default only non-deleted notes are listed

Returns

Either non-negative value with the number of notes or -1 which means some error occurred

5.42.3.55 noteCountPerNotebook()

```
int quentier::LocalStorageManager::noteCountPerNotebook (
            const Notebook & notebook,
            ErrorString & errorDescription,
            const NoteCountOptions options = NoteCountOption::IncludeNonDeletedNotes ) const
```

noteCountPerNotebook returns the number of notes currently stored in the local storage database per given notebook.

Parameters

notebook	Notebook for which the number of notes is requested. If its guid is set, it is used to identify the notebook, otherwise its local uid is used
errorDescription	Error description if the number of notes per given notebook could not be returned
options	Options clarifying which notes to list; by default only non-deleted notes are listed

Returns

Either non-negative value with the number of notes per given notebook or -1 which means some error occurred

5.42.3.56 noteCountPerNotebooksAndTags()

```
int quentier::LocalStorageManager::noteCountPerNotebooksAndTags (
            const QStringList & notebookLocalUids,
            const QStringList & tagLocalUids,
            ErrorString & errorDescription,
            const NoteCountOptions options = NoteCountOption::IncludeNonDeletedNotes ) const
```

noteCountPerNotebooksAndTags returns the number of notes currently stored in local storage database belonging to one of notebooks corresponding to given notebook local uids and labeled by at least one of tags corresponding to given tag local uids

Parameters

notebookLocalUids	The list of notebook local uids used for filtering
tagLocalUids	The list of tag local uids used for filtering
errorDescription	Error description if the number of notes per notebooks and tags could not be returned
options	Options clarifying which notes to list; by default only non-deleted notes are listed

Returns

Either non-negative value with the number of notes per given tag or -1 which means some error occurred

5.42.3.57 noteCountPerTag()

```
int quentier::LocalStorageManager::noteCountPerTag (
            const Tag & tag,
            ErrorString & errorDescription,
            const NoteCountOptions options = NoteCountOption::IncludeNonDeletedNotes ) const
```

noteCountPerTag returns the number of notes currently stored in local storage database labeled with given tag.

Parameters

tag	Tag for which the number of notes labeled with it is requested. If its guid is set, it is used to identify the tag, otherwise its local uid is used
errorDescription	Error description if the number of notes per given tag could not be returned
options	Options clarifying which notes to list; by default only non-deleted notes are listed

Returns

Either non-negative value with the number of notes per given tag or -1 which means some error occurred

5.42.3.58 noteCountsPerAllTags()

```
bool quentier::LocalStorageManager::noteCountsPerAllTags (
            QHash< QString, int > & noteCountsPerTagLocalUid,
            ErrorString & errorDescription,
            const NoteCountOptions options = NoteCountOption::IncludeNonDeletedNotes ) const
```

noteCountsPerAllTags returns the number of notes currently stored in local storage database labeled with each tag stored in the local storage database.

Parameters

noteCountsPerTagLocalUid	The result hash: note counts by tag local uids
errorDescription	Error description if the number of notes per all tags could not be returned
options	Options clarifying which notes to list; by default only non-deleted notes are listed

Returns

True if note counts for all tags were computed successfully, false otherwise

5.42.3.59 requiredLocalStoragePatches()

```
QVector< std::shared_ptr< ILocalStoragePatch > > quentier::LocalStorageManager::required↩
LocalStoragePatches ( )
```

requiredLocalStoragePatches provides the client code with the list of patches which need to be applied to the current state of local storage in order to bring it to a state compatible with the current version of code. If no patches are required, an empty list of patches is returned.

The client code should apply each patch in the exact order in which they are returned by this method.

Returns

The vector of patches required to be applied to the current local storage version

5.42.3.60 savedSearchCount()

```
int quentier::LocalStorageManager::savedSearchCount (
            ErrorString & errorDescription ) const
```

savedSearchCount returns the number of saved seacrhes currently stored in local storage database.

Parameters

errorDescription	Error description if the number of saved seacrhes could not be returned

Returns

Either non-negative value with the number of saved seacrhes or -1 which means some error occurred

5.42.3.61 switchUser()

```
void quentier::LocalStorageManager::switchUser (
            const Account & account,
            const StartupOptions options = {} )
```

switchUser - switches to another local storage database file associated with the passed in account

If optional "startFromScratch" parameter is set to true (it is false by default), the database file would be erased and only then - opened. If optional "overrideLock" parameter is set to true, the advisory lock set on the database file (if any) would be forcefully removed; otherwise, if this parameter if set to false, the presence of advisory lock on the database file woud cause the method to throw DatabaseLockedException

Parameters

account	The account to which the local storage is to be switched
options	Startup options for the local storage, none enabled by default

5.42.3.62 tagCount()

```
int quentier::LocalStorageManager::tagCount (
            ErrorString & errorDescription ) const
```

tagCount returns the number of non-deleted tags currently stored in the local storage database.

Parameters

errorDescription	Error description if the number of tags could not be returned

Returns

Either non-negative value with the number of tags or -1 which means some error occurred

5.42.3.63 updateEnResource()

```
bool quentier::LocalStorageManager::updateEnResource (
            Resource & resource,
            ErrorString & errorDescription )
```

updateEnResource updates passed in resource in the local storage database.

If the resource has "remote" Evernote service's guid set, it is identified by this guid in the local storage database. If no resource with such guid is found, the local uid is used to identify the resource in the local storage database. If the resource has no guid, the local uid is used to identify it in the local storage database.

Parameters

resource	Resource to be updated; may be changed as a result of the call, automatically filled with local uid and note local uid and/or guid if these were empty before the call
errorDescription	Error description if resource could not be updated

Returns

True if resource was updated successfully, false otherwise

5.42.3.64 updateLinkedNotebook()

```
bool quentier::LocalStorageManager::updateLinkedNotebook (
            const LinkedNotebook & linkedNotebook,
            ErrorString & errorDescription )
```

updateLinkedNotebook updates passd in LinkedNotebook in the local storage database; LinkedNotebook must have "remote" Evernote service's guid set.

Parameters

linkedNotebook	LinkedNotebook to be updated in the local storage database
errorDescription	Error description if linked notebook could not be updated

Returns

True if linked notebook was updated successfully, false otherwise

5.42.3.65 updateNote()

```
bool quentier::LocalStorageManager::updateNote (
            Note & note,
            const UpdateNoteOptions options,
            ErrorString & errorDescription )
```

updateNote updates passed in Note in the local storage database.

If the note has "remote" Evernote service's guid set, it is identified by this guid in the local storage database. If no note with such guid is found, the local uid is used to identify the note in the local storage database. If the note has no guid, the local uid is used to identify it in the local storage database.

A special way in which this method might be used is the update of a note which clears note's guid. This way is special because it imposes certain requirements onto the resources which the note might have. However, it is only relevant if options input parameter has UpdateResourceMetadata flag enabled. The requirements for this special case are as follows:

- each resource should not have noteGuid field set to a non-empty value
- each resource should not have guid field set to a non-empty value as it makes no sense for note without guid i.e. note not synchronized with Evernote to own a resource which has guid i.e. is synchronized with Evernote

Parameters

note	Note to be updated in the local storage database; required to contain either "remote" notebook guid or local notebook uid; may be changed as a result of the call, filled with fields like local uid or notebook guid or local uid if any of these were empty before the call; also tag guids are filled if the note passed in contained only tag local uids and tag local uids are filled if the note passed in contained only tag guids. Bear in mind that after the call the note may not have the representative resources if "updateNoteOptions" input parameter contained no "UpdateResourceMetadata" flag as well as it may not have the representative tags if "UpdateTags" flag was not set
options	Options specifying which optionally updatable fields of the note should actually be updated
errorDescription	Error description if note could not be updated

Returns

True if note was updated successfully, false otherwise

5.42.3.66 updateNotebook()

```
bool quentier::LocalStorageManager::updateNotebook (
            Notebook & notebook,
            ErrorString & errorDescription )
```

updateNotebook updates the passed in Notebook in the local storage database

If the notebook has "remote" Evernote service's guid set, it is identified by this guid in the local storage database. Otherwise it is identified by the local uid.

Parameters

notebook	Notebook to be updated in the local storage database; the object is passed by reference and may be changed as a result of the call (filled with autocompleted fields like local uid if it was empty before the call)
errorDescription	Error description if the notebook could not be updated

Returns

True if the notebook was updated successfully, false otherwise

5.42.3.67 updateSavedSearch()

```
bool quentier::LocalStorageManager::updateSavedSearch (
            SavedSearch & search,
            ErrorString & errorDescription )
```

updateSavedSearch updates passed in SavedSearch in the local storage database.

If search has "remote" Evernote service's guid set, it is identified in the database by this guid. If the saved search has no guid, the local uid is used to identify it in the local storage database.

Parameters

search	SavedSearch filled with values to be updated in the local storage database; may be changed as a result of the call filled local uid if it was empty before the call
errorDescription	Error description if SavedSearch could not be updated

Returns

True if SavedSearch was updated successfully, false otherwise

5.42.3.68 updateTag()

```
bool quentier::LocalStorageManager::updateTag (
            Tag & tag,
            ErrorString & errorDescription )
```

updateTag updates passed in Tag in the local storage database.

If the tag has "remote" Evernote service's guid set, it is identified by this guid in the local storage database. If the tag has no guid, the local uid is used to identify it in the local storage database.

Parameters

tag	Tag filled with values to be updated in the local storage database. Note that it can be changed * as a result of the call: automatically filled with local uid if it was empty before the call
errorDescription	Error description if tag could not be updated

Returns

True if tag was updated successfully, false otherwise

5.42.3.69 updateUser()

```
bool quentier::LocalStorageManager::updateUser (
            const User & user,
            ErrorString & errorDescription )
```

updateUser updates the passed in User object in the local storage database

The table with Users is only involved in operations with notebooks which have "contact" field set which in turn is used with business accounts

Parameters

user	The user to be updated in the local storage database
errorDescription	Error description if the user could not be updated

Returns

True if the user was updated successfully, false otherwise

5.42.3.70 upgradeProgress

```
void quentier::LocalStorageManager::upgradeProgress (
            double progress )  [signal]
```

LocalStorageManager is capable of performing automatic database upgrades if/when it is necessary.

As the database upgrade can be a lengthy operation, this signal is meant to provide some feedback on the progress of the upgrade

Parameters

progress	The value from 0 to 1 denoting the database upgrade progress

5.42.3.71 userCount()

```
int quentier::LocalStorageManager::userCount (
            ErrorString & errorDescription ) const
```

userCount returns the number of non-deleted users currently stored in the local storage database

Parameters

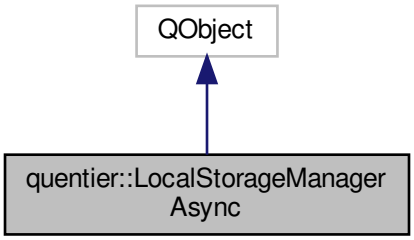
errorDescription	Error description if the number of users could not be returned

Returns

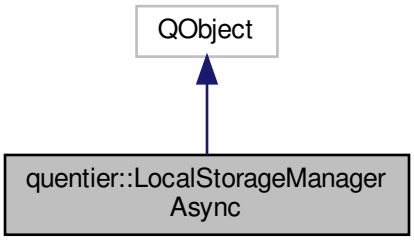
Either non-negative value with the number of users or -1 which means some error has occurred

5.43 quentier::LocalStorageManagerAsync Class Reference

Inheritance diagram for quentier::LocalStorageManagerAsync:



Collaboration diagram for quentier::LocalStorageManagerAsync:



Public Slots

- void **init** ()
- void **onGetUserCountRequest** (QUuid requestId)
- void **onSwitchUserRequest** (Account account, LocalStorageManager::StartupOptions startupOptions, QUuid requestId)
- void **onAddUserRequest** (User user, QUuid requestId)
- void **onUpdateUserRequest** (User user, QUuid requestId)
- void **onFindUserRequest** (User user, QUuid requestId)
- void **onDeleteUserRequest** (User user, QUuid requestId)
- void **onExpungeUserRequest** (User user, QUuid requestId)
- void **onGetNotebookCountRequest** (QUuid requestId)
- void **onAddNotebookRequest** (Notebook notebook, QUuid requestId)
- void **onUpdateNotebookRequest** (Notebook notebook, QUuid requestId)
- void **onFindNotebookRequest** (Notebook notebook, QUuid requestId)
- void **onFindDefaultNotebookRequest** (Notebook notebook, QUuid requestId)
- void **onFindLastUsedNotebookRequest** (Notebook notebook, QUuid requestId)
- void **onFindDefaultOrLastUsedNotebookRequest** (Notebook notebook, QUuid requestId)
- void **onListAllNotebooksRequest** (size_t limit, size_t offset, LocalStorageManager::ListNotebooksOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QUuid requestId)
- void **onListAllSharedNotebooksRequest** (QUuid requestId)
- void **onListNotebooksRequest** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotebooksOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QUuid requestId)
- void **onListSharedNotebooksPerNotebookGuidRequest** (QString notebookGuid, QUuid requestId)
- void **onExpungeNotebookRequest** (Notebook notebook, QUuid requestId)
- void **onGetLinkedNotebookCountRequest** (QUuid requestId)
- void **onAddLinkedNotebookRequest** (LinkedNotebook linkedNotebook, QUuid requestId)
- void **onUpdateLinkedNotebookRequest** (LinkedNotebook linkedNotebook, QUuid requestId)
- void **onFindLinkedNotebookRequest** (LinkedNotebook linkedNotebook, QUuid requestId)
- void **onListAllLinkedNotebooksRequest** (size_t limit, size_t offset, LocalStorageManager::ListLinkedNotebooksOrder order, LocalStorageManager::OrderDirection orderDirection, QUuid requestId)
- void **onListLinkedNotebooksRequest** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListLinkedNotebooksOrder order, LocalStorageManager::OrderDirection orderDirection, QUuid requestId)
- void **onExpungeLinkedNotebookRequest** (LinkedNotebook linkedNotebook, QUuid requestId)
- void **onGetNoteCountRequest** (LocalStorageManager::NoteCountOptions options, QUuid requestId)
- void **onGetNoteCountPerNotebookRequest** (Notebook notebook, LocalStorageManager::NoteCountOptions options, QUuid requestId)
- void **onGetNoteCountPerTagRequest** (Tag tag, LocalStorageManager::NoteCountOptions options, QUuid requestId)
- void **onGetNoteCountsPerAllTagsRequest** (LocalStorageManager::NoteCountOptions options, QUuid requestId)
- void **onGetNoteCountPerNotebooksAndTagsRequest** (QStringList notebookLocalUids, QStringList tagLocalUids, LocalStorageManager::NoteCountOptions options, QUuid requestId)
- void **onAddNoteRequest** (Note note, QUuid requestId)
- void **onUpdateNoteRequest** (Note note, LocalStorageManager::UpdateNoteOptions options, QUuid requestId)
- void **onFindNoteRequest** (Note note, LocalStorageManager::GetNoteOptions options, QUuid requestId)
- void **onListNotesPerNotebookRequest** (Notebook notebook, LocalStorageManager::GetNoteOptions options, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, QUuid requestId)
- void **onListNotesPerTagRequest** (Tag tag, LocalStorageManager::GetNoteOptions options, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, QUuid requestId)

- void **onListNotesPerNotebooksAndTagsRequest** (QStringList notebookLocalUids, QStringList tagLocalUids, LocalStorageManager::GetNoteOptions options, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, QUuid requestId)
- void **onListNotesByLocalUidsRequest** (QStringList noteLocalUids, LocalStorageManager::GetNoteOptions options, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrde order, LocalStorageManager::OrderDirection orderDirection, QUuid requestId)
- void **onListNotesRequest** (LocalStorageManager::ListObjectsOptions flag, LocalStorageManager::GetNoteOptions options, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QUuid requestId)
- void **onFindNoteLocalUidsWithSearchQuery** (NoteSearchQuery noteSearchQuery, QUuid requestId)
- void **onExpungeNoteRequest** (Note note, QUuid requestId)
- void **onGetTagCountRequest** (QUuid requestId)
- void **onAddTagRequest** (Tag tag, QUuid requestId)
- void **onUpdateTagRequest** (Tag tag, QUuid requestId)
- void **onFindTagRequest** (Tag tag, QUuid requestId)
- void **onListAllTagsPerNoteRequest** (Note note, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDirection orderDirection, QUuid requestId)
- void **onListAllTagsRequest** (size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QUuid requestId)
- void **onListTagsRequest** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QUuid requestId)
- void **onListTagsWithNoteLocalUidsRequest** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QUuid requestId)
- void **onExpungeTagRequest** (Tag tag, QUuid requestId)
- void **onExpungeNotelessTagsFromLinkedNotebooksRequest** (QUuid requestId)
- void **onGetResourceCountRequest** (QUuid requestId)
- void **onAddResourceRequest** (Resource resource, QUuid requestId)
- void **onUpdateResourceRequest** (Resource resource, QUuid requestId)
- void **onFindResourceRequest** (Resource resource, LocalStorageManager::GetResourceOptions options, QUuid requestId)
- void **onExpungeResourceRequest** (Resource resource, QUuid requestId)
- void **onGetSavedSearchCountRequest** (QUuid requestId)
- void **onAddSavedSearchRequest** (SavedSearch search, QUuid requestId)
- void **onUpdateSavedSearchRequest** (SavedSearch search, QUuid requestId)
- void **onFindSavedSearchRequest** (SavedSearch search, QUuid requestId)
- void **onListAllSavedSearchesRequest** (size_t limit, size_t offset, LocalStorageManager::ListSavedSearchesOrder order, LocalStorageManager::OrderDirection orderDirection, QUuid requestId)
- void **onListSavedSearchesRequest** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListSavedSearchesOrder order, LocalStorageManager::OrderDirection orderDirection, QUuid requestId)
- void **onExpungeSavedSearchRequest** (SavedSearch search, QUuid requestId)
- void **onAccountHighUsnRequest** (QString linkedNotebookGuid, QUuid requestId)

Signals

- void **initialized** ()
- void **getUserCountComplete** (int userCount, QUuid requestId)
- void **getUserCountFailed** (ErrorString errorDescription, QUuid requestId)
- void **switchUserComplete** (Account account, QUuid requestId)
- void **switchUserFailed** (Account account, ErrorString errorDescription, QUuid requestId)
- void **addUserComplete** (User user, QUuid requestId)

- void **addUserFailed** (User user, ErrorString errorDescription, QUuid requestId)
- void **updateUserComplete** (User user, QUuid requestId)
- void **updateUserFailed** (User user, ErrorString errorDescription, QUuid requestId)
- void **findUserComplete** (User foundUser, QUuid requestId)
- void **findUserFailed** (User user, ErrorString errorDescription, QUuid requestId)
- void **deleteUserComplete** (User user, QUuid requestId)
- void **deleteUserFailed** (User user, ErrorString errorDescription, QUuid requestId)
- void **expungeUserComplete** (User user, QUuid requestId)
- void **expungeUserFailed** (User user, ErrorString errorDescription, QUuid requestId)
- void **getNotebookCountComplete** (int notebookCount, QUuid requestId)
- void **getNotebookCountFailed** (ErrorString errorDescription, QUuid requestId)
- void **addNotebookComplete** (Notebook notebook, QUuid requestId)
- void **addNotebookFailed** (Notebook notebook, ErrorString errorDescription, QUuid requestId)
- void **updateNotebookComplete** (Notebook notebook, QUuid requestId)
- void **updateNotebookFailed** (Notebook notebook, ErrorString errorDescription, QUuid requestId)
- void **findNotebookComplete** (Notebook foundNotebook, QUuid requestId)
- void **findNotebookFailed** (Notebook notebook, ErrorString errorDescription, QUuid requestId)
- void **findDefaultNotebookComplete** (Notebook foundNotebook, QUuid requestId)
- void **findDefaultNotebookFailed** (Notebook notebook, ErrorString errorDescription, QUuid requestId)
- void **findLastUsedNotebookComplete** (Notebook foundNotebook, QUuid requestId)
- void **findLastUsedNotebookFailed** (Notebook notebook, ErrorString errorDescription, QUuid requestId)
- void **findDefaultOrLastUsedNotebookComplete** (Notebook foundNotebook, QUuid requestId)
- void **findDefaultOrLastUsedNotebookFailed** (Notebook notebook, ErrorString errorDescription, QUuid requestId)
- void **listAllNotebooksComplete** (size_t limit, size_t offset, LocalStorageManager::ListNotebooksOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QList< Notebook > foundNotebooks, QUuid requestId)
- void **listAllNotebooksFailed** (size_t limit, size_t offset, LocalStorageManager::ListNotebooksOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, ErrorString errorDescription, QUuid requestId)
- void **listNotebooksComplete** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotebooksOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QList< Notebook > foundNotebooks, QUuid requestId)
- void **listNotebooksFailed** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotebooksOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, ErrorString errorDescription, QUuid requestId)
- void **listAllSharedNotebooksComplete** (QList< SharedNotebook > foundSharedNotebooks, QUuid requestId)
- void **listAllSharedNotebooksFailed** (ErrorString errorDescription, QUuid requestId)
- void **listSharedNotebooksPerNotebookGuidComplete** (QString notebookGuid, QList< SharedNotebook > foundSharedNotebooks, QUuid requestId)
- void **listSharedNotebooksPerNotebookGuidFailed** (QString notebookGuid, ErrorString errorDescription, QUuid requestId)
- void **expungeNotebookComplete** (Notebook notebook, QUuid requestId)
- void **expungeNotebookFailed** (Notebook notebook, ErrorString errorDescription, QUuid requestId)
- void **getLinkedNotebookCountComplete** (int linkedNotebookCount, QUuid requestId)
- void **getLinkedNotebookCountFailed** (ErrorString errorDescription, QUuid requestId)
- void **addLinkedNotebookComplete** (LinkedNotebook linkedNotebook, QUuid requestId)
- void **addLinkedNotebookFailed** (LinkedNotebook linkedNotebook, ErrorString errorDescription, QUuid requestId)
- void **updateLinkedNotebookComplete** (LinkedNotebook linkedNotebook, QUuid requestId)
- void **updateLinkedNotebookFailed** (LinkedNotebook linkedNotebook, ErrorString errorDescription, QUuid requestId)
- void **findLinkedNotebookComplete** (LinkedNotebook foundLinkedNotebook, QUuid requestId)
- void **findLinkedNotebookFailed** (LinkedNotebook linkedNotebook, ErrorString errorDescription, QUuid requestId)

- void **listAllLinkedNotebooksComplete** (size_t limit, size_t offset, LocalStorageManager::ListLinkedNotebooksOrder order, LocalStorageManager::OrderDirection orderDirection, QList< LinkedNotebook > foundLinked↩ Notebooks, QUuid requestId)
- void **listAllLinkedNotebooksFailed** (size_t limit, size_t offset, LocalStorageManager::ListLinkedNotebooksOrder order, LocalStorageManager::OrderDirection orderDirection, ErrorString errorDescription, QUuid requestId)
- void **listLinkedNotebooksComplete** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListLinkedNotebooksOrder order, LocalStorageManager::OrderDirection order↩ Direction, QList< LinkedNotebook > foundLinkedNotebooks, QUuid requestId)
- void **listLinkedNotebooksFailed** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListLinkedNotebooksOrder order, LocalStorageManager::OrderDirection order↩ Direction, ErrorString errorDescription, QUuid requestId)
- void **expungeLinkedNotebookComplete** (LinkedNotebook linkedNotebook, QUuid requestId)
- void **expungeLinkedNotebookFailed** (LinkedNotebook linkedNotebook, ErrorString errorDescription, QUuid requestId)
- void **getNoteCountComplete** (int noteCount, LocalStorageManager::NoteCountOptions options, QUuid requestId)
- void **getNoteCountFailed** (ErrorString errorDescription, LocalStorageManager::NoteCountOptions options, QUuid requestId)
- void **getNoteCountPerNotebookComplete** (int noteCount, Notebook notebook, LocalStorageManager::↩ NoteCountOptions options, QUuid requestId)
- void **getNoteCountPerNotebookFailed** (ErrorString errorDescription, Notebook notebook, LocalStorage↩ Manager::NoteCountOptions options, QUuid requestId)
- void **getNoteCountPerTagComplete** (int noteCount, Tag tag, LocalStorageManager::NoteCountOptions options, QUuid requestId)
- void **getNoteCountPerTagFailed** (ErrorString errorDescription, Tag tag, LocalStorageManager::Note↩ CountOptions options, QUuid requestId)
- void **getNoteCountsPerAllTagsComplete** (QHash< QString, int > noteCountsPerTagLocalUid, Local↩ StorageManager::NoteCountOptions options, QUuid requestId)
- void **getNoteCountsPerAllTagsFailed** (ErrorString errorDescription, LocalStorageManager::NoteCount↩ Options options, QUuid requestId)
- void **getNoteCountPerNotebooksAndTagsComplete** (int noteCount, QStringList notebookLocalUids, QStringList tagLocalUids, LocalStorageManager::NoteCountOptions options, QUuid requestId)
- void **getNoteCountPerNotebooksAndTagsFailed** (ErrorString errorDescription, QStringList notebook↩ LocalUids, QStringList tagLocalUids, LocalStorageManager::NoteCountOptions options, QUuid requestId)
- void **addNoteComplete** (Note note, QUuid requestId)
- void **addNoteFailed** (Note note, ErrorString errorDescription, QUuid requestId)
- void **updateNoteComplete** (Note note, LocalStorageManager::UpdateNoteOptions options, QUuid requestId)
- void **updateNoteFailed** (Note note, LocalStorageManager::UpdateNoteOptions options, ErrorString error↩ Description, QUuid requestId)
- void **findNoteComplete** (Note foundNote, LocalStorageManager::GetNoteOptions options, QUuid request↩ Id)
- void **findNoteFailed** (Note note, LocalStorageManager::GetNoteOptions options, ErrorString error↩ Description, QUuid requestId)
- void **listNotesPerNotebookComplete** (Notebook notebook, LocalStorageManager::GetNoteOptions options, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, QList< Note > foundNotes, QUuid requestId)
- void **listNotesPerNotebookFailed** (Notebook notebook, LocalStorageManager::GetNoteOptions options, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, ErrorString errorDescription, QUuid requestId)
- void **listNotesPerTagComplete** (Tag tag, LocalStorageManager::GetNoteOptions options, LocalStorage↩ Manager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, QList< Note > foundNotes, QUuid requestId)
- void **listNotesPerTagFailed** (Tag tag, LocalStorageManager::GetNoteOptions options, LocalStorage↩ Manager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, ErrorString errorDescription, QUuid requestId)

- void **listNotesPerNotebooksAndTagsComplete** (QStringList notebookLocalUids, QStringList tagLocal↩ Uids, LocalStorageManager::GetNoteOptions options, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, QList< Note > foundNotes, QUuid requestId)
- void **listNotesPerNotebooksAndTagsFailed** (QStringList notebookLocalUids, QStringList tagLocalUids, LocalStorageManager::GetNoteOptions options, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection order↩ Direction, ErrorString errorDescription, QUuid requestId)
- void **listNotesByLocalUidsComplete** (QStringList noteLocalUids, LocalStorageManager::GetNoteOptions options, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, QList< Note > foundNotes, QUuid requestId)
- void **listNotesByLocalUidsFailed** (QStringList noteLocalUids, LocalStorageManager::GetNoteOptions options, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, ErrorString errorDescription, QUuid requestId)
- void **listNotesComplete** (LocalStorageManager::ListObjectsOptions flag, LocalStorageManager↩ ::GetNoteOptions options, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QList< Note > found↩ Notes, QUuid requestId)
- void **listNotesFailed** (LocalStorageManager::ListObjectsOptions flag, LocalStorageManager::GetNote↩ Options options, size_t limit, size_t offset, LocalStorageManager::ListNotesOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, ErrorString errorDescription, QUuid requestId)
- void **findNoteLocalUidsWithSearchQueryComplete** (QStringList noteLocalUids, NoteSearchQuery note↩ SearchQuery, QUuid requestId)
- void **findNoteLocalUidsWithSearchQueryFailed** (NoteSearchQuery noteSearchQuery, ErrorString error↩ Description, QUuid requestId)
- void **expungeNoteComplete** (Note note, QUuid requestId)
- void **expungeNoteFailed** (Note note, ErrorString errorDescription, QUuid requestId)
- void **noteMovedToAnotherNotebook** (QString noteLocalUid, QString previousNotebookLocalUid, QString newNotebookLocalUid)
- void **noteTagListChanged** (QString noteLocalUid, QStringList previousNoteTagLocalUids, QStringList newNoteTagLocalUids)
- void **getTagCountComplete** (int tagCount, QUuid requestId)
- void **getTagCountFailed** (ErrorString errorDescription, QUuid requestId)
- void **addTagComplete** (Tag tag, QUuid requestId)
- void **addTagFailed** (Tag tag, ErrorString errorDescription, QUuid requestId)
- void **updateTagComplete** (Tag tag, QUuid requestId)
- void **updateTagFailed** (Tag tag, ErrorString errorDescription, QUuid requestId)
- void **linkTagWithNoteComplete** (Tag tag, Note note, QUuid requestId)
- void **linkTagWithNoteFailed** (Tag tag, Note note, ErrorString errorDescription, QUuid requestId)
- void **findTagComplete** (Tag tag, QUuid requestId)
- void **findTagFailed** (Tag tag, ErrorString errorDescription, QUuid requestId)
- void **listAllTagsPerNoteComplete** (QList< Tag > foundTags, Note note, LocalStorageManager::List↩ ObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDirectio orderDirection, QUuid requestId)
- void **listAllTagsPerNoteFailed** (Note note, LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDirection order↩ Direction, ErrorString errorDescription, QUuid requestId)
- void **listAllTagsComplete** (size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QList< Tag > found↩ Tags, QUuid requestId)
- void **listAllTagsFailed** (size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDire orderDirection, QString linkedNotebookGuid, ErrorString errorDescription, QUuid requestId)
- void **listTagsComplete** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, QList< Tag > foundTags, QUuid requestId=QUuid())

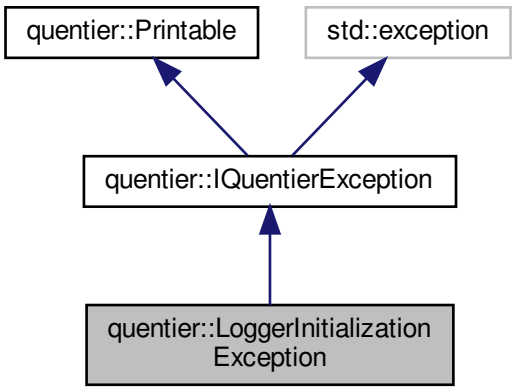
- void **listTagsFailed** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListTagsO order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, ErrorString errorDescription, QUuid requestId)
- void **listTagsWithNoteLocalUidsComplete** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDirection order↩ Direction, QString linkedNotebookGuid, QList< std::pair< Tag, QStringList > > foundTags, QUuid requestId)
- void **listTagsWithNoteLocalUidsFailed** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size↩ _t offset, LocalStorageManager::ListTagsOrder order, LocalStorageManager::OrderDirection orderDirection, QString linkedNotebookGuid, ErrorString errorDescription, QUuid requestId)
- void **expungeTagComplete** (Tag tag, QStringList expungedChildTagLocalUids, QUuid requestId)
- void **expungeTagFailed** (Tag tag, ErrorString errorDescription, QUuid requestId)
- void **expungeNotelessTagsFromLinkedNotebooksComplete** (QUuid requestId)
- void **expungeNotelessTagsFromLinkedNotebooksFailed** (ErrorString errorDescription, QUuid requestId)
- void **getResourceCountComplete** (int resourceCount, QUuid requestId)
- void **getResourceCountFailed** (ErrorString errorDescription, QUuid requestId)
- void **addResourceComplete** (Resource resource, QUuid requestId)
- void **addResourceFailed** (Resource resource, ErrorString errorDescription, QUuid requestId)
- void **updateResourceComplete** (Resource resource, QUuid requestId)
- void **updateResourceFailed** (Resource resource, ErrorString errorDescription, QUuid requestId)
- void **findResourceComplete** (Resource resource, LocalStorageManager::GetResourceOptions options, QUuid requestId)
- void **findResourceFailed** (Resource resource, LocalStorageManager::GetResourceOptions options, ErrorString errorDescription, QUuid requestId)
- void **expungeResourceComplete** (Resource resource, QUuid requestId)
- void **expungeResourceFailed** (Resource resource, ErrorString errorDescription, QUuid requestId)
- void **getSavedSearchCountComplete** (int savedSearchCount, QUuid requestId)
- void **getSavedSearchCountFailed** (ErrorString errorDescription, QUuid requestId)
- void **addSavedSearchComplete** (SavedSearch search, QUuid requestId)
- void **addSavedSearchFailed** (SavedSearch search, ErrorString errorDescription, QUuid requestId)
- void **updateSavedSearchComplete** (SavedSearch search, QUuid requestId)
- void **updateSavedSearchFailed** (SavedSearch search, ErrorString errorDescription, QUuid requestId)
- void **findSavedSearchComplete** (SavedSearch search, QUuid requestId)
- void **findSavedSearchFailed** (SavedSearch search, ErrorString errorDescription, QUuid requestId)
- void **listAllSavedSearchesComplete** (size_t limit, size_t offset, LocalStorageManager::ListSavedSearchesOrder order, LocalStorageManager::OrderDirection orderDirection, QList< SavedSearch > foundSearches, QUuid requestId)
- void **listAllSavedSearchesFailed** (size_t limit, size_t offset, LocalStorageManager::ListSavedSearchesOrder order, LocalStorageManager::OrderDirection orderDirection, ErrorString errorDescription, QUuid requestId)
- void **listSavedSearchesComplete** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListSavedSearchesOrder order, LocalStorageManager::OrderDirection order↩ Direction, QList< SavedSearch > foundSearches, QUuid requestId)
- void **listSavedSearchesFailed** (LocalStorageManager::ListObjectsOptions flag, size_t limit, size_t offset, LocalStorageManager::ListSavedSearchesOrder order, LocalStorageManager::OrderDirection order↩ Direction, ErrorString errorDescription, QUuid requestId)
- void **expungeSavedSearchComplete** (SavedSearch search, QUuid requestId)
- void **expungeSavedSearchFailed** (SavedSearch search, ErrorString errorDescription, QUuid requestId)
- void **accountHighUsnComplete** (qint32 usn, QString linkedNotebookGuid, QUuid requestId)
- void **accountHighUsnFailed** (QString linkedNotebookGuid, ErrorString errorDescription, QUuid requestId)

Public Member Functions

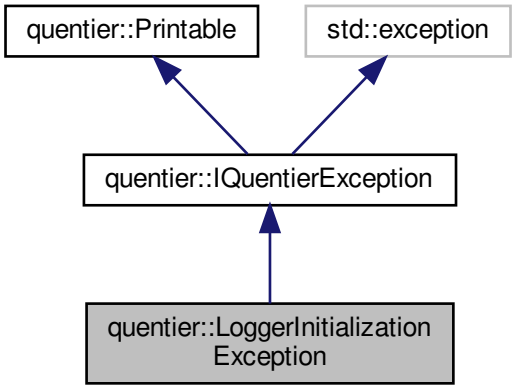
- **LocalStorageManagerAsync** (const Account &account, LocalStorageManager::StartupOptions options={}, QObject *parent=nullptr)
- void **setUseCache** (const bool useCache)
- const LocalStorageCacheManager * **localStorageCacheManager** () const
- bool **installCacheExpiryFunction** (const ILocalStorageCacheExpiryChecker &checker)
- const LocalStorageManager * **localStorageManager** () const
- LocalStorageManager * **localStorageManager** ()

5.44 quentier::LoggerInitializationException Class Reference

Inheritance diagram for quentier::LoggerInitializationException:



Collaboration diagram for quentier::LoggerInitializationException:



Public Member Functions

- **LoggerInitializationException** (const ErrorString &message)

Protected Member Functions

- const QString exceptionDisplayName () const override

5.44.1 Member Function Documentation

5.44.1.1 exceptionDisplayName()

```
const QString quentier::LoggerInitializationException::exceptionDisplayName ( ) const  [override],
[protected], [virtual]
```

Implements quentier::IQuentierException.

5.45 quentier::LRUCache< Key, Value, Allocator > Class Template Reference

Public Types

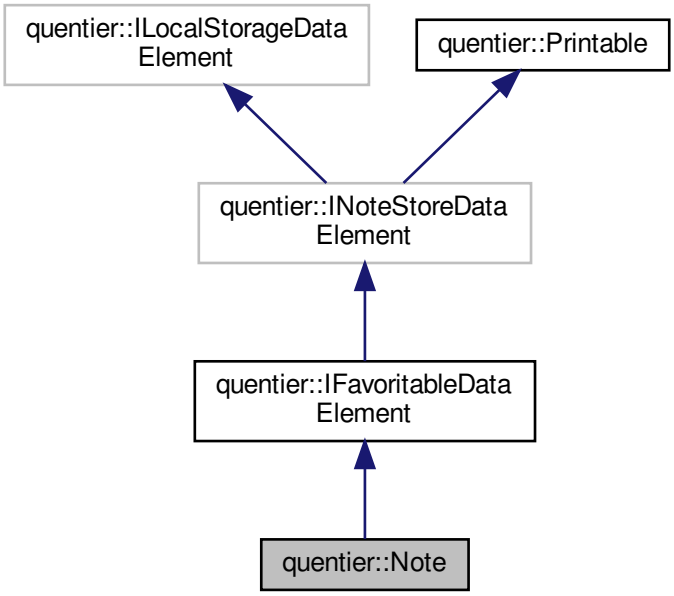
- using **key_type** = Key
- using **mapped_type** = Value
- using **allocator_type** = Allocator
- using **value_type** = std::pair< key_type, mapped_type >
- using **container_type** = std::list< value_type, allocator_type >
- using **size_type** = typename container_type::size_type
- using **difference_type** = typename container_type::difference_type
- using **iterator** = typename container_type::iterator
- using **const_iterator** = typename container_type::const_iterator
- using **reverse_iterator** = std::reverse_iterator< iterator >
- using **const_reverse_iterator** = std::reverse_iterator< const_iterator >
- using **reference** = value_type &
- using **const_reference** = const value_type &
- using **pointer** = typename std::allocator_traits< allocator_type >::pointer
- using **const_pointer** = typename std::allocator_traits< allocator_type >::const_pointer

Public Member Functions

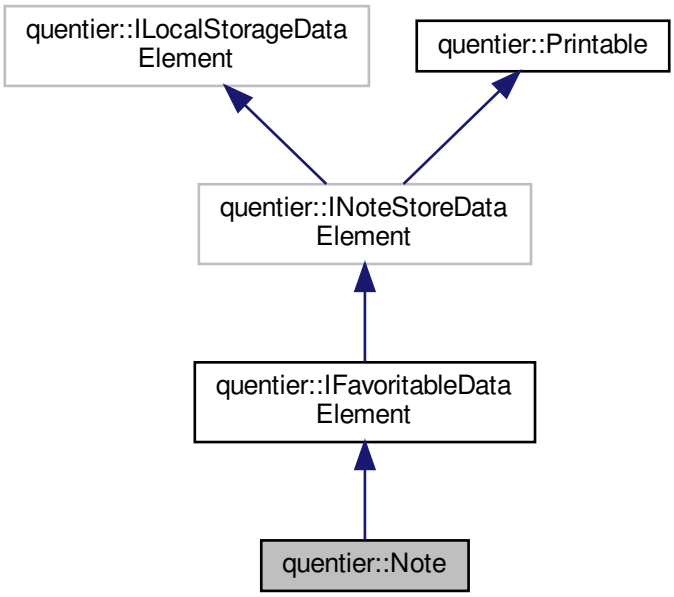
- **LRUCache** (const size_t maxSize=100)
- iterator **begin** ()
- const_iterator **begin** () const
- reverse_iterator **rbegin** ()
- const_reverse_iterator **rbegin** () const
- iterator **end** ()
- const_iterator **end** () const
- reverse_iterator **rend** ()
- const_reverse_iterator **rend** () const
- bool **empty** () const
- size_t **size** () const
- size_t **max_size** () const
- void **clear** ()
- void **put** (const key_type &key, const mapped_type &value)
- const mapped_type * **get** (const key_type &key) const
- bool **exists** (const key_type &key)
- bool **remove** (const key_type &key)
- void **setMaxSize** (const size_t maxSize)

5.46 quentier::Note Class Reference

Inheritance diagram for quentier::Note:



Collaboration diagram for quentier::Note:



Public Member Functions

- **Note** (const Note &other)
- **Note** (Note &&other)
- Note & **operator=** (const Note &other)
- Note & **operator=** (Note &&other)
- **Note** (const qevercloud::Note &other)
- Note & **operator=** (const qevercloud::Note &other)
- bool **operator==** (const Note &other) const
- bool **operator!=** (const Note &other) const
- const qevercloud::Note & **qevercloudNote** () const
- qevercloud::Note & **qevercloudNote** ()
- virtual bool hasGuid () const override
- virtual const QString & guid () const override
- virtual void setGuid (const QString &guid) override
- virtual bool hasUpdateSequenceNumber () const override
- virtual qint32 updateSequenceNumber () const override
- virtual void setUpdateSequenceNumber (const qint32 usn) override
- virtual void clear () override
- virtual bool checkParameters (ErrorString &errorDescription) const override
- bool **hasTitle** () const
- const QString & **title** () const
- void **setTitle** (const QString &title)
- bool **hasContent** () const
- const QString & **content** () const
- void **setContent** (const QString &content)

- bool **hasContentHash** () const
- const QByteArray & **contentHash** () const
- void **setContentHash** (const QByteArray &contentHash)
- bool **hasContentLength** () const
- qint32 **contentLength** () const
- void **setContentLength** (const qint32 length)
- bool **hasCreationTimestamp** () const
- qint64 **creationTimestamp** () const
- void **setCreationTimestamp** (const qint64 timestamp)
- bool **hasModificationTimestamp** () const
- qint64 **modificationTimestamp** () const
- void **setModificationTimestamp** (const qint64 timestamp)
- bool **hasDeletionTimestamp** () const
- qint64 **deletionTimestamp** () const
- void **setDeletionTimestamp** (const qint64 timestamp)
- bool **hasActive** () const
- bool **active** () const
- void **setActive** (const bool active)
- bool **hasNotebookGuid** () const
- const QString & **notebookGuid** () const
- void **setNotebookGuid** (const QString &guid)
- bool **hasNotebookLocalUid** () const
- const QString & **notebookLocalUid** () const
- void **setNotebookLocalUid** (const QString &notebookLocalUid)
- bool **hasTagGuids** () const
- const QStringList **tagGuids** () const
- void **setTagGuids** (const QStringList &guids)
- void **addTagGuid** (const QString &guid)
- void **removeTagGuid** (const QString &guid)
- bool **hasTagLocalUids** () const
- const QStringList & **tagLocalUids** () const
- void **setTagLocalUids** (const QStringList &localUids)
- void **addTagLocalUid** (const QString &localUid)
- void **removeTagLocalUid** (const QString &localUid)
- bool **hasResources** () const
- int **numResources** () const
- QList< Resource > **resources** () const
- void **setResources** (const QList< Resource > &resources)
- void **addResource** (const Resource &resource)
- bool **updateResource** (const Resource &resource)
- bool **removeResource** (const Resource &resource)
- bool **hasNoteAttributes** () const
- const qevercloud::NoteAttributes & **noteAttributes** () const
- qevercloud::NoteAttributes & **noteAttributes** ()
- void **clearNoteAttributes** ()
- bool **hasSharedNotes** () const
- QList< SharedNote > **sharedNotes** () const
- void **setSharedNotes** (const QList< SharedNote > &sharedNotes)
- void **addSharedNote** (const SharedNote &sharedNote)
- bool **updateSharedNote** (const SharedNote &sharedNote)
- bool **removeSharedNote** (const SharedNote &sharedNote)
- bool **hasNoteRestrictions** () const
- const qevercloud::NoteRestrictions & **noteRestrictions** () const
- qevercloud::NoteRestrictions & **noteRestrictions** ()
- void **setNoteRestrictions** (qevercloud::NoteRestrictions &&restrictions)

- bool **hasNoteLimits** () const
- const qevercloud::NoteLimits & **noteLimits** () const
- qevercloud::NoteLimits & **noteLimits** ()
- void **setNoteLimits** (qevercloud::NoteLimits &&limits)
- QByteArray **thumbnailData** () const
- void **setThumbnailData** (const QByteArray &thumbnailData)
- bool **isInkNote** () const
- QString **plainText** (ErrorString *pErrorMessage=nullptr) const
- QStringList **listOfWords** (ErrorString *pErrorMessage=nullptr) const
- std::pair< QString, QStringList > **plainTextAndListOfWords** (ErrorString *pErrorMessage=nullptr) const
- bool **containsCheckedTodo** () const
- bool **containsUncheckedTodo** () const
- bool **containsTodo** () const
- bool **containsEncryption** () const
- virtual QTextStream & print (QTextStream &strm) const override

Static Public Member Functions

- static bool **validateTitle** (const QString &title, ErrorString *pErrorDescription=nullptr)

Additional Inherited Members

5.46.1 Member Function Documentation

5.46.1.1 checkParameters()

```
virtual bool quentier::Note::checkParameters (
            ErrorString & errorDescription ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.46.1.2 clear()

```
virtual void quentier::Note::clear ( )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.46.1.3 guid()

```
virtual const QString & quentier::Note::guid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.46.1.4 hasGuid()

```
virtual bool quentier::Note::hasGuid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.46.1.5 hasUpdateSequenceNumber()

```
virtual bool quentier::Note::hasUpdateSequenceNumber ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.46.1.6 print()

```
virtual QTextStream & quentier::Note::print (
            QTextStream & strm ) const  [override], [virtual]
```

Implements quentier::Printable.

5.46.1.7 setGuid()

```
virtual void quentier::Note::setGuid (
            const QString & guid )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.46.1.8 setUpdateSequenceNumber()

```
virtual void quentier::Note::setUpdateSequenceNumber (
            const qint32 usn )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

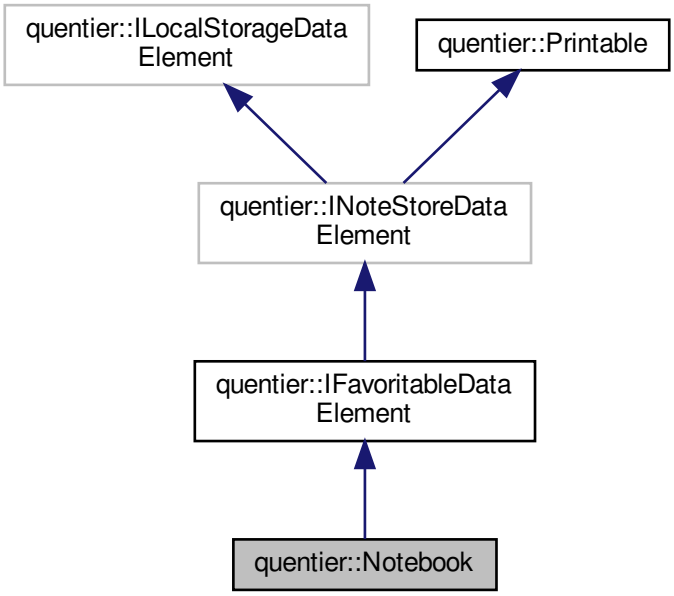
5.46.1.9 updateSequenceNumber()

```
virtual qint32 quentier::Note::updateSequenceNumber ( ) const  [override], [virtual]
```

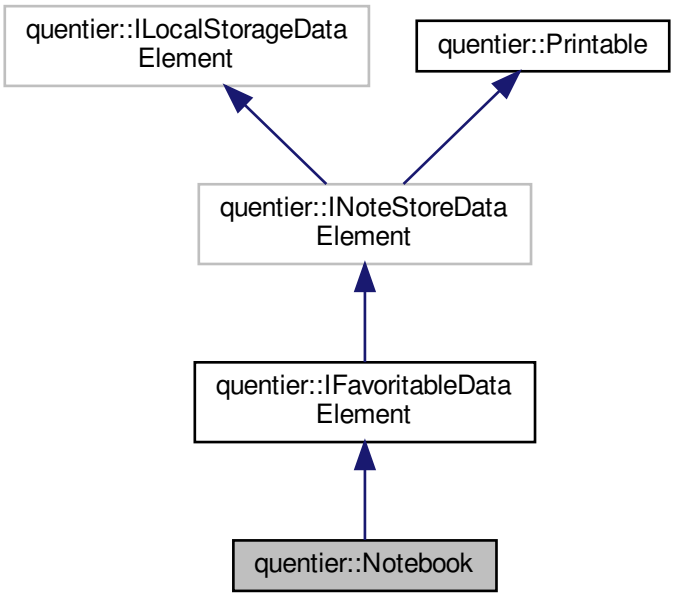
Implements quentier::INoteStoreDataElement.

5.47 quentier::Notebook Class Reference

Inheritance diagram for quentier::Notebook:



Collaboration diagram for quentier::Notebook:



Public Member Functions

- **Notebook** (const Notebook &other)
- **Notebook** (Notebook &&other)
- Notebook & **operator=** (const Notebook &other)
- Notebook & **operator=** (Notebook &&other)
- **Notebook** (const qevercloud::Notebook &other)
- **Notebook** (qevercloud::Notebook &&other)
- Notebook & **operator=** (const qevercloud::Notebook &other)
- Notebook & **operator=** (qevercloud::Notebook &&other)
- bool **operator==** (const Notebook &other) const
- bool **operator!=** (const Notebook &other) const
- const qevercloud::Notebook & **qevercloudNotebook** () const
- qevercloud::Notebook & **qevercloudNotebook** ()
- virtual void clear () override
- virtual bool hasGuid () const override
- virtual const QString & guid () const override
- virtual void setGuid (const QString &guid) override
- virtual bool hasUpdateSequenceNumber () const override
- virtual qint32 updateSequenceNumber () const override
- virtual void setUpdateSequenceNumber (const qint32 usn) override
- virtual bool checkParameters (ErrorString &errorDescription) const override
- bool **hasName** () const
- const QString & **name** () const
- void **setName** (const QString &name)
- bool **isDefaultNotebook** () const

- void **setDefaultNotebook** (const bool defaultNotebook)
- bool **hasLinkedNotebookGuid** () const
- const QString & **linkedNotebookGuid** () const
- void **setLinkedNotebookGuid** (const QString &linkedNotebookGuid)
- bool **hasCreationTimestamp** () const
- qint64 **creationTimestamp** () const
- void **setCreationTimestamp** (const qint64 timestamp)
- bool **hasModificationTimestamp** () const
- qint64 **modificationTimestamp** () const
- void **setModificationTimestamp** (const qint64 timestamp)
- bool **hasPublishingUri** () const
- const QString & **publishingUri** () const
- void **setPublishingUri** (const QString &uri)
- bool **hasPublishingOrder** () const
- qint8 **publishingOrder** () const
- void **setPublishingOrder** (const qint8 order)
- bool **hasPublishingAscending** () const
- bool **isPublishingAscending** () const
- void **setPublishingAscending** (const bool ascending)
- bool **hasPublishingPublicDescription** () const
- const QString & **publishingPublicDescription** () const
- void **setPublishingPublicDescription** (const QString &publishingPublicDescription)
- bool **hasPublished** () const
- bool **isPublished** () const
- void **setPublished** (const bool published)
- bool **hasStack** () const
- const QString & **stack** () const
- void **setStack** (const QString &stack)
- bool **hasSharedNotebooks** ()
- QList< SharedNotebook > **sharedNotebooks** () const
- void **setSharedNotebooks** (QList< qevercloud::SharedNotebook > sharedNotebooks)
- void **setSharedNotebooks** (QList< SharedNotebook > &&notebooks)
- void **addSharedNotebook** (const SharedNotebook &sharedNotebook)
- void **removeSharedNotebook** (const SharedNotebook &sharedNotebook)
- bool **hasBusinessNotebookDescription** () const
- const QString & **businessNotebookDescription** () const
- void **setBusinessNotebookDescription** (const QString &businessNotebookDescription)
- bool **hasBusinessNotebookPrivilegeLevel** () const
- qint8 **businessNotebookPrivilegeLevel** () const
- void **setBusinessNotebookPrivilegeLevel** (const qint8 privilegeLevel)
- bool **hasBusinessNotebookRecommended** () const
- bool **isBusinessNotebookRecommended** () const
- void **setBusinessNotebookRecommended** (const bool recommended)
- bool **hasContact** () const
- const User **contact** () const
- void **setContact** (const User &contact)
- bool **isLastUsed** () const
- void **setLastUsed** (const bool lastUsed)
- bool **canReadNotes** () const
- void **setCanReadNotes** (const bool canReadNotes)
- bool **canCreateNotes** () const
- void **setCanCreateNotes** (const bool canCreateNotes)
- bool **canUpdateNotes** () const
- void **setCanUpdateNotes** (const bool canUpdateNotes)
- bool **canExpungeNotes** () const

- void **setCanExpungeNotes** (const bool canExpungeNotes)
- bool **canShareNotes** () const
- void **setCanShareNotes** (const bool canShareNotes)
- bool **canEmailNotes** () const
- void **setCanEmailNotes** (const bool canEmailNotes)
- bool **canSendMessageToRecipients** () const
- void **setCanSendMessageToRecipients** (const bool canSendMessageToRecipients)
- bool **canUpdateNotebook** () const
- void **setCanUpdateNotebook** (const bool canUpdateNotebook)
- bool **canExpungeNotebook** () const
- void **setCanExpungeNotebook** (const bool canExpungeNotebook)
- bool **canSetDefaultNotebook** () const
- void **setCanSetDefaultNotebook** (const bool canSetDefaultNotebook)
- bool **canSetNotebookStack** () const
- void **setCanSetNotebookStack** (const bool canSetNotebookStack)
- bool **canPublishToPublic** () const
- void **setCanPublishToPublic** (const bool canPublishToPublic)
- bool **canPublishToBusinessLibrary** () const
- void **setCanPublishToBusinessLibrary** (const bool canPublishToBusinessLibrary)
- bool **canCreateTags** () const
- void **setCanCreateTags** (const bool canCreateTags)
- bool **canUpdateTags** () const
- void **setCanUpdateTags** (const bool canUpdateTags)
- bool **canExpungeTags** () const
- void **setCanExpungeTags** (const bool canExpungeTags)
- bool **canSetParentTag** () const
- void **setCanSetParentTag** (const bool canSetParentTag)
- bool **canCreateSharedNotebooks** () const
- void **setCanCreateSharedNotebooks** (const bool canCreateSharedNotebooks)
- bool **canShareNotesWithBusiness** () const
- void **setCanShareNotesWithBusiness** (const bool canShareNotesWithBusiness)
- bool **canRenameNotebook** () const
- void **setCanRenameNotebook** (const bool canRenameNotebook)
- bool **hasUpdateWhichSharedNotebookRestrictions** () const
- qint8 **updateWhichSharedNotebookRestrictions** () const
- void **setUpdateWhichSharedNotebookRestrictions** (const qint8 which)
- bool **hasExpungeWhichSharedNotebookRestrictions** () const
- qint8 **expungeWhichSharedNotebookRestrictions** () const
- void **setExpungeWhichSharedNotebookRestrictions** (const qint8 which)
- bool **hasRestrictions** () const
- const qevercloud::NotebookRestrictions & **restrictions** () const
- void **setNotebookRestrictions** (qevercloud::NotebookRestrictions &&restrictions)
- bool **hasRecipientReminderNotifyEmail** () const
- bool **recipientReminderNotifyEmail** () const
- void **setRecipientReminderNotifyEmail** (const bool notifyEmail)
- bool **hasRecipientReminderNotifyInApp** () const
- bool **recipientReminderNotifyInApp** () const
- void **setRecipientReminderNotifyInApp** (const bool notifyInApp)
- bool **hasRecipientInMyList** () const
- bool **recipientInMyList** () const
- void **setRecipientInMyList** (const bool inMyList)
- bool **hasRecipientStack** () const
- const QString & **recipientStack** () const
- void **setRecipientStack** (const QString &recipientString)
- bool **hasRecipientSettings** () const
- const qevercloud::NotebookRecipientSettings & **recipientSettings** () const
- void **setNotebookRecipientSettings** (qevercloud::NotebookRecipientSettings &&settings)
- virtual QTextStream & print (QTextStream &strm) const override

Static Public Member Functions

- static bool **validateName** (const QString &name, ErrorString *pErrorDescription=nullptr)

Additional Inherited Members

5.47.1 Member Function Documentation

5.47.1.1 checkParameters()

```
virtual bool quentier::Notebook::checkParameters (
            ErrorString & errorDescription ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.47.1.2 clear()

```
virtual void quentier::Notebook::clear ( )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.47.1.3 guid()

```
virtual const QString & quentier::Notebook::guid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.47.1.4 hasGuid()

```
virtual bool quentier::Notebook::hasGuid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.47.1.5 hasUpdateSequenceNumber()

```
virtual bool quentier::Notebook::hasUpdateSequenceNumber ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.47.1.6 print()

```
virtual QTextStream & quentier::Notebook::print (
            QTextStream & strm ) const  [override], [virtual]
```

Implements quentier::Printable.

5.47.1.7 setGuid()

```
virtual void quentier::Notebook::setGuid (
            const QString & guid )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.47.1.8 setUpdateSequenceNumber()

```
virtual void quentier::Notebook::setUpdateSequenceNumber (
            const qint32 usn )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.47.1.9 updateSequenceNumber()

```
virtual qint32 quentier::Notebook::updateSequenceNumber ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.48 quentier::ENMLConverter::NoteContentToHtmlExtraData Struct Reference

Public Attributes

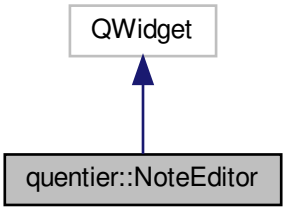
- quint64 **m_numEnToDoNodes** = 0
- quint64 **m_numHyperlinkNodes** = 0
- quint64 **m_numEnCryptNodes** = 0
- quint64 **m_numEnDecryptedNodes** = 0

5.49 quentier::NoteEditor Class Reference

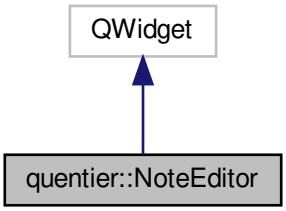
The NoteEditor class is a widget encapsulating all the functionality necessary for showing and editing notes.

`#include <NoteEditor.h>`

Inheritance diagram for quentier::NoteEditor:



Collaboration diagram for quentier::NoteEditor:



Public Slots

- void convertToNote ()
- void saveNoteToLocalStorage ()
- void setNoteTitle (const QString &noteTitle)
- void setTagIds (const QStringList &tagLocalUids, const QStringList &tagGuids)
- void **undo** ()
- void **redo** ()
- void **cut** ()
- void **copy** ()
- void **paste** ()
- void **pasteUnformatted** ()
- void **selectAll** ()
- void **formatSelectionAsSourceCode** ()

- void **fontMenu** ()
- void **textBold** ()
- void **textItalic** ()
- void **textUnderline** ()
- void **textStrikethrough** ()
- void **textHighlight** ()
- void **alignLeft** ()
- void **alignCenter** ()
- void **alignRight** ()
- void **alignFull** ()
- void **findNext** (const QString &text, const bool matchCase) const
- void **findPrevious** (const QString &text, const bool matchCase) const
- void **replace** (const QString &textToReplace, const QString &replacementText, const bool matchCase)
- void **replaceAll** (const QString &textToReplace, const QString &replacementText, const bool matchCase)
- void **insertToDoCheckbox** ()
- void **insertInAppNoteLink** (const QString &userId, const QString &shardId, const QString &noteGuid, const QString &linkText)
- void **setSpellcheck** (const bool enabled)
- void **setFont** (const QFont &font)
- void **setFontHeight** (const int height)
- void **setFontColor** (const QColor &color)
- void **setBackgroundColor** (const QColor &color)
- void setDefaultPalette (const QPalette &pal)
- void setDefaultFont (const QFont &font)
- void **insertHorizontalLine** ()
- void **increaseFontSize** ()
- void **decreaseFontSize** ()
- void **increaseIndentation** ()
- void **decreaseIndentation** ()
- void **insertBulletedList** ()
- void **insertNumberedList** ()
- void **insertTableDialog** ()
- void **insertFixedWidthTable** (const int rows, const int columns, const int widthInPixels)
- void **insertRelativeWidthTable** (const int rows, const int columns, const double relativeWidth)
- void **insertTableRow** ()
- void **insertTableColumn** ()
- void **removeTableRow** ()
- void **removeTableColumn** ()
- void **addAttachmentDialog** ()
- void **saveAttachmentDialog** (const QByteArray &resourceHash)
- void **saveAttachmentUnderCursor** ()
- void **openAttachment** (const QByteArray &resourceHash)
- void **openAttachmentUnderCursor** ()
- void **copyAttachment** (const QByteArray &resourceHash)
- void **copyAttachmentUnderCursor** ()
- void **encryptSelectedText** ()
- void **decryptEncryptedTextUnderCursor** ()
- void **editHyperlinkDialog** ()
- void **copyHyperlink** ()
- void **removeHyperlink** ()
- void **onNoteLoadCancelled** ()

Signals

- void **contentChanged** ()

  contentChanged signal is emitted when the note's content (text) gets modified via manual editing (i.e. not any action like paste or cut)
- void **noteAndNotebookFoundInLocalStorage** (Note note, Notebook notebook)

  noteAndNotebookFoundInLocalStorage signal is emitted when note and its corresponding notebook were found within the local storage right before the note editor starts to load the note into the editor
- void **noteNotFound** (QString noteLocalUid)

  noteNotFound signal is emitted when the note could not be found within the local storage by the provided local uid
- void **noteDeleted** (QString noteLocalUid)

  noteDeleted signal is emitted when the note displayed within the note editor is deleted. The note editor stops displaying the note in this case shortly after emitting this signal
- void **noteModified** ()

  noteModified signal is emitted when the note's content within the editor gets modified via some way - either via manual editing or via some action (like paste or cut)
- void **notifyError** (ErrorString error)

  notifyError signal is emitted when NoteEditor encounters some problem worth letting the user to know about
- void **inAppNoteLinkClicked** (QString userId, QString shardId, QString noteGuid)

  inAppNoteLinkClicked signal is emitted when the in-app note link is clicked within the note editor
- void inAppNoteLinkPasteRequested (QString url, QString userId, QString shardId, QString noteGuid)
- void **convertedToNote** (Note note)
- void **cantConvertToNote** (ErrorString error)
- void **noteEditorHtmlUpdated** (QString html)
- void **currentNoteChanged** (Note note)
- void **spellCheckerNotReady** ()
- void **spellCheckerReady** ()
- void **noteLoaded** ()
- void **noteSavedToLocalStorage** (QString noteLocalUid)

  noteSavedToLocalStorage signal is emitted when the note has been saved within the local storage. NoteEditor doesn't do this on its own unless it's explicitly asked to do this via invoking its saveNoteToLocalStorage slot
- void **failedToSaveNoteToLocalStorage** (ErrorString errorDescription, QString noteLocalUid)

  failedToSaveNoteToLocalStorage signal is emitted in case of failure to save the note to local storage
- void **textBoldState** (bool state)
- void **textItalicState** (bool state)
- void **textUnderlineState** (bool state)
- void **textStrikethroughState** (bool state)
- void **textAlignLeftState** (bool state)
- void **textAlignCenterState** (bool state)
- void **textAlignRightState** (bool state)
- void **textAlignFullState** (bool state)
- void **textInsideOrderedListState** (bool state)
- void **textInsideUnorderedListState** (bool state)
- void **textInsideTableState** (bool state)
- void **textFontFamilyChanged** (QString fontFamily)
- void **textFontSizeChanged** (int fontSize)
- void **insertTableDialogRequested** ()

Public Member Functions

- **NoteEditor** (QWidget *parent=nullptr, Qt::WindowFlags flags={})
- void initialize (LocalStorageManagerAsync &localStorageManager, SpellChecker &spellChecker, const Account &account, QThread *pBackgroundJobsThread=nullptr)
- INoteEditorBackend * backend ()
- void setBackend (INoteEditorBackend *backend)
- void setAccount (const Account &account)
- const QUndoStack * undoStack () const
- void setUndoStack (QUndoStack *pUndoStack)
- void setInitialPageHtml (const QString &html)
- void setNoteNotFoundPageHtml (const QString &html)
- void setNoteDeletedPageHtml (const QString &html)
- void setNoteLoadingPageHtml (const QString &html)
- QString currentNoteLocalUid () const
- void setCurrentNoteLocalUid (const QString &noteLocalUid)
- void clear ()
- bool isModified () const
- bool isEditorPageModified () const
- bool isNoteLoaded () const
- qint64 idleTime () const
- void setFocus ()
- QString **selectedText** () const
- bool **hasSelection** () const
- bool **spellCheckEnabled** () const
- bool **print** (QPrinter &printer, ErrorString &errorDescription)
- bool **exportToPdf** (const QString &absoluteFilePath, ErrorString &errorDescription)
- bool **exportToEnex** (const QStringList &tagNames, QString &enex, ErrorString &errorDescription)
- QPalette defaultPalette () const
- const QFont * defaultFont () const

Protected Member Functions

- virtual void **dragMoveEvent** (QDragMoveEvent *pEvent) override
- virtual void **dropEvent** (QDropEvent *pEvent) override

5.49.1 Detailed Description

The NoteEditor class is a widget encapsulating all the functionality necessary for showing and editing notes.

5.49.2 Member Function Documentation

5.49.2.1 backend()

```
INoteEditorBackend * quentier::NoteEditor::backend ( )
```

Returns

the pointer to the note editor's backend

5.49.2.2 clear()

```
void quentier::NoteEditor::clear ( )
```

Clear the contents of the note editor

5.49.2.3 convertToNote

```
void quentier::NoteEditor::convertToNote ( )  [slot]
```

Invoke this slot to launch the asynchronous procedure of converting the current contents of the note editor to note; the convertedToNote signal would be emitted in response when the conversion is done

5.49.2.4 currentNoteLocalUid()

```
QString quentier::NoteEditor::currentNoteLocalUid ( ) const
```

Get the local uid of the note currently set to the note editor

5.49.2.5 defaultFont()

```
const QFont * quentier::NoteEditor::defaultFont ( ) const
```

Returns

pointer to the default font used by the note editor; if no such font was set to the editor previously, returns null pointer

5.49.2.6 defaultPalette()

```
QPalette quentier::NoteEditor::defaultPalette ( ) const
```

Returns

palette containing default colors used by the editor; the palette is composed of colors from note editor widget's native palette but some of them might be overridden by colors from the palette specified previously via set↩ DefaultPalette method: those colors from the specified palette which were valid

5.49.2.7 idleTime()

```
qint64 quentier::NoteEditor::idleTime ( ) const
```

Returns

the number of milliseconds since the last user's interaction with the note editor or -1 if there was no interaction or if no note is loaded at the moment

5.49.2.8 inAppNoteLinkPasteRequested

```
void quentier::NoteEditor::inAppNoteLinkPasteRequested (
            QString url,
            QString userId,
            QString shardId,
            QString noteGuid )  [signal]
```

inAppNoteLinkPasteRequested signal is emitted when the note editor detects the attempt to paste the in-app note link into the note editor; the link would not be inserted right away, instead this signal would be emitted. Whatever party managing the note editor is expected to connect some slot to this signal and provide the optionally amended link information to the note editor by sending the signal connected to its insertInAppNoteLink slot - this slot accepts both the URL of the link and the link text and performs the actual link insertion into the note. If the link text is empty, the URL itself is used as the link text.

5.49.2.9 initialize()

```
void quentier::NoteEditor::initialize (
            LocalStorageManagerAsync & localStorageManager,
            SpellChecker & spellChecker,
            const Account & account,
            QThread * pBackgroundJobsThread = nullptr )
```

NoteEditor requires LocalStorageManagerAsync, SpellChecker and Account for its work but due to the particularities of Qt's .ui files processing these can't be passed right inside the constructor, hence here's a special initialization method

Parameters

localStorageManager	The reference to LocalStorageManagerAsync, to set up signal-slot connections with it
spellChecker	The spell checker to be used by note editor for, well, spell-checking
account	Currently active account
pBackgroundJobsThread	Pointer to the thread to be used for scheduling of background jobs of NoteEditor; if null, NoteEditor's background jobs would take place in GUI thread

5.49.2.10 isEditorPageModified()

```
bool quentier::NoteEditor::isEditorPageModified ( ) const
```

Returns

true if there's content within the editor not yet converted to note, false otherwise

5.49.2.11 isModified()

```
bool quentier::NoteEditor::isModified ( ) const
```

Returns

true if there's content within the editor not yet converted to note or not saved to local storage, false otherwise

5.49.2.12 isNoteLoaded()

```
bool quentier::NoteEditor::isNoteLoaded ( ) const
```

Returns

true if the note last set to the editor has been fully loaded already, false otherwise

5.49.2.13 saveNoteToLocalStorage

```
void quentier::NoteEditor::saveNoteToLocalStorage ( )  [slot]
```

Invoke this slot to launch the asynchronous procedure of saving the modified current note back to the local storage. If no note is set to the editor or if the note is not modified, no action would be performed. Otherwise noteSaved↩ ToLocalStorage signal would be emitted in case of successful saving or failedToSaveNoteToLocalStorage would be emitted otherwise

5.49.2.14 setAccount()

```
void quentier::NoteEditor::setAccount (
            const Account & account )
```

Set the current account to the note editor

5.49.2.15 setBackend()

```
void quentier::NoteEditor::setBackend (
            INoteEditorBackend * backend )
```

This method can be used to set the backend to the note editor; the note editor has the default backend so this method is not obligatory to be called

5.49.2.16 setCurrentNoteLocalUid()

```
void quentier::NoteEditor::setCurrentNoteLocalUid (
            const QString & noteLocalUid )
```

Set note local uid to the note editor. The note is being searched for within the local storage, in case of no note being found noteNotFound signal is emitted. Otherwise note editor page starts loading.

Parameters

noteLocalUid	The local uid of note

5.49.2.17 setDefaultFont

```
void quentier::NoteEditor::setDefaultFont (
            const QFont & font )  [slot]
```

Sets the font which would be used by the editor by default

Parameters

font	The font to be used by the editor by default

5.49.2.18 setDefaultPalette

```
void quentier::NoteEditor::setDefaultPalette (
            const QPalette & pal )  [slot]
```

Sets the palette with colors to be used by the editor. New colors are applied after the note is fully loaded. If no note is set to the editor, the palette is simply remembered for the next note to be loaded into it.

Colors within the palette and their usage:

1. WindowText - used as default font color
2. Base - used as default background color
3. HighlightedText - used as font color for selected text
4. Highlight - used as background color for selected text

Parameters

pal	The palette to be set. Invalid colors from it are substituted by colors from widget's palette by the editor

5.49.2.19 setFocus()

```
void quentier::NoteEditor::setFocus ( )
```

Sets the focus to the backend note editor widget

5.49.2.20 setInitialPageHtml()

```
void quentier::NoteEditor::setInitialPageHtml (
            const QString & html )
```

Set the html to be displayed when the note is not set to the editor

5.49.2.21 setNoteDeletedPageHtml()

```
void quentier::NoteEditor::setNoteDeletedPageHtml (
            const QString & html )
```

Set the html to be displayed when the note set to the editor was deleted from the local storage (either marked as deleted or deleted permanently i.e. expunged)

5.49.2.22 setNoteLoadingPageHtml()

```
void quentier::NoteEditor::setNoteLoadingPageHtml (
            const QString & html )
```

Set the html to be displayed when the note set to the editor is being loaded into it

5.49.2.23 setNoteNotFoundPageHtml()

```
void quentier::NoteEditor::setNoteNotFoundPageHtml (
            const QString & html )
```

Set the html to be displayed when the note attempted to be set to the editor was not found within the local storage

5.49.2.24 setNoteTitle

```
void quentier::NoteEditor::setNoteTitle (
            const QString & noteTitle )  [slot]
```

Invoke this slot to set the title to the note displayed via the note editor. The note editor itself doesn't manage the note title in any way so any external code using the note editor can set the title to the note editor's note which would be considered modified if the title is new and then eventually the note would be saved to local storage

Parameters

noteTitle	The title of the note

5.49.2.25 setTagIds

```
void quentier::NoteEditor::setTagIds (
```

```
            const QStringList & tagLocalUids,
            const QStringList & tagGuids )  [slot]
```

Invoke this slot to set tag local uids and/or tag guids to the note displayed via the note editor. The note editor itself doesn't manage the note tags in any way so any external code using the note editor can set the tag ids to the note editor's internal note which would be considered modified if the tag ids are new and then eventually the note would be saved to local storage

Parameters

tagLocalUids	The list of tag local uids for the note
tagGuids	The list of tag guids for the note

5.49.2.26 setUndoStack()

```
void quentier::NoteEditor::setUndoStack (
            QUndoStack * pUndoStack )
```

Set the undo stack for the note editor to use

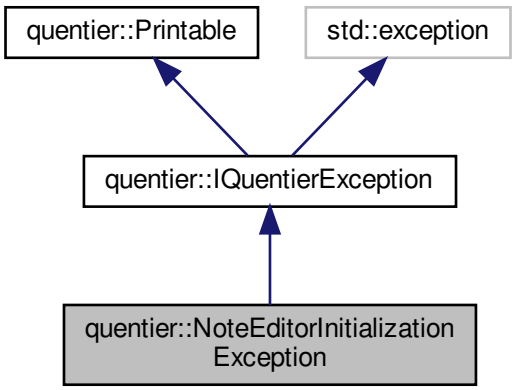
5.49.2.27 undoStack()

```
const QUndoStack * quentier::NoteEditor::undoStack ( ) const
```

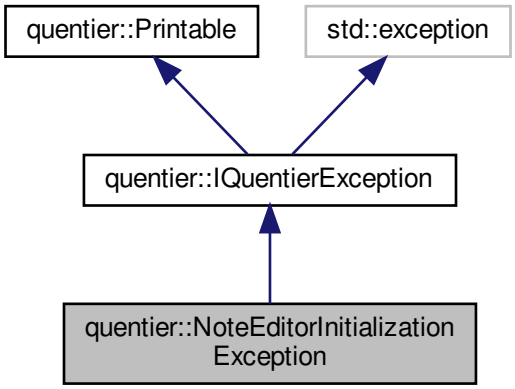
Get the undo stack serving to the note editor

5.50 quentier::NoteEditorInitializationException Class Reference

Inheritance diagram for quentier::NoteEditorInitializationException:



Collaboration diagram for quentier::NoteEditorInitializationException:



Public Member Functions

- **NoteEditorInitializationException** (const ErrorString &message)

Protected Member Functions

- virtual const QString exceptionDisplayName () const override

5.50.1 Member Function Documentation

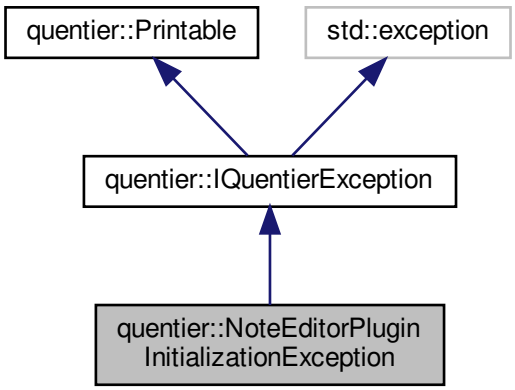
5.50.1.1 exceptionDisplayName()

```
virtual const QString quentier::NoteEditorInitializationException::exceptionDisplayName ( )
const  [override], [protected], [virtual]
```

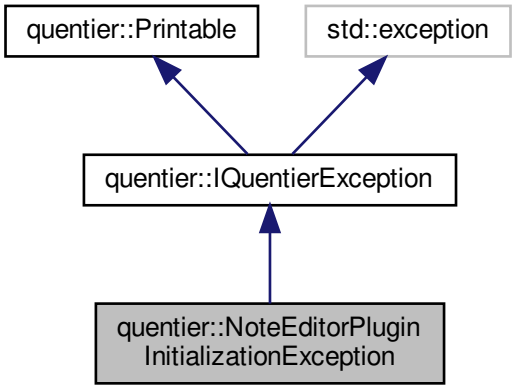
Implements quentier::IQuentierException.

5.51 quentier::NoteEditorPluginInitializationException Class Reference

Inheritance diagram for quentier::NoteEditorPluginInitializationException:



Collaboration diagram for quentier::NoteEditorPluginInitializationException:



Public Member Functions

- **NoteEditorPluginInitializationException** (const ErrorString &message)

Protected Member Functions

- virtual const QString exceptionDisplayName () const override

5.51.1 Member Function Documentation

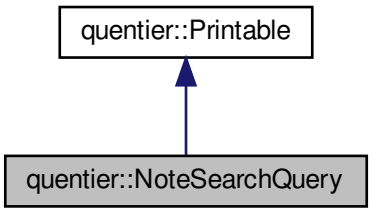
5.51.1.1 exceptionDisplayName()

```
virtual const QString quentier::NoteEditorPluginInitializationException::exceptionDisplayName
( ) const  [override], [protected], [virtual]
```

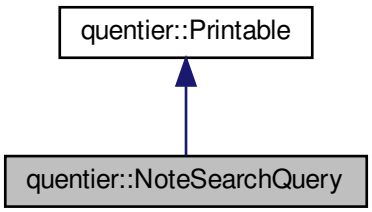
Implements quentier::IQuentierException.

5.52 quentier::NoteSearchQuery Class Reference

Inheritance diagram for quentier::NoteSearchQuery:



Collaboration diagram for quentier::NoteSearchQuery:



Public Member Functions

- **NoteSearchQuery** (const NoteSearchQuery &other)
- **NoteSearchQuery** (NoteSearchQuery &&other)
- NoteSearchQuery & **operator=** (const NoteSearchQuery &other)
- NoteSearchQuery & **operator=** (NoteSearchQuery &&other)
- bool **isEmpty** () const
- void **clear** ()
- const QString queryString () const
- bool **setQueryString** (const QString &queryString, ErrorString &error)
- const QString notebookModifier () const
- bool **hasAnyModifier** () const
- const QStringList & **tagNames** () const
- const QStringList & **negatedTagNames** () const
- bool **hasAnyTag** () const
- bool **hasNegatedAnyTag** () const
- const QStringList & **titleNames** () const
- const QStringList & **negatedTitleNames** () const
- bool **hasAnyTitleName** () const
- bool **hasNegatedAnyTitleName** () const
- const QVector< qint64 > & **creationTimestamps** () const
- const QVector< qint64 > & **negatedCreationTimestamps** () const
- bool **hasAnyCreationTimestamp** () const
- bool **hasNegatedAnyCreationTimestamp** () const
- const QVector< qint64 > & **modificationTimestamps** () const
- const QVector< qint64 > & **negatedModificationTimestamps** () const
- bool **hasAnyModificationTimestamp** () const
- bool **hasNegatedAnyModificationTimestamp** () const
- const QStringList & **resourceMimeTypes** () const
- const QStringList & **negatedResourceMimeTypes** () const
- bool **hasAnyResourceMimeType** () const
- bool **hasNegatedAnyResourceMimeType** () const
- const QVector< qint64 > & **subjectDateTimestamps** () const
- const QVector< qint64 > & **negatedSubjectDateTimestamps** () const
- bool **hasAnySubjectDateTimestamp** () const
- bool **hasNegatedAnySubjectDateTimestamp** () const
- const QVector< double > & **latitudes** () const
- const QVector< double > & **negatedLatitudes** () const
- bool **hasAnyLatitude** () const
- bool **hasNegatedAnyLatitude** () const
- const QVector< double > & **longitudes** () const
- const QVector< double > & **negatedLongitudes** () const
- bool **hasAnyLongitude** () const
- bool **hasNegatedAnyLongitude** () const
- const QVector< double > & **altitudes** () const
- const QVector< double > & **negatedAltitudes** () const
- bool **hasAnyAltitude** () const
- bool **hasNegatedAnyAltitude** () const
- const QStringList & **authors** () const
- const QStringList & **negatedAuthors** () const
- bool **hasAnyAuthor** () const
- bool **hasNegatedAnyAuthor** () const
- const QStringList & **sources** () const
- const QStringList & **negatedSources** () const
- bool **hasAnySource** () const

- bool **hasNegatedAnySource** () const
- const QStringList & **sourceApplications** () const
- const QStringList & **negatedSourceApplications** () const
- bool **hasAnySourceApplication** () const
- bool **hasNegatedAnySourceApplication** () const
- const QStringList & **contentClasses** () const
- const QStringList & **negatedContentClasses** () const
- bool **hasAnyContentClass** () const
- bool **hasNegatedAnyContentClass** () const
- const QStringList & **placeNames** () const
- const QStringList & **negatedPlaceNames** () const
- bool **hasAnyPlaceName** () const
- bool **hasNegatedAnyPlaceName** () const
- const QStringList & **applicationData** () const
- const QStringList & **negatedApplicationData** () const
- bool **hasAnyApplicationData** () const
- bool **hasNegatedAnyApplicationData** () const
- const QVector< qint64 > & **reminderOrders** () const
- const QVector< qint64 > & **negatedReminderOrders** () const
- bool **hasAnyReminderOrder** () const
- bool **hasNegatedAnyReminderOrder** () const
- const QVector< qint64 > & **reminderTimes** () const
- const QVector< qint64 > & **negatedReminderTimes** () const
- bool **hasAnyReminderTime** () const
- bool **hasNegatedAnyReminderTime** () const
- const QVector< qint64 > & **reminderDoneTimes** () const
- const QVector< qint64 > & **negatedReminderDoneTimes** () const
- bool **hasAnyReminderDoneTime** () const
- bool **hasNegatedAnyReminderDoneTime** () const
- bool **hasUnfinishedToDo** () const
- bool **hasNegatedUnfinishedToDo** () const
- bool **hasFinishedToDo** () const
- bool **hasNegatedFinishedToDo** () const
- bool **hasAnyToDo** () const
- bool **hasNegatedAnyToDo** () const
- bool **hasEncryption** () const
- bool **hasNegatedEncryption** () const
- const QStringList & **contentSearchTerms** () const
- const QStringList & **negatedContentSearchTerms** () const
- bool **hasAnyContentSearchTerms** () const
- bool **isMatcheable** () const
- virtual QTextStream & print (QTextStream &strm) const override

Additional Inherited Members

5.52.1 Member Function Documentation

5.52.1.1 notebookModifier()

```
const QString quentier::NoteSearchQuery::notebookModifier ( ) const
```

If query string has "notebook:<notebook name>" scope modifier, this method returns the name of the notebook, otherwise it returns empty string

5.52.1.2 print()

```
virtual QTextStream & quentier::NoteSearchQuery::print (
            QTextStream & strm ) const  [override], [virtual]
```

Implements quentier::Printable.

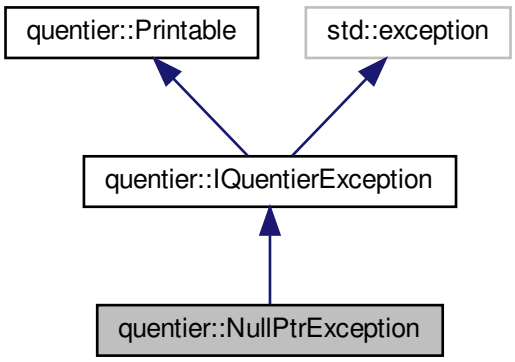
5.52.1.3 queryString()

```
const QString quentier::NoteSearchQuery::queryString ( ) const
```

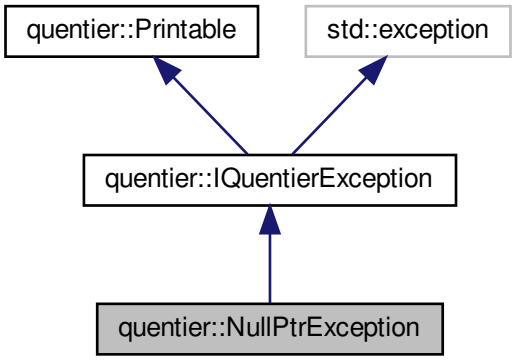
Returns the original non-parsed query string

5.53 quentier::NullPtrException Class Reference

Inheritance diagram for quentier::NullPtrException:



Collaboration diagram for quentier::NullPtrException:



Public Member Functions

- **NullPtrException** (const ErrorString &message)

Protected Member Functions

- virtual const QString exceptionDisplayName () const override

5.53.1 Member Function Documentation

5.53.1.1 exceptionDisplayName()

```
virtual const QString quentier::NullPtrException::exceptionDisplayName ( ) const  [override],
[protected], [virtual]
```

Implements quentier::IQuentierException.

5.54 quentier::ResourceRecognitionIndexItem::ObjectItem Struct Reference

Public Member Functions

- bool **operator==** (const ObjectItem &other) const

Public Attributes

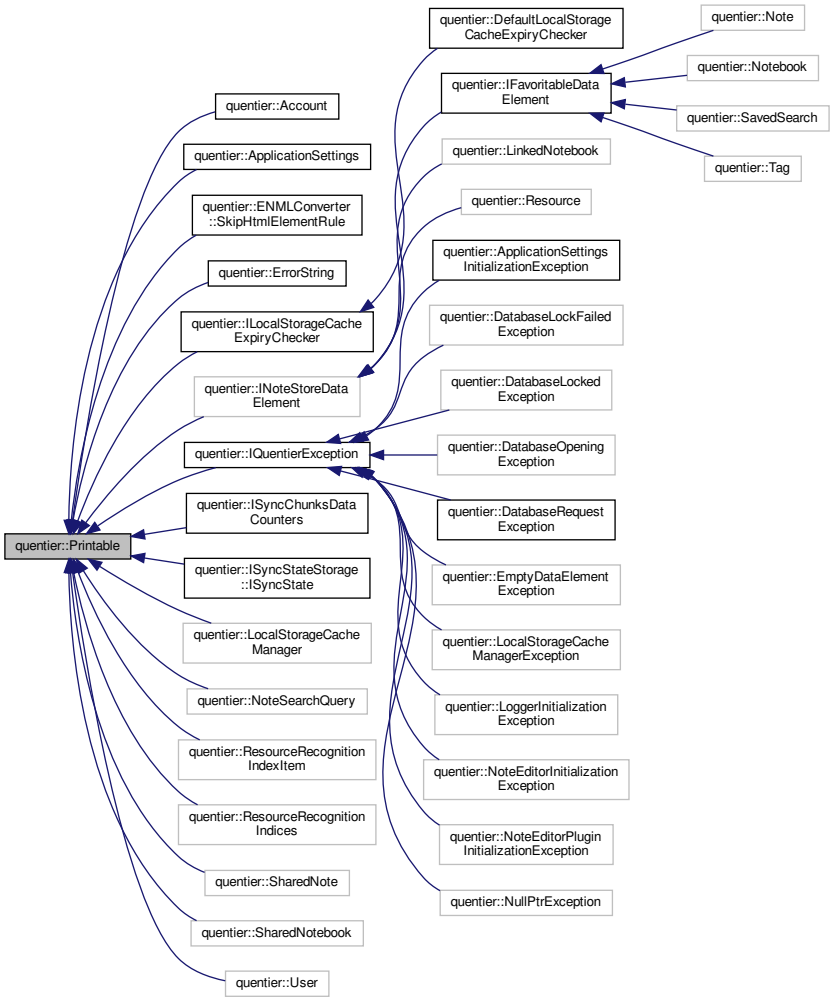
- QString **m_objectType**
- int **m_weight** = -1

5.55 quentier::Printable Class Reference

The Printable class is the interface for Quentier's internal classes which should be able to write themselves into QTextStream and/or convert to QString.

`#include <Printable.h>`

Inheritance diagram for quentier::Printable:



Public Member Functions

- virtual QTextStream & print (QTextStream &strm) const =0
- virtual const QString **toString** () const

Protected Member Functions

- **Printable** (const Printable &other)
- Printable & **operator=** (const Printable &other)

Friends

- QUENTIER_EXPORT QTextStream & **operator<<** (QTextStream &strm, const Printable &printable)
- QUENTIER_EXPORT QDebug & **operator<<** (QDebug &debug, const Printable &printable)

5.55.1 Detailed Description

The Printable class is the interface for Quentier's internal classes which should be able to write themselves into QTextStream and/or convert to QString.

5.55.2 Member Function Documentation

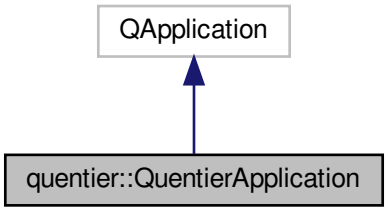
5.55.2.1 print()

```
virtual QTextStream & quentier::Printable::print (
            QTextStream & strm ) const  [pure virtual]
```

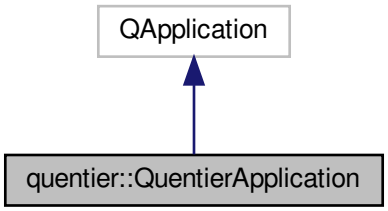
Implemented in quentier::ILocalStorageCacheExpiryChecker, and quentier::DefaultLocalStorageCacheExpiryChecker.

5.56 quentier::QuentierApplication Class Reference

Inheritance diagram for quentier::QuentierApplication:



Collaboration diagram for quentier::QuentierApplication:



Public Member Functions

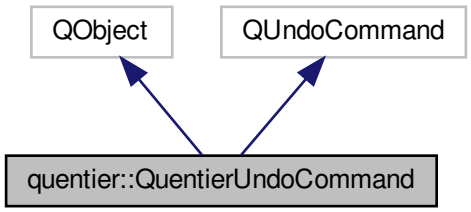
- **QuentierApplication** (int &argc, char ∗argv[ ])
- virtual bool **notify** (QObject ∗pObject, QEvent ∗pEvent) override
- virtual bool **event** (QEvent ∗pEvent) override

5.57 quentier::QuentierUndoCommand Class Reference

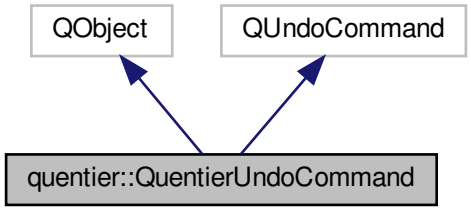
The QuentierUndoCommand class has the sole purpose of working around one quirky aspect of Qt's undo/redo framework: when you push QUndoCommand to QUndoStack, it calls "redo" method of that command. This class offers subclasses to implement their own methods for actual "undo" and "redo" commands while ignoring the attempts to "redo" anything if there were no previous "undo" call prior to that.

`#include <QuentierUndoCommand.h>`

Inheritance diagram for quentier::QuentierUndoCommand:



Collaboration diagram for quentier::QuentierUndoCommand:



Signals

- void **notifyError** (ErrorString error)

Public Member Functions

- **QuentierUndoCommand** (QUndoCommand *parent=nullptr)
- **QuentierUndoCommand** (const QString &text, QUndoCommand *parent=nullptr)
- virtual void **undo** () override final
- virtual void **redo** () override final
- bool **onceUndoExecuted** () const

Protected Member Functions

- virtual void **undoImpl** ()=0
- virtual void **redoImpl** ()=0

5.57.1 Detailed Description

The QuentierUndoCommand class has the sole purpose of working around one quirky aspect of Qt's undo/redo framework: when you push QUndoCommand to QUndoStack, it calls "redo" method of that command. This class offers subclasses to implement their own methods for actual "undo" and "redo" commands while ignoring the attempts to "redo" anything if there were no previous "undo" call prior to that.

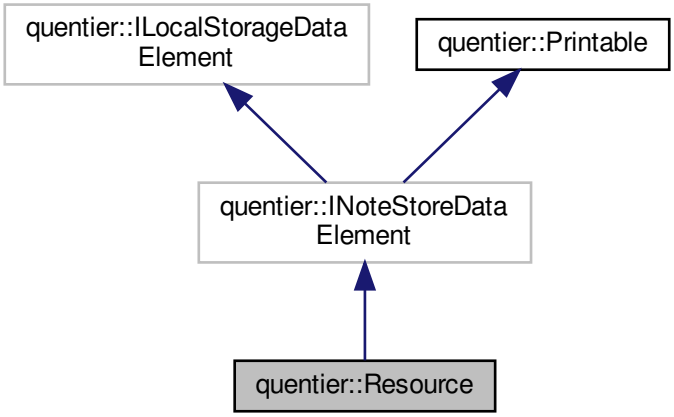
The rationale behind the current behaviour seems to be the compliance with "command pattern behaviour" when you create the command to execute the action instead of just executing it immediately. This design is enforced by Qt's undo/redo framework, there's no option to choose not to call "redo" when pushing to the stack.

One thing which this design fails to see is the fact that the command may be already executed externally by the moment the QUndoCommand can be created. Suppose we can get the information about how to undo (and then again redo) that command. We create the corresponding QUndoCommand, set up the stuff for its undo/redo methods and push it to QUndoStack for future use... But at the same time QUndoStack calls "redo" method of the command. Really not the behaviour you'd like to have.

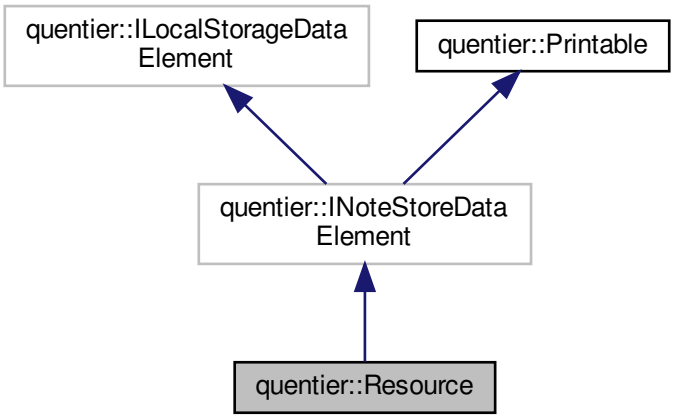
QuentierUndoCommand is also QObject, it is for error reporting via notifyError signal

5.58 quentier::Resource Class Reference

Inheritance diagram for quentier::Resource:



Collaboration diagram for quentier::Resource:



Public Member Functions

- **Resource** (const Resource &other)
- **Resource** (Resource &&other)
- **Resource** (const qevercloud::Resource &resource)
- Resource & **operator=** (const Resource &other)

- Resource & **operator=** (Resource &&other)
- bool **operator==** (const Resource &other) const
- bool **operator!=** (const Resource &other) const
- const qevercloud::Resource & **qevercloudResource** () const
- qevercloud::Resource & **qevercloudResource** ()
- virtual void clear () override
- virtual bool hasGuid () const override
- virtual const QString & guid () const override
- virtual void setGuid (const QString &guid) override
- virtual bool hasUpdateSequenceNumber () const override
- virtual qint32 updateSequenceNumber () const override
- virtual void setUpdateSequenceNumber (const qint32 updateSequenceNumber) override
- virtual bool checkParameters (ErrorString &errorDescription) const override
- QString **displayName** () const
- void **setDisplayName** (const QString &displayName)
- QString **preferredFileSuffix** () const
- int **indexInNote** () const
- void **setIndexInNote** (const int index)
- bool **hasNoteGuid** () const
- const QString & **noteGuid** () const
- void **setNoteGuid** (const QString &guid)
- bool **hasNoteLocalUid** () const
- const QString & **noteLocalUid** () const
- void **setNoteLocalUid** (const QString &guid)
- bool **hasData** () const
- bool **hasDataHash** () const
- const QByteArray & **dataHash** () const
- void **setDataHash** (const QByteArray &hash)
- bool **hasDataSize** () const
- qint32 **dataSize** () const
- void **setDataSize** (const qint32 size)
- bool **hasDataBody** () const
- const QByteArray & **dataBody** () const
- void **setDataBody** (const QByteArray &body)
- bool **hasMime** () const
- const QString & **mime** () const
- void **setMime** (const QString &mime)
- bool **hasWidth** () const
- qint16 **width** () const
- void **setWidth** (const qint16 width)
- bool **hasHeight** () const
- qint16 **height** () const
- void **setHeight** (const qint16 height)
- bool **hasRecognitionData** () const
- bool **hasRecognitionDataHash** () const
- const QByteArray & **recognitionDataHash** () const
- void **setRecognitionDataHash** (const QByteArray &hash)
- bool **hasRecognitionDataSize** () const
- qint32 **recognitionDataSize** () const
- void **setRecognitionDataSize** (const qint32 size)
- bool **hasRecognitionDataBody** () const
- const QByteArray & **recognitionDataBody** () const
- void **setRecognitionDataBody** (const QByteArray &body)
- bool **hasAlternateData** () const
- bool **hasAlternateDataHash** () const

- const QByteArray & **alternateDataHash** () const
- void **setAlternateDataHash** (const QByteArray &hash)
- bool **hasAlternateDataSize** () const
- qint32 **alternateDataSize** () const
- void **setAlternateDataSize** (const qint32 size)
- bool **hasAlternateDataBody** () const
- const QByteArray & **alternateDataBody** () const
- void **setAlternateDataBody** (const QByteArray &body)
- bool **hasResourceAttributes** () const
- const qevercloud::ResourceAttributes & **resourceAttributes** () const
- qevercloud::ResourceAttributes & **resourceAttributes** ()
- void **setResourceAttributes** (const qevercloud::ResourceAttributes &attributes)
- void **setResourceAttributes** (qevercloud::ResourceAttributes &&attributes)
- virtual QTextStream & print (QTextStream &strm) const override

Friends

- class **Note**

Additional Inherited Members

5.58.1 Member Function Documentation

5.58.1.1 checkParameters()

```
virtual bool quentier::Resource::checkParameters (
            ErrorString & errorDescription ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.58.1.2 clear()

```
virtual void quentier::Resource::clear ( )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.58.1.3 guid()

```
virtual const QString & quentier::Resource::guid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.58.1.4 hasGuid()

```
virtual bool quentier::Resource::hasGuid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.58.1.5 hasUpdateSequenceNumber()

```
virtual bool quentier::Resource::hasUpdateSequenceNumber ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.58.1.6 print()

```
virtual QTextStream & quentier::Resource::print (
            QTextStream & strm ) const  [override], [virtual]
```

Implements quentier::Printable.

5.58.1.7 setGuid()

```
virtual void quentier::Resource::setGuid (
            const QString & guid )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.58.1.8 setUpdateSequenceNumber()

```
virtual void quentier::Resource::setUpdateSequenceNumber (
            const qint32 updateSequenceNumber )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

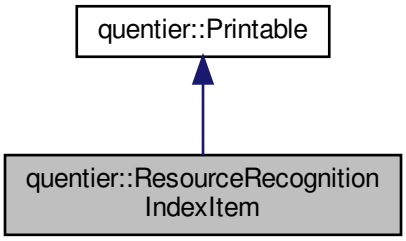
5.58.1.9 updateSequenceNumber()

```
virtual qint32 quentier::Resource::updateSequenceNumber ( ) const  [override], [virtual]
```

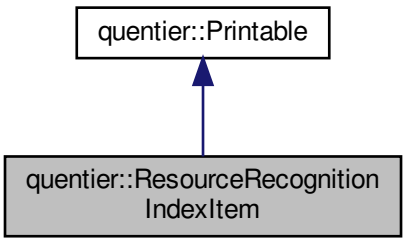
Implements quentier::INoteStoreDataElement.

5.59 quentier::ResourceRecognitionIndexItem Class Reference

Inheritance diagram for quentier::ResourceRecognitionIndexItem:



Collaboration diagram for quentier::ResourceRecognitionIndexItem:



Classes

- struct BarcodeItem
- struct ObjectItem
- struct ShapeItem
- struct TextItem

Public Member Functions

- **ResourceRecognitionIndexItem** (const ResourceRecognitionIndexItem &other)
- ResourceRecognitionIndexItem & **operator=** (const ResourceRecognitionIndexItem &other)
- bool **isValid** () const
- int **x** () const
- void **setX** (const int x)
- int **y** () const

- void **setY** (const int y)
- int **h** () const
- void **setH** (const int h)
- int **w** () const
- void **setW** (const int w)
- int **offset** () const
- void **setOffset** (const int offset)
- int **duration** () const
- void **setDuration** (const int duration)
- QVector< int > **strokeList** () const
- int **numStrokes** () const
- bool **strokeAt** (const int strokeIndex, int &stroke) const
- bool **setStrokeAt** (const int strokeIndex, const int stroke)
- void **setStrokeList** (const QVector< int > &strokeList)
- void **reserveStrokeListSpace** (const int numItems)
- void **addStroke** (const int stroke)
- bool **removeStroke** (const int stroke)
- bool **removeStrokeAt** (const int strokeIndex)
- QVector< TextItem > **textItems** () const
- int **numTextItems** () const
- bool **textItemAt** (const int textItemIndex, TextItem &textItem) const
- bool **setTextItemAt** (const int textItemIndex, const TextItem &textItem)
- void **setTextItems** (const QVector< TextItem > &textItems)
- void **reserveTextItemsSpace** (const int numItems)
- void **addTextItem** (const TextItem &item)
- bool **removeTextItem** (const TextItem &item)
- bool **removeTextItemAt** (const int textItemIndex)
- QVector< ObjectItem > **objectItems** () const
- int **numObjectItems** () const
- bool **objectItemAt** (const int objectItemIndex, ObjectItem &objectItem) const
- bool **setObjectItemAt** (const int objectItemIndex, const ObjectItem &objectItem)
- void **setObjectItems** (const QVector< ObjectItem > &objectItems)
- void **reserveObjectItemsSpace** (const int numItems)
- void **addObjectItem** (const ObjectItem &item)
- bool **removeObjectItem** (const ObjectItem &item)
- bool **removeObjectItemAt** (const int objectItemIndex)
- QVector< ShapeItem > **shapeItems** () const
- int **numShapeItems** () const
- bool **shapeItemAt** (const int shapeItemIndex, ShapeItem &shapeItem) const
- bool **setShapeItemAt** (const int shapeItemIndex, const ShapeItem &shapeItem)
- void **setShapeItems** (const QVector< ShapeItem > &shapeItems)
- void **reserveShapeItemsSpace** (const int numItems)
- void **addShapeItem** (const ShapeItem &item)
- bool **removeShapeItem** (const ShapeItem &item)
- bool **removeShapeItemAt** (const int shapeItemIndex)
- QVector< BarcodeItem > **barcodeItems** () const
- int **numBarcodeItems** () const
- bool **barcodeItemAt** (const int barcodeItemIndex, BarcodeItem &barcodeItem) const
- bool **setBarcodeItemAt** (const int barcodeItemIndex, const BarcodeItem &barcodeItem)
- void **setBarcodeItems** (const QVector< BarcodeItem > &barcodeItems)
- void **reserveBarcodeItemsSpace** (const int numItems)
- void **addBarcodeItem** (const BarcodeItem &item)
- bool **removeBarcodeItem** (const BarcodeItem &item)
- bool **removeBarcodeItemAt** (const int barcodeItemIndex)
- virtual QTextStream & print (QTextStream &strm) const override

Additional Inherited Members

5.59.1 Member Function Documentation

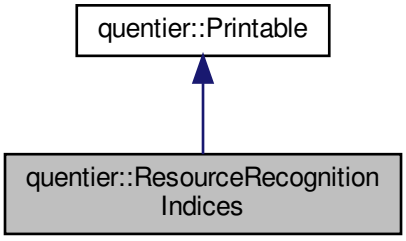
5.59.1.1 print()

```
virtual QTextStream & quentier::ResourceRecognitionIndexItem::print (
            QTextStream & strm ) const  [override], [virtual]
```

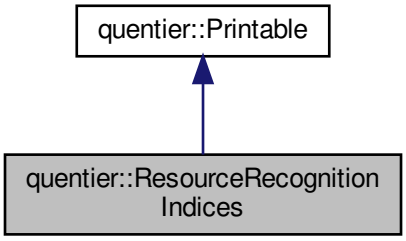
Implements quentier::Printable.

5.60 quentier::ResourceRecognitionIndices Class Reference

Inheritance diagram for quentier::ResourceRecognitionIndices:



Collaboration diagram for quentier::ResourceRecognitionIndices:



Public Member Functions

- **ResourceRecognitionIndices** (const ResourceRecognitionIndices &other)
- **ResourceRecognitionIndices** (const QByteArray &rawRecognitionIndicesData)
- ResourceRecognitionIndices & **operator=** (const ResourceRecognitionIndices &other)
- bool **isNull** () const
- bool **isValid** () const
- QString **objectId** () const
- QString **objectType** () const
- QString **recoType** () const
- QString **engineVersion** () const
- QString **docType** () const
- QString **lang** () const
- int **objectHeight** () const
- int **objectWidth** () const
- QVector< ResourceRecognitionIndexItem > **items** () const
- bool **setData** (const QByteArray &rawRecognitionIndicesData)
- virtual QTextStream & print (QTextStream &strm) const override

Additional Inherited Members

5.60.1 Member Function Documentation

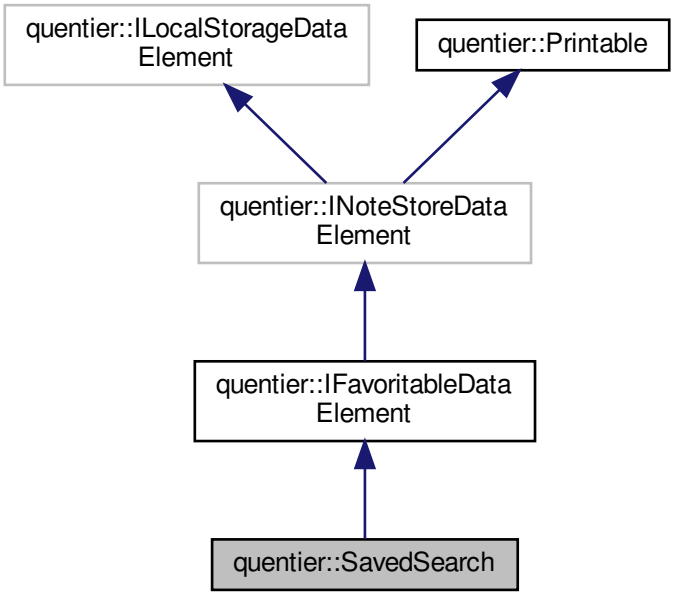
5.60.1.1 print()

```
virtual QTextStream & quentier::ResourceRecognitionIndices::print (
            QTextStream & strm ) const  [override], [virtual]
```

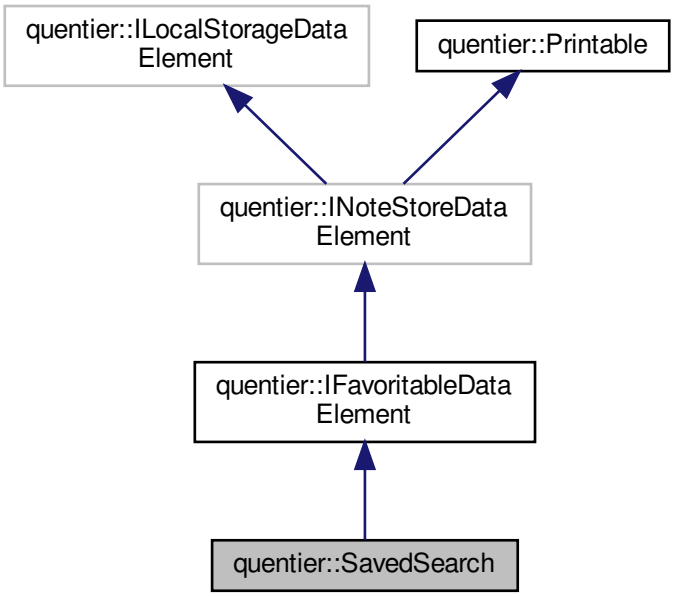
Implements quentier::Printable.

5.61 quentier::SavedSearch Class Reference

Inheritance diagram for quentier::SavedSearch:



Collaboration diagram for quentier::SavedSearch:



Public Types

- using **QueryFormat** = qevercloud::QueryFormat
- using **SavedSearchScope** = qevercloud::SavedSearchScope

Public Member Functions

- **SavedSearch** (const SavedSearch &other)
- **SavedSearch** (SavedSearch &&other)
- SavedSearch & **operator=** (const SavedSearch &other)
- SavedSearch & **operator=** (SavedSearch &&other)
- **SavedSearch** (const qevercloud::SavedSearch &search)
- **SavedSearch** (qevercloud::SavedSearch &&search)
- const qevercloud::SavedSearch & **qevercloudSavedSearch** () const
- qevercloud::SavedSearch & **qevercloudSavedSearch** ()
- bool **operator==** (const SavedSearch &other) const
- bool **operator!=** (const SavedSearch &other) const
- virtual void clear () override
- virtual bool hasGuid () const override
- virtual const QString & guid () const override
- virtual void setGuid (const QString &guid) override
- virtual bool hasUpdateSequenceNumber () const override
- virtual qint32 updateSequenceNumber () const override
- virtual void setUpdateSequenceNumber (const qint32 usn) override
- virtual bool checkParameters (ErrorString &errorDescription) const override

- bool **hasName** () const
- const QString & **name** () const
- void **setName** (const QString &name)
- bool **hasQuery** () const
- const QString & **query** () const
- void **setQuery** (const QString &query)
- bool **hasQueryFormat** () const
- QueryFormat **queryFormat** () const
- void **setQueryFormat** (const qint8 queryFormat)
- bool **hasIncludeAccount** () const
- bool **includeAccount** () const
- void **setIncludeAccount** (const bool includeAccount)
- bool **hasIncludePersonalLinkedNotebooks** () const
- bool **includePersonalLinkedNotebooks** () const
- void **setIncludePersonalLinkedNotebooks** (const bool includePersonalLinkedNotebooks)
- bool **hasIncludeBusinessLinkedNotebooks** () const
- bool **includeBusinessLinkedNotebooks** () const
- void **setIncludeBusinessLinkedNotebooks** (const bool includeBusinessLinkedNotebooks)
- virtual QTextStream & print (QTextStream &strm) const override

Static Public Member Functions

- static bool **validateName** (const QString &name, ErrorString *pErrorDescription=nullptr)

Additional Inherited Members

5.61.1 Member Function Documentation

5.61.1.1 checkParameters()

```
virtual bool quentier::SavedSearch::checkParameters (
            ErrorString & errorDescription ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.61.1.2 clear()

```
virtual void quentier::SavedSearch::clear ( )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.61.1.3 guid()

```
virtual const QString & quentier::SavedSearch::guid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.61.1.4 hasGuid()

```
virtual bool quentier::SavedSearch::hasGuid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.61.1.5 hasUpdateSequenceNumber()

```
virtual bool quentier::SavedSearch::hasUpdateSequenceNumber ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.61.1.6 print()

```
virtual QTextStream & quentier::SavedSearch::print (
            QTextStream & strm ) const  [override], [virtual]
```

Implements quentier::Printable.

5.61.1.7 setGuid()

```
virtual void quentier::SavedSearch::setGuid (
            const QString & guid )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.61.1.8 setUpdateSequenceNumber()

```
virtual void quentier::SavedSearch::setUpdateSequenceNumber (
            const qint32 usn )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.61.1.9 updateSequenceNumber()

```
virtual qint32 quentier::SavedSearch::updateSequenceNumber ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.62 quentier::ResourceRecognitionIndexItem::ShapeItem Struct Reference

Public Member Functions

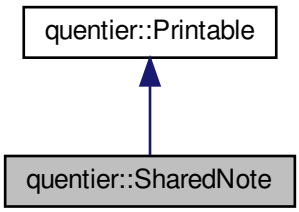
- bool **operator==** (const ShapeItem &other) const

Public Attributes

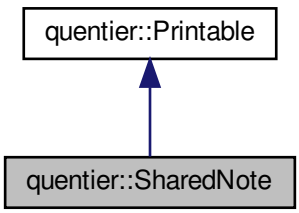
- QString **m_shapeType**
- int **m_weight** = -1

5.63 quentier::SharedNote Class Reference

Inheritance diagram for quentier::SharedNote:



Collaboration diagram for quentier::SharedNote:



Public Types

- using **SharedNotePrivilegeLevel** = qevercloud::SharedNotePrivilegeLevel
- using **ContactType** = qevercloud::ContactType

Public Member Functions

- **SharedNote** (const SharedNote &other)
- **SharedNote** (SharedNote &&other)
- **SharedNote** (const qevercloud::SharedNote &sharedNote)
- SharedNote & **operator=** (const SharedNote &other)
- SharedNote & **operator=** (SharedNote &&other)
- bool **operator==** (const SharedNote &other) const
- bool **operator!=** (const SharedNote &other) const
- const qevercloud::SharedNote & **qevercloudSharedNote** () const
- qevercloud::SharedNote & **qevercloudSharedNote** ()
- const QString & **noteGuid** () const
- void **setNoteGuid** (const QString &noteGuid)
- int **indexInNote** () const
- void **setIndexInNote** (const int index)
- bool **hasSharerUserId** () const
- qint32 **sharerUserId** () const
- void **setSharerUserId** (const qint32 id)
- bool **hasRecipientIdentityId** () const
- qint64 **recipientIdentityId** () const
- void **setRecipientIdentityId** (const qint64 identityId)
- bool **hasRecipientIdentityContactName** () const
- const QString & **recipientIdentityContactName** () const
- void **setRecipientIdentityContactName** (const QString &recipientIdentityContactName)
- bool **hasRecipientIdentityContactId** () const
- const QString & **recipientIdentityContactId** () const
- void **setRecipientIdentityContactId** (const QString &recipientIdentityContactId)
- bool **hasRecipientIdentityContactType** () const
- ContactType **recipientIdentityContactType** () const
- void **setRecipientIdentityContactType** (const ContactType recipientIdentityContactType)
- void **setRecipientIdentityContactType** (const qint32 recipientIdentityContactType)
- bool **hasRecipientIdentityContactPhotoUrl** () const
- const QString & **recipientIdentityContactPhotoUrl** () const
- void **setRecipientIdentityContactPhotoUrl** (const QString &recipientIdentityPhotoUrl)
- bool **hasRecipientIdentityContactPhotoLastUpdated** () const
- qint64 **recipientIdentityContactPhotoLastUpdated** () const
- void **setRecipientIdentityContactPhotoLastUpdated** (const qint64 recipientIdentityPhotoLastUpdated)
- bool **hasRecipientIdentityContactMessagingPermit** () const
- const QByteArray & **recipientIdentityContactMessagingPermit** () const
- void **setRecipientIdentityContactMessagingPermit** (const QByteArray &messagingPermit)
- bool **hasRecipientIdentityContactMessagingPermitExpires** () const
- qint64 **recipientIdentityContactMessagingPermitExpires** () const
- void **setRecipientIdentityContactMessagingPermitExpires** (const qint64 timestamp)
- bool **hasRecipientIdentityUserId** () const
- qint32 **recipientIdentityUserId** () const
- void **setRecipientIdentityUserId** (const qint32 userId)
- bool **hasRecipientIdentityDeactivated** () const
- bool **recipientIdentityDeactivated** () const
- void **setRecipientIdentityDeactivated** (const bool deactivated)

- bool **hasRecipientIdentitySameBusiness** () const
- bool **recipientIdentitySameBusiness** () const
- void **setRecipientIdentitySameBusiness** (const bool sameBusiness)
- bool **hasRecipientIdentityBlocked** () const
- bool **recipientIdentityBlocked** () const
- void **setRecipientIdentityBlocked** (const bool blocked)
- bool **hasRecipientIdentityUserConnected** () const
- bool **recipientIdentityUserConnected** () const
- void **setRecipientIdentityUserConnected** (const bool userConnected)
- bool **hasRecipientIdentityEventId** () const
- qint64 **recipientIdentityEventId** () const
- void **setRecipientIdentityEventId** (const qint64 eventId)
- bool **hasRecipientIdentity** () const
- const qevercloud::Identity & **recipientIdentity** () const
- void **setRecipientIdentity** (qevercloud::Identity &&identity)
- bool **hasPrivilegeLevel** () const
- SharedNotePrivilegeLevel **privilegeLevel** () const
- void **setPrivilegeLevel** (const SharedNotePrivilegeLevel level)
- void **setPrivilegeLevel** (const qint8 level)
- bool **hasCreationTimestamp** () const
- qint64 **creationTimestamp** () const
- void **setCreationTimestamp** (const qint64 timestamp)
- bool **hasModificationTimestamp** () const
- qint64 **modificationTimestamp** () const
- void **setModificationTimestamp** (const qint64 timestamp)
- bool **hasAssignmentTimestamp** () const
- qint64 **assignmentTimestamp** () const
- void **setAssignmentTimestamp** (const qint64 timestamp)
- virtual QTextStream & print (QTextStream &strm) const override

Additional Inherited Members

5.63.1 Member Function Documentation

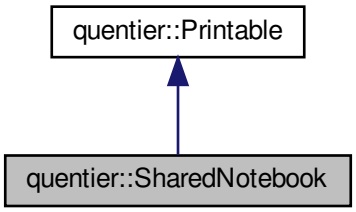
5.63.1.1 print()

```
virtual QTextStream & quentier::SharedNote::print (
            QTextStream & strm ) const  [override], [virtual]
```

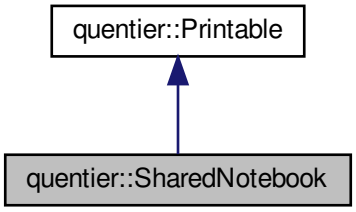
Implements quentier::Printable.

5.64 quentier::SharedNotebook Class Reference

Inheritance diagram for quentier::SharedNotebook:



Collaboration diagram for quentier::SharedNotebook:



Public Types

- using **SharedNotebookPrivilegeLevel** = qevercloud::SharedNotebookPrivilegeLevel

Public Member Functions

- **SharedNotebook** (const SharedNotebook &other)
- **SharedNotebook** (SharedNotebook &&other)
- **SharedNotebook** (const qevercloud::SharedNotebook &qecSharedNotebook)
- SharedNotebook & **operator=** (const SharedNotebook &other)
- SharedNotebook & **operator=** (SharedNotebook &&other)
- bool **operator==** (const SharedNotebook &other) const
- bool **operator!=** (const SharedNotebook &other) const
- const qevercloud::SharedNotebook & **qevercloudSharedNotebook** () const
- qevercloud::SharedNotebook & **qevercloudSharedNotebook** ()
- int **indexInNotebook** () const
- void **setIndexInNotebook** (const int index)

- bool **hasId** () const
- qint64 **id** () const
- void **setId** (const qint64 id)
- bool **hasUserId** () const
- qint32 **userId** () const
- void **setUserId** (const qint32 userId)
- bool **hasNotebookGuid** () const
- const QString & **notebookGuid** () const
- void **setNotebookGuid** (const QString &notebookGuid)
- bool **hasEmail** () const
- const QString & **email** () const
- void **setEmail** (const QString &email)
- bool **hasCreationTimestamp** () const
- qint64 **creationTimestamp** () const
- void **setCreationTimestamp** (const qint64 timestamp)
- bool **hasModificationTimestamp** () const
- qint64 **modificationTimestamp** () const
- void **setModificationTimestamp** (const qint64 timestamp)
- bool **hasUsername** () const
- const QString & **username** () const
- void **setUsername** (const QString &username)
- bool **hasPrivilegeLevel** () const
- SharedNotebookPrivilegeLevel **privilegeLevel** () const
- void **setPrivilegeLevel** (const SharedNotebookPrivilegeLevel privilegeLevel)
- void **setPrivilegeLevel** (const qint8 privilegeLevel)
- bool **hasReminderNotifyEmail** () const
- bool **reminderNotifyEmail** () const
- void **setReminderNotifyEmail** (const bool notifyEmail)
- bool **hasReminderNotifyApp** () const
- bool **reminderNotifyApp** () const
- void **setReminderNotifyApp** (const bool notifyApp)
- bool **hasRecipientUsername** () const
- const QString & **recipientUsername** () const
- void **setRecipientUsername** (const QString &recipientUsername)
- bool **hasRecipientUserId** () const
- qint32 **recipientUserId** () const
- void **setRecipientUserId** (const qint32 userId)
- bool **hasRecipientIdentityId** () const
- qint64 **recipientIdentityId** () const
- void **setRecipientIdentityId** (const qint64 recipientIdentityId)
- bool **hasGlobalId** () const
- const QString & **globalId** () const
- void **setGlobalId** (const QString &globalId)
- bool **hasSharerUserId** () const
- qint32 **sharerUserId** () const
- void **setSharerUserId** (qint32 sharerUserId)
- bool **hasAssignmentTimestamp** () const
- qint64 **assignmentTimestamp** () const
- void **setAssignmentTimestamp** (const qint64 timestamp)
- virtual QTextStream & print (QTextStream &strm) const override

Friends

- class **Notebook**

Additional Inherited Members

5.64.1 Member Function Documentation

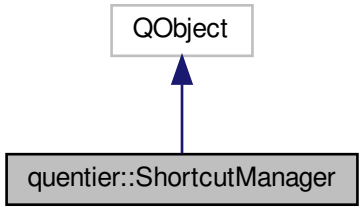
5.64.1.1 print()

```
virtual QTextStream & quentier::SharedNotebook::print (
            QTextStream & strm ) const  [override], [virtual]
```

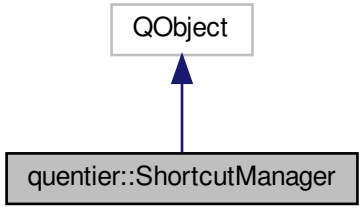
Implements quentier::Printable.

5.65 quentier::ShortcutManager Class Reference

Inheritance diagram for quentier::ShortcutManager:



Collaboration diagram for quentier::ShortcutManager:



Public Types

- enum **QuentierShortcutKey** {
  NewNote = 5000 , **NewTag** , **NewNotebook** , **NewSavedSearch** ,
  AddAttachment , **SaveAttachment** , **OpenAttachment** , **CopyAttachment** ,
  CutAttachment , **RemoveAttachment** , **RenameAttachment** , **AddAccount** ,
  ExitAccount , **SwitchAccount** , **AccountInfo** , **NoteSearch** ,
  NewNoteSearch , **ShowNotes** , **ShowNotebooks** , **ShowTags** ,
  ShowSavedSearches , **ShowDeletedNotes** , **ShowStatusBar** , **ShowToolBar** ,
  PasteUnformatted , **Font** , **UpperIndex** , **LowerIndex** ,
  AlignLeft , **AlignCenter** , **AlignRight** , **AlignFull** ,
  IncreaseIndentation , **DecreaseIndentation** , **IncreaseFontSize** , **DecreaseFontSize** ,
  InsertNumberedList , **InsertBulletedList** , **Strikethrough** , **Highlight** ,
  InsertTable , **InsertRow** , **InsertColumn** , **RemoveRow** ,
  RemoveColumn , **InsertHorizontalLine** , **InsertToDoTag** , **EditHyperlink** ,
  CopyHyperlink , **RemoveHyperlink** , **Encrypt** , **Decrypt** ,
  DecryptPermanently , **BackupLocalStorage** , **RestoreLocalStorage** , **UpgradeLocalStorage** ,
  LocalStorageStatus , **SpellCheck** , **SpellCheckIgnoreWord** , **SpellCheckAddWordToUserDictionary** ,
  SaveImage , **AnnotateImage** , **ImageRotateClockwise** , **ImageRotateCounterClockwise** ,
  Synchronize , **FullSync** , **ImportFolders** , **Preferences** ,
  ReleaseNotes , **ViewLogs** , **About** , **UnknownKey** = 100000 }

Public Slots

- void **setUserShortcut** (int key, QKeySequence shortcut, const Account &account, QString context={})
- void **setNonStandardUserShortcut** (QString nonStandardKey, QKeySequence shortcut, const Account &account, QString context={})
- void **setDefaultShortcut** (int key, QKeySequence shortcut, const Account &account, QString context={})
- void **setNonStandardDefaultShortcut** (QString nonStandardKey, QKeySequence shortcut, const Account &account, QString context={})

Signals

- void **shortcutChanged** (int key, QKeySequence shortcut, const Account &account, QString context)
- void **nonStandardShortcutChanged** (QString nonStandardKey, QKeySequence shortcut, const Account &account, QString context)

Public Member Functions

- **ShortcutManager** (QObject *parent=nullptr)
- QKeySequence shortcut (const int key, const Account &account, const QString &context={}) const
- QKeySequence shortcut (const QString &nonStandardKey, const Account &account, const QString &context={}) const
- QKeySequence defaultShortcut (const int key, const Account &account, const QString &context={}) const
- QKeySequence defaultShortcut (const QString &nonStandardKey, const Account &account, const QString &context={}) const
- QKeySequence userShortcut (const int key, const Account &account, const QString &context={}) const
- QKeySequence userShortcut (const QString &nonStandardKey, const Account &account, const QString &context={}) const

5.65.1 Member Function Documentation

5.65.1.1 defaultShortcut() [1/2]

```
QKeySequence quentier::ShortcutManager::defaultShortcut (
            const int key,
            const Account & account,
            const QString & context = {} ) const
```

Returns

Default shortcut for the standard key if present, otherwise empty key sequence

5.65.1.2 defaultShortcut() [2/2]

```
QKeySequence quentier::ShortcutManager::defaultShortcut (
            const QString & nonStandardKey,
            const Account & account,
            const QString & context = {} ) const
```

Returns

Default shortcut for the non-standard key if present, otherwise empty key sequence

5.65.1.3 shortcut() [1/2]

```
QKeySequence quentier::ShortcutManager::shortcut (
            const int key,
            const Account & account,
            const QString & context = {} ) const
```

Returns

Active shortcut for the standard key - either the user defined shortcut (if present) or the default one (if present as well)

5.65.1.4 shortcut() [2/2]

```
QKeySequence quentier::ShortcutManager::shortcut (
            const QString & nonStandardKey,
            const Account & account,
            const QString & context = {} ) const
```

Returns

Active shortcut for the non-standard key - either the user defined shortcut (if present) or the default one (if present as well)

5.65.1.5 userShortcut() [1/2]

```
QKeySequence quentier::ShortcutManager::userShortcut (
            const int key,
            const Account & account,
            const QString & context = {} ) const
```

Returns

User defined shortcut for the standard key if present, otherwise empty key sequence

5.65.1.6 userShortcut() [2/2]

```
QKeySequence quentier::ShortcutManager::userShortcut (
            const QString & nonStandardKey,
            const Account & account,
            const QString & context = {} ) const
```

Returns

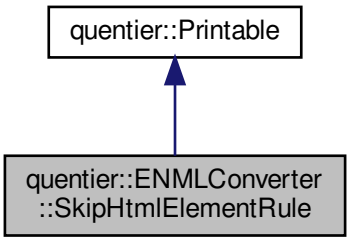
User defined shortcut for the non-standard key if present, otherwise empty key sequence

5.66 quentier::ENMLConverter::SkipHtmlElementRule Class Reference

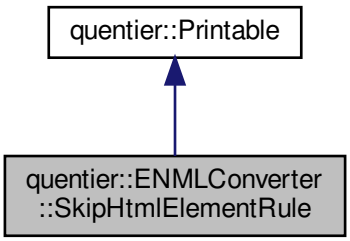
The SkipHtmlElementRule class describes the set of rules for HTML -> ENML conversion about the HTML elements that should not be actually converted to ENML due to their nature of being "helper" elements for the display or functioning of something within the note editor's page. The HTML -> ENML conversion would ignore tags and attributes forbidden by ENML even without these rules conditionally preserving or skipping the contents and nested elements of skipped elements.

```
#include <ENMLConverter.h>
```

Inheritance diagram for quentier::ENMLConverter::SkipHtmlElementRule:



Collaboration diagram for quentier::ENMLConverter::SkipHtmlElementRule:



Public Types

- enum class **ComparisonRule** { **Equals** = 0 , **StartsWith** , **EndsWith** , **Contains** }

Public Member Functions

- virtual QTextStream & print (QTextStream &strm) const override

Public Attributes

- QString **m_elementNameToSkip**
- ComparisonRule **m_elementNameComparisonRule** = ComparisonRule::Equals
- Qt::CaseSensitivity **m_elementNameCaseSensitivity** = Qt::CaseSensitive
- QString **m_attributeNameToSkip**
- ComparisonRule **m_attributeNameComparisonRule** = ComparisonRule::Equals
- Qt::CaseSensitivity **m_attributeNameCaseSensitivity** = Qt::CaseSensitive
- QString **m_attributeValueToSkip**
- ComparisonRule **m_attributeValueComparisonRule** = ComparisonRule::Equals
- Qt::CaseSensitivity **m_attributeValueCaseSensitivity** = Qt::CaseSensitive
- bool **m_includeElementContents** = false

Friends

- QUENTIER_EXPORT QTextStream & **operator**<< (QTextStream &strm, const ComparisonRule rule)

Additional Inherited Members

5.66.1 Detailed Description

The SkipHtmlElementRule class describes the set of rules for HTML -> ENML conversion about the HTML elements that should not be actually converted to ENML due to their nature of being "helper" elements for the display or functioning of something within the note editor's page. The HTML -> ENML conversion would ignore tags and attributes forbidden by ENML even without these rules conditionally preserving or skipping the contents and nested elements of skipped elements.

5.66.2 Member Function Documentation

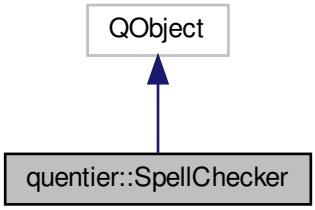
5.66.2.1 print()

```
virtual QTextStream & quentier::ENMLConverter::SkipHtmlElementRule::print (
            QTextStream & strm ) const  [override], [virtual]
```

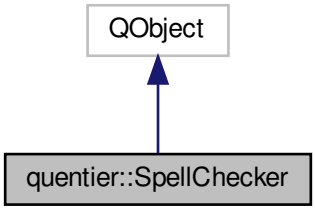
Implements quentier::Printable.

5.67 quentier::SpellChecker Class Reference

Inheritance diagram for quentier::SpellChecker:



Collaboration diagram for quentier::SpellChecker:



Signals

- void **ready** ()

Public Member Functions

- **SpellChecker** (FileIOProcessorAsync *pFileIOProcessorAsync, const Account &account, QObject *parent=nullptr, const QString &userDictionaryPath={})
- QVector< std::pair< QString, bool > > **listAvailableDictionaries** () const
- void **setAccount** (const Account &account)
- void **enableDictionary** (const QString &language)
- void **disableDictionary** (const QString &language)
- bool **checkSpell** (const QString &word) const
- QStringList **spellCorrectionSuggestions** (const QString &misSpelledWord) const
- void **addToUserWordlist** (const QString &word)
- void **removeFromUserWordList** (const QString &word)
- void **ignoreWord** (const QString &word)
- void **removeWord** (const QString &word)
- bool **isReady** () const

5.68 quentier::StringUtils::StringFilterPredicate Struct Reference

Public Member Functions

- **StringFilterPredicate** (QSet< QString > &filteredStrings)
- bool **operator()** (const QString &str) const

Public Attributes

- QSet< QString > & **m_filteredStrings**

5.69 quentier::StringUtils Class Reference

Classes

- struct StringFilterPredicate

Public Member Functions

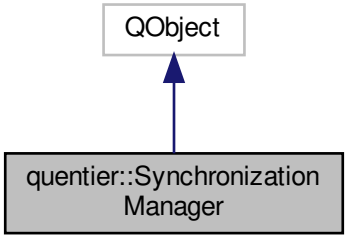
- void **removePunctuation** (QString &str, const QVector< QChar > &charactersToPreserve={}) const
- void **removeDiacritics** (QString &str) const
- void **removeNewlines** (QString &str) const

5.70 quentier::SynchronizationManager Class Reference

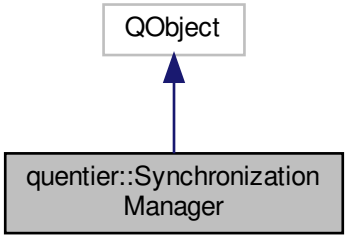
The SynchronizationManager class encapsulates methods and signals & slots required to perform the full or partial synchronization of data with remote Evernote servers. The class also deals with authentication with Evernote service through OAuth.

`#include <SynchronizationManager.h>`

Inheritance diagram for quentier::SynchronizationManager:



Collaboration diagram for quentier::SynchronizationManager:



Public Slots

- void setAccount (Account account)
- void authenticate ()
- void authenticateCurrentAccount ()
- void synchronize ()
- void stop ()
- void revokeAuthentication (const qevercloud::UserID userId)
- void setDownloadNoteThumbnails (bool flag)
- void setDownloadInkNoteImages (bool flag)
- void setInkNoteImagesStoragePath (QString path)

Signals

- void started ()
- void stopped ()
- void failed (ErrorString errorDescription)
- void finished (Account account, bool somethingDownloaded, bool somethingSent)
- void authenticationRevoked (bool success, ErrorString errorDescription, qevercloud::UserID userId)
- void authenticationFinished (bool success, ErrorString errorDescription, Account account)
- void remoteToLocalSyncStopped ()
- void sendLocalChangesStopped ()
- void willRepeatRemoteToLocalSyncAfterSendingChanges ()
- void detectedConflictDuringLocalChangesSending ()
- void rateLimitExceeded (qint32 secondsToWait)
- void remoteToLocalSyncDone (bool somethingDownloaded)
- void syncChunksDownloadProgress (qint32 highestDownloadedUsn, qint32 highestServerUsn, qint32 last↩ PreviousUsn)
- void syncChunksDownloaded ()
- void syncChunksDataProcessingProgress (ISyncChunksDataCountersPtr counters)
- void linkedNotebookSyncChunksDownloadProgress (qint32 highestDownloadedUsn, qint32 highestServer↩ Usn, qint32 lastPreviousUsn, LinkedNotebook linkedNotebook)
- void linkedNotebooksSyncChunksDownloaded ()
- void linkedNotebookSyncChunksDataProcessingProgress (ISyncChunksDataCountersPtr counters)
- void notesDownloadProgress (quint32 notesDownloaded, quint32 totalNotesToDownload)
- void linkedNotebooksNotesDownloadProgress (quint32 notesDownloaded, quint32 totalNotesToDownload)
- void resourcesDownloadProgress (quint32 resourcesDownloaded, quint32 totalResourcesToDownload)
- void linkedNotebooksResourcesDownloadProgress (quint32 resourcesDownloaded, quint32 total↩ ResourcesToDownload)
- void preparedDirtyObjectsForSending ()
- void preparedLinkedNotebooksDirtyObjectsForSending ()
- void setAccountDone (Account account)
- void setDownloadNoteThumbnailsDone (bool flag)
- void setDownloadInkNoteImagesDone (bool flag)
- void setInkNoteImagesStoragePathDone (QString path)

Public Member Functions

- SynchronizationManager (QString host, LocalStorageManagerAsync &localStorageManagerAsync, IAuthenticationManager &authenticationManager, QObject *parent=nullptr, INoteStorePtr pNoteStore={}, IUserStorePtr pUserStore={}, IKeychainServicePtr pKeychainService={}, ISyncStateStoragePtr pSync↩ StateStorage={})
- bool active () const
- bool downloadNoteThumbnailsOption () const

5.70.1 Detailed Description

The SynchronizationManager class encapsulates methods and signals & slots required to perform the full or partial synchronization of data with remote Evernote servers. The class also deals with authentication with Evernote service through OAuth.

5.70.2 Constructor & Destructor Documentation

5.70.2.1 SynchronizationManager()

```
quentier::SynchronizationManager::SynchronizationManager (
            QString host,
            LocalStorageManagerAsync & localStorageManagerAsync,
            IAuthenticationManager & authenticationManager,
            QObject * parent = nullptr,
            INoteStorePtr pNoteStore = {},
            IUserStorePtr pUserStore = {},
            IKeychainServicePtr pKeychainService = {},
            ISyncStateStoragePtr pSyncStateStorage = {} )
```

Parameters

host	The host to use for the connection with the Evernote service - typically www.evernote.com but could also be sandbox.evernote.com or some other one
localStorageManagerAsync	Local storage manager
authenticationManager	Reference to an object implementing IAuthenticationManager interface; SynchronizationManager does not store this reference, it only connects to the object via signals and slots during construction
pNoteStore	Pointer to an object implementing INoteStore interface; if nullptr, SynchronizatrionManager would create and use its own instance; otherwise SynchronizationManager would set itself as the parent of the passed in object
pUserStore	Pointer to an object implementing IUserStore interface; if nullptr, SynchronizationManager would create and use its own instance
pKeychainService	Pointer to an object implementing IKeychainService interface; if nullptr, SynchronizationManager would create and use its own default instance; otherwise SynchronizationManager would set itself as the parent of the passed in object
pSyncStateStorage	Pointer to an object implementing ISyncStateStorage interface; if nullptr, SynchronizationManager would create and use its own instance; otherwise SynchronizationManager would set itself as the parent of the passed in object

5.70.3 Member Function Documentation

5.70.3.1 active()

```
bool quentier::SynchronizationManager::active ( ) const
```

Returns

True if the synchronization is being performed at the moment, false otherwise

5.70.3.2 authenticate

```
void quentier::SynchronizationManager::authenticate ( )  [slot]
```

Use this slot to authenticate the new user to do the synchronization with the Evernote service via the client app. The invocation of this slot would respond asynchronously with authenticationFinished signal but won't start the synchronization.

Note that this slot would always proceed to the actual OAuth.

5.70.3.3 authenticateCurrentAccount

```
void quentier::SynchronizationManager::authenticateCurrentAccount ( )  [slot]
```

Use this slot to authenticate the current account to do the synchronization with the Evernote service via the client app. The invocation of this slot would respond asynchronously with authenticationFinished signal but won't start the synchronization

If no account was set to SynchronizationManager prior to this slot invocation, it would proceed to OAuth. Otherwise SynchronizationManager would first check whether the persistent authentication data is in place and actual. If yes, no OAuth would be performed.

5.70.3.4 authenticationFinished

```
void quentier::SynchronizationManager::authenticationFinished (
            bool success,
            ErrorString errorDescription,
            Account account )  [signal]
```

This signal is emitted in response to the explicit attempt to authenticate the new user of the client app to the Evernote service. NOTE: this signal is not emitted if the authentication was requested automatically during sync attempt, it is only emitted in response to the explicit invokation of authenticate slot.

Parameters

success	True if the authentication was successful, false otherwise
errorDescription	The textual explanation of the failure to authenticate the new user
account	The account of the authenticated user

5.70.3.5 authenticationRevoked

```
void quentier::SynchronizationManager::authenticationRevoked (
            bool success,
            ErrorString errorDescription,
            qevercloud::UserID userId )  [signal]
```

This signal is emitted in response to the attempt to revoke the authentication for a given user ID

Parameters

success	True if the authentication was revoked successfully, false otherwise
errorDescription	The textual explanation of the failure to revoke the authentication
userId	The ID of the user for which the revoke of the authentication was requested

5.70.3.6 detectedConflictDuringLocalChangesSending

```
void quentier::SynchronizationManager::detectedConflictDuringLocalChangesSending ( )  [signal]
```

This signal is emitted if during the "send local changes" synchronization step it was found out that new changes from the Evernote service are available AND some of them conflict with the local changes being sent.

Such situation can rarely happen in case of changes introduced concurrently with the running synchronization - perhaps via another client. The algorithm will handle it by repeating the "remote to local" incremental synchronization step, the signal is just for the sake of diagnostic.

5.70.3.7 downloadNoteThumbnailsOption()

```
bool quentier::SynchronizationManager::downloadNoteThumbnailsOption ( ) const
```

Returns

True or false depending on the option to download the thumbnails for notes containing resources during sync; by default no thumbnails are downloaded

5.70.3.8 failed

```
void quentier::SynchronizationManager::failed (
            ErrorString errorDescription )  [signal]
```

This signal is emitted when the synchronization fails; at this moment there is no error code explaining the reason of the failure programmatically so the only explanation available is the textual one for the end user

5.70.3.9 finished

```
void quentier::SynchronizationManager::finished (
            Account account,
            bool somethingDownloaded,
            bool somethingSent )  [signal]
```

This signal is emitted when the synchronization is finished

Parameters

account	Represents the latest version of Account structure filled during the synchronization procedure
somethingDownloaded	Boolean parameter telling the receiver whether any data items were actually downloaded during remote to local synchronization step; if there was nothing to sync up from the remote storage, this boolean would be false, otherwise it would be true
somethingSent	Boolean parameter telling the receiver whether any data items were actually sent during the send local changes synchronization step; if there was nothing to send to the remote storage, this boolean would be false, otherwise it would be true

5.70.3.10 linkedNotebooksNotesDownloadProgress

```
void quentier::SynchronizationManager::linkedNotebooksNotesDownloadProgress (
            quint32 notesDownloaded,
            quint32 totalNotesToDownload )  [signal]
```

This signal is emitted on each successful download of full note data from linked notebooks.

Parameters

notesDownloaded	The number of notes downloaded by the moment
totalNotesToDownload	The total number of notes that need to be downloaded

5.70.3.11 linkedNotebooksResourcesDownloadProgress

```
void quentier::SynchronizationManager::linkedNotebooksResourcesDownloadProgress (
            quint32 resourcesDownloaded,
            quint32 totalResourcesToDownload )  [signal]
```

This signal is emitted on each successful download of full resource data from linked notebooks during the incremental sync (as individual resources are downloaded along with their notes during full sync).

Parameters

resourcesDownloaded	The number of resources downloaded by the moment
totalResourcesToDownload	The total number of resources that need to be downloaded

5.70.3.12 linkedNotebooksSyncChunksDownloaded

```
void quentier::SynchronizationManager::linkedNotebooksSyncChunksDownloaded ( )  [signal]
```

This signal is emitted when the sync chunks for the stuff from linked notebooks are downloaded during "remote to local" synchronization step

5.70.3.13 linkedNotebookSyncChunksDataProcessingProgress

```
void quentier::SynchronizationManager::linkedNotebookSyncChunksDataProcessingProgress (
            ISyncChunksDataCountersPtr counters )  [signal]
```

This signal is emitted during linked notebooks' downloaded sync chunks contents processing and denotes the progress on that step.

5.70.3.14 linkedNotebookSyncChunksDownloadProgress

```
void quentier::SynchronizationManager::linkedNotebookSyncChunksDownloadProgress (
            qint32 highestDownloadedUsn,
            qint32 highestServerUsn,
            qint32 lastPreviousUsn,
            LinkedNotebook linkedNotebook )  [signal]
```

This signal is emitted during linked notebooks sync chunks downloading and denotes the progress of that step, individually for each linked notebook. The percentage of completeness can be computed roughly as (highest↩ DownloadedUsn - lastPreviousUsn) / (highestServerUsn - lastPreviousUsn) ∗ 100%. The sync chunks for each linked notebook are downloaded sequentially so the signals for one linked notebook should not intermix with signals for other linked notebooks, however, it is within hands of Qt's slot schedulers

Parameters

highestDownloadedUsn	The highest update sequence number within data items from linked notebook sync chunks downloaded so far
highestServerUsn	The current highest update sequence number within the linked notebook
lastPreviousUsn	The last update sequence number from previous sync of the given linked notebook; if current sync is the first one, this value is zero
linkedNotebook	The linked notebook which sync chunks download progress is reported

5.70.3.15 notesDownloadProgress

```
void quentier::SynchronizationManager::notesDownloadProgress (
            quint32 notesDownloaded,
            quint32 totalNotesToDownload )  [signal]
```

This signal is emitted on each successful download of full note data from use 's own account.

Parameters

notesDownloaded	The number of notes downloaded by the moment
totalNotesToDownload	The total number of notes that need to be downloaded

5.70.3.16 preparedDirtyObjectsForSending

```
void quentier::SynchronizationManager::preparedDirtyObjectsForSending ( )  [signal]
```

This signal is emitted during "send local changes" synchronization step when all the relevant data elements from user's own account were prepared for sending to the Evernote service

5.70.3.17 preparedLinkedNotebooksDirtyObjectsForSending

```
void quentier::SynchronizationManager::preparedLinkedNotebooksDirtyObjectsForSending ( )  [signal]
```

This signal is emitted during "send local changes" synchronization step when all the relevant data elements from linked notebooks were prepared for sending to the Evernote service

5.70.3.18 rateLimitExceeded

```
void quentier::SynchronizationManager::rateLimitExceeded (
            qint32 secondsToWait )  [signal]
```

This signal is emitted when the Evernote API rate limit is breached during the synchronization; the algorithm will handle it by auto-pausing itself until the time necessary to wait passes and then automatically continuing the synchronization.

Parameters

secondsToWait	The amount of time (in seconds) necessary to wait before the synchronization will continue

5.70.3.19 remoteToLocalSyncDone

```
void quentier::SynchronizationManager::remoteToLocalSyncDone (
            bool somethingDownloaded )  [signal]
```

This signal is emitted when the "remote to local" synchronization step is finished; once that step is done, the algorithn switches to sending the local changes back to the Evernote service.

Parameters

somethingDownloaded	Boolean parameter telling the receiver whether any data items were actually downloaded during remote to local synchronization step; if there was nothing to sync up from the remote storage, this boolean would be false, otherwise it would be true

5.70.3.20 remoteToLocalSyncStopped

```
void quentier::SynchronizationManager::remoteToLocalSyncStopped ( )  [signal]
```

This signal is emitted when the "remote to local" synchronization step is stopped

5.70.3.21 resourcesDownloadProgress

```
void quentier::SynchronizationManager::resourcesDownloadProgress (
            quint32 resourcesDownloaded,
            quint32 totalResourcesToDownload )  [signal]
```

This signal is emitted on each successful doenload of full resource data from user's own account during the incremental sync (as individual resources are downloaded along with their notes during full sync).

Parameters

resourcesDownloaded	The number of resources downloaded by the moment
totalResourcesToDownload	The total number of resources that need to be downloaded

5.70.3.22 revokeAuthentication

```
void quentier::SynchronizationManager::revokeAuthentication (
            const qevercloud::UserID userId )  [slot]
```

Use this slot to remove any previously cached authentication tokens (and shard ids) for a given user ID. After the call of this method the next attempt to synchronize the data for this user ID would cause the launch of OAuth to get the new authentication token

5.70.3.23 sendLocalChangesStopped

```
void quentier::SynchronizationManager::sendLocalChangesStopped ( )  [signal]
```

This signal is emitted when the "send local changes" synchronization step is stopped

5.70.3.24 setAccount

```
void quentier::SynchronizationManager::setAccount (
            Account account )  [slot]
```

Use this slot to set the current account for the synchronization manager. If the slot is called during the synchronization running, it would stop, any internal caches belonging to previously selected account (if any) would be purged (but persistent settings like the authentication token saved in the system keychain would remain). Setting the current account won't automatically start the synchronization for it, use synchronize slot for this.

The attempt to set the current account of "Local" type would just clean up the synchronization manager as if it was just created

After the method finishes its job, setAccountDone signal is emitted

5.70.3.25 setAccountDone

```
void quentier::SynchronizationManager::setAccountDone (
            Account account )  [signal]
```

This signal is emitted in response to invoking the setAccount slot after all the activities involved in switching the account inside SynchronizationManager are finished

5.70.3.26 setDownloadInkNoteImages

```
void quentier::SynchronizationManager::setDownloadInkNoteImages (
            bool flag )  [slot]
```

Use this slot to switch the option whether the synchronization of notes would download the plain images corresponding to ink notes or not. By default the downloading of ink note images is disabled.

After the method finishes its job, setDownloadInkNoteImagesDone signal is emitted

5.70.3.27 setDownloadInkNoteImagesDone

```
void quentier::SynchronizationManager::setDownloadInkNoteImagesDone (
            bool flag )  [signal]
```

This signal is emitted in response to invoking the setDownloadInkNoteImages slot after the setting is accepted

5.70.3.28 setDownloadNoteThumbnails

```
void quentier::SynchronizationManager::setDownloadNoteThumbnails (
            bool flag )  [slot]
```

Use this slot to switch the option whether the synchronization of notes would download the note thumbnails or not. By default the downloading of thumbnails for notes containing resources is disabled.

NOTE: even if thumbnails downloading is enabled, the thumbnails would be downloaded during sync only for notes containing resources

After the method finishes its job, setDownloadNoteThumbnailsDone signal is emitted

5.70.3.29 setDownloadNoteThumbnailsDone

```
void quentier::SynchronizationManager::setDownloadNoteThumbnailsDone (
            bool flag )  [signal]
```

This signal is emitted in response to invoking the setDownloadNoteThumbnails slot after the setting is accepted

5.70.3.30 setInkNoteImagesStoragePath

```
void quentier::SynchronizationManager::setInkNoteImagesStoragePath (
            QString path )  [slot]
```

Use this slot to specify the path to folder at which the downloaded ink note images should be stored. Each ink note image would be stored in a separate PNG file which name would be the same as the guid of the corresponding resource and the file extension would be PNG

The default storage path would be the folder "inkNoteImages" within the folder returned by applicationPersistent↩ StoragePath function found in quentier/StandardPaths.h header

WARNING: if the passed in path cannot be used (either it doesn't exist and cannot be created or exists but is not writable), the default path is silently restored. So make sure you're setting a valid path

After the method finishes its job, setInkNoteImagesStoragePathDone signal is emitted

5.70.3.31 setInkNoteImagesStoragePathDone

```
void quentier::SynchronizationManager::setInkNoteImagesStoragePathDone (
            QString path )  [signal]
```

This signal is emitted in response to invoking the setInkNoteImagesStoragePath slot after the setting is accepted

5.70.3.32 started

```
void quentier::SynchronizationManager::started ( )  [signal]
```

This signal is emitted when the synchronization is started (authentication is not considered a part of synchronization so this signal is only emitted when the authentication is completed)

5.70.3.33 stop

```
void quentier::SynchronizationManager::stop ( )  [slot]
```

Use this slot to stop the running synchronization; if no synchronization is running by the moment of this slot call, it has no effect

5.70.3.34 stopped

```
void quentier::SynchronizationManager::stopped ( )  [signal]
```

This signal is emitted in response to invoking the stop slot, whether it was invoked manually or from within the SynchronizationManager itself (due to sync failure, for example)

5.70.3.35 syncChunksDataProcessingProgress

```
void quentier::SynchronizationManager::syncChunksDataProcessingProgress (
            ISyncChunksDataCountersPtr counters )  [signal]
```

This signal is emitted during user own account's downloaded sync chunks contents processing and denotes the progress on that step.

5.70.3.36 syncChunksDownloaded

```
void quentier::SynchronizationManager::syncChunksDownloaded ( )  [signal]
```

This signal is emitted when the sync chunks for the stuff from user's own account are downloaded during "remote to local" synchronization step

5.70.3.37 syncChunksDownloadProgress

```
void quentier::SynchronizationManager::syncChunksDownloadProgress (
            qint32 highestDownloadedUsn,
            qint32 highestServerUsn,
            qint32 lastPreviousUsn )  [signal]
```

This signal is emitted during user own account's sync chunks downloading and denotes the progress of that step. The percentage of completeness can be computed roughly as (highestDownloadedUsn - lastPreviousUsn) / (highestServerUsn - lastPreviousUsn) $*$ 100%

Parameters

highestDownloadedUsn	The highest update sequence number within data items from sync chunks downloaded so far
highestServerUsn	The current highest update sequence number within the account
lastPreviousUsn	The last update sequence number from previous sync; if current sync is the first one, this value is zero

5.70.3.38 synchronize

```
void quentier::SynchronizationManager::synchronize ( )  [slot]
```

Use this slot to launch the synchronization of data

5.70.3.39 willRepeatRemoteToLocalSyncAfterSendingChanges

```
void quentier::SynchronizationManager::willRepeatRemoteToLocalSyncAfterSendingChanges ( )
[signal]
```

This signal is emitted if during the "send local changes" synchronization step it was found out that new changes from the Evernote service are available yet no conflict between remote and local changes was found yet.

Such situation can rarely happen in case of changes introduced concurrently with the running synchronization - perhaps via another client. The algorithm will handle it, the signal is just for the sake of diagnostic.

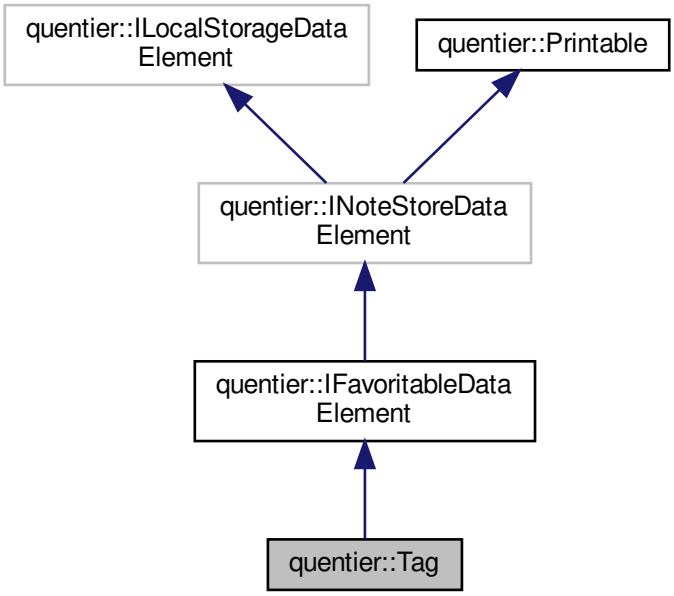
5.71 quentier::SysInfo Class Reference

Public Member Functions

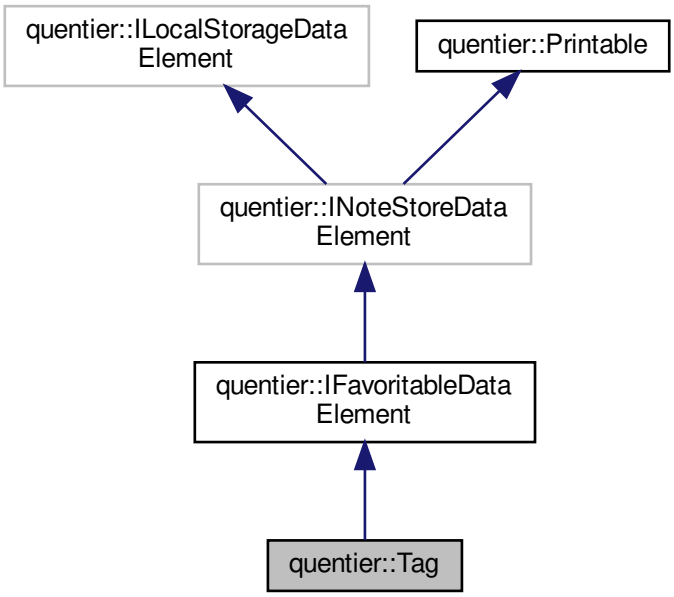
- qint64 **pageSize** ()
- qint64 **totalMemory** ()
- qint64 **freeMemory** ()
- QString **stackTrace** ()
- QString **platformName** ()

5.72 quentier::Tag Class Reference

Inheritance diagram for quentier::Tag:



Collaboration diagram for quentier::Tag:



Public Member Functions

- **Tag** (const Tag &other)
- **Tag** (Tag &&other)
- Tag & **operator=** (const Tag &other)
- Tag & **operator=** (Tag &&other)
- **Tag** (const qevercloud::Tag &other)
- **Tag** (qevercloud::Tag &&other)
- bool **operator==** (const Tag &other) const
- bool **operator!=** (const Tag &other) const
- const qevercloud::Tag & **qevercloudTag** () const
- qevercloud::Tag & **qevercloudTag** ()
- virtual void clear () override
- virtual bool hasGuid () const override
- virtual const QString & guid () const override
- virtual void setGuid (const QString &guid) override
- virtual bool hasUpdateSequenceNumber () const override
- virtual qint32 updateSequenceNumber () const override
- virtual void setUpdateSequenceNumber (const qint32 usn) override
- virtual bool checkParameters (ErrorString &errorDescription) const override
- bool **hasName** () const
- const QString & **name** () const
- void **setName** (const QString &name)
- bool **hasParentGuid** () const
- const QString & **parentGuid** () const
- void **setParentGuid** (const QString &parentGuid)

- bool **hasParentLocalUid** () const
- const QString & **parentLocalUid** () const
- void **setParentLocalUid** (const QString &parentLocalUid)
- bool **hasLinkedNotebookGuid** () const
- const QString & **linkedNotebookGuid** () const
- void **setLinkedNotebookGuid** (const QString &linkedNotebookGuid)
- virtual QTextStream & print (QTextStream &strm) const override

Static Public Member Functions

- static bool **validateName** (const QString &name, ErrorString *pErrorDescription=nullptr)

Additional Inherited Members

5.72.1 Member Function Documentation

5.72.1.1 checkParameters()

```
virtual bool quentier::Tag::checkParameters (
            ErrorString & errorDescription ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.72.1.2 clear()

```
virtual void quentier::Tag::clear ( )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.72.1.3 guid()

```
virtual const QString & quentier::Tag::guid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.72.1.4 hasGuid()

```
virtual bool quentier::Tag::hasGuid ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.72.1.5 hasUpdateSequenceNumber()

```
virtual bool quentier::Tag::hasUpdateSequenceNumber ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.72.1.6 print()

```
virtual QTextStream & quentier::Tag::print (
            QTextStream & strm ) const  [override], [virtual]
```

Implements quentier::Printable.

5.72.1.7 setGuid()

```
virtual void quentier::Tag::setGuid (
            const QString & guid )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.72.1.8 setUpdateSequenceNumber()

```
virtual void quentier::Tag::setUpdateSequenceNumber (
            const qint32 usn )  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.72.1.9 updateSequenceNumber()

```
virtual qint32 quentier::Tag::updateSequenceNumber ( ) const  [override], [virtual]
```

Implements quentier::INoteStoreDataElement.

5.73 quentier::ResourceRecognitionIndexItem::TextItem Struct Reference

Public Member Functions

- bool **operator==** (const TextItem &other) const

Public Attributes

- QString **m_text**
- int **m_weight** = -1

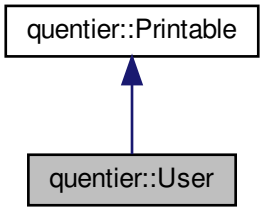
5.74 quentier::UidGenerator Class Reference

Static Public Member Functions

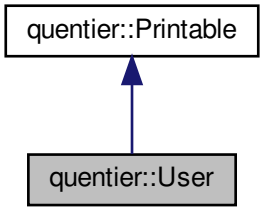
- static QString **Generate** ()
- static QString **UidToString** (const QUuid &uid)

5.75 quentier::User Class Reference

Inheritance diagram for quentier::User:



Collaboration diagram for quentier::User:



Public Types

- using **PrivilegeLevel** = qevercloud::PrivilegeLevel
- using **ServiceLevel** = qevercloud::ServiceLevel

Public Member Functions

- **User** (const qevercloud::User &user)
- **User** (qevercloud::User &&user)
- **User** (const User &other)
- **User** (User &&other)
- User & **operator=** (const User &other)
- User & **operator=** (User &&other)
- bool **operator==** (const User &other) const
- bool **operator!=** (const User &other) const
- const qevercloud::User & **qevercloudUser** () const
- qevercloud::User & **qevercloudUser** ()
- void **clear** ()
- bool **isDirty** () const
- void **setDirty** (const bool dirty)
- bool **isLocal** () const
- void **setLocal** (const bool local)
- bool **checkParameters** (ErrorString &errorDescription) const
- bool **hasId** () const
- qint32 **id** () const
- void **setId** (const qint32 id)
- bool **hasUsername** () const
- const QString & **username** () const
- void **setUsername** (const QString &username)
- bool **hasEmail** () const
- const QString & **email** () const
- void **setEmail** (const QString &email)
- bool **hasName** () const
- const QString & **name** () const
- void **setName** (const QString &name)
- bool **hasTimezone** () const
- const QString & **timezone** () const
- void **setTimezone** (const QString &timezone)
- bool **hasPrivilegeLevel** () const
- PrivilegeLevel **privilegeLevel** () const
- void **setPrivilegeLevel** (const qint8 level)
- bool **hasServiceLevel** () const
- ServiceLevel **serviceLevel** () const
- void **setServiceLevel** (const qint8 level)
- bool **hasCreationTimestamp** () const
- qint64 **creationTimestamp** () const
- void **setCreationTimestamp** (const qint64 timestamp)
- bool **hasModificationTimestamp** () const
- qint64 **modificationTimestamp** () const
- void **setModificationTimestamp** (const qint64 timestamp)
- bool **hasDeletionTimestamp** () const
- qint64 **deletionTimestamp** () const
- void **setDeletionTimestamp** (const qint64 timestamp)
- bool **hasActive** () const
- bool **active** () const
- void **setActive** (const bool active)
- bool **hasShardId** () const
- const QString & **shardId** () const
- void **setShardId** (const QString &shardId)
- bool **hasUserAttributes** () const

- const qevercloud::UserAttributes & **userAttributes** () const
- void **setUserAttributes** (qevercloud::UserAttributes &&attributes)
- bool **hasAccounting** () const
- const qevercloud::Accounting & **accounting** () const
- void **setAccounting** (qevercloud::Accounting &&accounting)
- bool **hasBusinessUserInfo** () const
- const qevercloud::BusinessUserInfo & **businessUserInfo** () const
- void **setBusinessUserInfo** (qevercloud::BusinessUserInfo &&info)
- bool **hasPhotoUrl** () const
- QString **photoUrl** () const
- void **setPhotoUrl** (const QString &photoUrl)
- bool **hasPhotoLastUpdateTimestamp** () const
- qint64 **photoLastUpdateTimestamp** () const
- void **setPhotoLastUpdateTimestamp** (const qint64 timestamp)
- bool **hasAccountLimits** () const
- const qevercloud::AccountLimits & **accountLimits** () const
- void **setAccountLimits** (qevercloud::AccountLimits &&limits)
- virtual QTextStream & print (QTextStream &strm) const override

Friends

- class **Notebook**

Additional Inherited Members

5.75.1 Member Function Documentation

5.75.1.1 print()

```
virtual QTextStream & quentier::User::print (
            QTextStream & strm ) const  [override], [virtual]
```

Implements quentier::Printable.

Chapter 6

File Documentation

6.1 DecryptedTextManager.h

```
1 /*
2 * Copyright 2016-2020 Dmitry Ivanov
3 *
4 * This file is part of libquentier
5 *
6 * libquentier is free software; you can redistribute it and/or modify
7 * it under the terms of the GNU Lesser General Public License as published by
8 * the Free Software Foundation, version 3 of the License.
9 *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_ENML_DECRYPTED_TEXT_MANAGER_H
20 #define LIB_QUENTIER_ENML_DECRYPTED_TEXT_MANAGER_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QtGlobal>
25
26 namespace quentier {
27
28 QT_FORWARD_DECLARE_CLASS(DecryptedTextManagerPrivate)
29
30 class QUENTIER_EXPORT DecryptedTextManager
31 {
32 public:
33     DecryptedTextManager();
34     virtual ~DecryptedTextManager();
35
36     void addEntry(
37         const QString & hash, const QString & decryptedText,
38         const bool rememberForSession, const QString & passphrase,
39         const QString & cipher, const size_t keyLength);
40
41     void removeEntry(const QString & hash);
42
43     void clearNonRememberedForSessionEntries();
44
45     bool findDecryptedTextByEncryptedText(
46         const QString & encryptedText, QString & decryptedText,
47         bool & rememberForSession) const;
48
49     bool modifyDecryptedText(
50         const QString & originalEncryptedText, const QString & newDecryptedText,
51         QString & newEncryptedText);
52
53 private:
54     Q_DISABLE_COPY(DecryptedTextManager)
55
56     DecryptedTextManagerPrivate * const d_ptr;
57     Q_DECLARE_PRIVATE(DecryptedTextManager)
58 };
```

```
59
60 } // namespace quentier
61
62 #endif // LIB_QUENTIER_ENML_DECRYPTED_TEXT_MANAGER_H
```

6.2 ENMLConverter.h

```
1 /*
2 * Copyright 2016-2020 Dmitry Ivanov
3 *
4 * This file is part of libquentier
5 *
6 * libquentier is free software; you can redistribute it and/or modify
7 * it under the terms of the GNU Lesser General Public License as published by
8 * the Free Software Foundation, version 3 of the License.
9 *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_ENML_ENML_CONVERTER_H
20 #define LIB_QUENTIER_ENML_ENML_CONVERTER_H
21
22 #include <quentier/types/ErrorString.h>
23 #include <quentier/types/Note.h>
24 #include <quentier/utility/Linkage.h>
25 #include <quentier/utility/Printable.h>
26
27 #include <QHash>
28 #include <QSet>
29 #include <QString>
30 #include <QTextDocument>
31
32 namespace quentier {
33
34 QT_FORWARD_DECLARE_CLASS(DecryptedTextManager)
35 QT_FORWARD_DECLARE_CLASS(ENMLConverterPrivate)
36 QT_FORWARD_DECLARE_CLASS(Resource)
37
38
43 class QUENTIER_EXPORT ENMLConverter
44 {
45 public:
46     ENMLConverter();
47
48     virtual ~ENMLConverter();
49
60     class QUENTIER_EXPORT SkipHtmlElementRule :  public Printable
61     {
62     public:
63         enum class ComparisonRule
64         {
65             Equals = 0,
66             StartsWith,
67             EndsWith,
68             Contains
69         };
70
71         friend QUENTIER_EXPORT QTextStream & operator«(
72             QTextStream & strm, const ComparisonRule rule);
73
74         virtual QTextStream & print(QTextStream & strm) const override;
75
76         QString m_elementNameToSkip;
77         ComparisonRule m_elementNameComparisonRule = ComparisonRule::Equals;
78         Qt::CaseSensitivity m_elementNameCaseSensitivity = Qt::CaseSensitive;
79
80         QString m_attributeNameToSkip;
81         ComparisonRule m_attributeNameComparisonRule = ComparisonRule::Equals;
82         Qt::CaseSensitivity m_attributeNameCaseSensitivity = Qt::CaseSensitive;
83
84         QString m_attributeValueToSkip;
85         ComparisonRule m_attributeValueComparisonRule = ComparisonRule::Equals;
86         Qt::CaseSensitivity m_attributeValueCaseSensitivity = Qt::CaseSensitive;
87
88         bool m_includeElementContents = false;
89     };
90
```

```
91      bool htmlToNoteContent(
92          const QString & html, QString & noteContent,
93          DecryptedTextManager & decryptedTextManager,
94          ErrorString & errorDescription,
95          const QVector<SkipHtmlElementRule> & skipRules = {}) const;
96
110     bool cleanupExternalHtml(
111         const QString & inputHtml, QString & cleanedUpHtml,
112         ErrorString & errorDescription) const;
113
127     bool htmlToQTextDocument(
128         const QString & html, QTextDocument & doc,
129         ErrorString & errorDescription,
130         const QVector<SkipHtmlElementRule> & skipRules = {}) const;
131
132     struct NoteContentToHtmlExtraData
133     {
134         quint64 m_numEnToDoNodes = 0;
135         quint64 m_numHyperlinkNodes = 0;
136         quint64 m_numEnCryptNodes = 0;
137         quint64 m_numEnDecryptedNodes = 0;
138     };
139
140     bool noteContentToHtml(
141         const QString & noteContent, QString & html,
142         ErrorString & errorDescription,
143         DecryptedTextManager & decryptedTextManager,
144         NoteContentToHtmlExtraData & extraData) const;
145
146     bool validateEnml(
147         const QString & enml, ErrorString & errorDescription) const;
148
149     bool validateAndFixupEnml(
150         QString & enml, ErrorString & errorDescription) const;
151
152     static bool noteContentToPlainText(
153         const QString & noteContent, QString & plainText,
154         ErrorString & errorMessage);
155
156     static bool noteContentToListOfWords(
157         const QString & noteContent, QStringList & listOfWords,
158         ErrorString & errorMessage, QString * plainText = nullptr);
159
160     static QStringList plainTextToListOfWords(const QString & plainText);
161
162     static QString toDoCheckboxHtml(const bool checked, const quint64 idNumber);
163
164     static QString encryptedTextHtml(
165         const QString & encryptedText, const QString & hint,
166         const QString & cipher, const size_t keyLength,
167         const quint64 enCryptIndex);
168
169     static QString decryptedTextHtml(
170         const QString & decryptedText, const QString & encryptedText,
171         const QString & hint, const QString & cipher, const size_t keyLength,
172         const quint64 enDecryptedIndex);
173
174     static QString resourceHtml(
175         const Resource & resource, ErrorString & errorDescription);
176
177     static void escapeString(QString & string, const bool simplify = true);
178
183     enum class EnexExportTags
184     {
185         Yes = 0,
186         No
187     };
188
217     bool exportNotesToEnex(
218         const QVector<Note> & notes,
219         const QHash<QString, QString> & tagNamesByTagLocalUids,
220         const EnexExportTags exportTagsOption, QString & enex,
221         ErrorString & errorDescription, const QString & version = {}) const;
222
241     bool importEnex(
242         const QString & enex, QVector<Note> & notes,
243         QHash<QString, QStringList> & tagNamesByNoteLocalUid,
244         ErrorString & errorDescription) const;
245
246 private:
247     Q_DISABLE_COPY(ENMLConverter)
248
249 private:
250     ENMLConverterPrivate * const d_ptr;
251     Q_DECLARE_PRIVATE(ENMLConverter)
252 };
253
```

```
254 } // namespace quentier
255
256 #endif // LIB_QUENTIER_ENML_ENML_CONVERTER_H
```

6.3 HTMLCleaner.h

```
1 /*
2 * Copyright 2016-2020 Dmitry Ivanov
3 *
4 * This file is part of libquentier
5 *
6 * libquentier is free software; you can redistribute it and/or modify
7 * it under the terms of the GNU Lesser General Public License as published by
8 * the Free Software Foundation, version 3 of the License.
9 *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_ENML_HTML_CLEANER_H
20 #define LIB_QUENTIER_ENML_HTML_CLEANER_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QString>
25
26 namespace quentier {
27
28 class QUENTIER_EXPORT HTMLCleaner
29 {
30 public:
31     HTMLCleaner();
32     virtual ~HTMLCleaner();
33
34     bool htmlToXml(
35         const QString & html, QString & output, QString & errorDescription);
36
37     bool htmlToXhtml(
38         const QString & html, QString & output, QString & errorDescription);
39
40     bool cleanupHtml(QString & html, QString & errorDescription);
41
42 private:
43     Q_DISABLE_COPY(HTMLCleaner)
44
45 private:
46     class Impl;
47     Impl * m_impl;
48 };
49
50 } // namespace quentier
51
52 #endif // LIB_QUENTIER_ENML_HTML_CLEANER_H
```

6.4 ApplicationSettingsInitializationException.h

```
1 /*
2 * Copyright 2016-2020 Dmitry Ivanov
3 *
4 * This file is part of libquentier
5 *
6 * libquentier is free software; you can redistribute it and/or modify
7 * it under the terms of the GNU Lesser General Public License as published by
8 * the Free Software Foundation, version 3 of the License.
9 *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
```

```
19 #ifndef LIB_QUENTIER_EXCEPTION_APPLICATION_SETTINGS_INITIALIZATION_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_APPLICATION_SETTINGS_INITIALIZATION_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
31 class QUENTIER_EXPORT ApplicationSettingsInitializationException :
32     public IQuentierException
33 {
34 public:
35     explicit ApplicationSettingsInitializationException(
36         const ErrorString & message);
37
38 protected:
39     virtual const QString exceptionDisplayName() const override;
40 };
41
42 } // namespace quentier
43
44 #endif // LIB_QUENTIER_EXCEPTION_APPLICATION_SETTINGS_INITIALIZATION_EXCEPTION_H
```

6.5 DatabaseLockedException.h

```
1 /*
2 * Copyright 2016-2019 Dmitry Ivanov
3 *
4 * This file is part of libquentier
5 *
6 * libquentier is free software; you can redistribute it and/or modify
7 * it under the terms of the GNU Lesser General Public License as published by
8 * the Free Software Foundation, version 3 of the License.
9 *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_DATABASE_LOCKED_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_DATABASE_LOCKED_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
26 class QUENTIER_EXPORT DatabaseLockedException :  public IQuentierException
27 {
28 public:
29     explicit DatabaseLockedException(const ErrorString & message);
30
31 protected:
32     virtual const QString exceptionDisplayName() const override;
33 };
34
35 } // namespace quentier
36
37 #endif // LIB_QUENTIER_EXCEPTION_DATABASE_LOCKED_EXCEPTION_H
```

6.6 DatabaseLockFailedException.h

```
1 /*
2 * Copyright 2016-2019 Dmitry Ivanov
3 *
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```

```
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17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_DATABASE_LOCK_FAILED_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_DATABASE_LOCK_FAILED_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
26 class QUENTIER_EXPORT DatabaseLockFailedException :  public IQuentierException
27 {
28 public:
29     explicit DatabaseLockFailedException(const ErrorString & message);
30
31 protected:
32     virtual const QString exceptionDisplayName() const override;
33 };
34
35 } // namespace quentier
36
37 #endif // LIB_QUENTIER_EXCEPTION_DATABASE_LOCK_FAILED_EXCEPTION_H
```

6.7 DatabaseOpeningException.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_DATABASE_OPENING_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_DATABASE_OPENING_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
26 class QUENTIER_EXPORT DatabaseOpeningException :  public IQuentierException
27 {
28 public:
29     explicit DatabaseOpeningException(const ErrorString & message);
30
31 protected:
32     virtual const QString exceptionDisplayName() const override;
33 };
34
35 } // namespace quentier
36
37 #endif // LIB_QUENTIER_EXCEPTION_DATABASE_OPENING_EXCEPTION_H
```

6.8 DatabaseRequestException.h

```
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14 *
```

```
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17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_DATABASE_SQL_ERROR_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_DATABASE_SQL_ERROR_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
30 class QUENTIER_EXPORT DatabaseRequestException :  public IQuentierException
31 {
32 public:
33     explicit DatabaseRequestException(const ErrorString & message);
34
35 protected:
36     virtual const QString exceptionDisplayName() const override;
37 };
38
39 } // namespace quentier
40
41 #endif // LIB_QUENTIER_EXCEPTION_DATABASE_SQL_ERROR_EXCEPTION_H
```

6.9 EmptyDataElementException.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_EMPTY_DATA_ELEMENT_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_EMPTY_DATA_ELEMENT_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
26 class QUENTIER_EXPORT EmptyDataElementException :  public IQuentierException
27 {
28 public:
29     explicit EmptyDataElementException(const ErrorString & message);
30
31 protected:
32     virtual const QString exceptionDisplayName() const override;
33 };
34
35 } // namespace quentier
36
37 #endif // LIB_QUENTIER_EXCEPTION_EMPTY_DATA_ELEMENT_EXCEPTION_H
```

6.10 IQuentierException.h

```
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```

```
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17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_I_QUENTIER_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_I_QUENTIER_EXCEPTION_H
21
22 #include <exception>
23 #include <quentier/types/ErrorString.h>
24 #include <quentier/utility/Printable.h>
25
26 namespace quentier {
27
36 class QUENTIER_EXPORT IQuentierException :
37     public Printable,
38     public std::exception
39 {
40 public:
41     explicit IQuentierException(const ErrorString & message);
42
43     virtual ~IQuentierException() noexcept override;
44
45     QString localizedErrorMessage() const;
46     QString nonLocalizedErrorMessage() const;
47
48     virtual const char * what() const noexcept override;
49
50     virtual QTextStream & print(QTextStream & strm) const override;
51
52 protected:
53     IQuentierException(const IQuentierException & other);
54     IQuentierException & operator=(const IQuentierException & other);
55
56     virtual const QString exceptionDisplayName() const = 0;
57
58 private:
59     IQuentierException() = delete;
60
61     ErrorString m_message;
62     char * m_whatMessage;
63 };
64
65 } // namespace quentier
66
67 #endif // LIB_QUENTIER_EXCEPTION_I_QUENTIER_EXCEPTION_H
```

6.11 LocalStorageCacheManagerException.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_LOCAL_STORAGE_CACHE_MANAGER_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_LOCAL_STORAGE_CACHE_MANAGER_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
26 class QUENTIER_EXPORT LocalStorageCacheManagerException :
27     public IQuentierException
28 {
29 public:
30     explicit LocalStorageCacheManagerException(const ErrorString & message);
31
32 protected:
33     virtual const QString exceptionDisplayName() const override;
34 };
```

```
35
36 } // namespace quentier
37
38 #endif // LIB_QUENTIER_EXCEPTION_LOCAL_STORAGE_CACHE_MANAGER_EXCEPTION_H
```

6.12 LoggerInitializationException.h

```
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_LOGGER_INITIALIZATION_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_LOGGER_INITIALIZATION_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
26 class QUENTIER_EXPORT LoggerInitializationException :  public IQuentierException
27 {
28 public:
29     explicit LoggerInitializationException(const ErrorString & message);
30
31 protected:
32     const QString exceptionDisplayName() const override;
33 };
34
35 } // namespace quentier
36
37 #endif // LIB_QUENTIER_EXCEPTION_LOGGER_INITIALIZATION_EXCEPTION_H
```

6.13 NoteEditorInitializationException.h

```
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_NOTE_EDITOR_INITIALIZATION_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_NOTE_EDITOR_INITIALIZATION_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
26 class QUENTIER_EXPORT NoteEditorInitializationException :
27     public IQuentierException
28 {
29 public:
30     explicit NoteEditorInitializationException(const ErrorString & message);
31
32 protected:
```

```
33     virtual const QString exceptionDisplayName() const override;
34 };
35
36 } // namespace quentier
37
38 #endif // LIB_QUENTIER_EXCEPTION_NOTE_EDITOR_INITIALIZATION_EXCEPTION_H
```

6.14 NoteEditorPluginInitializationException.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_NOTE_EDITOR_PLUGIN_INITIALIZATION_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_NOTE_EDITOR_PLUGIN_INITIALIZATION_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
26 class QUENTIER_EXPORT NoteEditorPluginInitializationException :
27     public IQuentierException
28 {
29 public:
30     explicit NoteEditorPluginInitializationException(
31         const ErrorString & message);
32
33 protected:
34     virtual const QString exceptionDisplayName() const override;
35 };
36
37 } // namespace quentier
38
39 #endif // LIB_QUENTIER_EXCEPTION_NOTE_EDITOR_PLUGIN_INITIALIZATION_EXCEPTION_H
```

6.15 NullPtrException.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_EXCEPTION_NULL_PTR_EXCEPTION_H
20 #define LIB_QUENTIER_EXCEPTION_NULL_PTR_EXCEPTION_H
21
22 #include <quentier/exception/IQuentierException.h>
23
24 namespace quentier {
25
26 class QUENTIER_EXPORT NullPtrException :  public IQuentierException
27 {
28 public:
```

```
29     explicit NullPtrException(const ErrorString & message);
30
31 protected:
32     virtual const QString exceptionDisplayName() const override;
33 };
34
35 } // namespace quentier
36
37 #endif // LIB_QUENTIER_EXCEPTION_NULL_PTR_EXCEPTION_H
```

6.16 DefaultLocalStorageCacheExpiryChecker.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_LOCAL_STORAGE_DEFAULT_LOCAL_STORAGE_CACHE_EXPIRY_CHECKER_H
20 #define LIB_QUENTIER_LOCAL_STORAGE_DEFAULT_LOCAL_STORAGE_CACHE_EXPIRY_CHECKER_H
21
22 #include <quentier/local_storage/ILocalStorageCacheExpiryChecker.h>
23
24 namespace quentier {
25
32 class QUENTIER_EXPORT DefaultLocalStorageCacheExpiryChecker :
33     public ILocalStorageCacheExpiryChecker
34 {
35 public:
36     DefaultLocalStorageCacheExpiryChecker(
37         const LocalStorageCacheManager & cacheManager);
38
39     virtual ~DefaultLocalStorageCacheExpiryChecker();
40
45     virtual DefaultLocalStorageCacheExpiryChecker * clone() const override;
46
51     virtual bool checkNotes() const override;
52
57     virtual bool checkResources() const override;
58
63     virtual bool checkNotebooks() const override;
64
69     virtual bool checkTags() const override;
70
75     virtual bool checkLinkedNotebooks() const override;
76
81     virtual bool checkSavedSearches() const override;
82
88     virtual QTextStream & print(QTextStream & strm) const override;
89
90 private:
91     Q_DISABLE_COPY(DefaultLocalStorageCacheExpiryChecker)
92 };
93
94 } // namespace quentier
95
96 #endif // LIB_QUENTIER_LOCAL_STORAGE_DEFAULT_LOCAL_STORAGE_CACHE_EXPIRY_CHECKER_H
```

6.17 ILocalStorageCacheExpiryChecker.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_LOCAL_STORAGE_I_LOCAL_STORAGE_CACHE_EXPIRY_CHECKER_H
20 #define LIB_QUENTIER_LOCAL_STORAGE_I_LOCAL_STORAGE_CACHE_EXPIRY_CHECKER_H
21
22 #include <quentier/utility/Printable.h>
23
24 namespace quentier {
25
26 QT_FORWARD_DECLARE_CLASS(LocalStorageCacheManager)
27
28
34 class QUENTIER_EXPORT ILocalStorageCacheExpiryChecker :  public Printable
35 {
36 public:
37     virtual ~ILocalStorageCacheExpiryChecker();
38
43     virtual ILocalStorageCacheExpiryChecker * clone() const = 0;
44
50     virtual bool checkNotes() const = 0;
51
57     virtual bool checkResources() const = 0;
58
64     virtual bool checkNotebooks() const = 0;
65
71     virtual bool checkTags() const = 0;
72
78     virtual bool checkLinkedNotebooks() const = 0;
79
85     virtual bool checkSavedSearches() const = 0;
86
92     virtual QTextStream & print(QTextStream & strm) const = 0;
93
94 protected:
95     ILocalStorageCacheExpiryChecker(
96         const LocalStorageCacheManager & cacheManager);
97
98     const LocalStorageCacheManager & m_localStorageCacheManager;
99
100 private:
101     ILocalStorageCacheExpiryChecker() = delete;
102     Q_DISABLE_COPY(ILocalStorageCacheExpiryChecker)
103 };
104
105 } // namespace quentier
106
107 #endif // LIB_QUENTIER_LOCAL_STORAGE_I_LOCAL_STORAGE_CACHE_EXPIRY_CHECKER_H
```

6.18 ILocalStoragePatch.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_LOCAL_STORAGE_I_LOCAL_STORAGE_PATCH_H
20 #define LIB_QUENTIER_LOCAL_STORAGE_I_LOCAL_STORAGE_PATCH_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QObject>
```

```
25
26 namespace quentier {
27
28 QT_FORWARD_DECLARE_CLASS(ErrorString)
29 QT_FORWARD_DECLARE_CLASS(LocalStorageDatabaseUpgrader)
30
31
37 class QUENTIER_EXPORT ILocalStoragePatch :  public QObject
38 {
39     Q_OBJECT
40 protected:
41     explicit ILocalStoragePatch(QObject * parent = nullptr);
42
43 public:
44     virtual ~ILocalStoragePatch();
45
50     virtual int fromVersion() const = 0;
51
56     virtual int toVersion() const = 0;
57
61     virtual QString patchShortDescription() const = 0;
62
66     virtual QString patchLongDescription() const = 0;
67
78     virtual bool backupLocalStorage(ErrorString & errorDescription) = 0;
79
91     virtual bool restoreLocalStorageFromBackup(
92         ErrorString & errorDescription) = 0;
93
106     virtual bool removeLocalStorageBackup(ErrorString & errorDescription) = 0;
107
116     virtual bool apply(ErrorString & errorDescription) = 0;
117
118     friend class LocalStorageDatabaseUpgrader;
119
120 Q_SIGNALS:
126     void progress(double progress);
127
133     void backupProgress(double progress);
134
141     void restoreBackupProgress(double progress);
142 };
143
144 } // namespace quentier
145
146 #endif // LIB_QUENTIER_LOCAL_STORAGE_I_LOCAL_STORAGE_PATCH_H
```

6.19 Lists.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_LOCAL_STORAGE_LISTS_H
20 #define LIB_QUENTIER_LOCAL_STORAGE_LISTS_H
21
22 #include <QVector>
23
24 namespace quentier {
25
26 QT_FORWARD_DECLARE_CLASS(LinkedNotebook)
27 QT_FORWARD_DECLARE_CLASS(Note)
28 QT_FORWARD_DECLARE_CLASS(Notebook)
29 QT_FORWARD_DECLARE_CLASS(Resource)
30 QT_FORWARD_DECLARE_CLASS(SavedSearch)
31 QT_FORWARD_DECLARE_CLASS(SharedNotebook)
32 QT_FORWARD_DECLARE_CLASS(Tag)
33 QT_FORWARD_DECLARE_CLASS(User)
34
```

```
35 using LinkedNotebookList = QList<LinkedNotebook>;
36 using NoteList = QList<Note>;
37 using NotebookList = QList<Notebook>;
38 using ResourceList = QList<Resource>;
39 using SavedSearchList = QList<SavedSearch>;
40 using SharedNotebookList = QList<SharedNotebook>;
41 using TagList = QList<Tag>;
42 using UserList = QList<User>;
43
44 } // namespace quentier
45
46 #endif // LIB_QUENTIER_LOCAL_STORAGE_LISTS_H
```

6.20 LocalStorageCacheManager.h

```
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_LOCAL_STORAGE_LOCAL_STORAGE_CACHE_MANAGER_H
20 #define LIB_QUENTIER_LOCAL_STORAGE_LOCAL_STORAGE_CACHE_MANAGER_H
21
22 #include <quentier/utility/Printable.h>
23
24 #include <memory>
25
26 namespace quentier {
27
28 QT_FORWARD_DECLARE_CLASS(LinkedNotebook)
29 QT_FORWARD_DECLARE_CLASS(Note)
30 QT_FORWARD_DECLARE_CLASS(Notebook)
31 QT_FORWARD_DECLARE_CLASS(Resource)
32 QT_FORWARD_DECLARE_CLASS(SavedSearch)
33 QT_FORWARD_DECLARE_CLASS(Tag)
34
35 QT_FORWARD_DECLARE_CLASS(ILocalStorageCacheExpiryChecker)
36
37 QT_FORWARD_DECLARE_CLASS(LocalStorageCacheManagerPrivate)
38 class QUENTIER_EXPORT LocalStorageCacheManager :  public Printable
39 {
40 public:
41     LocalStorageCacheManager();
42     virtual ~LocalStorageCacheManager();
43
44     enum WhichUid
45     {
46         LocalUid,
47         Guid
48     };
49
50     void clear();
51     bool empty() const;
52
53     // Notes cache
54     size_t numCachedNotes() const;
55     void cacheNote(const Note & note);
56     void expungeNote(const Note & note);
57
58     const Note * findNote(const QString & uid, const WhichUid whichUid) const;
59
60     void clearAllNotes();
61
62     // Resources cache
63     size_t numCachedResources() const;
64     void cacheResource(const Resource & resource);
65     void expungeResource(const Resource & resource);
66
67     const Resource * findResource(
68         const QString & id, const WhichUid whichUid) const;
```

```
69
70      void clearAllResources();
71
72      // Notebooks cache
73      size_t numCachedNotebooks() const;
74      void cacheNotebook(const Notebook & notebook);
75      void expungeNotebook(const Notebook & notebook);
76
77      const Notebook * findNotebook(
78          const QString & uid, const WhichUid whichUid) const;
79
80      const Notebook * findNotebookByName(const QString & name) const;
81      void clearAllNotebooks();
82
83      // Tags cache
84      size_t numCachedTags() const;
85      void cacheTag(const Tag & tag);
86      void expungeTag(const Tag & tag);
87      const Tag * findTag(const QString & uid, const WhichUid whichUid) const;
88      const Tag * findTagByName(const QString & name) const;
89      void clearAllTags();
90
91      // Linked notebooks cache
92      size_t numCachedLinkedNotebooks() const;
93      void cacheLinkedNotebook(const LinkedNotebook & linkedNotebook);
94      void expungeLinkedNotebook(const LinkedNotebook & linkedNotebook);
95      const LinkedNotebook * findLinkedNotebook(const QString & guid) const;
96      void clearAllLinkedNotebooks();
97
98      // Saved searches cache
99      size_t numCachedSavedSearches() const;
100     void cacheSavedSearch(const SavedSearch & savedSearch);
101     void expungeSavedSearch(const SavedSearch & savedSearch);
102
103     const SavedSearch * findSavedSearch(
104         const QString & uid, const WhichUid whichUid) const;
105
106     const SavedSearch * findSavedSearchByName(const QString & name) const;
107     void clearAllSavedSearches();
108
109     void installCacheExpiryFunction(
110         const ILocalStorageCacheExpiryChecker & checker);
111
112     virtual QTextStream & print(QTextStream & strm) const override;
113
114 private:
115     Q_DISABLE_COPY(LocalStorageCacheManager)
116
117     LocalStorageCacheManagerPrivate * const d_ptr;
118     Q_DECLARE_PRIVATE(LocalStorageCacheManager)
119 };
120
121 } // namespace quentier
122
123 #endif // LIB_QUENTIER_LOCAL_STORAGE_LOCAL_STORAGE_CACHE_MANAGER_H
```

6.21 LocalStorageManager.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
6  * libquentier is free software; you can redistribute it and/or modify
7  * it under the terms of the GNU Lesser General Public License as published by
8  * the Free Software Foundation, version 3 of the License.
9  *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_LOCAL_STORAGE_LOCAL_STORAGE_MANAGER_H
20 #define LIB_QUENTIER_LOCAL_STORAGE_LOCAL_STORAGE_MANAGER_H
21
22 #include <quentier/local_storage/Lists.h>
23 #include <quentier/local_storage/NoteSearchQuery.h>
24 #include <quentier/types/Account.h>
25 #include <quentier/types/ErrorString.h>
```

```
26 #include <quentier/utility/Linkage.h>
27
28 #include <QHash>
29 #include <QString>
30 #include <QVector>
31
32 #include <cstdint>
33 #include <memory>
34 #include <utility>
35
36 namespace qevercloud {
37
38 QT_FORWARD_DECLARE_STRUCT(Accounting)
39 QT_FORWARD_DECLARE_STRUCT(BusinessUserInfo)
40 QT_FORWARD_DECLARE_STRUCT(NoteAttributes)
41 QT_FORWARD_DECLARE_STRUCT(NotebookRestrictions)
42 QT_FORWARD_DECLARE_STRUCT(ResourceAttributes)
43 QT_FORWARD_DECLARE_STRUCT(PremiumInfo)
44 QT_FORWARD_DECLARE_STRUCT(SharedNotebook)
45 QT_FORWARD_DECLARE_STRUCT(UserAttributes)
46
47 } // namespace qevercloud
48
49 namespace quentier {
50
51 QT_FORWARD_DECLARE_CLASS(ILocalStoragePatch)
52 QT_FORWARD_DECLARE_CLASS(LocalStorageManagerPrivate)
53
54 class QUENTIER_EXPORT LocalStorageManager :  public QObject
55 {
56     Q_OBJECT
57 public:
63     enum class StartupOption
64     {
72         ClearDatabase = 1,
81         OverrideLock = 2
82     };
83     Q_DECLARE_FLAGS(StartupOptions, StartupOption)
84
85     friend QUENTIER_EXPORT QTextStream & operator«(
86         QTextStream & strm, const StartupOption option);
87
88     friend QUENTIER_EXPORT QDebug & operator«(
89         QDebug & dbg, const StartupOption option);
90
91     friend QUENTIER_EXPORT QTextStream & operator«(
92         QTextStream & strm, const StartupOptions options);
93
94     friend QUENTIER_EXPORT QDebug & operator«(
95         QDebug & dbg, const StartupOptions options);
96
108     explicit LocalStorageManager(
109         const Account & account,
110 #if QT_VERSION >= QT_VERSION_CHECK(5, 15, 0)
111         const StartupOptions options = {},
112 #else
113         const StartupOptions options = 0,
114 #endif
115         QObject * parent = nullptr);
116
117     virtual ~LocalStorageManager() override;
118
119 Q_SIGNALS:
130     void upgradeProgress(double progress);
131
132 public:
143     enum class ListObjectsOption
144     {
145         ListAll = 0,
146         ListDirty = 1,
147         ListNonDirty = 2,
148         ListElementsWithoutGuid = 4,
149         ListElementsWithGuid = 8,
150         ListLocal = 16,
151         ListNonLocal = 32,
152         ListFavoritedElements = 64,
153         ListNonFavoritedElements = 128
154     };
155     Q_DECLARE_FLAGS(ListObjectsOptions, ListObjectsOption)
156
157     friend QUENTIER_EXPORT QTextStream & operator«(
158         QTextStream & strm, const ListObjectsOption option);
159
160     friend QUENTIER_EXPORT QDebug & operator«(
161         QDebug & dbg, const ListObjectsOption option);
162
163     friend QUENTIER_EXPORT QTextStream & operator«(
```

```
164         QTextStream & strm, const ListObjectsOptions options);
165
166     friend QUENTIER_EXPORT QDebug & operator<<(
167         QDebug & dbg, const ListObjectsOptions options);
168
185     void switchUser(
186         const Account & account,
187 #if QT_VERSION >= QT_VERSION_CHECK(5, 15, 0)
188         const StartupOptions options = {});
189 #else
190         const StartupOptions options = 0);
191 #endif
192
216     bool isLocalStorageVersionTooHigh(ErrorString & errorDescription);
217
242     bool localStorageRequiresUpgrade(ErrorString & errorDescription);
243
256     QVector<std::shared_ptr<ILocalStoragePatch>> requiredLocalStoragePatches();
257
270     qint32 localStorageVersion(ErrorString & errorDescription);
271
279     qint32 highestSupportedLocalStorageVersion() const;
280
291     int userCount(ErrorString & errorDescription) const;
292
307     bool addUser(const User & user, ErrorString & errorDescription);
308
323     bool updateUser(const User & user, ErrorString & errorDescription);
324
337     bool findUser(User & user, ErrorString & errorDescription) const;
338
348     bool deleteUser(const User & user, ErrorString & errorDescription);
349
360     bool expungeUser(const User & user, ErrorString & errorDescription);
361
372     int notebookCount(ErrorString & errorDescription) const;
373
393     bool addNotebook(Notebook & notebook, ErrorString & errorDescription);
394
413     bool updateNotebook(Notebook & notebook, ErrorString & errorDescription);
414
444     bool findNotebook(
445         Notebook & notebook, ErrorString & errorDescription) const;
446
457     bool findDefaultNotebook(
458         Notebook & notebook, ErrorString & errorDescription) const;
459
470     bool findLastUsedNotebook(
471         Notebook & notebook, ErrorString & errorDescription) const;
472
484     bool findDefaultOrLastUsedNotebook(
485         Notebook & notebook, ErrorString & errorDescription) const;
486
492     enum class OrderDirection
493     {
494         Ascending = 0,
495         Descending
496     };
497
498     friend QUENTIER_EXPORT QTextStream & operator<<(
499         QTextStream & strm, const OrderDirection orderDirection);
500
501     friend QUENTIER_EXPORT QDebug & operator<<(
502         QDebug & dbg, const OrderDirection orderDirection);
503
508     enum class ListNotebooksOrder
509     {
510         ByUpdateSequenceNumber = 0,
511         ByNotebookName,
512         ByCreationTimestamp,
513         ByModificationTimestamp,
514         NoOrder
515     };
516
517     friend QUENTIER_EXPORT QTextStream & operator<<(
518         QTextStream & strm, const ListNotebooksOrder order);
519
520     friend QUENTIER_EXPORT QDebug & operator<<(
521         QDebug & dbg, const ListNotebooksOrder order);
522
556     QList<Notebook> listAllNotebooks(
557         ErrorString & errorDescription, const size_t limit = 0,
558         const size_t offset = 0,
559         const ListNotebooksOrder order = ListNotebooksOrder::NoOrder,
560         const OrderDirection orderDirection = OrderDirection::Ascending,
561         const QString & linkedNotebookGuid = QString()) const;
562
```

```
596     QList<Notebook> listNotebooks(
597         const ListObjectsOptions flag, ErrorString & errorDescription,
598         const size_t limit = 0, const size_t offset = 0,
599         const ListNotebooksOrder order = ListNotebooksOrder::NoOrder,
600         const OrderDirection orderDirection = OrderDirection::Ascending,
601         const QString & linkedNotebookGuid = QString()) const;
602
615     QList<SharedNotebook> listAllSharedNotebooks(
616         ErrorString & errorDescription) const;
617
634     QList<SharedNotebook> listSharedNotebooksPerNotebookGuid(
635         const QString & notebookGuid, ErrorString & errorDescription) const;
636
660     bool expungeNotebook(Notebook & notebook, ErrorString & errorDescription);
661
671     int linkedNotebookCount(ErrorString & errorDescription) const;
672
686     bool addLinkedNotebook(
687         const LinkedNotebook & linkedNotebook, ErrorString & errorDescription);
688
701     bool updateLinkedNotebook(
702         const LinkedNotebook & linkedNotebook, ErrorString & errorDescription);
703
719     bool findLinkedNotebook(
720         LinkedNotebook & linkedNotebook, ErrorString & errorDescription) const;
721
726     enum class ListLinkedNotebooksOrder
727     {
728         ByUpdateSequenceNumber = 0,
729         ByShareName,
730         ByUsername,
731         NoOrder
732     };
733
734     friend QUENTIER_EXPORT QTextStream & operator<<(
735         QTextStream & strm, const ListLinkedNotebooksOrder order);
736
737     friend QUENTIER_EXPORT QDebug & operator<<(
738         QDebug & strm, const ListLinkedNotebooksOrder order);
739
763     QList<LinkedNotebook> listAllLinkedNotebooks(
764         ErrorString & errorDescription, const size_t limit = 0,
765         const size_t offset = 0,
766         const ListLinkedNotebooksOrder order =
767             ListLinkedNotebooksOrder::NoOrder,
768         const OrderDirection orderDirection = OrderDirection::Ascending) const;
769
797     QList<LinkedNotebook> listLinkedNotebooks(
798         const ListObjectsOptions flag, ErrorString & errorDescription,
799         const size_t limit = 0, const size_t offset = 0,
800         const ListLinkedNotebooksOrder order =
801             ListLinkedNotebooksOrder::NoOrder,
802         const OrderDirection orderDirection = OrderDirection::Ascending) const;
803
821     bool expungeLinkedNotebook(
822         const LinkedNotebook & linkedNotebook, ErrorString & errorDescription);
823
828     enum class NoteCountOption
829     {
830         IncludeNonDeletedNotes = 1,
831         IncludeDeletedNotes = 2
832     };
833     Q_DECLARE_FLAGS(NoteCountOptions, NoteCountOption)
834
835     friend QUENTIER_EXPORT QTextStream & operator<<(
836         QTextStream & strm, const NoteCountOption option);
837
838     friend QUENTIER_EXPORT QDebug & operator<<(
839         QDebug & dbg, const NoteCountOption option);
840
841     friend QUENTIER_EXPORT QTextStream & operator<<(
842         QTextStream & strm, const NoteCountOptions options);
843
844     friend QUENTIER_EXPORT QDebug & operator<<(
845         QDebug & strm, const NoteCountOptions options);
846
859     int noteCount(
860         ErrorString & errorDescription,
861         const NoteCountOptions options =
862             NoteCountOption::IncludeNonDeletedNotes) const;
863
880     int noteCountPerNotebook(
881         const Notebook & notebook, ErrorString & errorDescription,
882         const NoteCountOptions options =
883             NoteCountOption::IncludeNonDeletedNotes) const;
884
901     int noteCountPerTag(
```

```
902         const Tag & tag, ErrorString & errorDescription,
903         const NoteCountOptions options =
904             NoteCountOption::IncludeNonDeletedNotes) const;
905
923     bool noteCountsPerAllTags(
924         QHash<QString, int> & noteCountsPerTagLocalUid,
925         ErrorString & errorDescription,
926         const NoteCountOptions options =
927             NoteCountOption::IncludeNonDeletedNotes) const;
928
947     int noteCountPerNotebooksAndTags(
948         const QStringList & notebookLocalUids, const QStringList & tagLocalUids,
949         ErrorString & errorDescription,
950         const NoteCountOptions options =
951             NoteCountOption::IncludeNonDeletedNotes) const;
952
970     bool addNote(Note & note, ErrorString & errorDescription);
971
981     enum class UpdateNoteOption
982     {
988         UpdateResourceMetadata = 1,
995         UpdateResourceBinaryData = 2,
999         UpdateTags = 4
1000     };
1001     Q_DECLARE_FLAGS(UpdateNoteOptions, UpdateNoteOption)
1002
1003     friend QUENTIER_EXPORT QTextStream & operator<<(
1004         QTextStream & strm, const UpdateNoteOption option);
1005
1006     friend QUENTIER_EXPORT QDebug & operator<<(
1007         QDebug & strm, const UpdateNoteOption option);
1008
1009     friend QUENTIER_EXPORT QTextStream & operator<<(
1010         QTextStream & strm, const UpdateNoteOptions options);
1011
1012     friend QUENTIER_EXPORT QDebug & operator<<(
1013         QDebug & strm, const UpdateNoteOptions options);
1014
1056     bool updateNote(
1057         Note & note, const UpdateNoteOptions options,
1058         ErrorString & errorDescription);
1059
1071     enum class GetNoteOption
1072     {
1078         WithResourceMetadata = 1,
1085         WithResourceBinaryData = 2
1086     };
1087     Q_DECLARE_FLAGS(GetNoteOptions, GetNoteOption)
1088
1089     friend QUENTIER_EXPORT QTextStream & operator<<(
1090         QTextStream & strm, const GetNoteOption option);
1091
1092     friend QUENTIER_EXPORT QDebug & operator<<(
1093         QDebug & dbg, const GetNoteOption option);
1094
1095     friend QUENTIER_EXPORT QTextStream & operator<<(
1096         QTextStream & strm, const GetNoteOptions options);
1097
1098     friend QUENTIER_EXPORT QDebug & operator<<(
1099         QDebug & strm, const GetNoteOptions options);
1100
1110     bool findNote(
1111         Note & note, const GetNoteOptions options,
1112         ErrorString & errorDescription) const;
1113
1118     enum class ListNotesOrder
1119     {
1120         ByUpdateSequenceNumber = 0,
1121         ByTitle,
1122         ByCreationTimestamp,
1123         ByModificationTimestamp,
1124         ByDeletionTimestamp,
1125         ByAuthor,
1126         BySource,
1127         BySourceApplication,
1128         ByReminderTime,
1129         ByPlaceName,
1130         NoOrder
1131     };
1132
1133     friend QUENTIER_EXPORT QTextStream & operator<<(
1134         QTextStream & strm, const ListNotesOrder order);
1135
1136     friend QUENTIER_EXPORT QDebug & operator<<(
1137         QDebug & strm, const ListNotesOrder order);
1138
1167     QList<Note> listNotesPerNotebook(
```

```
1168         const Notebook & notebook, const GetNoteOptions options,
1169         ErrorString & errorDescription,
1170         const ListObjectsOptions & flag = ListObjectsOption::ListAll,
1171         const size_t limit = 0, const size_t offset = 0,
1172         const ListNotesOrder & order = ListNotesOrder::NoOrder,
1173         const OrderDirection & orderDirection =
1174             OrderDirection::Ascending) const;
1175
1203     QList<Note> listNotesPerTag(
1204         const Tag & tag, const GetNoteOptions options,
1205         ErrorString & errorDescription,
1206         const ListObjectsOptions & flag = ListObjectsOption::ListAll,
1207         const size_t limit = 0, const size_t offset = 0,
1208         const ListNotesOrder & order = ListNotesOrder::NoOrder,
1209         const OrderDirection & orderDirection =
1210             OrderDirection::Ascending) const;
1211
1242     QList<Note> listNotesPerNotebooksAndTags(
1243         const QStringList & notebookLocalUids, const QStringList & tagLocalUids,
1244         const GetNoteOptions options, ErrorString & errorDescription,
1245         const ListObjectsOptions & flag = ListObjectsOption::ListAll,
1246         const size_t limit = 0, const size_t offset = 0,
1247         const ListNotesOrder & order = ListNotesOrder::NoOrder,
1248         const OrderDirection & orderDirection =
1249             OrderDirection::Ascending) const;
1250
1282     QList<Note> listNotesByLocalUids(
1283         const QStringList & noteLocalUids, const GetNoteOptions options,
1284         ErrorString & errorDescription,
1285         const ListObjectsOptions & flag = ListObjectsOption::ListAll,
1286         const size_t limit = 0, const size_t offset = 0,
1287         const ListNotesOrder & order = ListNotesOrder::NoOrder,
1288         const OrderDirection & orderDirection =
1289             OrderDirection::Ascending) const;
1290
1325     QList<Note> listNotes(
1326         const ListObjectsOptions flag, const GetNoteOptions options,
1327         ErrorString & errorDescription, const size_t limit = 0,
1328         const size_t offset = 0,
1329         const ListNotesOrder order = ListNotesOrder::NoOrder,
1330         const OrderDirection orderDirection = OrderDirection::Ascending,
1331         const QString & linkedNotebookGuid = QString()) const;
1332
1344     QStringList findNoteLocalUidsWithSearchQuery(
1345         const NoteSearchQuery & noteSearchQuery,
1346         ErrorString & errorDescription) const;
1347
1363     NoteList findNotesWithSearchQuery(
1364         const NoteSearchQuery & noteSearchQuery, const GetNoteOptions options,
1365         ErrorString & errorDescription) const;
1366
1384     bool expungeNote(Note & note, ErrorString & errorDescription);
1385
1395     int tagCount(ErrorString & errorDescription) const;
1396
1410     bool addTag(Tag & tag, ErrorString & errorDescription);
1411
1429     bool updateTag(Tag & tag, ErrorString & errorDescription);
1430
1455     bool findTag(Tag & tag, ErrorString & errorDescription) const;
1456
1461     enum class ListTagsOrder
1462     {
1463         ByUpdateSequenceNumber,
1464         ByName,
1465         NoOrder
1466     };
1467
1468     friend QUENTIER_EXPORT QTextStream & operator<<(
1469         QTextStream & strm, const ListTagsOrder order);
1470
1471     friend QUENTIER_EXPORT QDebug & operator<<(
1472         QDebug & strm, const ListTagsOrder order);
1473
1502     QList<Tag> listAllTagsPerNote(
1503         const Note & note, ErrorString & errorDescription,
1504         const ListObjectsOptions & flag = ListObjectsOption::ListAll,
1505         const size_t limit = 0, const size_t offset = 0,
1506         const ListTagsOrder & order = ListTagsOrder::NoOrder,
1507         const OrderDirection & orderDirection =
1508             OrderDirection::Ascending) const;
1509
1540     QList<Tag> listAllTags(
1541         ErrorString & errorDescription, const size_t limit = 0,
1542         const size_t offset = 0,
1543         const ListTagsOrder order = ListTagsOrder::NoOrder,
1544         const OrderDirection orderDirection = OrderDirection::Ascending,
```

```
1545         const QString & linkedNotebookGuid = QString()) const;
1546
1579     QList<Tag> listTags(
1580         const ListObjectsOptions flag, ErrorString & errorDescription,
1581         const size_t limit = 0, const size_t offset = 0,
1582         const ListTagsOrder & order = ListTagsOrder::NoOrder,
1583         const OrderDirection orderDirection = OrderDirection::Ascending,
1584         const QString & linkedNotebookGuid = QString()) const;
1585
1624     QList<std::pair<Tag, QStringList» listTagsWithNoteLocalUids(
1625         const ListObjectsOptions flag, ErrorString & errorDescription,
1626         const size_t limit = 0, const size_t offset = 0,
1627         const ListTagsOrder & order = ListTagsOrder::NoOrder,
1628         const OrderDirection orderDirection = OrderDirection::Ascending,
1629         const QString & linkedNotebookGuid = QString()) const;
1630
1655     bool expungeTag(
1656         Tag & tag, QStringList & expungedChildTagLocalUids,
1657         ErrorString & errorDescription);
1658
1669     bool expungeNotelessTagsFromLinkedNotebooks(ErrorString & errorDescription);
1670
1682     int enResourceCount(ErrorString & errorDescription) const;
1683
1700     bool addEnResource(Resource & resource, ErrorString & errorDescription);
1701
1722     bool updateEnResource(Resource & resource, ErrorString & errorDescription);
1723
1734     enum class GetResourceOption
1735     {
1740         WithBinaryData = 1
1741     };
1742     Q_DECLARE_FLAGS(GetResourceOptions, GetResourceOption)
1743
1744     friend QUENTIER_EXPORT QTextStream & operator«(
1745         QTextStream & strm, const GetResourceOption option);
1746
1747     friend QUENTIER_EXPORT QDebug & operator«(
1748         QDebug & strm, const GetResourceOption option);
1749
1750     friend QUENTIER_EXPORT QTextStream & operator«(
1751         QTextStream & strm, const GetResourceOptions options);
1752
1753     friend QUENTIER_EXPORT QDebug & operator«(
1754         QDebug & strm, const GetResourceOptions options);
1755
1774     bool findEnResource(
1775         Resource & resource, const GetResourceOptions options,
1776         ErrorString & errorDescription) const;
1777
1792     bool expungeEnResource(Resource & resource, ErrorString & errorDescription);
1793
1803     int savedSearchCount(ErrorString & errorDescription) const;
1804
1821     bool addSavedSearch(SavedSearch & search, ErrorString & errorDescription);
1822
1841     bool updateSavedSearch(
1842         SavedSearch & search, ErrorString & errorDescription);
1843
1861     bool findSavedSearch(
1862         SavedSearch & search, ErrorString & errorDescription) const;
1863
1868     enum class ListSavedSearchesOrder
1869     {
1870         ByUpdateSequenceNumber = 0,
1871         ByName,
1872         ByFormat,
1873         NoOrder
1874     };
1875
1876     friend QUENTIER_EXPORT QTextStream & operator«(
1877         QTextStream & strm, const ListSavedSearchesOrder order);
1878
1879     friend QUENTIER_EXPORT QDebug & operator«(
1880         QDebug & strm, const ListSavedSearchesOrder order);
1881
1904     QList<SavedSearch> listAllSavedSearches(
1905         ErrorString & errorDescription, const size_t limit = 0,
1906         const size_t offset = 0,
1907         const ListSavedSearchesOrder order = ListSavedSearchesOrder::NoOrder,
1908         const OrderDirection orderDirection = OrderDirection::Ascending) const;
1909
1939     QList<SavedSearch> listSavedSearches(
1940         const ListObjectsOptions flag, ErrorString & errorDescription,
1941         const size_t limit = 0, const size_t offset = 0,
1942         const ListSavedSearchesOrder order = ListSavedSearchesOrder::NoOrder,
1943         const OrderDirection orderDirection = OrderDirection::Ascending) const;
```

```
1944
1958     bool expungeSavedSearch(
1959         SavedSearch & search, ErrorString & errorDescription);
1960
1978     qint32 accountHighUsn(
1979         const QString & linkedNotebookGuid, ErrorString & errorDescription);
1980
1981 private:
1982     Q_DISABLE_COPY(LocalStorageManager)
1983
1984     LocalStorageManagerPrivate * const d_ptr;
1985     Q_DECLARE_PRIVATE(LocalStorageManager)
1986 };
1987
1988 Q_DECLARE_OPERATORS_FOR_FLAGS(LocalStorageManager::GetNoteOptions)
1989 Q_DECLARE_OPERATORS_FOR_FLAGS(LocalStorageManager::ListObjectsOptions)
1990 Q_DECLARE_OPERATORS_FOR_FLAGS(LocalStorageManager::StartupOptions)
1991 Q_DECLARE_OPERATORS_FOR_FLAGS(LocalStorageManager::UpdateNoteOptions)
1992
1993 } // namespace quentier
1994
1995 #endif // LIB_QUENTIER_LOCAL_STORAGE_LOCAL_STORAGE_MANAGER_H
```

6.22 LocalStorageManagerAsync.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
6  * libquentier is free software; you can redistribute it and/or modify
7  * it under the terms of the GNU Lesser General Public License as published by
8  * the Free Software Foundation, version 3 of the License.
9  *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_LOCAL_STORAGE_LOCAL_STORAGE_MANAGER_ASYNC_H
20 #define LIB_QUENTIER_LOCAL_STORAGE_LOCAL_STORAGE_MANAGER_ASYNC_H
21
22 #include <quentier/local_storage/ILocalStorageCacheExpiryChecker.h>
23 #include <quentier/local_storage/LocalStorageCacheManager.h>
24 #include <quentier/local_storage/LocalStorageManager.h>
25 #include <quentier/types/ErrorString.h>
26 #include <quentier/types/LinkedNotebook.h>
27 #include <quentier/types/Note.h>
28 #include <quentier/types/Notebook.h>
29 #include <quentier/types/Resource.h>
30 #include <quentier/types/SavedSearch.h>
31 #include <quentier/types/SharedNotebook.h>
32 #include <quentier/types/Tag.h>
33 #include <quentier/types/User.h>
34
35 #include <QObject>
36
37 #include <memory>
38
39 namespace quentier {
40
41 QT_FORWARD_DECLARE_CLASS(LocalStorageManagerAsyncPrivate)
42
43 class QUENTIER_EXPORT LocalStorageManagerAsync :  public QObject
44 {
45     Q_OBJECT
46 public:
47     explicit LocalStorageManagerAsync(
48         const Account & account,
49 #if QT_VERSION >= QT_VERSION_CHECK(5, 15, 0)
50         LocalStorageManager::StartupOptions options = {},
51 #else
52         LocalStorageManager::StartupOptions options = 0,
53 #endif
54         QObject * parent = nullptr);
55
56     virtual ~LocalStorageManagerAsync();
57
58     void setUseCache(const bool useCache);
```

```
59
60      const LocalStorageCacheManager * localStorageCacheManager() const;
61
62      bool installCacheExpiryFunction(
63          const ILocalStorageCacheExpiryChecker & checker);
64
65      const LocalStorageManager * localStorageManager() const;
66      LocalStorageManager * localStorageManager();
67
68  Q_SIGNALS:
69      // Sent when the initialization is complete
70      void initialized();
71
72      // User-related signals:
73      void getUserCountComplete(int userCount, QUuid requestId);
74      void getUserCountFailed(ErrorString errorDescription, QUuid requestId);
75      void switchUserComplete(Account account, QUuid requestId);
76
77      void switchUserFailed(
78          Account account, ErrorString errorDescription, QUuid requestId);
79
80      void addUserComplete(User user, QUuid requestId);
81
82      void addUserFailed(
83          User user, ErrorString errorDescription, QUuid requestId);
84
85      void updateUserComplete(User user, QUuid requestId);
86
87      void updateUserFailed(
88          User user, ErrorString errorDescription, QUuid requestId);
89
90      void findUserComplete(User foundUser, QUuid requestId);
91
92      void findUserFailed(
93          User user, ErrorString errorDescription, QUuid requestId);
94
95      void deleteUserComplete(User user, QUuid requestId);
96
97      void deleteUserFailed(
98          User user, ErrorString errorDescription, QUuid requestId);
99
100     void expungeUserComplete(User user, QUuid requestId);
101
102     void expungeUserFailed(
103         User user, ErrorString errorDescription, QUuid requestId);
104
105     // Notebook-related signals:
106     void getNotebookCountComplete(int notebookCount, QUuid requestId);
107     void getNotebookCountFailed(ErrorString errorDescription, QUuid requestId);
108     void addNotebookComplete(Notebook notebook, QUuid requestId);
109
110     void addNotebookFailed(
111         Notebook notebook, ErrorString errorDescription, QUuid requestId);
112
113     void updateNotebookComplete(Notebook notebook, QUuid requestId);
114
115     void updateNotebookFailed(
116         Notebook notebook, ErrorString errorDescription, QUuid requestId);
117
118     void findNotebookComplete(Notebook foundNotebook, QUuid requestId);
119
120     void findNotebookFailed(
121         Notebook notebook, ErrorString errorDescription, QUuid requestId);
122
123     void findDefaultNotebookComplete(Notebook foundNotebook, QUuid requestId);
124
125     void findDefaultNotebookFailed(
126         Notebook notebook, ErrorString errorDescription, QUuid requestId);
127
128     void findLastUsedNotebookComplete(Notebook foundNotebook, QUuid requestId);
129
130     void findLastUsedNotebookFailed(
131         Notebook notebook, ErrorString errorDescription, QUuid requestId);
132
133     void findDefaultOrLastUsedNotebookComplete(
134         Notebook foundNotebook, QUuid requestId);
135
136     void findDefaultOrLastUsedNotebookFailed(
137         Notebook notebook, ErrorString errorDescription, QUuid requestId);
138
139     void listAllNotebooksComplete(
140         size_t limit, size_t offset,
141         LocalStorageManager::ListNotebooksOrder order,
142         LocalStorageManager::OrderDirection orderDirection,
143         QString linkedNotebookGuid, QList<Notebook> foundNotebooks,
144         QUuid requestId);
145
```

```
146     void listAllNotebooksFailed(
147         size_t limit, size_t offset,
148         LocalStorageManager::ListNotebooksOrder order,
149         LocalStorageManager::OrderDirection orderDirection,
150         QString linkedNotebookGuid, ErrorString errorDescription,
151         QUuid requestId);
152
153     void listNotebooksComplete(
154         LocalStorageManager::ListObjectsOptions flag, size_t limit,
155         size_t offset, LocalStorageManager::ListNotebooksOrder order,
156         LocalStorageManager::OrderDirection orderDirection,
157         QString linkedNotebookGuid, QList<Notebook> foundNotebooks,
158         QUuid requestId);
159
160     void listNotebooksFailed(
161         LocalStorageManager::ListObjectsOptions flag, size_t limit,
162         size_t offset, LocalStorageManager::ListNotebooksOrder order,
163         LocalStorageManager::OrderDirection orderDirection,
164         QString linkedNotebookGuid, ErrorString errorDescription,
165         QUuid requestId);
166
167     void listAllSharedNotebooksComplete(
168         QList<SharedNotebook> foundSharedNotebooks, QUuid requestId);
169
170     void listAllSharedNotebooksFailed(
171         ErrorString errorDescription, QUuid requestId);
172
173     void listSharedNotebooksPerNotebookGuidComplete(
174         QString notebookGuid, QList<SharedNotebook> foundSharedNotebooks,
175         QUuid requestId);
176
177     void listSharedNotebooksPerNotebookGuidFailed(
178         QString notebookGuid, ErrorString errorDescription, QUuid requestId);
179
180     void expungeNotebookComplete(Notebook notebook, QUuid requestId);
181
182     void expungeNotebookFailed(
183         Notebook notebook, ErrorString errorDescription, QUuid requestId);
184
185     // Linked notebook-related signals:
186     void getLinkedNotebookCountComplete(
187         int linkedNotebookCount, QUuid requestId);
188
189     void getLinkedNotebookCountFailed(
190         ErrorString errorDescription, QUuid requestId);
191
192     void addLinkedNotebookComplete(
193         LinkedNotebook linkedNotebook, QUuid requestId);
194
195     void addLinkedNotebookFailed(
196         LinkedNotebook linkedNotebook, ErrorString errorDescription,
197         QUuid requestId);
198
199     void updateLinkedNotebookComplete(
200         LinkedNotebook linkedNotebook, QUuid requestId);
201
202     void updateLinkedNotebookFailed(
203         LinkedNotebook linkedNotebook, ErrorString errorDescription,
204         QUuid requestId);
205
206     void findLinkedNotebookComplete(
207         LinkedNotebook foundLinkedNotebook, QUuid requestId);
208
209     void findLinkedNotebookFailed(
210         LinkedNotebook linkedNotebook, ErrorString errorDescription,
211         QUuid requestId);
212
213     void listAllLinkedNotebooksComplete(
214         size_t limit, size_t offset,
215         LocalStorageManager::ListLinkedNotebooksOrder order,
216         LocalStorageManager::OrderDirection orderDirection,
217         QList<LinkedNotebook> foundLinkedNotebooks, QUuid requestId);
218
219     void listAllLinkedNotebooksFailed(
220         size_t limit, size_t offset,
221         LocalStorageManager::ListLinkedNotebooksOrder order,
222         LocalStorageManager::OrderDirection orderDirection,
223         ErrorString errorDescription, QUuid requestId);
224
225     void listLinkedNotebooksComplete(
226         LocalStorageManager::ListObjectsOptions flag, size_t limit,
227         size_t offset, LocalStorageManager::ListLinkedNotebooksOrder order,
228         LocalStorageManager::OrderDirection orderDirection,
229         QList<LinkedNotebook> foundLinkedNotebooks, QUuid requestId);
230
231     void listLinkedNotebooksFailed(
232         LocalStorageManager::ListObjectsOptions flag, size_t limit,
```

```
233         size_t offset, LocalStorageManager::ListLinkedNotebooksOrder order,
234         LocalStorageManager::OrderDirection orderDirection,
235         ErrorString errorDescription, QUuid requestId);
236
237     void expungeLinkedNotebookComplete(
238         LinkedNotebook linkedNotebook, QUuid requestId);
239
240     void expungeLinkedNotebookFailed(
241         LinkedNotebook linkedNotebook, ErrorString errorDescription,
242         QUuid requestId);
243
244     // Note-related signals:
245     void getNoteCountComplete(
246         int noteCount, LocalStorageManager::NoteCountOptions options,
247         QUuid requestId);
248
249     void getNoteCountFailed(
250         ErrorString errorDescription,
251         LocalStorageManager::NoteCountOptions options, QUuid requestId);
252
253     void getNoteCountPerNotebookComplete(
254         int noteCount, Notebook notebook,
255         LocalStorageManager::NoteCountOptions options, QUuid requestId);
256
257     void getNoteCountPerNotebookFailed(
258         ErrorString errorDescription, Notebook notebook,
259         LocalStorageManager::NoteCountOptions options, QUuid requestId);
260
261     void getNoteCountPerTagComplete(
262         int noteCount, Tag tag, LocalStorageManager::NoteCountOptions options,
263         QUuid requestId);
264
265     void getNoteCountPerTagFailed(
266         ErrorString errorDescription, Tag tag,
267         LocalStorageManager::NoteCountOptions options, QUuid requestId);
268
269     void getNoteCountsPerAllTagsComplete(
270         QHash<QString, int> noteCountsPerTagLocalUid,
271         LocalStorageManager::NoteCountOptions options, QUuid requestId);
272
273     void getNoteCountsPerAllTagsFailed(
274         ErrorString errorDescription,
275         LocalStorageManager::NoteCountOptions options, QUuid requestId);
276
277     void getNoteCountPerNotebooksAndTagsComplete(
278         int noteCount, QStringList notebookLocalUids, QStringList tagLocalUids,
279         LocalStorageManager::NoteCountOptions options, QUuid requestId);
280
281     void getNoteCountPerNotebooksAndTagsFailed(
282         ErrorString errorDescription, QStringList notebookLocalUids,
283         QStringList tagLocalUids, LocalStorageManager::NoteCountOptions options,
284         QUuid requestId);
285
286     void addNoteComplete(Note note, QUuid requestId);
287
288     void addNoteFailed(
289         Note note, ErrorString errorDescription, QUuid requestId);
290
291     void updateNoteComplete(
292         Note note, LocalStorageManager::UpdateNoteOptions options,
293         QUuid requestId);
294
295     void updateNoteFailed(
296         Note note, LocalStorageManager::UpdateNoteOptions options,
297         ErrorString errorDescription, QUuid requestId);
298
299     void findNoteComplete(
300         Note foundNote, LocalStorageManager::GetNoteOptions options,
301         QUuid requestId);
302
303     void findNoteFailed(
304         Note note, LocalStorageManager::GetNoteOptions options,
305         ErrorString errorDescription, QUuid requestId);
306
307     void listNotesPerNotebookComplete(
308         Notebook notebook, LocalStorageManager::GetNoteOptions options,
309         LocalStorageManager::ListObjectsOptions flag, size_t limit,
310         size_t offset, LocalStorageManager::ListNotesOrder order,
311         LocalStorageManager::OrderDirection orderDirection,
312         QList<Note> foundNotes, QUuid requestId);
313
314     void listNotesPerNotebookFailed(
315         Notebook notebook, LocalStorageManager::GetNoteOptions options,
316         LocalStorageManager::ListObjectsOptions flag, size_t limit,
317         size_t offset, LocalStorageManager::ListNotesOrder order,
318         LocalStorageManager::OrderDirection orderDirection,
319         ErrorString errorDescription, QUuid requestId);
```

```
320
321     void listNotesPerTagComplete(
322         Tag tag, LocalStorageManager::GetNoteOptions options,
323         LocalStorageManager::ListObjectsOptions flag, size_t limit,
324         size_t offset, LocalStorageManager::ListNotesOrder order,
325         LocalStorageManager::OrderDirection orderDirection,
326         QList<Note> foundNotes, QUuid requestId);
327
328     void listNotesPerTagFailed(
329         Tag tag, LocalStorageManager::GetNoteOptions options,
330         LocalStorageManager::ListObjectsOptions flag, size_t limit,
331         size_t offset, LocalStorageManager::ListNotesOrder order,
332         LocalStorageManager::OrderDirection orderDirection,
333         ErrorString errorDescription, QUuid requestId);
334
335     void listNotesPerNotebooksAndTagsComplete(
336         QStringList notebookLocalUids, QStringList tagLocalUids,
337         LocalStorageManager::GetNoteOptions options,
338         LocalStorageManager::ListObjectsOptions flag, size_t limit,
339         size_t offset, LocalStorageManager::ListNotesOrder order,
340         LocalStorageManager::OrderDirection orderDirection,
341         QList<Note> foundNotes, QUuid requestId);
342
343     void listNotesPerNotebooksAndTagsFailed(
344         QStringList notebookLocalUids, QStringList tagLocalUids,
345         LocalStorageManager::GetNoteOptions options,
346         LocalStorageManager::ListObjectsOptions flag, size_t limit,
347         size_t offset, LocalStorageManager::ListNotesOrder order,
348         LocalStorageManager::OrderDirection orderDirection,
349         ErrorString errorDescription, QUuid requestId);
350
351     void listNotesByLocalUidsComplete(
352         QStringList noteLocalUids, LocalStorageManager::GetNoteOptions options,
353         LocalStorageManager::ListObjectsOptions flag, size_t limit,
354         size_t offset, LocalStorageManager::ListNotesOrder order,
355         LocalStorageManager::OrderDirection orderDirection,
356         QList<Note> foundNotes, QUuid requestId);
357
358     void listNotesByLocalUidsFailed(
359         QStringList noteLocalUids, LocalStorageManager::GetNoteOptions options,
360         LocalStorageManager::ListObjectsOptions flag, size_t limit,
361         size_t offset, LocalStorageManager::ListNotesOrder order,
362         LocalStorageManager::OrderDirection orderDirection,
363         ErrorString errorDescription, QUuid requestId);
364
365     void listNotesComplete(
366         LocalStorageManager::ListObjectsOptions flag,
367         LocalStorageManager::GetNoteOptions options, size_t limit,
368         size_t offset, LocalStorageManager::ListNotesOrder order,
369         LocalStorageManager::OrderDirection orderDirection,
370         QString linkedNotebookGuid, QList<Note> foundNotes, QUuid requestId);
371
372     void listNotesFailed(
373         LocalStorageManager::ListObjectsOptions flag,
374         LocalStorageManager::GetNoteOptions options, size_t limit,
375         size_t offset, LocalStorageManager::ListNotesOrder order,
376         LocalStorageManager::OrderDirection orderDirection,
377         QString linkedNotebookGuid, ErrorString errorDescription,
378         QUuid requestId);
379
380     void findNoteLocalUidsWithSearchQueryComplete(
381         QStringList noteLocalUids, NoteSearchQuery noteSearchQuery,
382         QUuid requestId);
383
384     void findNoteLocalUidsWithSearchQueryFailed(
385         NoteSearchQuery noteSearchQuery, ErrorString errorDescription,
386         QUuid requestId);
387
388     void expungeNoteComplete(Note note, QUuid requestId);
389
390     void expungeNoteFailed(
391         Note note, ErrorString errorDescription, QUuid requestId);
392
393     // Specialized signal emitted alongside updateNoteComplete (after it)
394     // if the update of a note causes the change of its notebook
395     void noteMovedToAnotherNotebook(
396         QString noteLocalUid, QString previousNotebookLocalUid,
397         QString newNotebookLocalUid);
398
399     // Specialized signal emitted alongside updateNoteComplete (after it)
400     // if the update of a note causes the change of its set of tags
401     void noteTagListChanged(
402         QString noteLocalUid, QStringList previousNoteTagLocalUids,
403         QStringList newNoteTagLocalUids);
404
405     // Tag-related signals:
406     void getTagCountComplete(int tagCount, QUuid requestId);
```

```
407     void getTagCountFailed(ErrorString errorDescription, QUuid requestId);
408     void addTagComplete(Tag tag, QUuid requestId);
409     void addTagFailed(Tag tag, ErrorString errorDescription, QUuid requestId);
410     void updateTagComplete(Tag tag, QUuid requestId);
411
412     void updateTagFailed(
413         Tag tag, ErrorString errorDescription, QUuid requestId);
414
415     void linkTagWithNoteComplete(Tag tag, Note note, QUuid requestId);
416
417     void linkTagWithNoteFailed(
418         Tag tag, Note note, ErrorString errorDescription, QUuid requestId);
419
420     void findTagComplete(Tag tag, QUuid requestId);
421     void findTagFailed(Tag tag, ErrorString errorDescription, QUuid requestId);
422
423     void listAllTagsPerNoteComplete(
424         QList<Tag> foundTags, Note note,
425         LocalStorageManager::ListObjectsOptions flag, size_t limit,
426         size_t offset, LocalStorageManager::ListTagsOrder order,
427         LocalStorageManager::OrderDirection orderDirection, QUuid requestId);
428
429     void listAllTagsPerNoteFailed(
430         Note note, LocalStorageManager::ListObjectsOptions flag, size_t limit,
431         size_t offset, LocalStorageManager::ListTagsOrder order,
432         LocalStorageManager::OrderDirection orderDirection,
433         ErrorString errorDescription, QUuid requestId);
434
435     void listAllTagsComplete(
436         size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order,
437         LocalStorageManager::OrderDirection orderDirection,
438         QString linkedNotebookGuid, QList<Tag> foundTags, QUuid requestId);
439
440     void listAllTagsFailed(
441         size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order,
442         LocalStorageManager::OrderDirection orderDirection,
443         QString linkedNotebookGuid, ErrorString errorDescription,
444         QUuid requestId);
445
446     void listTagsComplete(
447         LocalStorageManager::ListObjectsOptions flag, size_t limit,
448         size_t offset, LocalStorageManager::ListTagsOrder order,
449         LocalStorageManager::OrderDirection orderDirection,
450         QString linkedNotebookGuid, QList<Tag> foundTags,
451         QUuid requestId = QUuid());
452
453     void listTagsFailed(
454         LocalStorageManager::ListObjectsOptions flag, size_t limit,
455         size_t offset, LocalStorageManager::ListTagsOrder order,
456         LocalStorageManager::OrderDirection orderDirection,
457         QString linkedNotebookGuid, ErrorString errorDescription,
458         QUuid requestId);
459
460     void listTagsWithNoteLocalUidsComplete(
461         LocalStorageManager::ListObjectsOptions flag, size_t limit,
462         size_t offset, LocalStorageManager::ListTagsOrder order,
463         LocalStorageManager::OrderDirection orderDirection,
464         QString linkedNotebookGuid,
465         QList<std::pair<Tag, QStringList» foundTags, QUuid requestId);
466
467     void listTagsWithNoteLocalUidsFailed(
468         LocalStorageManager::ListObjectsOptions flag, size_t limit,
469         size_t offset, LocalStorageManager::ListTagsOrder order,
470         LocalStorageManager::OrderDirection orderDirection,
471         QString linkedNotebookGuid, ErrorString errorDescription,
472         QUuid requestId);
473
474     void expungeTagComplete(
475         Tag tag, QStringList expungedChildTagLocalUids, QUuid requestId);
476
477     void expungeTagFailed(
478         Tag tag, ErrorString errorDescription, QUuid requestId);
479
480     void expungeNotelessTagsFromLinkedNotebooksComplete(QUuid requestId);
481
482     void expungeNotelessTagsFromLinkedNotebooksFailed(
483         ErrorString errorDescription, QUuid requestId);
484
485     // Resource-related signals:
486     void getResourceCountComplete(int resourceCount, QUuid requestId);
487     void getResourceCountFailed(ErrorString errorDescription, QUuid requestId);
488     void addResourceComplete(Resource resource, QUuid requestId);
489
490     void addResourceFailed(
491         Resource resource, ErrorString errorDescription, QUuid requestId);
492
493     void updateResourceComplete(Resource resource, QUuid requestId);
```

```
494
495     void updateResourceFailed(
496         Resource resource, ErrorString errorDescription, QUuid requestId);
497
498     void findResourceComplete(
499         Resource resource, LocalStorageManager::GetResourceOptions options,
500         QUuid requestId);
501
502     void findResourceFailed(
503         Resource resource, LocalStorageManager::GetResourceOptions options,
504         ErrorString errorDescription, QUuid requestId);
505
506     void expungeResourceComplete(Resource resource, QUuid requestId);
507
508     void expungeResourceFailed(
509         Resource resource, ErrorString errorDescription, QUuid requestId);
510
511     // Saved search-related signals:
512     void getSavedSearchCountComplete(int savedSearchCount, QUuid requestId);
513
514     void getSavedSearchCountFailed(
515         ErrorString errorDescription, QUuid requestId);
516
517     void addSavedSearchComplete(SavedSearch search, QUuid requestId);
518
519     void addSavedSearchFailed(
520         SavedSearch search, ErrorString errorDescription, QUuid requestId);
521
522     void updateSavedSearchComplete(SavedSearch search, QUuid requestId);
523
524     void updateSavedSearchFailed(
525         SavedSearch search, ErrorString errorDescription, QUuid requestId);
526
527     void findSavedSearchComplete(SavedSearch search, QUuid requestId);
528
529     void findSavedSearchFailed(
530         SavedSearch search, ErrorString errorDescription, QUuid requestId);
531
532     void listAllSavedSearchesComplete(
533         size_t limit, size_t offset,
534         LocalStorageManager::ListSavedSearchesOrder order,
535         LocalStorageManager::OrderDirection orderDirection,
536         QList<SavedSearch> foundSearches, QUuid requestId);
537
538     void listAllSavedSearchesFailed(
539         size_t limit, size_t offset,
540         LocalStorageManager::ListSavedSearchesOrder order,
541         LocalStorageManager::OrderDirection orderDirection,
542         ErrorString errorDescription, QUuid requestId);
543
544     void listSavedSearchesComplete(
545         LocalStorageManager::ListObjectsOptions flag, size_t limit,
546         size_t offset, LocalStorageManager::ListSavedSearchesOrder order,
547         LocalStorageManager::OrderDirection orderDirection,
548         QList<SavedSearch> foundSearches, QUuid requestId);
549
550     void listSavedSearchesFailed(
551         LocalStorageManager::ListObjectsOptions flag, size_t limit,
552         size_t offset, LocalStorageManager::ListSavedSearchesOrder order,
553         LocalStorageManager::OrderDirection orderDirection,
554         ErrorString errorDescription, QUuid requestId);
555
556     void expungeSavedSearchComplete(SavedSearch search, QUuid requestId);
557
558     void expungeSavedSearchFailed(
559         SavedSearch search, ErrorString errorDescription, QUuid requestId);
560
561     void accountHighUsnComplete(
562         qint32 usn, QString linkedNotebookGuid, QUuid requestId);
563
564     void accountHighUsnFailed(
565         QString linkedNotebookGuid, ErrorString errorDescription,
566         QUuid requestId);
567
568 public Q_SLOTS:
569     void init();
570
571     // User-related slots:
572     void onGetUserCountRequest(QUuid requestId);
573
574     void onSwitchUserRequest(
575         Account account, LocalStorageManager::StartupOptions startupOptions,
576         QUuid requestId);
577
578     void onAddUserRequest(User user, QUuid requestId);
579     void onUpdateUserRequest(User user, QUuid requestId);
580     void onFindUserRequest(User user, QUuid requestId);
```

```
581     void onDeleteUserRequest(User user, QUuid requestId);
582     void onExpungeUserRequest(User user, QUuid requestId);
583
584     // Notebook-related slots:
585     void onGetNotebookCountRequest(QUuid requestId);
586     void onAddNotebookRequest(Notebook notebook, QUuid requestId);
587     void onUpdateNotebookRequest(Notebook notebook, QUuid requestId);
588     void onFindNotebookRequest(Notebook notebook, QUuid requestId);
589     void onFindDefaultNotebookRequest(Notebook notebook, QUuid requestId);
590     void onFindLastUsedNotebookRequest(Notebook notebook, QUuid requestId);
591
592     void onFindDefaultOrLastUsedNotebookRequest(
593         Notebook notebook, QUuid requestId);
594
595     void onListAllNotebooksRequest(
596         size_t limit, size_t offset,
597         LocalStorageManager::ListNotebooksOrder order,
598         LocalStorageManager::OrderDirection orderDirection,
599         QString linkedNotebookGuid, QUuid requestId);
600
601     void onListAllSharedNotebooksRequest(QUuid requestId);
602
603     void onListNotebooksRequest(
604         LocalStorageManager::ListObjectsOptions flag, size_t limit,
605         size_t offset, LocalStorageManager::ListNotebooksOrder order,
606         LocalStorageManager::OrderDirection orderDirection,
607         QString linkedNotebookGuid, QUuid requestId);
608
609     void onListSharedNotebooksPerNotebookGuidRequest(
610         QString notebookGuid, QUuid requestId);
611
612     void onExpungeNotebookRequest(Notebook notebook, QUuid requestId);
613
614     // Linked notebook-related slots:
615     void onGetLinkedNotebookCountRequest(QUuid requestId);
616
617     void onAddLinkedNotebookRequest(
618         LinkedNotebook linkedNotebook, QUuid requestId);
619
620     void onUpdateLinkedNotebookRequest(
621         LinkedNotebook linkedNotebook, QUuid requestId);
622
623     void onFindLinkedNotebookRequest(
624         LinkedNotebook linkedNotebook, QUuid requestId);
625
626     void onListAllLinkedNotebooksRequest(
627         size_t limit, size_t offset,
628         LocalStorageManager::ListLinkedNotebooksOrder order,
629         LocalStorageManager::OrderDirection orderDirection, QUuid requestId);
630
631     void onListLinkedNotebooksRequest(
632         LocalStorageManager::ListObjectsOptions flag, size_t limit,
633         size_t offset, LocalStorageManager::ListLinkedNotebooksOrder order,
634         LocalStorageManager::OrderDirection orderDirection, QUuid requestId);
635
636     void onExpungeLinkedNotebookRequest(
637         LinkedNotebook linkedNotebook, QUuid requestId);
638
639     // Note-related slots:
640     void onGetNoteCountRequest(
641         LocalStorageManager::NoteCountOptions options, QUuid requestId);
642
643     void onGetNoteCountPerNotebookRequest(
644         Notebook notebook, LocalStorageManager::NoteCountOptions options,
645         QUuid requestId);
646
647     void onGetNoteCountPerTagRequest(
648         Tag tag, LocalStorageManager::NoteCountOptions options,
649         QUuid requestId);
650
651     void onGetNoteCountsPerAllTagsRequest(
652         LocalStorageManager::NoteCountOptions options, QUuid requestId);
653
654     void onGetNoteCountPerNotebooksAndTagsRequest(
655         QStringList notebookLocalUids, QStringList tagLocalUids,
656         LocalStorageManager::NoteCountOptions options, QUuid requestId);
657
658     void onAddNoteRequest(Note note, QUuid requestId);
659
660     void onUpdateNoteRequest(
661         Note note, LocalStorageManager::UpdateNoteOptions options,
662         QUuid requestId);
663
664     void onFindNoteRequest(
665         Note note, LocalStorageManager::GetNoteOptions options,
666         QUuid requestId);
667
```

```
668     void onListNotesPerNotebookRequest(
669         Notebook notebook, LocalStorageManager::GetNoteOptions options,
670         LocalStorageManager::ListObjectsOptions flag, size_t limit,
671         size_t offset, LocalStorageManager::ListNotesOrder order,
672         LocalStorageManager::OrderDirection orderDirection, QUuid requestId);
673
674     void onListNotesPerTagRequest(
675         Tag tag, LocalStorageManager::GetNoteOptions options,
676         LocalStorageManager::ListObjectsOptions flag, size_t limit,
677         size_t offset, LocalStorageManager::ListNotesOrder order,
678         LocalStorageManager::OrderDirection orderDirection, QUuid requestId);
679
680     void onListNotesPerNotebooksAndTagsRequest(
681         QStringList notebookLocalUids, QStringList tagLocalUids,
682         LocalStorageManager::GetNoteOptions options,
683         LocalStorageManager::ListObjectsOptions flag, size_t limit,
684         size_t offset, LocalStorageManager::ListNotesOrder order,
685         LocalStorageManager::OrderDirection orderDirection, QUuid requestId);
686
687     void onListNotesByLocalUidsRequest(
688         QStringList noteLocalUids, LocalStorageManager::GetNoteOptions options,
689         LocalStorageManager::ListObjectsOptions flag, size_t limit,
690         size_t offset, LocalStorageManager::ListNotesOrder order,
691         LocalStorageManager::OrderDirection orderDirection, QUuid requestId);
692
693     void onListNotesRequest(
694         LocalStorageManager::ListObjectsOptions flag,
695         LocalStorageManager::GetNoteOptions options, size_t limit,
696         size_t offset, LocalStorageManager::ListNotesOrder order,
697         LocalStorageManager::OrderDirection orderDirection,
698         QString linkedNotebookGuid, QUuid requestId);
699
700     void onFindNoteLocalUidsWithSearchQuery(
701         NoteSearchQuery noteSearchQuery, QUuid requestId);
702
703     void onExpungeNoteRequest(Note note, QUuid requestId);
704
705     // Tag-related slots:
706     void onGetTagCountRequest(QUuid requestId);
707     void onAddTagRequest(Tag tag, QUuid requestId);
708     void onUpdateTagRequest(Tag tag, QUuid requestId);
709     void onFindTagRequest(Tag tag, QUuid requestId);
710
711     void onListAllTagsPerNoteRequest(
712         Note note, LocalStorageManager::ListObjectsOptions flag, size_t limit,
713         size_t offset, LocalStorageManager::ListTagsOrder order,
714         LocalStorageManager::OrderDirection orderDirection, QUuid requestId);
715
716     void onListAllTagsRequest(
717         size_t limit, size_t offset, LocalStorageManager::ListTagsOrder order,
718         LocalStorageManager::OrderDirection orderDirection,
719         QString linkedNotebookGuid, QUuid requestId);
720
721     void onListTagsRequest(
722         LocalStorageManager::ListObjectsOptions flag, size_t limit,
723         size_t offset, LocalStorageManager::ListTagsOrder order,
724         LocalStorageManager::OrderDirection orderDirection,
725         QString linkedNotebookGuid, QUuid requestId);
726
727     void onListTagsWithNoteLocalUidsRequest(
728         LocalStorageManager::ListObjectsOptions flag, size_t limit,
729         size_t offset, LocalStorageManager::ListTagsOrder order,
730         LocalStorageManager::OrderDirection orderDirection,
731         QString linkedNotebookGuid, QUuid requestId);
732
733     void onExpungeTagRequest(Tag tag, QUuid requestId);
734     void onExpungeNotelessTagsFromLinkedNotebooksRequest(QUuid requestId);
735
736     // Resource-related slots:
737     void onGetResourceCountRequest(QUuid requestId);
738     void onAddResourceRequest(Resource resource, QUuid requestId);
739     void onUpdateResourceRequest(Resource resource, QUuid requestId);
740
741     void onFindResourceRequest(
742         Resource resource, LocalStorageManager::GetResourceOptions options,
743         QUuid requestId);
744
745     void onExpungeResourceRequest(Resource resource, QUuid requestId);
746
747     // Saved search-related slots:
748     void onGetSavedSearchCountRequest(QUuid requestId);
749     void onAddSavedSearchRequest(SavedSearch search, QUuid requestId);
750     void onUpdateSavedSearchRequest(SavedSearch search, QUuid requestId);
751     void onFindSavedSearchRequest(SavedSearch search, QUuid requestId);
752
753     void onListAllSavedSearchesRequest(
754         size_t limit, size_t offset,
```

```
755         LocalStorageManager::ListSavedSearchesOrder order,
756         LocalStorageManager::OrderDirection orderDirection, QUuid requestId);
757
758     void onListSavedSearchesRequest(
759         LocalStorageManager::ListObjectsOptions flag, size_t limit,
760         size_t offset, LocalStorageManager::ListSavedSearchesOrder order,
761         LocalStorageManager::OrderDirection orderDirection, QUuid requestId);
762
763     void onExpungeSavedSearchRequest(SavedSearch search, QUuid requestId);
764
765     void onAccountHighUsnRequest(QString linkedNotebookGuid, QUuid requestId);
766
767 private:
768     LocalStorageManagerAsync() = delete;
769     Q_DISABLE_COPY(LocalStorageManagerAsync)
770
771     LocalStorageManagerAsyncPrivate * const d_ptr;
772     Q_DECLARE_PRIVATE(LocalStorageManagerAsync)
773 };
774
775 } // namespace quentier
776
777 #endif // LIB_QUENTIER_LOCAL_STORAGE_LOCAL_STORAGE_MANAGER_ASYNC_H
```

6.23 NoteSearchQuery.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
6  * libquentier is free software; you can redistribute it and/or modify
7  * it under the terms of the GNU Lesser General Public License as published by
8  * the Free Software Foundation, version 3 of the License.
9  *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_LOCAL_STORAGE_NOTE_SEARCH_QUERY_H
20 #define LIB_QUENTIER_LOCAL_STORAGE_NOTE_SEARCH_QUERY_H
21
22 #include <quentier/types/ErrorString.h>
23
24 #include <QSharedDataPointer>
25
26 namespace quentier {
27
28 QT_FORWARD_DECLARE_CLASS(NoteSearchQueryData)
29
30 class QUENTIER_EXPORT NoteSearchQuery :  public Printable
31 {
32 public:
33     NoteSearchQuery();
34     NoteSearchQuery(const NoteSearchQuery & other);
35     NoteSearchQuery(NoteSearchQuery && other);
36     NoteSearchQuery & operator=(const NoteSearchQuery & other);
37     NoteSearchQuery & operator=(NoteSearchQuery && other);
38     virtual ~NoteSearchQuery();
39
40     bool isEmpty() const;
41
42     void clear();
43
47     const QString queryString() const;
48
49     bool setQueryString(const QString & queryString, ErrorString & error);
50
56     const QString notebookModifier() const;
57
58     bool hasAnyModifier() const;
59
60     const QStringList & tagNames() const;
61     const QStringList & negatedTagNames() const;
62     bool hasAnyTag() const;
63     bool hasNegatedAnyTag() const;
64
65     const QStringList & titleNames() const;
```

```
66      const QStringList & negatedTitleNames() const;
67      bool hasAnyTitleName() const;
68      bool hasNegatedAnyTitleName() const;
69
70      const QVector<qint64> & creationTimestamps() const;
71      const QVector<qint64> & negatedCreationTimestamps() const;
72      bool hasAnyCreationTimestamp() const;
73      bool hasNegatedAnyCreationTimestamp() const;
74
75      const QVector<qint64> & modificationTimestamps() const;
76      const QVector<qint64> & negatedModificationTimestamps() const;
77      bool hasAnyModificationTimestamp() const;
78      bool hasNegatedAnyModificationTimestamp() const;
79
80      const QStringList & resourceMimeTypes() const;
81      const QStringList & negatedResourceMimeTypes() const;
82      bool hasAnyResourceMimeType() const;
83      bool hasNegatedAnyResourceMimeType() const;
84
85      const QVector<qint64> & subjectDateTimestamps() const;
86      const QVector<qint64> & negatedSubjectDateTimestamps() const;
87      bool hasAnySubjectDateTimestamp() const;
88      bool hasNegatedAnySubjectDateTimestamp() const;
89
90      const QVector<double> & latitudes() const;
91      const QVector<double> & negatedLatitudes() const;
92      bool hasAnyLatitude() const;
93      bool hasNegatedAnyLatitude() const;
94
95      const QVector<double> & longitudes() const;
96      const QVector<double> & negatedLongitudes() const;
97      bool hasAnyLongitude() const;
98      bool hasNegatedAnyLongitude() const;
99
100      const QVector<double> & altitudes() const;
101      const QVector<double> & negatedAltitudes() const;
102      bool hasAnyAltitude() const;
103      bool hasNegatedAnyAltitude() const;
104
105      const QStringList & authors() const;
106      const QStringList & negatedAuthors() const;
107      bool hasAnyAuthor() const;
108      bool hasNegatedAnyAuthor() const;
109
110      const QStringList & sources() const;
111      const QStringList & negatedSources() const;
112      bool hasAnySource() const;
113      bool hasNegatedAnySource() const;
114
115      const QStringList & sourceApplications() const;
116      const QStringList & negatedSourceApplications() const;
117      bool hasAnySourceApplication() const;
118      bool hasNegatedAnySourceApplication() const;
119
120      const QStringList & contentClasses() const;
121      const QStringList & negatedContentClasses() const;
122      bool hasAnyContentClass() const;
123      bool hasNegatedAnyContentClass() const;
124
125      const QStringList & placeNames() const;
126      const QStringList & negatedPlaceNames() const;
127      bool hasAnyPlaceName() const;
128      bool hasNegatedAnyPlaceName() const;
129
130      const QStringList & applicationData() const;
131      const QStringList & negatedApplicationData() const;
132      bool hasAnyApplicationData() const;
133      bool hasNegatedAnyApplicationData() const;
134
135      const QVector<qint64> & reminderOrders() const;
136      const QVector<qint64> & negatedReminderOrders() const;
137      bool hasAnyReminderOrder() const;
138      bool hasNegatedAnyReminderOrder() const;
139
140      const QVector<qint64> & reminderTimes() const;
141      const QVector<qint64> & negatedReminderTimes() const;
142      bool hasAnyReminderTime() const;
143      bool hasNegatedAnyReminderTime() const;
144
145      const QVector<qint64> & reminderDoneTimes() const;
146      const QVector<qint64> & negatedReminderDoneTimes() const;
147      bool hasAnyReminderDoneTime() const;
148      bool hasNegatedAnyReminderDoneTime() const;
149
150      bool hasUnfinishedToDo() const;
151      bool hasNegatedUnfinishedToDo() const;
152
```

```
153     bool hasFinishedToDo() const;
154     bool hasNegatedFinishedToDo() const;
155
156     bool hasAnyToDo() const;
157     bool hasNegatedAnyToDo() const;
158
159     bool hasEncryption() const;
160     bool hasNegatedEncryption() const;
161
162     const QStringList & contentSearchTerms() const;
163     const QStringList & negatedContentSearchTerms() const;
164     bool hasAnyContentSearchTerms() const;
165
166     bool isMatcheable() const;
167
168     virtual QTextStream & print(QTextStream & strm) const override;
169
170 private:
171     QSharedDataPointer<NoteSearchQueryData> d;
172 };
173
174 } // namespace quentier
175
176 #endif // LIB_QUENTIER_LOCAL_STORAGE_NOTE_SEARCH_QUERY_H
```

6.24 QuentierLogger.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
6  * libquentier is free software; you can redistribute it and/or modify
7  * it under the terms of the GNU Lesser General Public License as published by
8  * the Free Software Foundation, version 3 of the License.
9  *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_LOGGING_QUENTIER_LOGGER_H
20 #define LIB_QUENTIER_LOGGING_QUENTIER_LOGGER_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QDebug>
25 #include <QRegularExpression>
26 #include <QString>
27 #include <QTextStream>
28
29 namespace quentier {
30
35 enum class LogLevel
36 {
37     Trace,
38     Debug,
39     Info,
40     Warning,
41     Error
42 };
43
44 QUENTIER_EXPORT QDebug & operator<<(QDebug & dbg, const LogLevel logLevel);
45
46 QUENTIER_EXPORT QTextStream & operator<<(
47     QTextStream & strm, const LogLevel logLevel);
48
56 void QUENTIER_EXPORT QuentierInitializeLogging();
57
61 void QUENTIER_EXPORT QuentierAddLogEntry(
62     const QString & sourceFileName, const int sourceFileLineNumber,
63     const QString & component, const QString & message,
64     const LogLevel logLevel);
65
71 LogLevel QUENTIER_EXPORT QuentierMinLogLevel();
72
76 void QUENTIER_EXPORT QuentierSetMinLogLevel(const LogLevel logLevel);
77
82 void QUENTIER_EXPORT QuentierAddStdOutLogDestination();
```

```
83
88 bool QUENTIER_EXPORT QuentierIsLogLevelActive(const LogLevel logLevel);
89
93 QString QUENTIER_EXPORT QuentierLogFilesDirPath();
94
98 void QUENTIER_EXPORT QuentierRestartLogging();
99
103 QRegularExpression QUENTIER_EXPORT QuentierLogComponentFilter();
104
108 void QUENTIER_EXPORT
109 QuentierSetLogComponentFilter(const QRegularExpression & filter);
110
111 } // namespace quentier
112
113 #define __QNLOG_BASE(component, message, level)                                  \
114 if (quentier::QuentierIsLogLevelActive(quentier::LogLevel::level)) {       \
115 QString msg;                                                              \
116 QDebug dbg(&msg);                                                         \
117 dbg.nospace();                                                            \
118 dbg.noquote();                                                            \
119 dbg « message;                                                           \
120 quentier::QuentierAddLogEntry(                                            \
121 QStringLiteral(__FILE__), __LINE__, QString::fromUtf8(component),  \
122 msg, quentier::LogLevel::level);                                          \
123 }                                                                                \
124 // __QNLOG_BASE
125
126 #define QNTRACE(component, message)                                              \
127 __QNLOG_BASE(component, message, Trace)                                  \
128 // QNTRACE
129
130 #define QNDEBUG(component, message)                                              \
131 __QNLOG_BASE(component, message, Debug)                                  \
132 // QNDEBUG
133
134 #define QNINFO(component, message)                                               \
135 __QNLOG_BASE(component, message, Info)                                   \
136 // QNINFO
137
138 #define QNWARNING(component, message)                                            \
139 __QNLOG_BASE(component, message, Warning)                                \
140 // QNWARNING
141
142 #define QNERROR(component, message)                                              \
143 __QNLOG_BASE(component, message, Error)                                  \
144 // QNERROR
145
146 #define QUENTIER_SET_MIN_LOG_LEVEL(level)                                        \
147 quentier::QuentierSetMinLogLevel(                                        \
148 quentier::LogLevel::level) // QUENTIER_SET_MIN_LOG_LEVEL
149
150 #define QUENTIER_INITIALIZE_LOGGING()                                            \
151 quentier::QuentierInitializeLogging() // QUENTIER_INITIALIZE_LOGGING
152
153 #define QUENTIER_ADD_STDOUT_LOG_DESTINATION()                                    \
154 quentier::
      \
155 QuentierAddStdOutLogDestination() // QUENTIER_ADD_STDOUT_LOG_DESTINATION
156
157 #define QNLOG_FILE_LINENUMBER_DELIMITER ":"
158
159 #endif // LIB_QUENTIER_LOGGING_QUENTIER_LOGGER_H
```

6.25 INoteEditorBackend.h

```
1 /*
2 * Copyright 2016-2020 Dmitry Ivanov
3 *
4 * This file is part of libquentier
5 *
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7 * it under the terms of the GNU Lesser General Public License as published by
8 * the Free Software Foundation, version 3 of the License.
9 *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
```

```
19 #ifndef LIB_QUENTIER_NOTE_EDITOR_I_NOTE_EDITOR_BACKEND_H
20 #define LIB_QUENTIER_NOTE_EDITOR_I_NOTE_EDITOR_BACKEND_H
21
22 #include <quentier/types/Note.h>
23 #include <quentier/utility/Linkage.h>
24 #include <quentier/utility/Printable.h>
25
26 #include <QPalette>
27 #include <QPrinter>
28 #include <QStringList>
29 #include <QThread>
30 #include <QWidget>
31
32 QT_FORWARD_DECLARE_CLASS(QUndoStack)
33
34 namespace quentier {
35
36 QT_FORWARD_DECLARE_CLASS(Account)
37 QT_FORWARD_DECLARE_CLASS(LocalStorageManagerAsync)
38 QT_FORWARD_DECLARE_CLASS(NoteEditor)
39 QT_FORWARD_DECLARE_CLASS(SpellChecker)
40
41 class QUENTIER_EXPORT INoteEditorBackend
42 {
43 public:
44     virtual ~INoteEditorBackend();
45
46     virtual void initialize(
47         LocalStorageManagerAsync & localStorageManager,
48         SpellChecker & spellChecker, const Account & account,
49         QThread * pBackgroundJobsThread) = 0;
50
51     virtual QObject * object() = 0; // provide QObject interface
52     virtual QWidget * widget() = 0; // provide QWidget interface
53
54     virtual void setAccount(const Account & account) = 0;
55     virtual void setUndoStack(QUndoStack * pUndoStack) = 0;
56
57     virtual void setInitialPageHtml(const QString & html) = 0;
58     virtual void setNoteNotFoundPageHtml(const QString & html) = 0;
59     virtual void setNoteDeletedPageHtml(const QString & html) = 0;
60     virtual void setNoteLoadingPageHtml(const QString & html) = 0;
61
62     virtual bool isNoteLoaded() const = 0;
63     virtual qint64 idleTime() const = 0;
64
65     virtual void convertToNote() = 0;
66     virtual void saveNoteToLocalStorage() = 0;
67     virtual void setNoteTitle(const QString & noteTitle) = 0;
68
69     virtual void setTagIds(
70         const QStringList & tagLocalUids, const QStringList & tagGuids) = 0;
71
72     virtual void undo() = 0;
73     virtual void redo() = 0;
74     virtual void cut() = 0;
75     virtual void copy() = 0;
76     virtual void paste() = 0;
77     virtual void pasteUnformatted() = 0;
78     virtual void selectAll() = 0;
79
80     virtual void formatSelectionAsSourceCode() = 0;
81
82     virtual void fontMenu() = 0;
83     virtual void textBold() = 0;
84     virtual void textItalic() = 0;
85     virtual void textUnderline() = 0;
86     virtual void textStrikethrough() = 0;
87     virtual void textHighlight() = 0;
88
89     virtual void alignLeft() = 0;
90     virtual void alignCenter() = 0;
91     virtual void alignRight() = 0;
92     virtual void alignFull() = 0;
93
94     virtual QString selectedText() const = 0;
95     virtual bool hasSelection() const = 0;
96
97     virtual void findNext(const QString & text, const bool matchCase) const = 0;
98
99     virtual void findPrevious(
100         const QString & text, const bool matchCase) const = 0;
101
102     virtual void replace(
103         const QString & textToReplace, const QString & replacementText,
104         const bool matchCase) = 0;
105
```

```
106     virtual void replaceAll(
107         const QString & textToReplace, const QString & replacementText,
108         const bool matchCase) = 0;
109
110     virtual void insertToDoCheckbox() = 0;
111
112     virtual void insertInAppNoteLink(
113         const QString & userId, const QString & shardId,
114         const QString & noteGuid, const QString & linkText) = 0;
115
116     virtual void setSpellcheck(const bool enabled) = 0;
117     virtual bool spellCheckEnabled() const = 0;
118
119     virtual void setFont(const QFont & font) = 0;
120     virtual void setFontHeight(const int height) = 0;
121     virtual void setFontColor(const QColor & color) = 0;
122     virtual void setBackgroundColor(const QColor & color) = 0;
123
124     virtual QPalette defaultPalette() const = 0;
125     virtual void setDefaultPalette(const QPalette & pal) = 0;
126
127     virtual const QFont * defaultFont() const = 0;
128     virtual void setDefaultFont(const QFont & font) = 0;
129
130     virtual void insertHorizontalLine() = 0;
131
132     virtual void increaseFontSize() = 0;
133     virtual void decreaseFontSize() = 0;
134
135     virtual void increaseIndentation() = 0;
136     virtual void decreaseIndentation() = 0;
137
138     virtual void insertBulletedList() = 0;
139     virtual void insertNumberedList() = 0;
140
141     virtual void insertTableDialog() = 0;
142
143     virtual void insertFixedWidthTable(
144         const int rows, const int columns, const int widthInPixels) = 0;
145
146     virtual void insertRelativeWidthTable(
147         const int rows, const int columns, const double relativeWidth) = 0;
148
149     virtual void insertTableRow() = 0;
150     virtual void insertTableColumn() = 0;
151     virtual void removeTableRow() = 0;
152     virtual void removeTableColumn() = 0;
153
154     virtual void addAttachmentDialog() = 0;
155     virtual void saveAttachmentDialog(const QByteArray & resourceHash) = 0;
156     virtual void saveAttachmentUnderCursor() = 0;
157     virtual void openAttachment(const QByteArray & resourceHash) = 0;
158     virtual void openAttachmentUnderCursor() = 0;
159     virtual void copyAttachment(const QByteArray & resourceHash) = 0;
160     virtual void copyAttachmentUnderCursor() = 0;
161     virtual void removeAttachment(const QByteArray & resourceHash) = 0;
162     virtual void removeAttachmentUnderCursor() = 0;
163     virtual void renameAttachment(const QByteArray & resourceHash) = 0;
164     virtual void renameAttachmentUnderCursor() = 0;
165
166     enum class Rotation
167     {
168         Clockwise = 0,
169         Counterclockwise
170     };
171
172     friend QUENTIER_EXPORT QTextStream & operator<<(
173         QTextStream & strm, const Rotation rotation);
174
175     friend QUENTIER_EXPORT QDebug & operator<<(
176         QDebug & dbg, const Rotation rotation);
177
178     virtual void rotateImageAttachment(
179         const QByteArray & resourceHash, const Rotation rotationDirection) = 0;
180
181     virtual void rotateImageAttachmentUnderCursor(
182         const Rotation rotationDirection) = 0;
183
184     virtual void encryptSelectedText() = 0;
185
186     virtual void decryptEncryptedTextUnderCursor() = 0;
187
188     virtual void decryptEncryptedText(
189         QString encryptedText, QString cipher, QString keyLength, QString hint,
190         QString enCryptIndex) = 0;
191
192     virtual void hideDecryptedTextUnderCursor() = 0;
```

```
193
194     virtual void hideDecryptedText(
195         QString encryptedText, QString decryptedText, QString cipher,
196         QString keyLength, QString hint, QString enDecryptedIndex) = 0;
197
198     virtual void editHyperlinkDialog() = 0;
199     virtual void copyHyperlink() = 0;
200     virtual void removeHyperlink() = 0;
201
202     virtual void onNoteLoadCancelled() = 0;
203
204     virtual bool print(QPrinter & printer, ErrorString & errorDescription) = 0;
205
206     virtual bool exportToPdf(
207         const QString & absoluteFilePath, ErrorString & errorDescription) = 0;
208
209     virtual bool exportToEnex(
210         const QStringList & tagNames, QString & enex,
211         ErrorString & errorDescription) = 0;
212
213     virtual QString currentNoteLocalUid() const = 0;
214     virtual void setCurrentNoteLocalUid(const QString & noteLocalUid) = 0;
215
216     virtual void clear() = 0;
217
218     virtual bool isModified() const = 0;
219     virtual bool isEditorPageModified() const = 0;
220
221     virtual void setFocusToEditor() = 0;
222
223 protected:
224     INoteEditorBackend(NoteEditor * parent);
225     NoteEditor * m_pNoteEditor;
226 };
227
228 } // namespace quentier
229
230 #endif // LIB_QUENTIER_NOTE_EDITOR_I_NOTE_EDITOR_BACKEND_H
```

6.26 NoteEditor.h

```
1 /*
2 * Copyright 2016-2020 Dmitry Ivanov
3 *
4 * This file is part of libquentier
5 *
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7 * it under the terms of the GNU Lesser General Public License as published by
8 * the Free Software Foundation, version 3 of the License.
9 *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_NOTE_EDITOR_NOTE_EDITOR_H
20 #define LIB_QUENTIER_NOTE_EDITOR_NOTE_EDITOR_H
21
22 #include <quentier/types/ErrorString.h>
23 #include <quentier/types/Note.h>
24 #include <quentier/types/Notebook.h>
25 #include <quentier/utility/Linkage.h>
26
27 #include <QPrinter>
28 #include <QStringList>
29 #include <QThread>
30 #include <QWidget>
31
32 QT_FORWARD_DECLARE_CLASS(QUndoStack)
33
34 namespace quentier {
35
36 QT_FORWARD_DECLARE_CLASS(Account)
37 QT_FORWARD_DECLARE_CLASS(INoteEditorBackend)
38 QT_FORWARD_DECLARE_CLASS(LocalStorageManagerAsync)
39 QT_FORWARD_DECLARE_CLASS(SpellChecker)
40
41
45 class QUENTIER_EXPORT NoteEditor :  public QWidget
```

```
46 {
47     Q_OBJECT
48 public:
49     explicit NoteEditor(
50         QWidget * parent = nullptr,
51 #if QT_VERSION >= QT_VERSION_CHECK(5, 15, 0)
52         Qt::WindowFlags flags = {});
53 #else
54         Qt::WindowFlags flags = 0);
55 #endif
56
57     virtual ~NoteEditor() override;
58
77     void initialize(
78         LocalStorageManagerAsync & localStorageManager,
79         SpellChecker & spellChecker, const Account & account,
80         QThread * pBackgroundJobsThread = nullptr);
81
85     INoteEditorBackend * backend();
86
92     void setBackend(INoteEditorBackend * backend);
93
97     void setAccount(const Account & account);
98
102     const QUndoStack * undoStack() const;
103
107     void setUndoStack(QUndoStack * pUndoStack);
108
112     void setInitialPageHtml(const QString & html);
113
118     void setNoteNotFoundPageHtml(const QString & html);
119
125     void setNoteDeletedPageHtml(const QString & html);
126
131     void setNoteLoadingPageHtml(const QString & html);
132
136     QString currentNoteLocalUid() const;
137
145     void setCurrentNoteLocalUid(const QString & noteLocalUid);
146
150     void clear();
151
156     bool isModified() const;
157
162     bool isEditorPageModified() const;
163
168     bool isNoteLoaded() const;
169
175     qint64 idleTime() const;
176
180     void setFocus();
181
182     QString selectedText() const;
183     bool hasSelection() const;
184
185     bool spellCheckEnabled() const;
186
187     bool print(QPrinter & printer, ErrorString & errorDescription);
188
189     bool exportToPdf(
190         const QString & absoluteFilePath, ErrorString & errorDescription);
191
192     bool exportToEnex(
193         const QStringList & tagNames, QString & enex,
194         ErrorString & errorDescription);
195
203     QPalette defaultPalette() const;
204
209     const QFont * defaultFont() const;
210
211 Q_SIGNALS:
216     void contentChanged();
217
223     void noteAndNotebookFoundInLocalStorage(Note note, Notebook notebook);
224
229     void noteNotFound(QString noteLocalUid);
230
236     void noteDeleted(QString noteLocalUid);
237
243     void noteModified();
244
249     void notifyError(ErrorString error);
250
255     void inAppNoteLinkClicked(
256         QString userId, QString shardId, QString noteGuid);
257
269     void inAppNoteLinkPasteRequested(
```

```
270         QString url, QString userId, QString shardId, QString noteGuid);
271
272     void convertedToNote(Note note);
273     void cantConvertToNote(ErrorString error);
274
275     void noteEditorHtmlUpdated(QString html);
276
277     void currentNoteChanged(Note note);
278
279     void spellCheckerNotReady();
280     void spellCheckerReady();
281
282     void noteLoaded();
283
290     void noteSavedToLocalStorage(QString noteLocalUid);
291
296     void failedToSaveNoteToLocalStorage(
297         ErrorString errorDescription, QString noteLocalUid);
298
299     // Signals to notify anyone interested of the formatting at the current
300     // cursor position
301     void textBoldState(bool state);
302     void textItalicState(bool state);
303     void textUnderlineState(bool state);
304     void textStrikethroughState(bool state);
305     void textAlignLeftState(bool state);
306     void textAlignCenterState(bool state);
307     void textAlignRightState(bool state);
308     void textAlignFullState(bool state);
309     void textInsideOrderedListState(bool state);
310     void textInsideUnorderedListState(bool state);
311     void textInsideTableState(bool state);
312
313     void textFontFamilyChanged(QString fontFamily);
314     void textFontSizeChanged(int fontSize);
315
316     void insertTableDialogRequested();
317
318 public Q_SLOTS:
324     void convertToNote();
325
334     void saveNoteToLocalStorage();
335
345     void setNoteTitle(const QString & noteTitle);
346
358     void setTagIds(
359         const QStringList & tagLocalUids, const QStringList & tagGuids);
360
361     void undo();
362     void redo();
363     void cut();
364     void copy();
365     void paste();
366     void pasteUnformatted();
367     void selectAll();
368
369     void formatSelectionAsSourceCode();
370
371     void fontMenu();
372     void textBold();
373     void textItalic();
374     void textUnderline();
375     void textStrikethrough();
376     void textHighlight();
377
378     void alignLeft();
379     void alignCenter();
380     void alignRight();
381     void alignFull();
382
383     void findNext(const QString & text, const bool matchCase) const;
384     void findPrevious(const QString & text, const bool matchCase) const;
385
386     void replace(
387         const QString & textToReplace, const QString & replacementText,
388         const bool matchCase);
389
390     void replaceAll(
391         const QString & textToReplace, const QString & replacementText,
392         const bool matchCase);
393
394     void insertToDoCheckbox();
395
396     void insertInAppNoteLink(
397         const QString & userId, const QString & shardId,
398         const QString & noteGuid, const QString & linkText);
399
```

```
400     void setSpellcheck(const bool enabled);
401
402     void setFont(const QFont & font);
403     void setFontHeight(const int height);
404     void setFontColor(const QColor & color);
405     void setBackgroundColor(const QColor & color);
406
422     void setDefaultPalette(const QPalette & pal);
423
429     void setDefaultFont(const QFont & font);
430
431     void insertHorizontalLine();
432
433     void increaseFontSize();
434     void decreaseFontSize();
435
436     void increaseIndentation();
437     void decreaseIndentation();
438
439     void insertBulletedList();
440     void insertNumberedList();
441
442     void insertTableDialog();
443
444     void insertFixedWidthTable(
445         const int rows, const int columns, const int widthInPixels);
446
447     void insertRelativeWidthTable(
448         const int rows, const int columns, const double relativeWidth);
449
450     void insertTableRow();
451     void insertTableColumn();
452     void removeTableRow();
453     void removeTableColumn();
454
455     void addAttachmentDialog();
456     void saveAttachmentDialog(const QByteArray & resourceHash);
457     void saveAttachmentUnderCursor();
458     void openAttachment(const QByteArray & resourceHash);
459     void openAttachmentUnderCursor();
460     void copyAttachment(const QByteArray & resourceHash);
461     void copyAttachmentUnderCursor();
462
463     void encryptSelectedText();
464     void decryptEncryptedTextUnderCursor();
465
466     void editHyperlinkDialog();
467     void copyHyperlink();
468     void removeHyperlink();
469
470     void onNoteLoadCancelled();
471
472 protected:
473     virtual void dragMoveEvent(QDragMoveEvent * pEvent) override;
474     virtual void dropEvent(QDropEvent * pEvent) override;
475
476 private:
477     INoteEditorBackend * m_backend;
478 };
479
480 } // namespace quentier
481
482 #endif // LIB_QUENTIER_NOTE_EDITOR_NOTE_EDITOR_H
```

6.27 SpellChecker.h

```
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13 * GNU Lesser General Public License for more details.
14 *
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
```

```
18
19 #ifndef LIB_QUENTIER_NOTE_EDITOR_SPELL_CHECKER_H
20 #define LIB_QUENTIER_NOTE_EDITOR_SPELL_CHECKER_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QObject>
25 #include <QVector>
26
27 #include <utility>
28
29 namespace quentier {
30
31 QT_FORWARD_DECLARE_CLASS(Account)
32 QT_FORWARD_DECLARE_CLASS(FileIOProcessorAsync)
33 QT_FORWARD_DECLARE_CLASS(SpellCheckerPrivate)
34
35 class QUENTIER_EXPORT SpellChecker :  public QObject
36 {
37     Q_OBJECT
38 public:
39     SpellChecker(
40         FileIOProcessorAsync * pFileIOProcessorAsync, const Account & account,
41         QObject * parent = nullptr, const QString & userDictionaryPath = {});
42
43     // The second bool in the pair indicates whether the dictionary
44     // is enabled or disabled
45     QVector<std::pair<QString, bool>> listAvailableDictionaries() const;
46
47     void setAccount(const Account & account);
48
49     void enableDictionary(const QString & language);
50     void disableDictionary(const QString & language);
51
52     bool checkSpell(const QString & word) const;
53
54     QStringList spellCorrectionSuggestions(
55         const QString & misSpelledWord) const;
56
57     void addToUserWordlist(const QString & word);
58     void removeFromUserWordList(const QString & word);
59     void ignoreWord(const QString & word);
60     void removeWord(const QString & word);
61
62     bool isReady() const;
63
64 Q_SIGNALS:
65     void ready();
66
67 private:
68     SpellCheckerPrivate * const d_ptr;
69     Q_DECLARE_PRIVATE(SpellChecker)
70 };
71
72 } // namespace quentier
73
74 #endif // LIB_QUENTIER_NOTE_EDITOR_SPELL_CHECKER_H
```

6.28 AuthenticationManager.h

```
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2 * Copyright 2017-2020 Dmitry Ivanov
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13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_SYNCHRONIZATION_AUTHENTICATION_MANAGER_H
20 #define LIB_QUENTIER_SYNCHRONIZATION_AUTHENTICATION_MANAGER_H
21
22 #include <quentier/synchronization/IAuthenticationManager.h>
23
```

```
24 namespace quentier {
25
26 QT_FORWARD_DECLARE_CLASS(AuthenticationManagerPrivate)
27
28
33 class QUENTIER_EXPORT AuthenticationManager :  public IAuthenticationManager
34 {
35     Q_OBJECT
36 public:
37     explicit AuthenticationManager(
38         const QString & consumerKey, const QString & consumerSecret,
39         const QString & host, QObject * parent = nullptr);
40
41     virtual ~AuthenticationManager();
42
43 public Q_SLOTS:
44     virtual void onAuthenticationRequest() override;
45
46 private:
47     AuthenticationManager() = delete;
48     Q_DISABLE_COPY(AuthenticationManager)
49
50 private:
51     AuthenticationManagerPrivate * const d_ptr;
52     Q_DECLARE_PRIVATE(AuthenticationManager)
53 };
54
55 } // namespace quentier
56
57 #endif // LIB_QUENTIER_SYNCHRONIZATION_AUTHENTICATION_MANAGER_H
```

6.29 synchronization/ForwardDeclarations.h

```
1 /*
2 * Copyright 2020-2021 Dmitry Ivanov
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13 * GNU Lesser General Public License for more details.
14 *
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_SYNCHRONIZATION_FORWARD_DECLARATIONS_H
20 #define LIB_QUENTIER_SYNCHRONIZATION_FORWARD_DECLARATIONS_H
21
22 #include <memory>
23
24 namespace quentier {
25
26 class IAuthenticationManager;
27
28 class INoteStore;
29 using INoteStorePtr = std::shared_ptr<INoteStore>;
30
31 class ISyncStateStorage;
32 using ISyncStateStoragePtr = std::shared_ptr<ISyncStateStorage>;
33
34 class IUserStore;
35 using IUserStorePtr = std::shared_ptr<IUserStore>;
36
37 struct ISyncChunksDataCounters;
38 using ISyncChunksDataCountersPtr = std::shared_ptr<ISyncChunksDataCounters>;
39
40 } // namespace quentier
41
42 #endif // LIB_QUENTIER_SYNCHRONIZATION_FORWARD_DECLARATIONS_H
```

6.30 utility/ForwardDeclarations.h

```
1 /*
```

```
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11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
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13 * GNU Lesser General Public License for more details.
14 *
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_FORWARD_DECLARATIONS_H
20 #define LIB_QUENTIER_UTILITY_FORWARD_DECLARATIONS_H
21
22 #include <memory>
23
24 namespace quentier {
25
26 class IKeychainService;
27 using IKeychainServicePtr = std::shared_ptr<IKeychainService>;
28
29 } // namespace quentier
30
31 #endif // LIB_QUENTIER_UTILITY_FORWARD_DECLARATIONS_H
```

6.31 IAuthenticationManager.h

```
1 /*
2 * Copyright 2017-2020 Dmitry Ivanov
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7 * it under the terms of the GNU Lesser General Public License as published by
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11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
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13 * GNU Lesser General Public License for more details.
14 *
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_SYNCHRONIZATION_I_AUTHENTICATION_MANAGER_H
20 #define LIB_QUENTIER_SYNCHRONIZATION_I_AUTHENTICATION_MANAGER_H
21
22 #include <quentier/synchronization/ForwardDeclarations.h>
23 #include <quentier/types/ErrorString.h>
24 #include <quentier/utility/Linkage.h>
25
26 #include <qt5qevercloud/QEverCloud.h>
27
28 #include <QHash>
29 #include <QList>
30 #include <QNetworkCookie>
31 #include <QObject>
32 #include <QVector>
33
34 namespace quentier {
35
36 class QUENTIER_EXPORT IAuthenticationManager :  public QObject
37 {
38     Q_OBJECT
39 protected:
40     explicit IAuthenticationManager(QObject * parent = nullptr);
41
42 public:
43     virtual ~IAuthenticationManager();
44
45 Q_SIGNALS:
46     void sendAuthenticationResult(
47         bool success, qevercloud::UserID userId, QString authToken,
48         qevercloud::Timestamp authTokenExpirationTime, QString shardId,
49         QString noteStoreUrl, QString webApiUrlPrefix,
50         QList<QNetworkCookie> userStoreCookies, ErrorString errorDescription);
```

```
51
52 public Q_SLOTS:
53     virtual void onAuthenticationRequest() = 0;
54 };
55
56 } // namespace quentier
57
58 #endif // LIB_QUENTIER_SYNCHRONIZATION_I_AUTHENTICATION_MANAGER_H
```

6.32 INoteStore.h

```
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2 * Copyright 2018-2020 Dmitry Ivanov
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13 * GNU Lesser General Public License for more details.
14 *
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_SYNCHRONIZATION_I_NOTE_STORE_H
20 #define LIB_QUENTIER_SYNCHRONIZATION_I_NOTE_STORE_H
21
22 #include <quentier/synchronization/ForwardDeclarations.h>
23 #include <quentier/types/ErrorString.h>
24 #include <quentier/types/Note.h>
25 #include <quentier/types/Notebook.h>
26 #include <quentier/types/SavedSearch.h>
27 #include <quentier/types/Tag.h>
28 #include <quentier/utility/Linkage.h>
29
30 #include <qt5qevercloud/QEverCloud.h>
31
32 #include <QObject>
33
34 #include <memory>
35
36 namespace quentier {
37
43 class QUENTIER_EXPORT INoteStore :  public QObject
44 {
45     Q_OBJECT
46 protected:
47     explicit INoteStore(QObject * parent = nullptr);
48
49 public:
50     virtual ~INoteStore() = default;
51
52     /*
53 * Factory method, create a new INoteStore subclass object
54 */
55     virtual INoteStore * create() const = 0;
56
60     virtual QString noteStoreUrl() const = 0;
61
65     virtual void setNoteStoreUrl(QString noteStoreUrl) = 0;
66
70     virtual void setAuthData(
71         QString authenticationToken, QList<QNetworkCookie> cookies) = 0;
72
77     virtual void stop() = 0;
78
102     virtual qint32 createNotebook(
103         Notebook & notebook, ErrorString & errorDescription,
104         qint32 & rateLimitSeconds, QString linkedNotebookAuthToken = {}) = 0;
105
127     virtual qint32 updateNotebook(
128         Notebook & notebook, ErrorString & errorDescription,
129         qint32 & rateLimitSeconds, QString linkedNotebookAuthToken = {}) = 0;
130
151     virtual qint32 createNote(
152         Note & note, ErrorString & errorDescription, qint32 & rateLimitSeconds,
153         QString linkedNotebookAuthToken = {}) = 0;
154
```

```
176     virtual qint32 updateNote(
177         Note & note, ErrorString & errorDescription, qint32 & rateLimitSeconds,
178         QString linkedNotebookAuthToken = {}) = 0;
179
201     virtual qint32 createTag(
202         Tag & tag, ErrorString & errorDescription, qint32 & rateLimitSeconds,
203         QString linkedNotebookAuthToken = {}) = 0;
204
226     virtual qint32 updateTag(
227         Tag & tag, ErrorString & errorDescription, qint32 & rateLimitSeconds,
228         QString linkedNotebookAuthToken = {}) = 0;
229
247     virtual qint32 createSavedSearch(
248         SavedSearch & savedSearch, ErrorString & errorDescription,
249         qint32 & rateLimitSeconds) = 0;
250
267     virtual qint32 updateSavedSearch(
268         SavedSearch & savedSearch, ErrorString & errorDescription,
269         qint32 & rateLimitSeconds) = 0;
270
287     virtual qint32 getSyncState(
288         qevercloud::SyncState & syncState, ErrorString & errorDescription,
289         qint32 & rateLimitSeconds) = 0;
290
313     virtual qint32 getSyncChunk(
314         const qint32 afterUSN, const qint32 maxEntries,
315         const qevercloud::SyncChunkFilter & filter,
316         qevercloud::SyncChunk & syncChunk, ErrorString & errorDescription,
317         qint32 & rateLimitSeconds) = 0;
318
343     virtual qint32 getLinkedNotebookSyncState(
344         const qevercloud::LinkedNotebook & linkedNotebook,
345         const QString & authToken, qevercloud::SyncState & syncState,
346         ErrorString & errorDescription, qint32 & rateLimitSeconds) = 0;
347
384     virtual qint32 getLinkedNotebookSyncChunk(
385         const qevercloud::LinkedNotebook & linkedNotebook,
386         const qint32 afterUSN, const qint32 maxEntries,
387         const QString & linkedNotebookAuthToken, const bool fullSyncOnly,
388         qevercloud::SyncChunk & syncChunk, ErrorString & errorDescription,
389         qint32 & rateLimitSeconds) = 0;
390
421     virtual qint32 getNote(
422         const bool withContent, const bool withResourcesData,
423         const bool withResourcesRecognition,
424         const bool withResourceAlternateData, Note & note,
425         ErrorString & errorDescription, qint32 & rateLimitSeconds) = 0;
426
464     virtual bool getNoteAsync(
465         const bool withContent, const bool withResourceData,
466         const bool withResourcesRecognition,
467         const bool withResourceAlternateData, const bool withSharedNotes,
468         const bool withNoteAppDataValues, const bool withResourceAppDataValues,
469         const bool withNoteLimits, const QString & noteGuid,
470         const QString & authToken, ErrorString & errorDescription) = 0;
471
503     virtual qint32 getResource(
504         const bool withDataBody, const bool withRecognitionDataBody,
505         const bool withAlternateDataBody, const bool withAttributes,
506         const QString & authToken, Resource & resource,
507         ErrorString & errorDescription, qint32 & rateLimitSeconds) = 0;
508
533     virtual bool getResourceAsync(
534         const bool withDataBody, const bool withRecognitionDataBody,
535         const bool withAlternateDataBody, const bool withAttributes,
536         const QString & resourceGuid, const QString & authToken,
537         ErrorString & errorDescription) = 0;
538
558     virtual qint32 authenticateToSharedNotebook(
559         const QString & shareKey, qevercloud::AuthenticationResult & authResult,
560         ErrorString & errorDescription, qint32 & rateLimitSeconds) = 0;
561
562 Q_SIGNALS:
563     void getNoteAsyncFinished(
564         qint32 errorCode, qevercloud::Note note, qint32 rateLimitSeconds,
565         ErrorString errorDescription);
566
567     void getResourceAsyncFinished(
568         qint32 errorCode, qevercloud::Resource resource,
569         qint32 rateLimitSeconds, ErrorString errorDescription);
570
571 private:
572     Q_DISABLE_COPY(INoteStore)
573 };
574
575 QUENTIER_EXPORT INoteStorePtr newNoteStore(QObject * parent = nullptr);
576
```

```
577 } // namespace quentier
578
579 #endif // LIB_QUENTIER_SYNCHRONIZATION_I_NOTE_STORE_H
```

6.33 ISyncChunksDataCounters.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_SYNCHRONIZATION_I_SYNC_CHUNKS_DATA_COUNTERS_H
20 #define LIB_QUENTIER_SYNCHRONIZATION_I_SYNC_CHUNKS_DATA_COUNTERS_H
21
22 #include <quentier/utility/Linkage.h>
23 #include <quentier/utility/Printable.h>
24
25 #include <QtGlobal>
26
27 namespace quentier {
28
34 struct QUENTIER_EXPORT ISyncChunksDataCounters :  public Printable
35 {
36     // ================= Saved searches =================
37
41     virtual quint64 totalSavedSearches() const noexcept = 0;
42
46     virtual quint64 totalExpungedSavedSearches() const noexcept = 0;
47
52     virtual quint64 addedSavedSearches() const noexcept = 0;
53
58     virtual quint64 updatedSavedSearches() const noexcept = 0;
59
64     virtual quint64 expungedSavedSearches() const noexcept = 0;
65
66     // ================= Tags =================
67
71     virtual quint64 totalTags() const noexcept = 0;
72
76     virtual quint64 totalExpungedTags() const noexcept = 0;
77
81     virtual quint64 addedTags() const noexcept = 0;
82
86     virtual quint64 updatedTags() const noexcept = 0;
87
91     virtual quint64 expungedTags() const noexcept = 0;
92
93     // ================= Linked notebooks =================
94
98     virtual quint64 totalLinkedNotebooks() const noexcept = 0;
99
103     virtual quint64 totalExpungedLinkedNotebooks() const noexcept = 0;
104
109     virtual quint64 addedLinkedNotebooks() const noexcept = 0;
110
115     virtual quint64 updatedLinkedNotebooks() const noexcept = 0;
116
121     virtual quint64 expungedLinkedNotebooks() const noexcept = 0;
122
123     // ================= Notebooks =================
124
128     virtual quint64 totalNotebooks() const noexcept = 0;
129
133     virtual quint64 totalExpungedNotebooks() const noexcept = 0;
134
138     virtual quint64 addedNotebooks() const noexcept = 0;
139
143     virtual quint64 updatedNotebooks() const noexcept = 0;
144
149     virtual quint64 expungedNotebooks() const noexcept = 0;
```

```
150 };
151
152 } // namespace quentier
153
154 #endif // LIB_QUENTIER_SYNCHRONIZATION_I_SYNC_CHUNKS_DATA_COUNTERS_H
```

6.34 ISyncStateStorage.h

```
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_SYNCHRONIZATION_I_SYNC_STATE_STORAGE_H
20 #define LIB_QUENTIER_SYNCHRONIZATION_I_SYNC_STATE_STORAGE_H
21
22 #include <quentier/synchronization/ForwardDeclarations.h>
23 #include <quentier/types/Account.h>
24 #include <quentier/utility/Linkage.h>
25
26 #include <qt5qevercloud/QEverCloud.h>
27
28 #include <QHash>
29 #include <QObject>
30 #include <QString>
31
32 #include <memory>
33
34 namespace quentier {
35
41 class QUENTIER_EXPORT ISyncStateStorage :  public QObject
42 {
43     Q_OBJECT
44 public:
49     class QUENTIER_EXPORT ISyncState :  public Printable
50     {
51     public:
52         virtual qint32 userDataUpdateCount() const = 0;
53         virtual qevercloud::Timestamp userDataLastSyncTime() const = 0;
54         virtual QHash<QString, qint32> linkedNotebookUpdateCounts() const = 0;
55
56         virtual QHash<QString, qevercloud::Timestamp>
57         linkedNotebookLastSyncTimes() const = 0;
58
59         virtual QTextStream & print(QTextStream & strm) const override;
60     };
61
62     using ISyncStatePtr = std::shared_ptr<ISyncState>;
63
64 public:
65     explicit ISyncStateStorage(QObject * parent = nullptr) :  QObject(parent) {}
66
67     virtual ~ISyncStateStorage() = default;
68
69     virtual ISyncStatePtr getSyncState(const Account & account) = 0;
70
71     virtual void setSyncState(
72         const Account & account, ISyncStatePtr syncState) = 0;
73
74 Q_SIGNALS:
80     void notifySyncStateUpdated(Account account, ISyncStatePtr syncState);
81 };
82
83 QUENTIER_EXPORT ISyncStateStoragePtr
84 newSyncStateStorage(QObject * parent = nullptr);
85
86 } // namespace quentier
87
88 #endif // LIB_QUENTIER_SYNCHRONIZATION_I_SYNC_STATE_STORAGE_H
```

6.35 IUserStore.h

```
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2 * Copyright 2018-2020 Dmitry Ivanov
3 *
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11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_SYNCHRONIZATION_I_USER_STORE_H
20 #define LIB_QUENTIER_SYNCHRONIZATION_I_USER_STORE_H
21
22 #include <quentier/synchronization/ForwardDeclarations.h>
23 #include <quentier/types/ErrorString.h>
24 #include <quentier/utility/Linkage.h>
25
26 #include <QList>
27 #include <QNetworkCookie>
28
29 #include <qt5qevercloud/QEverCloud.h>
30
31 #include <memory>
32
33 namespace quentier {
34
35 QT_FORWARD_DECLARE_CLASS(User)
36
37
42 class QUENTIER_EXPORT IUserStore
43 {
44 public:
45     virtual ~IUserStore() = default;
46
50     virtual void setAuthData(
51         QString authenticationToken, QList<QNetworkCookie> cookies) = 0;
52
71     virtual bool checkVersion(
72         const QString & clientName, qint16 edamVersionMajor,
73         qint16 edamVersionMinor, ErrorString & errorDescription) = 0;
74
93     virtual qint32 getUser(
94         User & user, ErrorString & errorDescription,
95         qint32 & rateLimitSeconds) = 0;
96
117     virtual qint32 getAccountLimits(
118         const qevercloud::ServiceLevel serviceLevel,
119         qevercloud::AccountLimits & limits, ErrorString & errorDescription,
120         qint32 & rateLimitSeconds) = 0;
121 };
122
123 QUENTIER_EXPORT IUserStorePtr newUserStore(QString evernoteHost);
124
125 } // namespace quentier
126
127 #endif // LIB_QUENTIER_SYNCHRONIZATION_I_USER_STORE_H
```

6.36 SynchronizationManager.h

```
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14 *
```

```
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_SYNCHRONIZATION_SYNCHRONIZATION_MANAGER_H
20 #define LIB_QUENTIER_SYNCHRONIZATION_SYNCHRONIZATION_MANAGER_H
21
22 #include <quentier/synchronization/ForwardDeclarations.h>
23 #include <quentier/synchronization/ISyncChunksDataCounters.h>
24 #include <quentier/types/Account.h>
25 #include <quentier/types/ErrorString.h>
26 #include <quentier/types/LinkedNotebook.h>
27 #include <quentier/utility/ForwardDeclarations.h>
28 #include <quentier/utility/Linkage.h>
29
30 #include <QObject>
31
32 namespace quentier {
33
34 QT_FORWARD_DECLARE_CLASS(LocalStorageManagerAsync)
35 QT_FORWARD_DECLARE_CLASS(SynchronizationManagerPrivate)
36
37
43 class QUENTIER_EXPORT SynchronizationManager :  public QObject
44 {
45     Q_OBJECT
46 public:
82     SynchronizationManager(
83         QString host, LocalStorageManagerAsync & localStorageManagerAsync,
84         IAuthenticationManager & authenticationManager,
85         QObject * parent = nullptr, INoteStorePtr pNoteStore = {},
86         IUserStorePtr pUserStore = {},
87         IKeychainServicePtr pKeychainService = {},
88         ISyncStateStoragePtr pSyncStateStorage = {});
89
90     virtual ~SynchronizationManager();
91
96     bool active() const;
97
104     bool downloadNoteThumbnailsOption() const;
105
106 public Q_SLOTS:
121     void setAccount(Account account);
122
131     void authenticate();
132
144     void authenticateCurrentAccount();
145
149     void synchronize();
150
155     void stop();
156
163     void revokeAuthentication(const qevercloud::UserID userId);
164
176     void setDownloadNoteThumbnails(bool flag);
177
186     void setDownloadInkNoteImages(bool flag);
187
205     void setInkNoteImagesStoragePath(QString path);
206
207 Q_SIGNALS:
213     void started();
214
220     void stopped();
221
228     void failed(ErrorString errorDescription);
229
250     void finished(
251         Account account, bool somethingDownloaded, bool somethingSent);
252
264     void authenticationRevoked(
265         bool success, ErrorString errorDescription, qevercloud::UserID userId);
266
280     void authenticationFinished(
281         bool success, ErrorString errorDescription, Account account);
282
287     void remoteToLocalSyncStopped();
288
293     void sendLocalChangesStopped();
294
305     void willRepeatRemoteToLocalSyncAfterSendingChanges();
306
318     void detectedConflictDuringLocalChangesSending();
319
329     void rateLimitExceeded(qint32 secondsToWait);
330
344     void remoteToLocalSyncDone(bool somethingDownloaded);
```

```
345
361     void syncChunksDownloadProgress(
362         qint32 highestDownloadedUsn, qint32 highestServerUsn,
363         qint32 lastPreviousUsn);
364
369     void syncChunksDownloaded();
370
375     void syncChunksDataProcessingProgress(ISyncChunksDataCountersPtr counters);
376
400     void linkedNotebookSyncChunksDownloadProgress(
401         qint32 highestDownloadedUsn, qint32 highestServerUsn,
402         qint32 lastPreviousUsn, LinkedNotebook linkedNotebook);
403
408     void linkedNotebooksSyncChunksDownloaded();
409
414     void linkedNotebookSyncChunksDataProcessingProgress(
415         ISyncChunksDataCountersPtr counters);
416
425     void notesDownloadProgress(
426         quint32 notesDownloaded, quint32 totalNotesToDownload);
427
436     void linkedNotebooksNotesDownloadProgress(
437         quint32 notesDownloaded, quint32 totalNotesToDownload);
438
449     void resourcesDownloadProgress(
450         quint32 resourcesDownloaded, quint32 totalResourcesToDownload);
451
462     void linkedNotebooksResourcesDownloadProgress(
463         quint32 resourcesDownloaded, quint32 totalResourcesToDownload);
464
470     void preparedDirtyObjectsForSending();
471
477     void preparedLinkedNotebooksDirtyObjectsForSending();
478
484     void setAccountDone(Account account);
485
490     void setDownloadNoteThumbnailsDone(bool flag);
491
496     void setDownloadInkNoteImagesDone(bool flag);
497
502     void setInkNoteImagesStoragePathDone(QString path);
503
504 private:
505     SynchronizationManager() = delete;
506     Q_DISABLE_COPY(SynchronizationManager)
507
508     SynchronizationManagerPrivate * d_ptr;
509     Q_DECLARE_PRIVATE(SynchronizationManager)
510 };
511
512 } // namespace quentier
513
514 #endif // LIB_QUENTIER_SYNCHRONIZATION_SYNCHRONIZATION_MANAGER_H
```

6.37 Account.h

```
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3  *
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_ACCOUNT_H
20 #define LIB_QUENTIER_TYPES_ACCOUNT_H
21
22 #include <quentier/utility/Printable.h>
23
24 #include <qt5qevercloud/QEverCloud.h>
25
26 #include <QSharedDataPointer>
27 #include <QString>
```

```
28
29 namespace quentier {
30
31 QT_FORWARD_DECLARE_CLASS(AccountData)
32
33
38 class QUENTIER_EXPORT Account :  public Printable
39 {
40 public:
41     enum class Type
42     {
43         Local = 0,
44         Evernote
45     };
46
47     friend QUENTIER_EXPORT QTextStream & operator«(
48         QTextStream & strm, const Type type);
49
50     friend QUENTIER_EXPORT QDebug & operator«(QDebug & dbg, const Type type);
51
52     enum class EvernoteAccountType
53     {
54         Free = 0,
55         Plus,
56         Premium,
57         Business
58     };
59
60     friend QUENTIER_EXPORT QTextStream & operator«(
61         QTextStream & strm, const EvernoteAccountType type);
62
63     friend QUENTIER_EXPORT QDebug & operator«(
64         QDebug & dbg, const EvernoteAccountType type);
65
66 public:
67     explicit Account();
68
69     explicit Account(
70         QString name, const Type type, const qevercloud::UserID userId = -1,
71         const EvernoteAccountType evernoteAccountType =
72             EvernoteAccountType::Free,
73         QString evernoteHost = {}, QString shardId = {});
74
75     Account(const Account & other);
76     Account & operator=(const Account & other);
77     virtual ~Account() override;
78
79     bool operator==(const Account & other) const;
80     bool operator!=(const Account & other) const;
81
87     bool isEmpty() const;
88
92     QString name() const;
93
97     void setName(QString name);
98
104     QString displayName() const;
105
109     void setDisplayName(QString displayName);
110
114     Type type() const;
115
121     qevercloud::UserID id() const;
122
127     EvernoteAccountType evernoteAccountType() const;
128
133     QString evernoteHost() const;
134
140     QString shardId() const;
141
142     void setEvernoteAccountType(const EvernoteAccountType evernoteAccountType);
143     void setEvernoteHost(QString evernoteHost);
144     void setShardId(QString shardId);
145
146     qint32 mailLimitDaily() const;
147     qint64 noteSizeMax() const;
148     qint64 resourceSizeMax() const;
149     qint32 linkedNotebookMax() const;
150     qint32 noteCountMax() const;
151     qint32 notebookCountMax() const;
152     qint32 tagCountMax() const;
153     qint32 noteTagCountMax() const;
154     qint32 savedSearchCountMax() const;
155     qint32 noteResourceCountMax() const;
156     void setEvernoteAccountLimits(const qevercloud::AccountLimits & limits);
157
158     virtual QTextStream & print(QTextStream & strm) const override;
```

```
159
160 private:
161     QSharedDataPointer<AccountData> d;
162 };
163
164 } // namespace quentier
165
166 #endif // LIB_QUENTIER_TYPES_ACCOUNT_H
```

6.38 ErrorString.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_TYPES_ERROR_STRING_H
20 #define LIB_QUENTIER_TYPES_ERROR_STRING_H
21
22 #include <quentier/utility/Printable.h>
23
24 #include <QSharedDataPointer>
25
26 namespace quentier {
27
28 QT_FORWARD_DECLARE_CLASS(ErrorStringData)
29
30
43 class QUENTIER_EXPORT ErrorString :  public Printable
44 {
45 public:
46     explicit ErrorString(const char * error = nullptr);
47     explicit ErrorString(const QString & error);
48     ErrorString(const ErrorString & other);
49     ErrorString & operator=(const ErrorString & other);
50     virtual ~ErrorString() override;
51
52     const QString & base() const;
53     QString & base();
54
55     const QStringList & additionalBases() const;
56     QStringList & additionalBases();
57
58     const QString & details() const;
59     QString & details();
60
61     void setBase(const QString & error);
62     void setBase(const char * error);
63
64     void appendBase(const QString & error);
65     void appendBase(const QStringList & errors);
66     void appendBase(const char * error);
67
68     void setDetails(const QString & error);
69     void setDetails(const char * error);
70
71     bool isEmpty() const;
72     void clear();
73
74     QString localizedString() const;
75     QString nonLocalizedString() const;
76
77     virtual QTextStream & print(QTextStream & strm) const override;
78
79 private:
80     QSharedDataPointer<ErrorStringData> d;
81 };
82
83 } // namespace quentier
84
85 #endif // LIB_QUENTIER_TYPES_ERROR_STRING_H
```

6.39 IFavoritableDataElement.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_TYPES_I_FAVORITABLE_DATA_ELEMENT_H
20 #define LIB_QUENTIER_TYPES_I_FAVORITABLE_DATA_ELEMENT_H
21
22 #include "INoteStoreDataElement.h"
23
24 namespace quentier {
25
31 class QUENTIER_EXPORT IFavoritableDataElement :
32     public virtual INoteStoreDataElement
33 {
34 public:
35     virtual bool isFavorited() const = 0;
36     virtual void setFavorited(const bool favorited) = 0;
37
38     virtual ~IFavoritableDataElement() {}
39 };
40
41 #define DECLARE_IS_FAVORITED                                            \
42 virtual bool isFavorited() const override;                              \
43 // DECLARE_IS_FAVORITED
44
45 #define DECLARE_SET_FAVORITED                                           \
46 virtual void setFavorited(const bool favorited) override;               \
47 // DECLARE_SET_FAVORITED
48
49 #define QN_DECLARE_FAVORITED                                            \
50 DECLARE_IS_FAVORITED                                                    \
51 DECLARE_SET_FAVORITED                                                   \
52 // QN_DECLARE_FAVORITED
53
54 #define DEFINE_IS_FAVORITED(type)                                       \
55 bool type::isFavorited() const                                          \
56 {                                                                       \
57 return d->m_isFavorited;                                          \
58 }                                                                       \
59 // DEFINE_IS_FAVORITED
60
61 #define DEFINE_SET_FAVORITED(type)                                      \
62 void type::setFavorited(const bool favorited)                           \
63 {                                                                       \
64 d->m_isFavorited = favorited;                                     \
65 }                                                                       \
66 // DEFINE_SET_FAVORITED
67
68 #define QN_DEFINE_FAVORITED(type)                                       \
69 DEFINE_IS_FAVORITED(type)                                               \
70 DEFINE_SET_FAVORITED(type)                                              \
71 // QN_DEFINE_FAVORITED
72
73 } // namespace quentier
74
75 #endif // LIB_QUENTIER_TYPES_I_FAVORITABLE_DATA_ELEMENT_H
```

6.40 ILocalStorageDataElement.h

```
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```

```
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17 */
18
19 #ifndef LIB_QUENTIER_TYPES_I_LOCAL_STORAGE_DATA_ELEMENT_H
20 #define LIB_QUENTIER_TYPES_I_LOCAL_STORAGE_DATA_ELEMENT_H
21
22 #include <quentier/utility/Linkage.h>
23 #include <quentier/utility/UidGenerator.h>
24
25 #include <QString>
26 #include <QUuid>
27
28 namespace quentier {
29
30 class QUENTIER_EXPORT ILocalStorageDataElement
31 {
32 public:
33     virtual const QString localUid() const = 0;
34     virtual void setLocalUid(const QString & guid) = 0;
35     virtual void unsetLocalUid() = 0;
36
37     virtual ~ILocalStorageDataElement() {}
38 };
39
40 #define DEFINE_LOCAL_UID_GETTER(type)                                       \
41 const QString type::localUid() const                                        \
42 {                                                                           \
43 return UidGenerator::UidToString(d->m_localUid);                        \
44 }                                                                           \
45 // DEFINE_LOCAL_UID_GETTER
46
47 #define DEFINE_LOCAL_UID_SETTER(type)                                       \
48 void type::setLocalUid(const QString & uid)                                 \
49 {                                                                           \
50 d->m_localUid = uid;                                                     \
51 }                                                                           \
52 // DEFINE_LOCAL_UID_SETTER
53
54 #define DEFINE_LOCAL_UID_UNSETTER(type)                                     \
55 void type::unsetLocalUid()                                                  \
56 {                                                                           \
57 d->m_localUid = QUuid();                                                 \
58 }                                                                           \
59 // DEFINE_LOCAL_UID_UNSETTER
60
61 #define QN_DECLARE_LOCAL_UID                                                \
62 virtual const QString localUid() const override;                            \
63 virtual void setLocalUid(const QString & guid) override;                    \
64 virtual void unsetLocalUid() override;                                      \
65 // QN_DECLARE_LOCAL_UID
66
67 #define QN_DEFINE_LOCAL_UID(type)                                           \
68 DEFINE_LOCAL_UID_GETTER(type)                                               \
69 DEFINE_LOCAL_UID_SETTER(type)                                               \
70 DEFINE_LOCAL_UID_UNSETTER(type)                                             \
71 // QN_DEFINE_LOCAL_UID
72
73 } // namespace quentier
74
75 #endif // LIB_QUENTIER_TYPES_I_LOCAL_STORAGE_DATA_ELEMENT_H
```

6.41 INoteStoreDataElement.h

```
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```

```
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17 */
18
19 #ifndef LIB_QUENTIER_TYPES_I_NOTE_STORE_DATA_ELEMENT_H
20 #define LIB_QUENTIER_TYPES_I_NOTE_STORE_DATA_ELEMENT_H
21
22 #include "ILocalStorageDataElement.h"
23
24 #include <quentier/types/ErrorString.h>
25 #include <quentier/utility/Printable.h>
26
27 #include <QUuid>
28 #include <QtGlobal>
29
30 namespace quentier {
31
32 class QUENTIER_EXPORT INoteStoreDataElement :
33     public ILocalStorageDataElement,
34     public Printable
35 {
36 public:
37     virtual void clear() = 0;
38
39     virtual bool hasGuid() const = 0;
40     virtual const QString & guid() const = 0;
41     virtual void setGuid(const QString & guid) = 0;
42
43     virtual bool hasUpdateSequenceNumber() const = 0;
44     virtual qint32 updateSequenceNumber() const = 0;
45     virtual void setUpdateSequenceNumber(const qint32 usn) = 0;
46
47     virtual bool checkParameters(ErrorString & errorDescription) const = 0;
48
49     virtual bool isDirty() const = 0;
50     virtual void setDirty(const bool dirty) = 0;
51
52     virtual bool isLocal() const = 0;
53     virtual void setLocal(const bool local) = 0;
54
55     virtual ~INoteStoreDataElement() {}
56 };
57
58 #define DECLARE_IS_DIRTY                                                \
59 virtual bool isDirty() const override;                                  \
60 // DECLARE_IS_DIRTY
61
62 #define DECLARE_SET_DIRTY                                               \
63 virtual void setDirty(const bool isDirty) override;                     \
64 // DECLARE_SET_DIRTY
65
66 #define QN_DECLARE_DIRTY                                                \
67 DECLARE_IS_DIRTY                                                        \
68 DECLARE_SET_DIRTY                                                       \
69 // QN_DECLARE_DIRTY
70
71 #define DEFINE_IS_DIRTY(type)                                           \
72 bool type::isDirty() const                                              \
73 {                                                                       \
74 return d->m_isDirty;                                                \
75 }                                                                       \
76 // DEFINE_IS_DIRTY
77
78 #define DEFINE_SET_DIRTY(type)                                          \
79 void type::setDirty(const bool dirty)                                   \
80 {                                                                       \
81 d->m_isDirty = dirty;                                               \
82 }                                                                       \
83 // DEFINE_SET_DIRTY
84
85 #define QN_DEFINE_DIRTY(type)                                           \
86 DEFINE_IS_DIRTY(type)                                                   \
87 DEFINE_SET_DIRTY(type)                                                  \
88 // QN_DEFINE_DIRTY
89
90 #define DECLARE_IS_LOCAL                                                \
91 virtual bool isLocal() const override;                                  \
92 // DECLARE_IS_LOCAL
93
94 #define DECLARE_SET_LOCAL                                               \
95 virtual void setLocal(const bool isLocal) override;                     \
96 // DECLARE_SET_LOCAL
97
98 #define QN_DECLARE_LOCAL                                                \
99 DECLARE_IS_LOCAL                                                        \
100 DECLARE_SET_LOCAL                                                       \
```

```
101 // QN_DECLARE_LOCAL
102
103 #define DEFINE_IS_LOCAL(type)                                                \
104 bool type::isLocal() const                                                   \
105 {                                                                            \
106 return d->m_isLocal;                                                        \
107 }                                                                            \
108 // DEFINE_IS_LOCAL
109
110 #define DEFINE_SET_LOCAL(type)                                               \
111 void type::setLocal(const bool local)                                        \
112 {                                                                            \
113 d->m_isLocal = local;                                                       \
114 }                                                                            \
115 // DEFINE_SET_LOCAL
116
117 #define QN_DEFINE_LOCAL(type)                                                \
118 DEFINE_IS_LOCAL(type)                                                        \
119 DEFINE_SET_LOCAL(type)                                                       \
120 // QN_DEFINE_LOCAL
121
122 } // namespace quentier
123
124 #endif // LIB_QUENTIER_TYPES_I_NOTE_STORE_DATA_ELEMENT_H
```

6.42 LinkedNotebook.h

```
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_LINKED_NOTEBOOK_H
20 #define LIB_QUENTIER_TYPES_LINKED_NOTEBOOK_H
21
22 #include "INoteStoreDataElement.h"
23
24 #include <qt5qevercloud/QEverCloud.h>
25
26 #include <QSharedDataPointer>
27
28 namespace quentier {
29
30 QT_FORWARD_DECLARE_CLASS(LinkedNotebookData)
31
32 class QUENTIER_EXPORT LinkedNotebook :  public INoteStoreDataElement
33 {
34 public:
35     QN_DECLARE_DIRTY
36
37 public:
38     explicit LinkedNotebook();
39     LinkedNotebook(const LinkedNotebook & other);
40     LinkedNotebook(LinkedNotebook && other);
41     LinkedNotebook & operator=(const LinkedNotebook & other);
42     LinkedNotebook & operator=(LinkedNotebook && other);
43
44     explicit LinkedNotebook(const qevercloud::LinkedNotebook & linkedNotebook);
45     explicit LinkedNotebook(qevercloud::LinkedNotebook && linkedNotebook);
46
47     virtual ~LinkedNotebook() override;
48
49     const qevercloud::LinkedNotebook & qevercloudLinkedNotebook() const;
50     qevercloud::LinkedNotebook & qevercloudLinkedNotebook();
51
52     bool operator==(const LinkedNotebook & other) const;
53     bool operator!=(const LinkedNotebook & other) const;
54
55     virtual void clear() override;
56
```

```
57      virtual bool hasGuid() const override;
58      virtual const QString & guid() const override;
59      virtual void setGuid(const QString & guid) override;
60
61      virtual bool hasUpdateSequenceNumber() const override;
62      virtual qint32 updateSequenceNumber() const override;
63      virtual void setUpdateSequenceNumber(const qint32 usn) override;
64
65      virtual bool checkParameters(ErrorString & errorDescription) const override;
66
67      bool hasShareName() const;
68      const QString & shareName() const;
69      void setShareName(const QString & shareName);
70
71      bool hasUsername() const;
72      const QString & username() const;
73      void setUsername(const QString & username);
74
75      bool hasShardId() const;
76      const QString & shardId() const;
77      void setShardId(const QString & shardId);
78
79      bool hasSharedNotebookGlobalId() const;
80      const QString & sharedNotebookGlobalId() const;
81      void setSharedNotebookGlobalId(const QString & sharedNotebookGlobalId);
82
83      bool hasUri() const;
84      const QString & uri() const;
85      void setUri(const QString & uri);
86
87      bool hasNoteStoreUrl() const;
88      const QString & noteStoreUrl() const;
89      void setNoteStoreUrl(const QString & noteStoreUrl);
90
91      bool hasWebApiUrlPrefix() const;
92      const QString & webApiUrlPrefix() const;
93      void setWebApiUrlPrefix(const QString & webApiUrlPrefix);
94
95      bool hasStack() const;
96      const QString & stack() const;
97      void setStack(const QString & stack);
98
99      bool hasBusinessId() const;
100      qint32 businessId() const;
101      void setBusinessId(const qint32 businessId);
102
103     virtual QTextStream & print(QTextStream & strm) const override;
104
105 private:
106     // hide useless methods inherited from the base class from public interface
107     virtual const QString localUid()const override
108 {
109         return QString();
110     }
111     virtual void setLocalUid(const QString &)override {}
112     virtual void unsetLocalUid()override {}
113
114     virtual bool isLocal()const override
115 {
116         return false;
117     }
118     virtual void setLocal(const bool)override {}
119
120 private:
121     QSharedDataPointer<LinkedNotebookData> d;
122 };
123
124 } // namespace quentier
125
126 Q_DECLARE_METATYPE(quentier::LinkedNotebook)
127
128 #endif // LIB_QUENTIER_TYPES_LINKED_NOTEBOOK_H
```

6.43 Note.h

```
1 /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
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8  * the Free Software Foundation, version 3 of the License.
```

```
9 *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_NOTE_H
20 #define LIB_QUENTIER_TYPES_NOTE_H
21
22 #include "IFavoritableDataElement.h"
23 #include "SharedNote.h"
24
25 #include <qt5qevercloud/QEverCloud.h>
26
27 #include <QSharedDataPointer>
28
29 namespace quentier {
30
31 QT_FORWARD_DECLARE_CLASS(Resource)
32 QT_FORWARD_DECLARE_CLASS(NoteData)
33
34 class QUENTIER_EXPORT Note :  public IFavoritableDataElement
35 {
36 public:
37     QN_DECLARE_LOCAL_UID
38     QN_DECLARE_DIRTY
39     QN_DECLARE_FAVORITED
40     QN_DECLARE_LOCAL
41
42 public:
43     explicit Note();
44     Note(const Note & other);
45     Note(Note && other);
46     Note & operator=(const Note & other);
47     Note & operator=(Note && other);
48
49     explicit Note(const qevercloud::Note & other);
50     Note & operator=(const qevercloud::Note & other);
51
52     virtual ~Note() override;
53
54     bool operator==(const Note & other) const;
55     bool operator!=(const Note & other) const;
56
57     const qevercloud::Note & qevercloudNote() const;
58     qevercloud::Note & qevercloudNote();
59
60     virtual bool hasGuid() const override;
61     virtual const QString & guid() const override;
62     virtual void setGuid(const QString & guid) override;
63
64     virtual bool hasUpdateSequenceNumber() const override;
65     virtual qint32 updateSequenceNumber() const override;
66     virtual void setUpdateSequenceNumber(const qint32 usn) override;
67
68     virtual void clear() override;
69
70     static bool validateTitle(
71         const QString & title, ErrorString * pErrorDescription = nullptr);
72
73     virtual bool checkParameters(ErrorString & errorDescription) const override;
74
75     bool hasTitle() const;
76     const QString & title() const;
77     void setTitle(const QString & title);
78
79     bool hasContent() const;
80     const QString & content() const;
81     void setContent(const QString & content);
82
83     bool hasContentHash() const;
84     const QByteArray & contentHash() const;
85     void setContentHash(const QByteArray & contentHash);
86
87     bool hasContentLength() const;
88     qint32 contentLength() const;
89     void setContentLength(const qint32 length);
90
91     bool hasCreationTimestamp() const;
92     qint64 creationTimestamp() const;
93     void setCreationTimestamp(const qint64 timestamp);
94
95     bool hasModificationTimestamp() const;
```

```
96      qint64 modificationTimestamp() const;
97      void setModificationTimestamp(const qint64 timestamp);
98
99      bool hasDeletionTimestamp() const;
100      qint64 deletionTimestamp() const;
101      void setDeletionTimestamp(const qint64 timestamp);
102
103      bool hasActive() const;
104      bool active() const;
105      void setActive(const bool active);
106
107      bool hasNotebookGuid() const;
108      const QString & notebookGuid() const;
109      void setNotebookGuid(const QString & guid);
110
111      bool hasNotebookLocalUid() const;
112      const QString & notebookLocalUid() const;
113      void setNotebookLocalUid(const QString & notebookLocalUid);
114
115      bool hasTagGuids() const;
116      const QStringList tagGuids() const;
117      void setTagGuids(const QStringList & guids);
118      void addTagGuid(const QString & guid);
119      void removeTagGuid(const QString & guid);
120
121      bool hasTagLocalUids() const;
122      const QStringList & tagLocalUids() const;
123      void setTagLocalUids(const QStringList & localUids);
124      void addTagLocalUid(const QString & localUid);
125      void removeTagLocalUid(const QString & localUid);
126
127      bool hasResources() const;
128      int numResources() const;
129      QList<Resource> resources() const;
130      void setResources(const QList<Resource> & resources);
131      void addResource(const Resource & resource);
132      bool updateResource(const Resource & resource);
133      bool removeResource(const Resource & resource);
134
135      bool hasNoteAttributes() const;
136      const qevercloud::NoteAttributes & noteAttributes() const;
137      qevercloud::NoteAttributes & noteAttributes();
138      void clearNoteAttributes();
139
140      bool hasSharedNotes() const;
141      QList<SharedNote> sharedNotes() const;
142      void setSharedNotes(const QList<SharedNote> & sharedNotes);
143      void addSharedNote(const SharedNote & sharedNote);
144
145      // NOTE: the shared note is recognized by its index in note
146      // in the following two methods
147      bool updateSharedNote(const SharedNote & sharedNote);
148      bool removeSharedNote(const SharedNote & sharedNote);
149
150      bool hasNoteRestrictions() const;
151      const qevercloud::NoteRestrictions & noteRestrictions() const;
152      qevercloud::NoteRestrictions & noteRestrictions();
153      void setNoteRestrictions(qevercloud::NoteRestrictions && restrictions);
154
155      bool hasNoteLimits() const;
156      const qevercloud::NoteLimits & noteLimits() const;
157      qevercloud::NoteLimits & noteLimits();
158      void setNoteLimits(qevercloud::NoteLimits && limits);
159
160      QByteArray thumbnailData() const;
161      void setThumbnailData(const QByteArray & thumbnailData);
162
163      bool isInkNote() const;
164
165      QString plainText(ErrorString * pErrorMessage = nullptr) const;
166      QStringList listOfWords(ErrorString * pErrorMessage = nullptr) const;
167
168      std::pair<QString, QStringList> plainTextAndListOfWords(
169          ErrorString * pErrorMessage = nullptr) const;
170
171      bool containsCheckedTodo() const;
172      bool containsUncheckedTodo() const;
173      bool containsTodo() const;
174      bool containsEncryption() const;
175
176      virtual QTextStream & print(QTextStream & strm) const override;
177
178  private:
179      QSharedDataPointer<NoteData> d;
180  };
181
182  } // namespace quentier
```

```
183
184 Q_DECLARE_METATYPE(quentier::Note)
185
186 #endif // LIB_QUENTIER_TYPES_NOTE_H
```

6.44 Notebook.h

```
1 /*
2 * Copyright 2016-2020 Dmitry Ivanov
3 *
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9 *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
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13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_NOTEBOOK_H
20 #define LIB_QUENTIER_TYPES_NOTEBOOK_H
21
22 #include "IFavoritableDataElement.h"
23
24 #include <qt5qevercloud/QEverCloud.h>
25
26 #include <QSharedDataPointer>
27
28 namespace quentier {
29
30 QT_FORWARD_DECLARE_CLASS(SharedNotebook)
31 QT_FORWARD_DECLARE_CLASS(User)
32 QT_FORWARD_DECLARE_CLASS(NotebookData)
33
34 class QUENTIER_EXPORT Notebook :  public IFavoritableDataElement
35 {
36 public:
37     QN_DECLARE_LOCAL_UID
38     QN_DECLARE_DIRTY
39     QN_DECLARE_LOCAL
40     QN_DECLARE_FAVORITED
41
42 public:
43     explicit Notebook();
44     Notebook(const Notebook & other);
45     Notebook(Notebook && other);
46     Notebook & operator=(const Notebook & other);
47     Notebook & operator=(Notebook && other);
48
49     explicit Notebook(const qevercloud::Notebook & other);
50     explicit Notebook(qevercloud::Notebook && other);
51     Notebook & operator=(const qevercloud::Notebook & other);
52     Notebook & operator=(qevercloud::Notebook && other);
53
54     virtual ~Notebook() override;
55
56     bool operator==(const Notebook & other) const;
57     bool operator!=(const Notebook & other) const;
58
59     const qevercloud::Notebook & qevercloudNotebook() const;
60     qevercloud::Notebook & qevercloudNotebook();
61
62     virtual void clear() override;
63
64     static bool validateName(
65         const QString & name, ErrorString * pErrorDescription = nullptr);
66
67     virtual bool hasGuid() const override;
68     virtual const QString & guid() const override;
69     virtual void setGuid(const QString & guid) override;
70
71     virtual bool hasUpdateSequenceNumber() const override;
72     virtual qint32 updateSequenceNumber() const override;
73     virtual void setUpdateSequenceNumber(const qint32 usn) override;
74
75     virtual bool checkParameters(ErrorString & errorDescription) const override;
76
```

```
77      bool hasName() const;
78      const QString & name() const;
79      void setName(const QString & name);
80
81      bool isDefaultNotebook() const;
82      void setDefaultNotebook(const bool defaultNotebook);
83
84      bool hasLinkedNotebookGuid() const;
85      const QString & linkedNotebookGuid() const;
86      void setLinkedNotebookGuid(const QString & linkedNotebookGuid);
87
88      bool hasCreationTimestamp() const;
89      qint64 creationTimestamp() const;
90      void setCreationTimestamp(const qint64 timestamp);
91
92      bool hasModificationTimestamp() const;
93      qint64 modificationTimestamp() const;
94      void setModificationTimestamp(const qint64 timestamp);
95
96      bool hasPublishingUri() const;
97      const QString & publishingUri() const;
98      void setPublishingUri(const QString & uri);
99
100     bool hasPublishingOrder() const;
101     qint8 publishingOrder() const;
102     void setPublishingOrder(const qint8 order);
103
104     bool hasPublishingAscending() const;
105     bool isPublishingAscending() const;
106     void setPublishingAscending(const bool ascending);
107
108     bool hasPublishingPublicDescription() const;
109     const QString & publishingPublicDescription() const;
110     void setPublishingPublicDescription(
111         const QString & publishingPublicDescription);
112
113     bool hasPublished() const;
114     bool isPublished() const;
115     void setPublished(const bool published);
116
117     bool hasStack() const;
118     const QString & stack() const;
119     void setStack(const QString & stack);
120
121     bool hasSharedNotebooks();
122     QList<SharedNotebook> sharedNotebooks() const;
123     void setSharedNotebooks(QList<qevercloud::SharedNotebook> sharedNotebooks);
124     void setSharedNotebooks(QList<SharedNotebook> && notebooks);
125     void addSharedNotebook(const SharedNotebook & sharedNotebook);
126     void removeSharedNotebook(const SharedNotebook & sharedNotebook);
127
128     bool hasBusinessNotebookDescription() const;
129     const QString & businessNotebookDescription() const;
130
131     void setBusinessNotebookDescription(
132         const QString & businessNotebookDescription);
133
134     bool hasBusinessNotebookPrivilegeLevel() const;
135     qint8 businessNotebookPrivilegeLevel() const;
136     void setBusinessNotebookPrivilegeLevel(const qint8 privilegeLevel);
137
138     bool hasBusinessNotebookRecommended() const;
139     bool isBusinessNotebookRecommended() const;
140     void setBusinessNotebookRecommended(const bool recommended);
141
142     bool hasContact() const;
143     const User contact() const;
144     void setContact(const User & contact);
145
146     bool isLastUsed() const;
147     void setLastUsed(const bool lastUsed);
148
149     bool canReadNotes() const;
150     void setCanReadNotes(const bool canReadNotes);
151
152     bool canCreateNotes() const;
153     void setCanCreateNotes(const bool canCreateNotes);
154
155     bool canUpdateNotes() const;
156     void setCanUpdateNotes(const bool canUpdateNotes);
157
158     bool canExpungeNotes() const;
159     void setCanExpungeNotes(const bool canExpungeNotes);
160
161     bool canShareNotes() const;
162     void setCanShareNotes(const bool canShareNotes);
163
```

```
164     bool canEmailNotes() const;
165     void setCanEmailNotes(const bool canEmailNotes);
166
167     bool canSendMessageToRecipients() const;
168     void setCanSendMessageToRecipients(const bool canSendMessageToRecipients);
169
170     bool canUpdateNotebook() const;
171     void setCanUpdateNotebook(const bool canUpdateNotebook);
172
173     bool canExpungeNotebook() const;
174     void setCanExpungeNotebook(const bool canExpungeNotebook);
175
176     bool canSetDefaultNotebook() const;
177     void setCanSetDefaultNotebook(const bool canSetDefaultNotebook);
178
179     bool canSetNotebookStack() const;
180     void setCanSetNotebookStack(const bool canSetNotebookStack);
181
182     bool canPublishToPublic() const;
183     void setCanPublishToPublic(const bool canPublishToPublic);
184
185     bool canPublishToBusinessLibrary() const;
186     void setCanPublishToBusinessLibrary(const bool canPublishToBusinessLibrary);
187
188     bool canCreateTags() const;
189     void setCanCreateTags(const bool canCreateTags);
190
191     bool canUpdateTags() const;
192     void setCanUpdateTags(const bool canUpdateTags);
193
194     bool canExpungeTags() const;
195     void setCanExpungeTags(const bool canExpungeTags);
196
197     bool canSetParentTag() const;
198     void setCanSetParentTag(const bool canSetParentTag);
199
200     bool canCreateSharedNotebooks() const;
201     void setCanCreateSharedNotebooks(const bool canCreateSharedNotebooks);
202
203     bool canShareNotesWithBusiness() const;
204     void setCanShareNotesWithBusiness(const bool canShareNotesWithBusiness);
205
206     bool canRenameNotebook() const;
207     void setCanRenameNotebook(const bool canRenameNotebook);
208
209     bool hasUpdateWhichSharedNotebookRestrictions() const;
210     qint8 updateWhichSharedNotebookRestrictions() const;
211     void setUpdateWhichSharedNotebookRestrictions(const qint8 which);
212
213     bool hasExpungeWhichSharedNotebookRestrictions() const;
214     qint8 expungeWhichSharedNotebookRestrictions() const;
215     void setExpungeWhichSharedNotebookRestrictions(const qint8 which);
216
217     bool hasRestrictions() const;
218     const qevercloud::NotebookRestrictions & restrictions() const;
219
220     void setNotebookRestrictions(
221         qevercloud::NotebookRestrictions && restrictions);
222
223     bool hasRecipientReminderNotifyEmail() const;
224     bool recipientReminderNotifyEmail() const;
225     void setRecipientReminderNotifyEmail(const bool notifyEmail);
226
227     bool hasRecipientReminderNotifyInApp() const;
228     bool recipientReminderNotifyInApp() const;
229     void setRecipientReminderNotifyInApp(const bool notifyInApp);
230
231     bool hasRecipientInMyList() const;
232     bool recipientInMyList() const;
233     void setRecipientInMyList(const bool inMyList);
234
235     bool hasRecipientStack() const;
236     const QString & recipientStack() const;
237     void setRecipientStack(const QString & recipientString);
238
239     bool hasRecipientSettings() const;
240     const qevercloud::NotebookRecipientSettings & recipientSettings() const;
241     void setNotebookRecipientSettings(
242         qevercloud::NotebookRecipientSettings && settings);
243
244     virtual QTextStream & print(QTextStream & strm) const override;
245
246 private:
247     QSharedDataPointer<NotebookData> d;
248 };
249
250 } // namespace quentier
```

```
251
252 Q_DECLARE_METATYPE(quentier::Notebook)
253
254 #endif // LIB_QUENTIER_TYPES_NOTEBOOK_H
```

6.45 RegisterMetatypes.h

```
1 /*
2 * Copyright 2016-2019 Dmitry Ivanov
3 *
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12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_REGISTER_METATYPES_H
20 #define LIB_QUENTIER_TYPES_REGISTER_METATYPES_H
21
22 #include <quentier/utility/Linkage.h>
23
24 namespace quentier {
25
26 void QUENTIER_EXPORT registerMetatypes();
27
28 } // namespace quentier
29
30 #endif // LIB_QUENTIER_TYPES_REGISTER_METATYPES_H
```

6.46 Resource.h

```
1 /*
2 * Copyright 2016-2020 Dmitry Ivanov
3 *
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11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_RESOURCE_H
20 #define LIB_QUENTIER_TYPES_RESOURCE_H
21
22 #include "INoteStoreDataElement.h"
23 #include "Note.h"
24
25 namespace quentier {
26
27 QT_FORWARD_DECLARE_CLASS(ResourceData)
28
29 class QUENTIER_EXPORT Resource :  public INoteStoreDataElement
30 {
31 public:
32     QN_DECLARE_LOCAL_UID
33     QN_DECLARE_DIRTY
34     QN_DECLARE_LOCAL
35
36 public:
37     explicit Resource();
38     Resource(const Resource & other);
39     Resource(Resource && other);
```

```
40      explicit Resource(const qevercloud::Resource & resource);
41      Resource & operator=(const Resource & other);
42      Resource & operator=(Resource && other);
43      virtual ~Resource() override;
44
45      bool operator==(const Resource & other) const;
46      bool operator!=(const Resource & other) const;
47
48      const qevercloud::Resource & qevercloudResource() const;
49      qevercloud::Resource & qevercloudResource();
50
51      virtual void clear() override;
52
53      virtual bool hasGuid() const override;
54      virtual const QString & guid() const override;
55      virtual void setGuid(const QString & guid) override;
56
57      virtual bool hasUpdateSequenceNumber() const override;
58      virtual qint32 updateSequenceNumber() const override;
59
60      virtual void setUpdateSequenceNumber(
61          const qint32 updateSequenceNumber) override;
62
63      virtual bool checkParameters(ErrorString & errorDescription) const override;
64
65      QString displayName() const;
66      void setDisplayName(const QString & displayName);
67
68      QString preferredFileSuffix() const;
69
70      int indexInNote() const;
71      void setIndexInNote(const int index);
72
73      bool hasNoteGuid() const;
74      const QString & noteGuid() const;
75      void setNoteGuid(const QString & guid);
76
77      bool hasNoteLocalUid() const;
78      const QString & noteLocalUid() const;
79      void setNoteLocalUid(const QString & guid);
80
81      bool hasData() const;
82
83      bool hasDataHash() const;
84      const QByteArray & dataHash() const;
85      void setDataHash(const QByteArray & hash);
86
87      bool hasDataSize() const;
88      qint32 dataSize() const;
89      void setDataSize(const qint32 size);
90
91      bool hasDataBody() const;
92      const QByteArray & dataBody() const;
93      void setDataBody(const QByteArray & body);
94
95      bool hasMime() const;
96      const QString & mime() const;
97      void setMime(const QString & mime);
98
99      bool hasWidth() const;
100     qint16 width() const;
101     void setWidth(const qint16 width);
102
103     bool hasHeight() const;
104     qint16 height() const;
105     void setHeight(const qint16 height);
106
107     bool hasRecognitionData() const;
108
109     bool hasRecognitionDataHash() const;
110     const QByteArray & recognitionDataHash() const;
111     void setRecognitionDataHash(const QByteArray & hash);
112
113     bool hasRecognitionDataSize() const;
114     qint32 recognitionDataSize() const;
115     void setRecognitionDataSize(const qint32 size);
116
117     bool hasRecognitionDataBody() const;
118     const QByteArray & recognitionDataBody() const;
119     void setRecognitionDataBody(const QByteArray & body);
120
121     bool hasAlternateData() const;
122
123     bool hasAlternateDataHash() const;
124     const QByteArray & alternateDataHash() const;
125     void setAlternateDataHash(const QByteArray & hash);
126
```

```
127     bool hasAlternateDataSize() const;
128     qint32 alternateDataSize() const;
129     void setAlternateDataSize(const qint32 size);
130
131     bool hasAlternateDataBody() const;
132     const QByteArray & alternateDataBody() const;
133     void setAlternateDataBody(const QByteArray & body);
134
135     bool hasResourceAttributes() const;
136     const qevercloud::ResourceAttributes & resourceAttributes() const;
137     qevercloud::ResourceAttributes & resourceAttributes();
138
139     void setResourceAttributes(
140         const qevercloud::ResourceAttributes & attributes);
141
142     void setResourceAttributes(qevercloud::ResourceAttributes && attributes);
143
144     friend class Note;
145
146     virtual QTextStream & print(QTextStream & strm) const override;
147
148 private:
149     QSharedDataPointer<ResourceData> d;
150 };
151
152 } // namespace quentier
153
154 #endif // LIB_QUENTIER_TYPES_RESOURCE_H
```

6.47 ResourceRecognitionIndexItem.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
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9  *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_RESOURCE_RECOGNITION_INDEX_ITEM_H
20 #define LIB_QUENTIER_TYPES_RESOURCE_RECOGNITION_INDEX_ITEM_H
21
22 #include <quentier/utility/Linkage.h>
23 #include <quentier/utility/Printable.h>
24
25 #include <QByteArray>
26 #include <QSharedDataPointer>
27
28 namespace quentier {
29
30 QT_FORWARD_DECLARE_CLASS(ResourceRecognitionIndexItemData)
31
32 class QUENTIER_EXPORT ResourceRecognitionIndexItem :  public Printable
33 {
34 public:
35     explicit ResourceRecognitionIndexItem();
36     ResourceRecognitionIndexItem(const ResourceRecognitionIndexItem & other);
37
38     ResourceRecognitionIndexItem & operator=(
39         const ResourceRecognitionIndexItem & other);
40
41     virtual ~ResourceRecognitionIndexItem() override;
42
43     bool isValid() const;
44
45     int x() const;
46     void setX(const int x);
47
48     int y() const;
49     void setY(const int y);
50
51     int h() const;
52     void setH(const int h);
```

```
53
54      int w() const;
55      void setW(const int w);
56
57      int offset() const;
58      void setOffset(const int offset);
59
60      int duration() const;
61      void setDuration(const int duration);
62
63      QVector<int> strokeList() const;
64      int numStrokes() const;
65      bool strokeAt(const int strokeIndex, int & stroke) const;
66      bool setStrokeAt(const int strokeIndex, const int stroke);
67      void setStrokeList(const QVector<int> & strokeList);
68      void reserveStrokeListSpace(const int numItems);
69      void addStroke(const int stroke);
70      bool removeStroke(const int stroke);
71      bool removeStrokeAt(const int strokeIndex);
72
73      struct TextItem
74      {
75          bool operator==(const TextItem & other)const
76  {
77              return (m_text == other.m_text) && (m_weight == other.m_weight);
78          }
79
80          QString m_text;
81          int m_weight = -1;
82      };
83
84      QVector<TextItem> textItems() const;
85      int numTextItems() const;
86      bool textItemAt(const int textItemIndex, TextItem & textItem) const;
87      bool setTextItemAt(const int textItemIndex, const TextItem & textItem);
88      void setTextItems(const QVector<TextItem> & textItems);
89      void reserveTextItemsSpace(const int numItems);
90      void addTextItem(const TextItem & item);
91      bool removeTextItem(const TextItem & item);
92      bool removeTextItemAt(const int textItemIndex);
93
94      struct ObjectItem
95      {
96          bool operator==(const ObjectItem & other)const
97  {
98              return (m_objectType == other.m_objectType) &&
99                  (m_weight == other.m_weight);
100         }
101
102         QString m_objectType;
103         int m_weight = -1;
104     };
105
106     QVector<ObjectItem> objectItems() const;
107     int numObjectItems() const;
108     bool objectItemAt(const int objectItemIndex, ObjectItem & objectItem) const;
109
110     bool setObjectItemAt(
111         const int objectItemIndex, const ObjectItem & objectItem);
112
113     void setObjectItems(const QVector<ObjectItem> & objectItems);
114     void reserveObjectItemsSpace(const int numItems);
115     void addObjectItem(const ObjectItem & item);
116     bool removeObjectItem(const ObjectItem & item);
117     bool removeObjectItemAt(const int objectItemIndex);
118
119     struct ShapeItem
120     {
121         bool operator==(const ShapeItem & other)const
122 {
123             return (m_shapeType == other.m_shapeType) &&
124                 (m_weight == other.m_weight);
125         }
126
127         QString m_shapeType;
128         int m_weight = -1;
129     };
130
131     QVector<ShapeItem> shapeItems() const;
132     int numShapeItems() const;
133     bool shapeItemAt(const int shapeItemIndex, ShapeItem & shapeItem) const;
134     bool setShapeItemAt(const int shapeItemIndex, const ShapeItem & shapeItem);
135     void setShapeItems(const QVector<ShapeItem> & shapeItems);
136     void reserveShapeItemsSpace(const int numItems);
137     void addShapeItem(const ShapeItem & item);
138     bool removeShapeItem(const ShapeItem & item);
139     bool removeShapeItemAt(const int shapeItemIndex);
```

```
140
141     struct BarcodeItem
142     {
143         bool operator==(const BarcodeItem & other)const
144 {
145             return (m_barcode == other.m_barcode) &&
146                 (m_weight == other.m_weight);
147         }
148
149         QString m_barcode;
150         int m_weight = -1;
151     };
152
153     QVector<BarcodeItem> barcodeItems() const;
154     int numBarcodeItems() const;
155
156     bool barcodeItemAt(
157         const int barcodeItemIndex, BarcodeItem & barcodeItem) const;
158
159     bool setBarcodeItemAt(
160         const int barcodeItemIndex, const BarcodeItem & barcodeItem);
161
162     void setBarcodeItems(const QVector<BarcodeItem> & barcodeItems);
163     void reserveBarcodeItemsSpace(const int numItems);
164     void addBarcodeItem(const BarcodeItem & item);
165     bool removeBarcodeItem(const BarcodeItem & item);
166     bool removeBarcodeItemAt(const int barcodeItemIndex);
167
168     virtual QTextStream & print(QTextStream & strm) const override;
169
170 private:
171     QSharedDataPointer<ResourceRecognitionIndexItemData> d;
172 };
173
174 } // namespace quentier
175
176 #endif // LIB_QUENTIER_TYPES_RESOURCE_RECOGNITION_INDEX_ITEM_H
```

6.48 ResourceRecognitionIndices.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
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7  * it under the terms of the GNU Lesser General Public License as published by
8  * the Free Software Foundation, version 3 of the License.
9  *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_RESOURCE_RECOGNITION_INDICES_H
20 #define LIB_QUENTIER_TYPES_RESOURCE_RECOGNITION_INDICES_H
21
22 #include <quentier/types/ResourceRecognitionIndexItem.h>
23
24 #include <QByteArray>
25 #include <QSharedDataPointer>
26 #include <QVector>
27
28 namespace quentier {
29
30 QT_FORWARD_DECLARE_CLASS(ResourceRecognitionIndicesData)
31
32 class QUENTIER_EXPORT ResourceRecognitionIndices :  public Printable
33 {
34 public:
35     explicit ResourceRecognitionIndices();
36     ResourceRecognitionIndices(const ResourceRecognitionIndices & other);
37
38     explicit ResourceRecognitionIndices(
39         const QByteArray & rawRecognitionIndicesData);
40
41     ResourceRecognitionIndices & operator=(
42         const ResourceRecognitionIndices & other);
43
```

```
44      virtual ~ResourceRecognitionIndices() override;
45
46      bool isNull() const;
47      bool isValid() const;
48
49      QString objectId() const;
50      QString objectType() const;
51      QString recoType() const;
52      QString engineVersion() const;
53      QString docType() const;
54      QString lang() const;
55
56      int objectHeight() const;
57      int objectWidth() const;
58
59      QVector<ResourceRecognitionIndexItem> items() const;
60
61      bool setData(const QByteArray & rawRecognitionIndicesData);
62
63      virtual QTextStream & print(QTextStream & strm) const override;
64
65  private:
66      QSharedDataPointer<ResourceRecognitionIndicesData> d;
67  };
68
69  } // namespace quentier
70
71  #endif // LIB_QUENTIER_TYPES_RESOURCE_RECOGNITION_INDICES_H
```

6.49 SavedSearch.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
6  * libquentier is free software; you can redistribute it and/or modify
7  * it under the terms of the GNU Lesser General Public License as published by
8  * the Free Software Foundation, version 3 of the License.
9  *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_SAVED_SEARCH_H
20 #define LIB_QUENTIER_TYPES_SAVED_SEARCH_H
21
22 #include "IFavoritableDataElement.h"
23
24 #include <qt5qevercloud/QEverCloud.h>
25
26 #include <QSharedDataPointer>
27
28 namespace quentier {
29
30 QT_FORWARD_DECLARE_CLASS(SavedSearchData)
31
32 class QUENTIER_EXPORT SavedSearch :  public IFavoritableDataElement
33 {
34 public:
35     QN_DECLARE_LOCAL_UID
36     QN_DECLARE_DIRTY
37     QN_DECLARE_LOCAL
38     QN_DECLARE_FAVORITED
39
40 public:
41     using QueryFormat = qevercloud::QueryFormat;
42     using SavedSearchScope = qevercloud::SavedSearchScope;
43
44 public:
45     explicit SavedSearch();
46     SavedSearch(const SavedSearch & other);
47     SavedSearch(SavedSearch && other);
48     SavedSearch & operator=(const SavedSearch & other);
49     SavedSearch & operator=(SavedSearch && other);
50
51     explicit SavedSearch(const qevercloud::SavedSearch & search);
52     explicit SavedSearch(qevercloud::SavedSearch && search);
```

```
53
54      virtual ~SavedSearch() override;
55
56      const qevercloud::SavedSearch & qevercloudSavedSearch() const;
57      qevercloud::SavedSearch & qevercloudSavedSearch();
58
59      bool operator==(const SavedSearch & other) const;
60      bool operator!=(const SavedSearch & other) const;
61
62      virtual void clear() override;
63
64      static bool validateName(
65          const QString & name, ErrorString * pErrorDescription = nullptr);
66
67      virtual bool hasGuid() const override;
68      virtual const QString & guid() const override;
69      virtual void setGuid(const QString & guid) override;
70
71      virtual bool hasUpdateSequenceNumber() const override;
72      virtual qint32 updateSequenceNumber() const override;
73      virtual void setUpdateSequenceNumber(const qint32 usn) override;
74
75      virtual bool checkParameters(ErrorString & errorDescription) const override;
76
77      bool hasName() const;
78      const QString & name() const;
79      void setName(const QString & name);
80
81      bool hasQuery() const;
82      const QString & query() const;
83      void setQuery(const QString & query);
84
85      bool hasQueryFormat() const;
86      QueryFormat queryFormat() const;
87      void setQueryFormat(const qint8 queryFormat);
88
89      bool hasIncludeAccount() const;
90      bool includeAccount() const;
91      void setIncludeAccount(const bool includeAccount);
92
93      bool hasIncludePersonalLinkedNotebooks() const;
94      bool includePersonalLinkedNotebooks() const;
95
96      void setIncludePersonalLinkedNotebooks(
97          const bool includePersonalLinkedNotebooks);
98
99      bool hasIncludeBusinessLinkedNotebooks() const;
100      bool includeBusinessLinkedNotebooks() const;
101
102      void setIncludeBusinessLinkedNotebooks(
103          const bool includeBusinessLinkedNotebooks);
104
105      virtual QTextStream & print(QTextStream & strm) const override;
106
107 private:
108      QSharedDataPointer<SavedSearchData> d;
109 };
110
111 } // namespace quentier
112
113 Q_DECLARE_METATYPE(quentier::SavedSearch)
114
115 #endif // LIB_QUENTIER_TYPES_SAVED_SEARCH_H
```

6.50 SharedNote.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
6  * libquentier is free software; you can redistribute it and/or modify
7  * it under the terms of the GNU Lesser General Public License as published by
8  * the Free Software Foundation, version 3 of the License.
9  *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
```

```
18
19 #ifndef LIB_QUENTIER_TYPES_SHARED_NOTE_H
20 #define LIB_QUENTIER_TYPES_SHARED_NOTE_H
21
22 #include <quentier/utility/Linkage.h>
23 #include <quentier/utility/Printable.h>
24
25 #include <qt5qevercloud/QEverCloud.h>
26
27 #include <QSharedDataPointer>
28
29 namespace quentier {
30
31 QT_FORWARD_DECLARE_CLASS(SharedNoteData)
32
33 class QUENTIER_EXPORT SharedNote :  public Printable
34 {
35 public:
36     using SharedNotePrivilegeLevel = qevercloud::SharedNotePrivilegeLevel;
37     using ContactType = qevercloud::ContactType;
38
39 public:
40     explicit SharedNote();
41     SharedNote(const SharedNote & other);
42     SharedNote(SharedNote && other);
43     explicit SharedNote(const qevercloud::SharedNote & sharedNote);
44     SharedNote & operator=(const SharedNote & other);
45     SharedNote & operator=(SharedNote && other);
46     virtual ~SharedNote() override;
47
48     bool operator==(const SharedNote & other) const;
49     bool operator!=(const SharedNote & other) const;
50
51     const qevercloud::SharedNote & qevercloudSharedNote() const;
52     qevercloud::SharedNote & qevercloudSharedNote();
53
54     const QString & noteGuid() const;
55     void setNoteGuid(const QString & noteGuid);
56
57     int indexInNote() const;
58     void setIndexInNote(const int index);
59
60     bool hasSharerUserId() const;
61     qint32 sharerUserId() const;
62     void setSharerUserId(const qint32 id);
63
64     bool hasRecipientIdentityId() const;
65     qint64 recipientIdentityId() const;
66     void setRecipientIdentityId(const qint64 identityId);
67
68     bool hasRecipientIdentityContactName() const;
69     const QString & recipientIdentityContactName() const;
70
71     void setRecipientIdentityContactName(
72         const QString & recipientIdentityContactName);
73
74     bool hasRecipientIdentityContactId() const;
75     const QString & recipientIdentityContactId() const;
76
77     void setRecipientIdentityContactId(
78         const QString & recipientIdentityContactId);
79
80     bool hasRecipientIdentityContactType() const;
81     ContactType recipientIdentityContactType() const;
82
83     void setRecipientIdentityContactType(
84         const ContactType recipientIdentityContactType);
85
86     void setRecipientIdentityContactType(
87         const qint32 recipientIdentityContactType);
88
89     bool hasRecipientIdentityContactPhotoUrl() const;
90     const QString & recipientIdentityContactPhotoUrl() const;
91
92     void setRecipientIdentityContactPhotoUrl(
93         const QString & recipientIdentityPhotoUrl);
94
95     bool hasRecipientIdentityContactPhotoLastUpdated() const;
96     qint64 recipientIdentityContactPhotoLastUpdated() const;
97
98     void setRecipientIdentityContactPhotoLastUpdated(
99         const qint64 recipientIdentityPhotoLastUpdated);
100
101     bool hasRecipientIdentityContactMessagingPermit() const;
102     const QByteArray & recipientIdentityContactMessagingPermit() const;
103
104     void setRecipientIdentityContactMessagingPermit(
```

```
105         const QByteArray & messagingPermit);
106
107     bool hasRecipientIdentityContactMessagingPermitExpires() const;
108     qint64 recipientIdentityContactMessagingPermitExpires() const;
109
110     void setRecipientIdentityContactMessagingPermitExpires(
111         const qint64 timestamp);
112
113     bool hasRecipientIdentityUserId() const;
114     qint32 recipientIdentityUserId() const;
115     void setRecipientIdentityUserId(const qint32 userId);
116
117     bool hasRecipientIdentityDeactivated() const;
118     bool recipientIdentityDeactivated() const;
119     void setRecipientIdentityDeactivated(const bool deactivated);
120
121     bool hasRecipientIdentitySameBusiness() const;
122     bool recipientIdentitySameBusiness() const;
123     void setRecipientIdentitySameBusiness(const bool sameBusiness);
124
125     bool hasRecipientIdentityBlocked() const;
126     bool recipientIdentityBlocked() const;
127     void setRecipientIdentityBlocked(const bool blocked);
128
129     bool hasRecipientIdentityUserConnected() const;
130     bool recipientIdentityUserConnected() const;
131     void setRecipientIdentityUserConnected(const bool userConnected);
132
133     bool hasRecipientIdentityEventId() const;
134     qint64 recipientIdentityEventId() const;
135     void setRecipientIdentityEventId(const qint64 eventId);
136
137     bool hasRecipientIdentity() const;
138     const qevercloud::Identity & recipientIdentity() const;
139     void setRecipientIdentity(qevercloud::Identity && identity);
140
141     bool hasPrivilegeLevel() const;
142     SharedNotePrivilegeLevel privilegeLevel() const;
143     void setPrivilegeLevel(const SharedNotePrivilegeLevel level);
144     void setPrivilegeLevel(const qint8 level);
145
146     bool hasCreationTimestamp() const;
147     qint64 creationTimestamp() const;
148     void setCreationTimestamp(const qint64 timestamp);
149
150     bool hasModificationTimestamp() const;
151     qint64 modificationTimestamp() const;
152     void setModificationTimestamp(const qint64 timestamp);
153
154     bool hasAssignmentTimestamp() const;
155     qint64 assignmentTimestamp() const;
156     void setAssignmentTimestamp(const qint64 timestamp);
157
158     virtual QTextStream & print(QTextStream & strm) const override;
159
160 private:
161     QSharedDataPointer<SharedNoteData> d;
162 };
163
164 } // namespace quentier
165
166 #endif // LIB_QUENTIER_TYPES_SHARED_NOTE_H
```

6.51 SharedNotebook.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
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10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
```

```
19 #ifndef LIB_QUENTIER_TYPES_SHARED_NOTEBOOK_H
20 #define LIB_QUENTIER_TYPES_SHARED_NOTEBOOK_H
21
22 #include <quentier/utility/Printable.h>
23
24 #include <qt5qevercloud/QEverCloud.h>
25
26 #include <QSharedDataPointer>
27
28 namespace quentier {
29
30 QT_FORWARD_DECLARE_CLASS(SharedNotebookData)
31
32 class QUENTIER_EXPORT SharedNotebook :  public Printable
33 {
34 public:
35     using SharedNotebookPrivilegeLevel =
36         qevercloud::SharedNotebookPrivilegeLevel;
37
38 public:
39     explicit SharedNotebook();
40     SharedNotebook(const SharedNotebook & other);
41     SharedNotebook(SharedNotebook && other);
42
43     explicit SharedNotebook(
44         const qevercloud::SharedNotebook & qecSharedNotebook);
45
46     SharedNotebook & operator=(const SharedNotebook & other);
47     SharedNotebook & operator=(SharedNotebook && other);
48
49     virtual ~SharedNotebook() override;
50
51     bool operator==(const SharedNotebook & other) const;
52     bool operator!=(const SharedNotebook & other) const;
53
54     const qevercloud::SharedNotebook & qevercloudSharedNotebook() const;
55     qevercloud::SharedNotebook & qevercloudSharedNotebook();
56
57     int indexInNotebook() const;
58     void setIndexInNotebook(const int index);
59
60     bool hasId() const;
61     qint64 id() const;
62     void setId(const qint64 id);
63
64     bool hasUserId() const;
65     qint32 userId() const;
66     void setUserId(const qint32 userId);
67
68     bool hasNotebookGuid() const;
69     const QString & notebookGuid() const;
70     void setNotebookGuid(const QString & notebookGuid);
71
72     bool hasEmail() const;
73     const QString & email() const;
74     void setEmail(const QString & email);
75
76     bool hasCreationTimestamp() const;
77     qint64 creationTimestamp() const;
78     void setCreationTimestamp(const qint64 timestamp);
79
80     bool hasModificationTimestamp() const;
81     qint64 modificationTimestamp() const;
82     void setModificationTimestamp(const qint64 timestamp);
83
84     bool hasUsername() const;
85     const QString & username() const;
86     void setUsername(const QString & username);
87
88     bool hasPrivilegeLevel() const;
89     SharedNotebookPrivilegeLevel privilegeLevel() const;
90     void setPrivilegeLevel(const SharedNotebookPrivilegeLevel privilegeLevel);
91     void setPrivilegeLevel(const qint8 privilegeLevel);
92
93     bool hasReminderNotifyEmail() const;
94     bool reminderNotifyEmail() const;
95     void setReminderNotifyEmail(const bool notifyEmail);
96
97     bool hasReminderNotifyApp() const;
98     bool reminderNotifyApp() const;
99     void setReminderNotifyApp(const bool notifyApp);
100
101     bool hasRecipientUsername() const;
102     const QString & recipientUsername() const;
103     void setRecipientUsername(const QString & recipientUsername);
104
105     bool hasRecipientUserId() const;
```

```
106     qint32 recipientUserId() const;
107     void setRecipientUserId(const qint32 userId);
108
109     bool hasRecipientIdentityId() const;
110     qint64 recipientIdentityId() const;
111     void setRecipientIdentityId(const qint64 recipientIdentityId);
112
113     bool hasGlobalId() const;
114     const QString & globalId() const;
115     void setGlobalId(const QString & globalId);
116
117     bool hasSharerUserId() const;
118     qint32 sharerUserId() const;
119     void setSharerUserId(qint32 sharerUserId);
120
121     bool hasAssignmentTimestamp() const;
122     qint64 assignmentTimestamp() const;
123     void setAssignmentTimestamp(const qint64 timestamp);
124
125     virtual QTextStream & print(QTextStream & strm) const override;
126
127     friend class Notebook;
128
129 private:
130     QSharedDataPointer<SharedNotebookData> d;
131 };
132
133 } // namespace quentier
134
135 #endif // LIB_QUENTIER_TYPES_SHARED_NOTEBOOK_H
```

6.52 Tag.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
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11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_TAG_H
20 #define LIB_QUENTIER_TYPES_TAG_H
21
22 #include "IFavoritableDataElement.h"
23
24 #include <qt5qevercloud/QEverCloud.h>
25
26 #include <QSharedDataPointer>
27
28 namespace quentier {
29
30 QT_FORWARD_DECLARE_CLASS(TagData)
31
32 class QUENTIER_EXPORT Tag :  public IFavoritableDataElement
33 {
34 public:
35     QN_DECLARE_LOCAL_UID
36     QN_DECLARE_DIRTY
37     QN_DECLARE_LOCAL
38     QN_DECLARE_FAVORITED
39
40 public:
41     explicit Tag();
42     Tag(const Tag & other);
43     Tag(Tag && other);
44     Tag & operator=(const Tag & other);
45     Tag & operator=(Tag && other);
46
47     explicit Tag(const qevercloud::Tag & other);
48     explicit Tag(qevercloud::Tag && other);
49
50     virtual ~Tag() override;
```

```
51
52      bool operator==(const Tag & other) const;
53      bool operator!=(const Tag & other) const;
54
55      const qevercloud::Tag & qevercloudTag() const;
56      qevercloud::Tag & qevercloudTag();
57
58      virtual void clear() override;
59
60      static bool validateName(
61          const QString & name, ErrorString * pErrorDescription = nullptr);
62
63      virtual bool hasGuid() const override;
64      virtual const QString & guid() const override;
65      virtual void setGuid(const QString & guid) override;
66
67      virtual bool hasUpdateSequenceNumber() const override;
68      virtual qint32 updateSequenceNumber() const override;
69      virtual void setUpdateSequenceNumber(const qint32 usn) override;
70
71      virtual bool checkParameters(ErrorString & errorDescription) const override;
72
73      bool hasName() const;
74      const QString & name() const;
75      void setName(const QString & name);
76
77      bool hasParentGuid() const;
78      const QString & parentGuid() const;
79      void setParentGuid(const QString & parentGuid);
80
81      bool hasParentLocalUid() const;
82      const QString & parentLocalUid() const;
83      void setParentLocalUid(const QString & parentLocalUid);
84
85      bool hasLinkedNotebookGuid() const;
86      const QString & linkedNotebookGuid() const;
87      void setLinkedNotebookGuid(const QString & linkedNotebookGuid);
88
89      virtual QTextStream & print(QTextStream & strm) const override;
90
91  private:
92      QSharedDataPointer<TagData> d;
93  };
94
95  } // namespace quentier
96
97  Q_DECLARE_METATYPE(quentier::Tag)
98
99  #endif // LIB_QUENTIER_TYPES_TAG_H
```

6.53 User.h

```
1  /*
2  * Copyright 2016-2020 Dmitry Ivanov
3  *
4  * This file is part of libquentier
5  *
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7  * it under the terms of the GNU Lesser General Public License as published by
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9  *
10 * libquentier is distributed in the hope that it will be useful,
11 * but WITHOUT ANY WARRANTY; without even the implied warranty of
12 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
13 * GNU Lesser General Public License for more details.
14 *
15 * You should have received a copy of the GNU Lesser General Public License
16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_TYPES_USER_H
20 #define LIB_QUENTIER_TYPES_USER_H
21
22 #include <quentier/types/ErrorString.h>
23 #include <quentier/utility/Printable.h>
24
25 #include <qt5qevercloud/QEverCloud.h>
26
27 #include <QtGlobal>
28
29 namespace quentier {
30
31 QT_FORWARD_DECLARE_CLASS(UserData)
```

```
32
33 class QUENTIER_EXPORT User :  public Printable
34 {
35 public:
36     using PrivilegeLevel = qevercloud::PrivilegeLevel;
37     using ServiceLevel = qevercloud::ServiceLevel;
38
39 public:
40     explicit User();
41     explicit User(const qevercloud::User & user);
42     explicit User(qevercloud::User && user);
43     User(const User & other);
44     User(User && other);
45     User & operator=(const User & other);
46     User & operator=(User && other);
47     virtual ~User() override;
48
49     bool operator==(const User & other) const;
50     bool operator!=(const User & other) const;
51
52     const qevercloud::User & qevercloudUser() const;
53     qevercloud::User & qevercloudUser();
54
55     void clear();
56
57     bool isDirty() const;
58     void setDirty(const bool dirty);
59
60     bool isLocal() const;
61     void setLocal(const bool local);
62
63     bool checkParameters(ErrorString & errorDescription) const;
64
65     bool hasId() const;
66     qint32 id() const;
67     void setId(const qint32 id);
68
69     bool hasUsername() const;
70     const QString & username() const;
71     void setUsername(const QString & username);
72
73     bool hasEmail() const;
74     const QString & email() const;
75     void setEmail(const QString & email);
76
77     bool hasName() const;
78     const QString & name() const;
79     void setName(const QString & name);
80
81     bool hasTimezone() const;
82     const QString & timezone() const;
83     void setTimezone(const QString & timezone);
84
85     bool hasPrivilegeLevel() const;
86     PrivilegeLevel privilegeLevel() const;
87     void setPrivilegeLevel(const qint8 level);
88
89     bool hasServiceLevel() const;
90     ServiceLevel serviceLevel() const;
91     void setServiceLevel(const qint8 level);
92
93     bool hasCreationTimestamp() const;
94     qint64 creationTimestamp() const;
95     void setCreationTimestamp(const qint64 timestamp);
96
97     bool hasModificationTimestamp() const;
98     qint64 modificationTimestamp() const;
99     void setModificationTimestamp(const qint64 timestamp);
100
101     bool hasDeletionTimestamp() const;
102     qint64 deletionTimestamp() const;
103     void setDeletionTimestamp(const qint64 timestamp);
104
105     bool hasActive() const;
106     bool active() const;
107     void setActive(const bool active);
108
109     bool hasShardId() const;
110     const QString & shardId() const;
111     void setShardId(const QString & shardId);
112
113     bool hasUserAttributes() const;
114     const qevercloud::UserAttributes & userAttributes() const;
115     void setUserAttributes(qevercloud::UserAttributes && attributes);
116
117     bool hasAccounting() const;
118     const qevercloud::Accounting & accounting() const;
```

```
119     void setAccounting(qevercloud::Accounting && accounting);
120
121     bool hasBusinessUserInfo() const;
122     const qevercloud::BusinessUserInfo & businessUserInfo() const;
123     void setBusinessUserInfo(qevercloud::BusinessUserInfo && info);
124
125     bool hasPhotoUrl() const;
126     QString photoUrl() const;
127     void setPhotoUrl(const QString & photoUrl);
128
129     bool hasPhotoLastUpdateTimestamp() const;
130     qint64 photoLastUpdateTimestamp() const;
131     void setPhotoLastUpdateTimestamp(const qint64 timestamp);
132
133     bool hasAccountLimits() const;
134     const qevercloud::AccountLimits & accountLimits() const;
135     void setAccountLimits(qevercloud::AccountLimits && limits);
136
137     virtual QTextStream & print(QTextStream & strm) const override;
138
139     friend class Notebook;
140
141 private:
142     QSharedDataPointer<UserData> d;
143 };
144
145 } // namespace quentier
146
147 #endif // LIB_QUENTIER_TYPES_USER_H
```

6.54 ApplicationSettings.h

```
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3  *
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14 *
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_APPLICATION_SETTINGS_H
20 #define LIB_QUENTIER_UTILITY_APPLICATION_SETTINGS_H
21
22 #include <quentier/types/Account.h>
23
24 #include <QSettings>
25
26 namespace quentier {
27
33 class QUENTIER_EXPORT ApplicationSettings :  public QSettings, public Printable
34 {
35     Q_OBJECT
36 public:
46     ApplicationSettings(const QString & settingsName = {});
47
59     ApplicationSettings(
60         const Account & account, const QString & settingsName = {});
61
78     ApplicationSettings(
79         const Account & account, const char * settingsName,
80         const int settingsNameSize = -1);
81
85     virtual ~ApplicationSettings() override;
86
87 public:
92     struct ArrayCloser
93     {
94         ArrayCloser(ApplicationSettings & settings) :  m_settings(settings) {}
95
96         ~ArrayCloser()
97         {
98             m_settings.endArray();
99             m_settings.sync();
```

```
100         }
101
102         ApplicationSettings & m_settings;
103     };
104
109     struct GroupCloser
110     {
111         GroupCloser(ApplicationSettings & settings) :  m_settings(settings) {}
112
113         ~GroupCloser()
114         {
115             m_settings.endGroup();
116             m_settings.sync();
117         }
118
119         ApplicationSettings & m_settings;
120     };
121
122 public:
129     void beginGroup(const QString & prefix);
130
141     void beginGroup(const char * prefix, const int size = -1);
142
150     int beginReadArray(const QString & prefix);
151
162     int beginReadArray(const char * prefix, const int size = -1);
163
174     void beginWriteArray(const QString & prefix, const int arraySize = -1);
175
190     void beginWriteArray(
191         const char * prefix, const int arraySize = -1,
192         const int prefixSize = -1);
193
201     bool contains(const QString & key) const;
202
214     bool contains(const char * key, const int size = -1) const;
215
222     void remove(const QString & key);
223
234     void remove(const char * key, const int size = -1);
235
243     void setValue(const QString & key, const QVariant & value);
244
256     void setValue(
257         const char * key, const QVariant & value, const int keySize = -1);
258
269     QVariant value(
270         const QString & key, const QVariant & defaultValue = {}) const;
271
286     QVariant value(
287         const char * key, const QVariant & defaultValue = {},
288         const int keySize = -1) const;
289
290 public:
291     virtual QTextStream & print(QTextStream & strm) const override;
292
293 private:
294     Q_DISABLE_COPY(ApplicationSettings)
295 };
296
297 } // namespace quentier
298
299 #endif // LIB_QUENTIER_UTILITY_APPLICATION_SETTINGS_H
```

6.55 Checks.h

```
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
```

```
18
19 #ifndef LIB_QUENTIER_UTILITY_CHECKS_H
20 #define LIB_QUENTIER_UTILITY_CHECKS_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QString>
25
26 namespace quentier {
27
34 bool QUENTIER_EXPORT checkGuid(const QString & guid);
35
45 bool QUENTIER_EXPORT
46 checkUpdateSequenceNumber(const int32_t updateSequenceNumber);
47
48 } // namespace quentier
49
50 #endif // LIB_QUENTIER_UTILITY_CHECKS_H
```

6.56 Compat.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_COMPAT_H
20 #define LIB_QUENTIER_UTILITY_COMPAT_H
21
22 #include <QHash>
23 #include <QString>
24 #include <QtGlobal>
25
26 #if QT_VERSION < QT_VERSION_CHECK(5, 7, 0)
27 #include <type_traits>
28 #endif
29
30 // Compatibility with older Qt versions
31
32 #if QT_VERSION < QT_VERSION_CHECK(5, 7, 0)
33
34 // this adds const to non-const objects (like std::as_const)
35 template <typename T>
36 Q_DECL_CONSTEXPR typename std::add_const<T>::type & qAsConst(T & t)
37     Q_DECL_NOTHROW
38 {
39     return t;
40 }
41
42 // prevent rvalue arguments:
43 template <typename T>
44 void qAsConst(const T &&) = delete;
45
46 #endif
47
48 // Compatibility with boost parts which require to take a hash of QString
49
50 inline std::size_t hash_value(QString x) noexcept
51 {
52     return qHash(x);
53 }
54
55 #endif // LIB_QUENTIER_UTILITY_COMPAT_H
```

6.57 DateTime.h

```
1 /*
```

```
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_DATE_TIME_H
20 #define LIB_QUENTIER_UTILITY_DATE_TIME_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QFlags>
25
26 namespace quentier {
27
28 constexpr int secondsToMilliseconds(int seconds) noexcept
29 {
30     return seconds * 1000;
31 }
32
37 class QUENTIER_EXPORT DateTimePrint
38 {
39 public:
43     enum Option
44     {
49         IncludeNumericTimestamp = 1 << 1,
53         IncludeMilliseconds = 1 << 2,
59         IncludeTimezone = 1 << 3
60     };
61     Q_DECLARE_FLAGS(Options, Option)
62 };
63
64 Q_DECLARE_OPERATORS_FOR_FLAGS(DateTimePrint::Options)
65
66
83 const QString QUENTIER_EXPORT printableDateTimeFromTimestamp(
84     const qint64 timestamp,
85     DateTimePrint::Options options = DateTimePrint::Options(
86         DateTimePrint::IncludeNumericTimestamp |
87         DateTimePrint::IncludeMilliseconds | DateTimePrint::IncludeTimezone),
88     const char * customFormat = nullptr);
89
90 } // namespace quentier
91
92 #endif // LIB_QUENTIER_UTILITY_DATE_TIME_H
```

6.58 EncryptionManager.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_ENCRYPTION_MANAGER_H
20 #define LIB_QUENTIER_UTILITY_ENCRYPTION_MANAGER_H
21
22 #include <quentier/types/ErrorString.h>
23 #include <quentier/utility/Linkage.h>
24
```

```
25 #include <QObject>
26 #include <QString>
27 #include <QUuid>
28
29 namespace quentier {
30
31 QT_FORWARD_DECLARE_CLASS(EncryptionManagerPrivate)
32
33
38 class QUENTIER_EXPORT EncryptionManager :  public QObject
39 {
40     Q_OBJECT
41 public:
42     explicit EncryptionManager(QObject * parent = nullptr);
43     virtual ~EncryptionManager();
44
45     bool decrypt(
46         const QString & encryptedText, const QString & passphrase,
47         const QString & cipher, const size_t keyLength, QString & decryptedText,
48         ErrorString & errorDescription);
49
50     bool encrypt(
51         const QString & textToEncrypt, const QString & passphrase,
52         QString & cipher, size_t & keyLength, QString & encryptedText,
53         ErrorString & errorDescription);
54
55 Q_SIGNALS:
56     void decryptedText(
57         QString text, bool success, ErrorString errorDescription,
58         QUuid requestId);
59
60     void encryptedText(
61         QString encryptedText, bool success, ErrorString errorDescription,
62         QUuid requestId);
63
64 public Q_SLOTS:
65     void onDecryptTextRequest(
66         QString encryptedText, QString passphrase, QString cipher,
67         size_t keyLength, QUuid requestId);
68
69     void onEncryptTextRequest(
70         QString textToEncrypt, QString passphrase, QString cipher,
71         size_t keyLength, QUuid requestId);
72
73 private:
74     EncryptionManagerPrivate * const d_ptr;
75     Q_DECLARE_PRIVATE(EncryptionManager)
76 };
77
78 } // namespace quentier
79
80 #endif // LIB_QUENTIER_UTILITY_ENCRYPTION_MANAGER_H
```

6.59 EventLoopWithExitStatus.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_EVENT_LOOP_WITH_EXIT_STATUS_H
20 #define LIB_QUENTIER_UTILITY_EVENT_LOOP_WITH_EXIT_STATUS_H
21
22 #include <quentier/types/ErrorString.h>
23 #include <quentier/utility/Linkage.h>
24
25 #include <QEventLoop>
26
27 QT_FORWARD_DECLARE_CLASS(QDebug)
28 QT_FORWARD_DECLARE_CLASS(QTextStream)
```

```
29
30 namespace quentier {
31
32 class QUENTIER_EXPORT EventLoopWithExitStatus :  public QEventLoop
33 {
34     Q_OBJECT
35 public:
36     explicit EventLoopWithExitStatus(QObject * parent = nullptr);
37
38     enum class ExitStatus
39     {
40         Success,
41         Failure,
42         Timeout
43     };
44
45     friend QDebug & operator<<(QDebug & dbg, const ExitStatus status);
46
47     friend QTextStream & operator<<(
48         QTextStream & strm, const ExitStatus status);
49
50     ExitStatus exitStatus() const;
51     const ErrorString & errorDescription() const;
52
53 public Q_SLOTS:
54     void exitAsSuccess();
55     void exitAsFailure();
56     void exitAsFailureWithError(QString errorDescription);
57     void exitAsFailureWithErrorString(ErrorString errorDescription);
58     void exitAsTimeout();
59
60 private:
61     ExitStatus m_exitStatus;
62     ErrorString m_errorDescription;
63 };
64
65 } // namespace quentier
66
67 #endif // LIB_QUENTIER_UTILITY_EVENT_LOOP_WITH_EXIT_STATUS_H
```

6.60 FileCopier.h

```
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2  * Copyright 2018-2020 Dmitry Ivanov
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_FILE_COPIER_H
20 #define LIB_QUENTIER_UTILITY_FILE_COPIER_H
21
22 #include <quentier/types/ErrorString.h>
23 #include <quentier/utility/Linkage.h>
24
25 #include <QObject>
26 #include <QString>
27
28 QT_FORWARD_DECLARE_CLASS(QDebug)
29 QT_FORWARD_DECLARE_CLASS(QTextStream)
30
31 namespace quentier {
32
33 QT_FORWARD_DECLARE_CLASS(FileCopierPrivate)
34
35 class QUENTIER_EXPORT FileCopier :  public QObject
36 {
37     Q_OBJECT
38 public:
39     explicit FileCopier(QObject * parent = nullptr);
40
41     enum class State
```

```
42      {
43          Idle = 0,
44          Copying,
45          Cancelling
46      };
47
48      friend QDebug & operator«(QDebug & dbg, const State state);
49      friend QTextStream & operator«(QTextStream & strm, const State state);
50
51      State state() const;
52
53      QString sourceFilePath() const;
54      QString destinationFilePath() const;
55
56      double currentProgress() const;
57
58  Q_SIGNALS:
59      void progressUpdate(double progress);
60      void finished(QString sourcePath, QString destPath);
61      void cancelled(QString sourcePath, QString destPath);
62      void notifyError(ErrorString error);
63
64  public Q_SLOTS:
65      void copyFile(QString sourcePath, QString destPath);
66      void cancel();
67
68  private:
69      Q_DISABLE_COPY(FileCopier)
70
71  private:
72      FileCopierPrivate * d_ptr;
73      Q_DECLARE_PRIVATE(FileCopier)
74  };
75
76  } // namespace quentier
77
78  #endif // LIB_QUENTIER_UTILITY_FILE_COPIER_H
```

6.61 FileIOProcessorAsync.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_FILE_IO_PROCESSOR_ASYNC_H
20 #define LIB_QUENTIER_UTILITY_FILE_IO_PROCESSOR_ASYNC_H
21
22 #include <quentier/types/ErrorString.h>
23 #include <quentier/utility/Linkage.h>
24
25 #include <QByteArray>
26 #include <QIODevice>
27 #include <QObject>
28 #include <QString>
29 #include <QUuid>
30
31 namespace quentier {
32
33 QT_FORWARD_DECLARE_CLASS(FileIOProcessorAsyncPrivate)
34
35
39 class QUENTIER_EXPORT FileIOProcessorAsync :  public QObject
40 {
41     Q_OBJECT
42 public:
43     explicit FileIOProcessorAsync(QObject * parent = nullptr);
44
54     void setIdleTimePeriod(qint32 seconds);
55
```

```
56 Q_SIGNALS:
63     void readyForIO();
64
75     void writeFileRequestProcessed(
76         bool success, ErrorString errorDescription, QUuid requestId);
77
89     void readFileRequestProcessed(
90         bool success, ErrorString errorDescription, QByteArray data,
91         QUuid requestId);
92
93 public Q_SLOTS:
105     void onWriteFileRequest(
106         QString absoluteFilePath, QByteArray data, QUuid requestId,
107         bool append);
108
116     void onReadFileRequest(QString absoluteFilePath, QUuid requestId);
117
118 private:
119     FileIOProcessorAsyncPrivate * const d_ptr;
120     Q_DECLARE_PRIVATE(FileIOProcessorAsync)
121 };
122
123 } // namespace quentier
124
125 #endif // LIB_QUENTIER_UTILITY_FILE_IO_PROCESSOR_ASYNC_H
```

6.62 FileSystem.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_FILE_SYSTEM_H
20 #define LIB_QUENTIER_UTILITY_FILE_SYSTEM_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QString>
25
26 namespace quentier {
27
28 QT_FORWARD_DECLARE_CLASS(ErrorString)
29
30
44 const QString QUENTIER_EXPORT relativePathFromAbsolutePath(
45     const QString & absolutePath, const QString & relativePathRootFolderPath);
46
55 bool QUENTIER_EXPORT removeFile(const QString & filePath);
56
66 bool QUENTIER_EXPORT removeDir(const QString & dirPath);
67
79 QByteArray QUENTIER_EXPORT
80 readFileContents(const QString & filePath, ErrorString & errorDescription);
81
96 bool QUENTIER_EXPORT renameFile(
97     const QString & from, const QString & to, ErrorString & errorDescription);
98
99 } // namespace quentier
100
101 #endif // LIB_QUENTIER_UTILITY_FILE_SYSTEM_H
```

6.63 FileSystemWatcher.h

```
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2 * Copyright 2016-2020 Dmitry Ivanov
```

```
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_FILE_SYSTEM_WATCHER_H
20 #define LIB_QUENTIER_UTILITY_FILE_SYSTEM_WATCHER_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QObject>
25 #include <QStringList>
26
27 #define FILE_SYSTEM_WATCHER_DEFAULT_REMOVAL_TIMEOUT_MSEC (500)
28
29 namespace quentier {
30
31 QT_FORWARD_DECLARE_CLASS(FileSystemWatcherPrivate)
32
33 class QUENTIER_EXPORT FileSystemWatcher :  public QObject
34 {
35     Q_OBJECT
36 public:
37     explicit FileSystemWatcher(
38         const int removalTimeoutMSec =
39             FILE_SYSTEM_WATCHER_DEFAULT_REMOVAL_TIMEOUT_MSEC,
40         QObject * parent = nullptr);
41
42     explicit FileSystemWatcher(
43         const QStringList & paths,
44         const int removalTimeoutMSec =
45             FILE_SYSTEM_WATCHER_DEFAULT_REMOVAL_TIMEOUT_MSEC,
46         QObject * parent = nullptr);
47
48     virtual ~FileSystemWatcher() override;
49
50     void addPath(const QString & path);
51     void addPaths(const QStringList & paths);
52
53     QStringList directories() const;
54     QStringList files() const;
55
56     void removePath(const QString & path);
57     void removePaths(const QStringList & paths);
58
59 Q_SIGNALS:
60     void directoryChanged(const QString & path);
61     void directoryRemoved(const QString & path);
62
63     void fileChanged(const QString & path);
64     void fileRemoved(const QString & path);
65
66 private:
67     Q_DISABLE_COPY(FileSystemWatcher)
68
69 private:
70     FileSystemWatcherPrivate * d_ptr;
71     Q_DECLARE_PRIVATE(FileSystemWatcher)
72 };
73
74 } // namespace quentier
75
76 #endif // LIB_QUENTIER_UTILITY_FILE_SYSTEM_WATCHER_H
```

6.64 IKeychainService.h

```
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```

```
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16 * along with libquentier.  If not, see <http://www.gnu.org/licenses/>.
17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_I_KEYCHAIN_SERVICE_H
20 #define LIB_QUENTIER_UTILITY_I_KEYCHAIN_SERVICE_H
21
22 #include <quentier/types/ErrorString.h>
23 #include <quentier/utility/ForwardDeclarations.h>
24 #include <quentier/utility/Linkage.h>
25
26 #include <QObject>
27 #include <QUuid>
28
29 #include <memory>
30
31 QT_FORWARD_DECLARE_CLASS(QDebug)
32
33 namespace quentier {
34
40 class QUENTIER_EXPORT IKeychainService :  public QObject
41 {
42     Q_OBJECT
43 protected:
44     explicit IKeychainService(QObject * parent = nullptr);
45
46 public:
47     virtual ~IKeychainService() {}
48
52     enum class ErrorCode
53     {
57         NoError,
61         EntryNotFound,
65         CouldNotDeleteEntry,
69         AccessDeniedByUser,
73         AccessDenied,
77         NoBackendAvailable,
81         NotImplemented,
85         OtherError
86     };
87
88     friend QTextStream & operator«(
89         QTextStream & strm, const ErrorCode errorCode);
90
91     friend QDebug & operator«(QDebug & dbg, const ErrorCode errorCode);
92
93 public:
106     virtual QUuid startWritePasswordJob(
107         const QString & service, const QString & key,
108         const QString & password) = 0;
109
121     virtual QUuid startReadPasswordJob(
122         const QString & service, const QString & key) = 0;
123
135     virtual QUuid startDeletePasswordJob(
136         const QString & service, const QString & key) = 0;
137
138 Q_SIGNALS:
151     void writePasswordJobFinished(
152         QUuid requestId, ErrorCode errorCode, ErrorString errorDescription);
153
167     void readPasswordJobFinished(
168         QUuid requestId, ErrorCode errorCode, ErrorString errorDescription,
169         QString password);
170
183     void deletePasswordJobFinished(
184         QUuid requestId, ErrorCode errorCode, ErrorString errorDescription);
185
186 private:
187     Q_DISABLE_COPY(IKeychainService);
188 };
189
190 QUENTIER_EXPORT IKeychainServicePtr
191 newQtKeychainService(QObject * parent = nullptr);
192
193 QUENTIER_EXPORT IKeychainServicePtr
194 newObfuscatingKeychainService(QObject * parent = nullptr);
195
196 QUENTIER_EXPORT IKeychainServicePtr newCompositeKeychainService(
```

```
197     QString name, IKeychainServicePtr primaryKeychain,
198     IKeychainServicePtr secondaryKeychain, QObject * parent = nullptr);
199
200 QUENTIER_EXPORT IKeychainServicePtr newMigratingKeychainService(
201     IKeychainServicePtr sourceKeychain, IKeychainServicePtr sinkKeychain,
202     QObject * parent = nullptr);
203
204 } // namespace quentier
205
206 #endif // LIB_QUENTIER_UTILITY_I_KEYCHAIN_SERVICE_H
```

6.65 Initialize.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_INITIALIZE_H
20 #define LIB_QUENTIER_UTILITY_INITIALIZE_H
21
22 #include <quentier/utility/Linkage.h>
23
24 namespace quentier {
25
30 void QUENTIER_EXPORT initializeLibquentier();
31
32 } // namespace quentier
33
34 #endif // LIB_QUENTIER_UTILITY_INITIALIZE_H
```

6.66 LimitedStack.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_LIMITED_STACK_H
20 #define LIB_QUENTIER_UTILITY_LIMITED_STACK_H
21
22 #include <QStack>
23
24 namespace quentier {
25
32 template <class T>
33 class LimitedStack :  public QStack<T>
34 {
35 public:
36     LimitedStack(void (*deleter)(T &) = nullptr) :
37         m_limit(-1), m_deleter(deleter)
38     {}
39
```

```
40      LimitedStack(const LimitedStack<T> & other) :
41          QStack<T>(other), m_limit(other.m_limit), m_deleter(other.m_deleter)
42      {}
43
44      LimitedStack(LimitedStack<T> && other) :
45          QStack<T>(std::move(other)), m_limit(std::move(other.m_limit)),
46          m_deleter(std::move(other.m_deleter))
47      {}
48
49      LimitedStack<T> & operator=(const LimitedStack<T> & other)
50      {
51          if (this != &other) {
52              QStack<T>::operator=(other);
53              m_limit = other.m_limit;
54              m_deleter = other.m_deleter;
55          }
56
57          return *this;
58      }
59
60      LimitedStack<T> & operator=(LimitedStack<T> && other)
61      {
62          if (this != &other) {
63              QStack<T>::operator=(std::move(other));
64              m_limit = std::move(other.m_limit);
65              m_deleter = std::move(other.m_deleter);
66          }
67
68          return *this;
69      }
70
71      ~LimitedStack()
72      {
73          if (m_deleter) {
74              while (!QStack<T>::isEmpty()) {
75                  T t = QStack<T>::pop();
76                  (*m_deleter)(t);
77              }
78          }
79      }
80
81      void swap(const LimitedStack<T> & other)
82      {
83          int limit = other.m_limit;
84          other.m_limit = m_limit;
85          m_limit = limit;
86
87          void (*deleter)(T &) = other.m_deleter;
88          other.m_deleter = m_deleter;
89          m_deleter = deleter;
90
91          QStack<T>::swap(other);
92      }
93
94      int limit()const
95  {
96          return m_limit;
97      }
98      void setLimit(const int limit)
99      {
100          m_limit = limit;
101      }
102
103      void push(const T & t)
104      {
105          if ((m_limit > 0) && (QVector<T>::size() == m_limit - 1)) {
106              if (m_deleter) {
107                  (*m_deleter)(*QVector<T>::begin());
108              }
109              Q_UNUSED(QVector<T>::erase(QVector<T>::begin()));
110          }
111
112          QStack<T>::push(t);
113      }
114
115  private:
116      int m_limit;
117      void (*m_deleter)(T &);
118  };
119
120  } // namespace quentier
121
122  #endif // LIB_QUENTIER_UTILITY_LIMITED_STACK_H
```

6.67 Linkage.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_LINKAGE_H
20 #define LIB_QUENTIER_UTILITY_LINKAGE_H
21
22 #include <QtGlobal>
23
24 #if defined(BUILDING_QUENTIER_DLL)
25 #define QUENTIER_EXPORT Q_DECL_EXPORT
26 #else
27 #define QUENTIER_EXPORT Q_DECL_IMPORT
28 #endif
29
30 #endif // LIB_QUENTIER_UTILITY_LINKAGE_H
```

6.68 LRUCache.hpp

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_LRU_CACHE_HPP
20 #define LIB_QUENTIER_UTILITY_LRU_CACHE_HPP
21
22 #include <QHash>
23
24 #include <cstddef>
25 #include <list>
26
27 namespace quentier {
28
29 template <
30     class Key, class Value,
31     class Allocator = std::allocator<std::pair<Key, Value>>
32 class LRUCache
33 {
34 public:
35     LRUCache(const size_t maxSize = 100) :
36         m_container(), m_currentSize(0), m_maxSize(maxSize), m_mapper()
37     {}
38
39     using key_type = Key;
40     using mapped_type = Value;
41     using allocator_type = Allocator;
42     using value_type = std::pair<key_type, mapped_type>;
43     using container_type = std::list<value_type, allocator_type>;
44     using size_type = typename container_type::size_type;
45     using difference_type = typename container_type::difference_type;
46     using iterator = typename container_type::iterator;
47     using const_iterator = typename container_type::const_iterator;
48     using reverse_iterator = std::reverse_iterator<iterator>;
```

```
49      using const_reverse_iterator = std::reverse_iterator<const_iterator>;
50
51      using reference = value_type &;
52      using const_reference = const value_type &;
53      using pointer = typename std::allocator_traits<allocator_type>::pointer;
54
55      using const_pointer =
56          typename std::allocator_traits<allocator_type>::const_pointer;
57
58      iterator begin()
59      {
60          return m_container.begin();
61      }
62      const_iterator begin()const
63  {
64          return m_container.begin();
65      }
66
67      reverse_iterator rbegin()
68      {
69          return m_container.rbegin();
70      }
71      const_reverse_iterator rbegin()const
72  {
73          return m_container.rbegin();
74      }
75
76      iterator end()
77      {
78          return m_container.end();
79      }
80      const_iterator end()const
81  {
82          return m_container.end();
83      }
84
85      reverse_iterator rend()
86      {
87          return m_container.rend();
88      }
89      const_reverse_iterator rend()const
90  {
91          return m_container.rend();
92      }
93
94      bool empty()const
95  {
96          return m_container.empty();
97      }
98      size_t size()const
99  {
100          return m_currentSize;
101      }
102      size_t max_size()const
103  {
104          return m_maxSize;
105      }
106
107      void clear()
108      {
109          m_container.clear();
110          m_mapper.clear();
111          m_currentSize = 0;
112      }
113
114      void put(const key_type & key, const mapped_type & value)
115      {
116          Q_UNUSED(remove(key))
117
118          m_container.push_front(value_type(key, value));
119          m_mapper[key] = m_container.begin();
120          ++m_currentSize;
121
122          fixupSize();
123      }
124
125      const mapped_type * get(const key_type & key)const
126  {
127          auto mapperIt = m_mapper.find(key);
128          if (mapperIt == m_mapper.end()) {
129              return nullptr;
130          }
131
132          auto it = mapperIt.value();
133          if (it == m_container.end()) {
134              return nullptr;
135          }
```

```
136
137         m_container.splice(m_container.begin(), m_container, it);
138         mapperIt.value() = m_container.begin();
139         return &(mapperIt.value()->second);
140     }
141
142     bool exists(const key_type & key)
143     {
144         auto mapperIt = m_mapper.find(key);
145         if (mapperIt == m_mapper.end()) {
146             return false;
147         }
148
149         auto it = mapperIt.value();
150         return (it != m_container.end());
151     }
152
153     bool remove(const key_type & key)
154     {
155         auto mapperIt = m_mapper.find(key);
156         if (mapperIt == m_mapper.end()) {
157             return false;
158         }
159
160         auto it = mapperIt.value();
161         Q_UNUSED(m_container.erase(it))
162         Q_UNUSED(m_mapper.erase(mapperIt))
163
164         if (m_currentSize != 0) {
165             --m_currentSize;
166         }
167
168         return true;
169     }
170
171     void setMaxSize(const size_t maxSize)
172     {
173         if (maxSize >= m_maxSize) {
174             m_maxSize = maxSize;
175             return;
176         }
177
178         size_t diff = m_maxSize - maxSize;
179         for (size_t i = 0; (i < diff) && !m_container.empty(); ++i) {
180             auto lastIt = m_container.end();
181             --lastIt;
182
183             const key_type & lastElementKey = lastIt->first;
184             Q_UNUSED(m_mapper.remove(lastElementKey))
185             Q_UNUSED(m_container.erase(lastIt))
186
187             if (m_currentSize != 0) {
188                 --m_currentSize;
189             }
190         }
191     }
192
193 private:
194     void fixupSize()
195     {
196         if (m_currentSize <= m_maxSize) {
197             return;
198         }
199
200         if (Q_UNLIKELY(m_container.empty())) {
201             return;
202         }
203
204         auto lastIt = m_container.end();
205         --lastIt;
206
207         const key_type & lastElementKey = lastIt->first;
208
209         Q_UNUSED(m_mapper.remove(lastElementKey))
210         Q_UNUSED(m_container.erase(lastIt))
211
212         if (m_currentSize != 0) {
213             --m_currentSize;
214         }
215     }
216
217 private:
218     mutable container_type m_container;
219     size_t m_currentSize;
220     size_t m_maxSize;
221
222     mutable QHash<Key, iterator> m_mapper;
```

```
223 };
224
225 } // namespace quentier
226
227 #endif // LIB_QUENTIER_UTILITY_LRU_CACHE_HPP
```

6.69 MessageBox.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_MESSAGE_BOX_H
20 #define LIB_QUENTIER_UTILITY_MESSAGE_BOX_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QMessageBox>
25
26 namespace quentier {
27
28 int QUENTIER_EXPORT genericMessageBox(
29     QWidget * parent, const QString & title, const QString & briefText,
30     const QString & detailedText = {},
31     const QMessageBox::StandardButtons standardButtons = QMessageBox::Ok);
32
33 int QUENTIER_EXPORT informationMessageBox(
34     QWidget * parent, const QString & title, const QString & briefText,
35     const QString & detailedText = {},
36     const QMessageBox::StandardButtons standardButtons = QMessageBox::Ok);
37
38 int QUENTIER_EXPORT warningMessageBox(
39     QWidget * parent, const QString & title, const QString & briefText,
40     const QString & detailedText = {},
41     const QMessageBox::StandardButtons standardButtons = QMessageBox::Ok);
42
43 int QUENTIER_EXPORT criticalMessageBox(
44     QWidget * parent, const QString & title, const QString & briefText,
45     const QString & detailedText = {},
46     const QMessageBox::StandardButtons standardButtons = QMessageBox::Ok);
47
48 int QUENTIER_EXPORT questionMessageBox(
49     QWidget * parent, const QString & title, const QString & briefText,
50     const QString & detailedText = {},
51     const QMessageBox::StandardButtons standardButtons = QMessageBox::Ok |
52         QMessageBox::Cancel);
53
59 void QUENTIER_EXPORT
60 internalErrorMessageBox(QWidget * parent, QString detailedText = {});
61
62 } // namespace quentier
63
64 #endif // LIB_QUENTIER_UTILITY_MESSAGE_BOX_H
```

6.70 Printable.h

```
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```

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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_PRINTABLE_H
20 #define LIB_QUENTIER_UTILITY_PRINTABLE_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QDebug>
25 #include <QHash>
26 #include <QSet>
27 #include <QString>
28 #include <QTextStream>
29
30 namespace quentier {
31
37 class QUENTIER_EXPORT Printable
38 {
39 public:
40     virtual QTextStream & print(QTextStream & strm) const = 0;
41
42     virtual const QString toString() const;
43
44     friend QUENTIER_EXPORT QTextStream & operator«(
45         QTextStream & strm, const Printable & printable);
46
47     friend QUENTIER_EXPORT QDebug & operator«(
48         QDebug & debug, const Printable & printable);
49
50 protected:
51     Printable();
52     Printable(const Printable & other);
53     Printable & operator=(const Printable & other);
54     virtual ~Printable();
55 };
56
57 } // namespace quentier
58
59 // printing operators for existing classes not inheriting from Printable
60
61 template <class T>
62 const QString ToString(const T & object)
63 {
64     QString str;
65     QTextStream strm(&str, QIODevice::WriteOnly);
66     strm « object;
67     return str;
68 }
69
70 template <class TKey, class TValue>
71 const QString ToString(const QHash<TKey, TValue> & object)
72 {
73     QString str;
74     QTextStream strm(&str, QIODevice::WriteOnly);
75     strm « QStringLiteral("QHash:  \n");
76
77     typedef typename QHash<TKey, TValue>::const_iterator CIter;
78     CIter hashEnd = object.end();
79     for (CIter it = object.begin(); it != hashEnd; ++it) {
80         strm « QStringLiteral("[") « it.key() « QStringLiteral("] = ")
81              « it.value() « QStringLiteral(";\n");
82     }
83     return str;
84 }
85
86 template <class T>
87 const QString ToString(const QSet<T> & object)
88 {
89     QString str;
90     QTextStream strm(&str, QIODevice::WriteOnly);
91     strm « QStringLiteral("QSet:  \n");
92
93     typedef typename QSet<T>::const_iterator CIter;
94     CIter setEnd = object.end();
95     for (CIter it = object.begin(); it != setEnd; ++it) {
96         strm « QStringLiteral("[") « *it « QStringLiteral("];\n");
97     }
98     return str;
99 }
100
101 #define QUENTIER_DECLARE_PRINTABLE(type, ...)
```

```
    \
102 QUENTIER_EXPORT QTextStream & operator«(                                    \
103 QTextStream & strm, const type & obj);                                     \
104 inline QDebug & operator«(QDebug & debug, const type & obj)                 \
105 {                                                                           \
106 debug « ToString<type, ##__VA_ARGS__>(obj);                                \
107 return debug;                                                              \
108 }                                                                           \
109 // QUENTIER_DECLARE_PRINTABLE
110
111 #endif // LIB_QUENTIER_UTILITY_PRINTABLE_H
```

6.71 QuentierApplication.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_QUENTIER_APPLICATION_H
20 #define LIB_QUENTIER_UTILITY_QUENTIER_APPLICATION_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QApplication>
25
26 namespace quentier {
27
28 class QUENTIER_EXPORT QuentierApplication :  public QApplication
29 {
30     Q_OBJECT
31 public:
32     QuentierApplication(int & argc, char * argv[]);
33     virtual ~QuentierApplication() override;
34
35     virtual bool notify(QObject * pObject, QEvent * pEvent) override;
36     virtual bool event(QEvent * pEvent) override;
37 };
38
39 } // namespace quentier
40
41 #endif // LIB_QUENTIER_UTILITY_QUENTIER_APPLICATION_H
```

6.72 QuentierCheckPtr.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_QUENTIER_CHECK_PTR_H
20 #define LIB_QUENTIER_UTILITY_QUENTIER_CHECK_PTR_H
21
```

```
22 #include <quentier/exception/NullPtrException.h>
23 #include <quentier/logging/QuentierLogger.h>
24
25 #ifndef QUENTIER_CHECK_PTR
26 #define QUENTIER_CHECK_PTR(component, pointer, ...)
    \
27 {                                                                    \
28 if (Q_UNLIKELY(!pointer)) {                                          \
29 using quentier::NullPtrException;                                    \
30 ErrorString quentier_null_ptr_error(                                 \
31 QT_TRANSLATE_NOOP("", "Detected unintended null pointer"));    \
32             quentier_null_ptr_error.details() = QStringLiteral(__FILE__);       \
33             quentier_null_ptr_error.details() += QStringLiteral(" (");          \
34             quentier_null_ptr_error.details() += QString::number(__LINE__);     \
35             quentier_null_ptr_error.details() += QStringLiteral(") ");          \
36             quentier_null_ptr_error.details() +=                                \
37                 QString::fromUtf8("" #__VA_ARGS__ "");                          \
38             QNERROR(component, quentier_null_ptr_error);                        \
39             throw NullPtrException(quentier_null_ptr_error);                    \
40         }                                                                       \
41     }                                                                           \
42 // QUENTIER_CHECK_PTR
43 #endif
44
45 #endif // LIB_QUENTIER_UTILITY_QUENTIER_CHECK_PTR_H
```

6.73 QuentierUndoCommand.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_QUENTIER_UNDO_COMMAND_H
20 #define LIB_QUENTIER_UTILITY_QUENTIER_UNDO_COMMAND_H
21
22 #include <quentier/types/ErrorString.h>
23
24 #include <QObject>
25 #include <QUndoCommand>
26
27 namespace quentier {
28
54 class QuentierUndoCommand :  public QObject, public QUndoCommand
55 {
56     Q_OBJECT
57 public:
58     QuentierUndoCommand(QUndoCommand * parent = nullptr);
59     QuentierUndoCommand(const QString & text, QUndoCommand * parent = nullptr);
60     virtual ~QuentierUndoCommand() override;
61
62     virtual void undo() override final;
63     virtual void redo() override final;
64
65     bool onceUndoExecuted()const
66 {
67         return m_onceUndoExecuted;
68     }
69
70 Q_SIGNALS:
71     void notifyError(ErrorString error);
72
73 protected:
74     virtual void undoImpl() = 0;
75     virtual void redoImpl() = 0;
76
77 private:
78     bool m_onceUndoExecuted;
79 };
80
```

```
81 } // namespace quentier
82
83 #endif // LIB_QUENTIER_UTILITY_QUENTIER_UNDO_COMMAND_H
```

6.74 ShortcutManager.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_SHORTCUT_MANAGER_H
20 #define LIB_QUENTIER_UTILITY_SHORTCUT_MANAGER_H
21
22 #include <quentier/types/Account.h>
23 #include <quentier/utility/Linkage.h>
24
25 #include <QKeySequence>
26 #include <QObject>
27
28 namespace quentier {
29
30 QT_FORWARD_DECLARE_CLASS(ShortcutManagerPrivate)
31
32 class QUENTIER_EXPORT ShortcutManager :  public QObject
33 {
34     Q_OBJECT
35 public:
36     explicit ShortcutManager(QObject * parent = nullptr);
37
38     enum QuentierShortcutKey
39     {
40         NewNote = 5000,
41         NewTag,
42         NewNotebook,
43         NewSavedSearch,
44         AddAttachment,
45         SaveAttachment,
46         OpenAttachment,
47         CopyAttachment,
48         CutAttachment,
49         RemoveAttachment,
50         RenameAttachment,
51         AddAccount,
52         ExitAccount,
53         SwitchAccount,
54         AccountInfo,
55         NoteSearch,
56         NewNoteSearch,
57         ShowNotes,
58         ShowNotebooks,
59         ShowTags,
60         ShowSavedSearches,
61         ShowDeletedNotes,
62         ShowStatusBar,
63         ShowToolBar,
64         PasteUnformatted,
65         Font,
66         UpperIndex,
67         LowerIndex,
68         AlignLeft,
69         AlignCenter,
70         AlignRight,
71         AlignFull,
72         IncreaseIndentation,
73         DecreaseIndentation,
74         IncreaseFontSize,
75         DecreaseFontSize,
76         InsertNumberedList,
77         InsertBulletedList,
```

```
78          Strikethrough,
79          Highlight,
80          InsertTable,
81          InsertRow,
82          InsertColumn,
83          RemoveRow,
84          RemoveColumn,
85          InsertHorizontalLine,
86          InsertToDoTag,
87          EditHyperlink,
88          CopyHyperlink,
89          RemoveHyperlink,
90          Encrypt,
91          Decrypt,
92          DecryptPermanently,
93          BackupLocalStorage,
94          RestoreLocalStorage,
95          UpgradeLocalStorage,
96          LocalStorageStatus,
97          SpellCheck,
98          SpellCheckIgnoreWord,
99          SpellCheckAddWordToUserDictionary,
100          SaveImage,
101          AnnotateImage,
102          ImageRotateClockwise,
103          ImageRotateCounterClockwise,
104          Synchronize,
105          FullSync,
106          ImportFolders,
107          Preferences,
108          ReleaseNotes,
109          ViewLogs,
110          About,
111          UnknownKey = 100000
112      };
113
119      QKeySequence shortcut(
120          const int key, const Account & account,
121          const QString & context = {}) const;
122
128      QKeySequence shortcut(
129          const QString & nonStandardKey, const Account & account,
130          const QString & context = {}) const;
131
136      QKeySequence defaultShortcut(
137          const int key, const Account & account,
138          const QString & context = {}) const;
139
144      QKeySequence defaultShortcut(
145          const QString & nonStandardKey, const Account & account,
146          const QString & context = {}) const;
147
152      QKeySequence userShortcut(
153          const int key, const Account & account,
154          const QString & context = {}) const;
155
160      QKeySequence userShortcut(
161          const QString & nonStandardKey, const Account & account,
162          const QString & context = {}) const;
163
164  Q_SIGNALS:
165      void shortcutChanged(
166          int key, QKeySequence shortcut, const Account & account,
167          QString context);
168
169      void nonStandardShortcutChanged(
170          QString nonStandardKey, QKeySequence shortcut, const Account & account,
171          QString context);
172
173  public Q_SLOTS:
174      void setUserShortcut(
175          int key, QKeySequence shortcut, const Account & account,
176          QString context = {});
177
178      void setNonStandardUserShortcut(
179          QString nonStandardKey, QKeySequence shortcut, const Account & account,
180          QString context = {});
181
182      void setDefaultShortcut(
183          int key, QKeySequence shortcut, const Account & account,
184          QString context = {});
185
186      void setNonStandardDefaultShortcut(
187          QString nonStandardKey, QKeySequence shortcut, const Account & account,
188          QString context = {});
189
190  private:
```

```
191     ShortcutManagerPrivate * const d_ptr;
192     Q_DECLARE_PRIVATE(ShortcutManager)
193 };
194
195 } // namespace quentier
196
197 #endif // LIB_QUENTIER_UTILITY_SHORTCUT_MANAGER_H
```

6.75 Size.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_SIZE_H
20 #define LIB_QUENTIER_UTILITY_SIZE_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QString>
25
26 namespace quentier {
27
37 const QString QUENTIER_EXPORT humanReadableSize(const quint64 bytes);
38
39 } // namespace quentier
40
41 #endif // LIB_QUENTIER_UTILITY_SIZE_H
```

6.76 StandardPaths.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_STANDARD_PATHS_H
20 #define LIB_QUENTIER_UTILITY_STANDARD_PATHS_H
21
22 #include <quentier/types/Account.h>
23 #include <quentier/utility/Linkage.h>
24
29 #define LIBQUENTIER_PERSISTENCE_STORAGE_PATH                                   \
30 "LIBQUENTIER_PERSISTENCE_STORAGE_PATH"
31
32 namespace quentier {
33
42 const QString QUENTIER_EXPORT
43 applicationPersistentStoragePath(bool * pNonStandardLocation = nullptr);
44
54 const QString QUENTIER_EXPORT
55 accountPersistentStoragePath(const Account & account);
```

```
56
61 const QString QUENTIER_EXPORT applicationTemporaryStoragePath();
62
68 const QString QUENTIER_EXPORT homePath();
69
73 const QString QUENTIER_EXPORT documentsPath();
74
75 } // namespace quentier
76
77 #endif // LIB_QUENTIER_UTILITY_STANDARD_PATHS_H
```

6.77 StringUtils.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_STRING_UTILS_H
20 #define LIB_QUENTIER_UTILITY_STRING_UTILS_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QSet>
25 #include <QString>
26 #include <QVector>
27
28 namespace quentier {
29
30 QT_FORWARD_DECLARE_CLASS(StringUtilsPrivate)
31
32 class QUENTIER_EXPORT StringUtils
33 {
34 public:
35     StringUtils();
36     virtual ~StringUtils();
37
38     void removePunctuation(
39         QString & str, const QVector<QChar> & charactersToPreserve = {}) const;
40
41     void removeDiacritics(QString & str) const;
42     void removeNewlines(QString & str) const;
43
44     struct StringFilterPredicate
45     {
46         StringFilterPredicate(QSet<QString> & filteredStrings) :
47             m_filteredStrings(filteredStrings)
48         {}
49
50         bool operator()(const QString & str)const
51 {
52             return m_filteredStrings.contains(str);
53         }
54
55         QSet<QString> & m_filteredStrings;
56     };
57
58 private:
59     StringUtilsPrivate * const d_ptr;
60     Q_DECLARE_PRIVATE(StringUtils);
61 };
62
63 } // namespace quentier
64
65 #endif // LIB_QUENTIER_UTILITY_STRING_UTILS_H
```

6.78 SuppressWarnings.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_SUPPRESS_WARNINGS_H
20 #define LIB_QUENTIER_UTILITY_SUPPRESS_WARNINGS_H
21
23 // Common macros
25
26 #define STRINGIFY(a) #a
27
28 // Define empty macros doing nothing for supported compilers, they would be used
29 // as fallback when any of these compilers are not actually used
30
31 #define SAVE_WARNINGS
32
33 #define CLANG_SUPPRESS_WARNING(warning)
34 #define GCC_SUPPRESS_WARNING(warning)
35 #define MSVC_SUPPRESS_WARNING(warning)
36
37 #define RESTORE_WARNINGS
38
40 // Clang implementation
42
43 #if defined(__clang__)
44
45 #undef CLANG_SUPPRESS_WARNING
46
47 #define CLANG_SUPPRESS_WARNING(warning)                                        \
48 _Pragma(                                                                       \
49 STRINGIFY(clang diagnostic ignored #warning)) // CLANG_IGNORE_WARNING
50
51 #undef SAVE_WARNINGS
52
53 #define SAVE_WARNINGS _Pragma("clang diagnostic push") // SAVE_WARNINGS
54
55 #undef RESTORE_WARNINGS
56
57 #define RESTORE_WARNINGS _Pragma("clang diagnostic pop") // RESTORE_WARNINGS
58
59 #endif // clang
60
62 // GCC implementation
64
65 // Clang can mimic gcc so need to ensure it's indeed gcc
66 #if defined(__GNUC__) && !defined(__clang__)
67
68 #undef GCC_SUPPRESS_WARNING
69
70 #define GCC_SUPPRESS_WARNING(warning)                                          \
71 _Pragma(STRINGIFY(GCC diagnostic ignored #warning)) // GCC_SUPPRESS_WARNING
72
73 #undef SAVE_WARNINGS
74
75 #define SAVE_WARNINGS _Pragma("GCC diagnostic push") // SAVE_WARNINGS
76
77 #undef RESTORE_WARNINGS
78
79 #define RESTORE_WARNINGS _Pragma("GCC diagnostic pop") // RESTORE_WARNINGS
80
81 #endif // GCC
82
84 // MSVC implementation
86
87 #if defined(_MSC_VER)
88
89 #undef MSVC_SUPPRESS_WARNING
90
91 #define MSVC_SUPPRESS_WARNING(number)                                          \
92 __pragma(warning(disable :  number)) // MSVC_SUPPRESS_WARNING
93
```

```
94 #undef SAVE_WARNINGS
95
96 #define SAVE_WARNINGS __pragma(warning(push)) // SAVE_WARNINGS
97
98 #undef RESTORE_WARNINGS
99
100 #define RESTORE_WARNINGS __pragma(warning(pop)) // RESTORE_WARNINGS
101
102 #endif // MSVC
103
104 #endif // LIB_QUENTIER_UTILITY_SUPPRESS_WARNINGS_H
```

6.79 SysInfo.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_SYS_INFO_H
20 #define LIB_QUENTIER_UTILITY_SYS_INFO_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QString>
25
26 namespace quentier {
27
28 QT_FORWARD_DECLARE_CLASS(SysInfoPrivate)
29
30 class QUENTIER_EXPORT SysInfo
31 {
32 public:
33     SysInfo();
34     ~SysInfo();
35
36     qint64 pageSize();
37     qint64 totalMemory();
38     qint64 freeMemory();
39
40     QString stackTrace();
41
42     QString platformName();
43
44 private:
45     Q_DISABLE_COPY(SysInfo)
46
47 private:
48     SysInfoPrivate * const d_ptr;
49     Q_DECLARE_PRIVATE(SysInfo)
50 };
51
52 } // namespace quentier
53
54 #endif // LIB_QUENTIER_UTILITY_SYS_INFO_H
```

6.80 System.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_SYSTEM_H
20 #define LIB_QUENTIER_UTILITY_SYSTEM_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QString>
25 #include <QUrl>
26
27 namespace quentier {
28
32 QString QUENTIER_EXPORT getCurrentUserName();
33
37 QString QUENTIER_EXPORT getCurrentUserFullName();
38
42 void QUENTIER_EXPORT openUrl(const QUrl & url);
43
44 } // namespace quentier
45
46 #endif // LIB_QUENTIER_UTILITY_SYSTEM_H
```

6.81 TagSortByParentChildRelations.h

```
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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_TAG_SORT_BY_PARENT_CHILD_RELATIONS_H
20 #define LIB_QUENTIER_UTILITY_TAG_SORT_BY_PARENT_CHILD_RELATIONS_H
21
22 #include <quentier/types/ErrorString.h>
23 #include <quentier/types/Tag.h>
24
25 #include <qt5qevercloud/QEverCloud.h>
26
27 #include <QList>
28
29 namespace quentier {
30
42 bool QUENTIER_EXPORT sortTagsByParentChildRelations(
43     QList<qevercloud::Tag> & tagList, ErrorString & errorDescription);
44
57 bool QUENTIER_EXPORT sortTagsByParentChildRelations(
58     QList<Tag> & tagList, ErrorString errorDescription);
59
60 } // namespace quentier
61
62 #endif // LIB_QUENTIER_UTILITY_TAG_SORT_BY_PARENT_CHILD_RELATIONS_H
```

6.82 UidGenerator.h

```
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```

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17 */
18
19 #ifndef LIB_QUENTIER_UTILITY_UID_GENERATOR_H
20 #define LIB_QUENTIER_UTILITY_UID_GENERATOR_H
21
22 #include <quentier/utility/Linkage.h>
23
24 #include <QString>
25 #include <QUuid>
26
27 namespace quentier {
28
29 class QUENTIER_EXPORT UidGenerator
30 {
31 public:
32     static QString Generate();
33     static QString UidToString(const QUuid & uid);
34 };
35
36 } // namespace quentier
37
38 #endif // LIB_QUENTIER_UTILITY_UID_GENERATOR_H
```

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