

xapian-core
1.2.13

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Chapter 1

Deprecated List

Member `Xapian::Enquire::get_mset(Xapian::doccount first, Xapian::doccount maxitems, Xapian::doccount checkat)` this parameter is deprecated - use the newer MatchSpy class and `add_matchspy()` method instead.

Class `Xapian::MultiValueSorter` This class is deprecated - you should migrate to using MultiValueKeyMaker instead. Note that `MultiValueSorter::add()` becomes `MultiValueKeyMaker::add_value()`, but the sense of the direction flag is reversed (to be consistent with `Enquire::set_sort_by_value()`), so:

Chapter 2

Namespace Index

2.1 Namespace List

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

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Class Index

3.1 Class Hierarchy

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Xapian::Stopper	219
Xapian::SimpleStopper	212
Xapian::TermGenerator	223
Xapian::TermIterator	229
Xapian::Utf8Iterator	238
Xapian::ValueIterator	248
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Xapian::BM25Weight	41
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Chapter 4

Class Index

4.1 Class List

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

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Xapian::BoolWeight (Class implementing a "boolean" weighting scheme) . .	45
Xapian::Compactor (Compact a database, or merge and compact several) . .	49
Xapian::Database (This class is used to access a database, or a group of databases)	53
Xapian::DatabaseCorruptError (DatabaseCorruptError indicates database corruption was detected)	64
Xapian::DatabaseCreateError (DatabaseCreateError indicates a failure to create a database)	66
Xapian::DatabaseError (DatabaseError indicates some sort of database related error)	68
Xapian::DatabaseLockError (DatabaseLockError indicates failure to lock a database)	70
Xapian::DatabaseModifiedError (DatabaseModifiedError indicates a database was modified)	72
Xapian::DatabaseOpeningError (DatabaseOpeningError indicates failure to open a database)	74
Xapian::DatabaseVersionError (DatabaseVersionError indicates that a database is in an unsupported format)	76
Xapian::DateValueRangeProcessor (Handle a date range)	78
Xapian::DecreasingValueWeightPostingSource (Read weights from a value which is known to decrease as docid increases)	82
Xapian::DocNotFoundError (Indicates an attempt to access a document not present in the database)	89
Xapian::Document (A handle representing a document in a Xapian database)	91

Xapian::Enquire (This class provides an interface to the information retrieval system for the purpose of searching)	97
Xapian::Error (All exceptions thrown by Xapian are subclasses of Xapian::Error)	111
Xapian::ErrorHandler (Decide if a Xapian::Error exception should be ignored)	113
Xapian::ESet (Class representing an ordered set of expand terms (an ESet))	114
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Xapian::ExpandDecider (Virtual base class for expand decider functor)	118
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Xapian::ExpandDeciderFilterTerms (ExpandDecider subclass which rejects terms in a specified list)	122
Xapian::FeatureUnavailableError (Indicates an attempt to use a feature which is unavailable)	124
Xapian::FixedWeightPostingSource (A posting source which returns a fixed weight for all documents)	126
Xapian::InternalError (InternalError indicates a runtime problem of some sort)	134
Xapian::InvalidArgumentError (InvalidArgumentError indicates an invalid parameter value was passed to the API)	136
Xapian::InvalidOperationError (InvalidOperationError indicates the API was used in an invalid way)	138
Xapian::KeyMaker (Virtual base class for key making functors)	140
Xapian::LogicError (The base class for exceptions indicating errors in the program logic)	142
Xapian::MatchDecider (Base class for matcher decision functor)	143
Xapian::MatchSpy (Abstract base class for match spies)	145
Xapian::MSet (A match set (MSet))	149
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Xapian::NetworkError (Indicates a problem communicating with a remote database)	163
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Xapian::NumberValueRangeProcessor (Handle a number range)	167
Xapian::PositionIterator (An iterator pointing to items in a list of positions)	170
Xapian::PostingIterator (An iterator pointing to items in a list of postings)	172
Xapian::PostingSource (Base class which provides an "external" source of postings)	175
Xapian::Query (Class representing a query)	183
Xapian::QueryParser (Build a Xapian::Query object from a user query string)	191
Xapian::QueryParserError (Indicates a query string can't be parsed)	199
Xapian::RangeError (RangeError indicates an attempt to access outside the bounds of a container)	201
Xapian::Registry (Registry for user subclasses)	203
Xapian::RSet (A relevance set (R-Set))	207

Xapian::RuntimeError (The base class for exceptions indicating errors only detectable at runtime)	209
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Xapian::SimpleStopper (Simple implementation of Stopper class - this will suit most users)	212
Xapian::Sorter (Virtual base class for sorter functor)	214
Xapian::Stem (Class representing a stemming algorithm)	215
Xapian::StemImplementation (Class representing a stemming algorithm implementation)	218
Xapian::Stopper (Base class for stop-word decision functor)	219
Xapian::StringValueRangeProcessor (Handle a string range)	221
Xapian::TermGenerator (Parses a piece of text and generate terms)	223
Xapian::TermIterator (An iterator pointing to items in a list of terms)	229
Xapian::TradWeight (Xapian::Weight subclass implementing the traditional probabilistic formula)	232
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Xapian::ValueCountMatchSpy (Class for counting the frequencies of values in the matching documents)	243
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Chapter 5

File Index

5.1 File List

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xapian/database.h (API for working with Xapian databases)	296
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xapian/document.h (API for working with documents)	299
xapian/enquire.h (API for running queries)	300
xapian/errorhandler.h (Decide if a Xapian::Error exception should be ignored)	302
xapian/expanddecider.h (Allow rejection of terms during ESet generation)	303
xapian/keymaker.h (Build key strings for MSet ordering or collapsing)	304
xapian/matchspy.h (MatchSpy implementation)	305
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xapian/postingsource.h (External sources of posting information)	308
xapian/query.h (Classes for representing a query)	309
xapian/queryparser.h (Parsing a user query string to build a Xapian::Query object)	310
xapian/registry.h (Class for looking up user subclasses during unserialisation)	312
xapian/stem.h (Stemming algorithms)	313
xapian/termgenerator.h (Parse free text and generate terms)	314
xapian/termiterator.h (Classes for iterating through term lists)	315
xapian/types.h (Typedefs for Xapian)	316
xapian/unicode.h (Unicode and UTF-8 related classes and functions)	318
xapian/valueiterator.h (Class for iterating over document values)	320
xapian/valuesetmatchdecider.h (MatchDecider subclass for filtering results by value)	321
xapian/weight.h (Weighting scheme API)	322

Chapter 6

Namespace Documentation

6.1 Xapian Namespace Reference

The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

Namespaces

- namespace [Auto](#)
[Database](#) factory functions which determine the database type automatically.
- namespace [Brass](#)
[Database](#) factory functions for the brass backend.
- namespace [Chert](#)
[Database](#) factory functions for the chert backend.
- namespace [Flint](#)
[Database](#) factory functions for the flint backend.
- namespace [InMemory](#)
[Database](#) factory functions for the inmemory backend.
- namespace [Remote](#)
[Database](#) factory functions for the remote backend.
- namespace [Unicode](#)
Functions associated with handling [Unicode](#) characters.

Classes

- class [Error](#)
All exceptions thrown by [Xapian](#) are subclasses of [Xapian::Error](#).
- class [LogicError](#)
The base class for exceptions indicating errors in the program logic.
- class [RuntimeError](#)
The base class for exceptions indicating errors only detectable at runtime.
- class [AssertionError](#)
[AssertionError](#) is thrown if a logical assertion inside [Xapian](#) fails.
- class [InvalidArgumentError](#)
[InvalidArgumentError](#) indicates an invalid parameter value was passed to the API.
- class [InvalidOperationError](#)
[InvalidOperationError](#) indicates the API was used in an invalid way.
- class [UnimplementedError](#)
[UnimplementedError](#) indicates an attempt to use an unimplemented feature.
- class [DatabaseError](#)
[DatabaseError](#) indicates some sort of database related error.
- class [DatabaseCorruptError](#)
[DatabaseCorruptError](#) indicates database corruption was detected.
- class [DatabaseCreateError](#)
[DatabaseCreateError](#) indicates a failure to create a database.
- class [DatabaseLockError](#)
[DatabaseLockError](#) indicates failure to lock a database.
- class [DatabaseModifiedError](#)
[DatabaseModifiedError](#) indicates a database was modified.
- class [DatabaseOpeningError](#)
[DatabaseOpeningError](#) indicates failure to open a database.
- class [DatabaseVersionError](#)
[DatabaseVersionError](#) indicates that a database is in an unsupported format.
- class [DocNotFoundError](#)
Indicates an attempt to access a document not present in the database.

- class [FeatureUnavailableError](#)
Indicates an attempt to use a feature which is unavailable.
- class [InternalError](#)
[InternalError](#) indicates a runtime problem of some sort.
- class [NetworkError](#)
Indicates a problem communicating with a remote database.
- class [NetworkTimeoutError](#)
Indicates a timeout expired while communicating with a remote database.
- class [QueryParserError](#)
Indicates a query string can't be parsed.
- class [SerialisationError](#)
Indicates an error in the `std::string` serialisation of an object.
- class [RangeError](#)
[RangeError](#) indicates an attempt to access outside the bounds of a container.
- class [Compactor](#)
Compact a database, or merge and compact several.
- class [Database](#)
This class is used to access a database, or a group of databases.
- class [WritableDatabase](#)
This class provides read/write access to a database.
- class [Document](#)
A handle representing a document in a [Xapian](#) database.
- class [MSet](#)
A match set ([MSet](#)).
- class [MSetIterator](#)
An iterator pointing to items in an [MSet](#).
- class [ESet](#)
Class representing an ordered set of expand terms (an [ESet](#)).
- class [ESetIterator](#)
Iterate through terms in the [ESet](#).

- class [RSet](#)
A relevance set (R-Set).
- class [MatchDecider](#)
Base class for matcher decision functor.
- class [Enquire](#)
This class provides an interface to the information retrieval system for the purpose of searching.
- class [ErrorHandler](#)
Decide if a [Xapian::Error](#) exception should be ignored.
- class [ExpandDecider](#)
Virtual base class for expand decider functor.
- class [ExpandDeciderAnd](#)
[ExpandDecider](#) subclass which rejects terms using two [ExpandDeciders](#).
- class [ExpandDeciderFilterTerms](#)
[ExpandDecider](#) subclass which rejects terms in a specified list.
- class [KeyMaker](#)
Virtual base class for key making functors.
- class [MultiValueKeyMaker](#)
[KeyMaker](#) subclass which combines several values.
- class [Sorter](#)
Virtual base class for sorter functor.
- class [MultiValueSorter](#)
[Sorter](#) subclass which sorts by a several values.
- class [MatchSpy](#)
Abstract base class for match spies.
- class [ValueCountMatchSpy](#)
Class for counting the frequencies of values in the matching documents.
- class [PositionIterator](#)
An iterator pointing to items in a list of positions.
- class [PostingIterator](#)
An iterator pointing to items in a list of postings.

- class [PostingSource](#)
Base class which provides an "external" source of postings.
- class [ValuePostingSource](#)
A posting source which generates weights from a value slot.
- class [ValueWeightPostingSource](#)
A posting source which reads weights from a value slot.
- class [DecreasingValueWeightPostingSource](#)
Read weights from a value which is known to decrease as docid increases.
- class [ValueMapPostingSource](#)
A posting source which looks up weights in a map using values as the key.
- class [FixedWeightPostingSource](#)
A posting source which returns a fixed weight for all documents.
- class [Query](#)
Class representing a query.
- class [Stopper](#)
Base class for stop-word decision functor.
- class [SimpleStopper](#)
Simple implementation of [Stopper](#) class - this will suit most users.
- struct [ValueRangeProcessor](#)
Base class for value range processors.
- class [StringValueRangeProcessor](#)
Handle a string range.
- class [DateValueRangeProcessor](#)
Handle a date range.
- class [NumberValueRangeProcessor](#)
Handle a number range.
- class [QueryParser](#)
Build a [Xapian::Query](#) object from a user query string.
- class [Registry](#)
[Registry](#) for user subclasses.
- struct [StemImplementation](#)

Class representing a stemming algorithm implementation.

- class [Stem](#)
Class representing a stemming algorithm.
- class [TermGenerator](#)
Parses a piece of text and generate terms.
- class [TermIterator](#)
An iterator pointing to items in a list of terms.
- class [Utf8Iterator](#)
An iterator which returns [Unicode](#) character values from a UTF-8 encoded string.
- class [ValueIterator](#)
Class for iterating over document values.
- class [ValueSetMatchDecider](#)
[MatchDecider](#) filtering results based on whether document values are in a user-defined set.
- class [Weight](#)
Abstract base class for weighting schemes.
- class [BoolWeight](#)
Class implementing a "boolean" weighting scheme.
- class [BM25Weight](#)
[Xapian::Weight](#) subclass implementing the BM25 probabilistic formula.
- class [TradWeight](#)
[Xapian::Weight](#) subclass implementing the traditional probabilistic formula.

Typedefs

- typedef unsigned [doccount](#)
A count of documents.
- typedef int [doccount_diff](#)
A signed difference between two counts of documents.
- typedef unsigned [docid](#)
A unique identifier for a document.
- typedef double [doclength](#)

A normalised document length.

- typedef int [percent](#)
The percentage score for a document in an [MSet](#).
- typedef unsigned [termcount](#)
A counts of terms.
- typedef int [termcount_diff](#)
A signed difference between two counts of terms.
- typedef unsigned [termpos](#)
A term position within a document or query.
- typedef int [termpos_diff](#)
A signed difference between two term positions.
- typedef unsigned [timeout](#)
A timeout value in milliseconds.
- typedef unsigned [valueno](#)
The number for a value slot in a document.
- typedef int [valueno_diff](#)
A signed difference between two value slot numbers.
- typedef double [weight](#)
The weight of a document or term.

Functions

- bool [operator==](#) (const [MSetIterator](#) &a, const [MSetIterator](#) &b)
Equality test for [MSetIterator](#) objects.
- bool [operator!=](#) (const [MSetIterator](#) &a, const [MSetIterator](#) &b)
Inequality test for [MSetIterator](#) objects.
- bool [operator==](#) (const [ESetIterator](#) &a, const [ESetIterator](#) &b)
Equality test for [ESetIterator](#) objects.
- bool [operator!=](#) (const [ESetIterator](#) &a, const [ESetIterator](#) &b)
Inequality test for [ESetIterator](#) objects.
- bool [operator==](#) (const [PositionIterator](#) &a, const [PositionIterator](#) &b)
Test equality of two [PositionIterators](#).

- `bool operator!= (const PositionIterator &a, const PositionIterator &b)`
Test inequality of two PositionIterators.
- `bool operator== (const PostingIterator &a, const PostingIterator &b)`
Test equality of two PostingIterators.
- `bool operator!= (const PostingIterator &a, const PostingIterator &b)`
Test inequality of two PostingIterators.
- `std::string sortable_serialise (double value)`
Convert a floating point number to a string, preserving sort order.
- `double sortable_unserialise (const std::string &value)`
Convert a string encoded using sortable_serialise back to a floating point number.
- `bool operator== (const TermIterator &a, const TermIterator &b)`
Equality test for TermIterator objects.
- `bool operator!= (const TermIterator &a, const TermIterator &b)`
Inequality test for TermIterator objects.
- `bool operator== (const ValueIterator &a, const ValueIterator &b)`
Equality test for ValueIterator objects.
- `bool operator!= (const ValueIterator &a, const ValueIterator &b)`
Inequality test for ValueIterator objects.
- `const char * version_string ()`
Report the version string of the library which the program is linked with.
- `int major_version ()`
Report the major version of the library which the program is linked with.
- `int minor_version ()`
Report the minor version of the library which the program is linked with.
- `int revision ()`
Report the revision of the library which the program is linked with.

Variables

- `const int DB_CREATE_OR_OPEN = 1`
Open for read/write; create if no db exists.

- const int `DB_CREATE` = 2
Create a new database; fail if db exists.
- const int `DB_CREATE_OR_OVERWRITE` = 3
Overwrite existing db; create if none exists.
- const int `DB_OPEN` = 4
Open for read/write; fail if no db exists.
- const `valueno BAD_VALUENO` = static_cast<valueno>(-1)
Reserved value to indicate "no valueno".

6.1.1 Detailed Description

The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

6.1.2 Typedef Documentation

6.1.2.1 typedef unsigned Xapian::doccount

A count of documents.

This is used to hold values such as the number of documents in a database and the frequency of a term in the database.

6.1.2.2 typedef int Xapian::doccount_diff

A signed difference between two counts of documents.

This is used by the [Xapian](#) classes which are STL containers of documents for "difference_type".

6.1.2.3 typedef unsigned Xapian::docid

A unique identifier for a document.

Docid 0 is invalid, providing an "out of range" value which can be used to mean "not a valid document".

6.1.2.4 typedef double Xapian::doclength

A normalised document length.

The normalised document length is the document length divided by the average document length in the database.

6.1.2.5 `typedef int Xapian::percent`

The percentage score for a document in an [MSet](#).

6.1.2.6 `typedef unsigned Xapian::termcount`

A counts of terms.

This is used to hold values such as the Within [Document](#) Frequency (wdf).

6.1.2.7 `typedef int Xapian::termcount_diff`

A signed difference between two counts of terms.

This is used by the [Xapian](#) classes which are STL containers of terms for "difference_type".

6.1.2.8 `typedef int Xapian::termpos_diff`

A signed difference between two term positions.

This is used by the [Xapian](#) classes which are STL containers of positions for "difference_type".

6.1.2.9 `typedef unsigned Xapian::timeout`

A timeout value in milliseconds.

There are 1000 milliseconds in a second, so for example, to set a timeout of 5 seconds use 5000.

6.1.2.10 `typedef unsigned Xapian::valueno`

The number for a value slot in a document.

Value slot numbers are unsigned and (currently) a 32-bit quantity, with [Xapian::BAD_VALUENO](#) being represented by the largest possible value. Therefore value slots 0 to 0xFFFFFFFFFE are available for use.

6.1.2.11 `typedef int Xapian::valueno_diff`

A signed difference between two value slot numbers.

This is used by the [Xapian](#) classes which are STL containers of values for "difference_type".

6.1.2.12 `typedef double Xapian::weight`

The weight of a document or term.

6.1.3 Function Documentation

6.1.3.1 `int Xapian::major_version ()`

Report the major version of the library which the program is linked with.

This may be different to the version compiled against (given by `XAPIAN_MAJOR_VERSION`) if shared libraries are being used.

6.1.3.2 `int Xapian::minor_version ()`

Report the minor version of the library which the program is linked with.

This may be different to the version compiled against (given by `XAPIAN_MINOR_VERSION`) if shared libraries are being used.

6.1.3.3 `int Xapian::revision ()`

Report the revision of the library which the program is linked with.

This may be different to the version compiled against (given by `XAPIAN_REVISION`) if shared libraries are being used.

6.1.3.4 `std::string Xapian::sortable_serialise (double value)`

Convert a floating point number to a string, preserving sort order.

This method converts a floating point number to a string, suitable for using as a value for numeric range restriction, or for use as a sort key.

The conversion is platform independent.

The conversion attempts to ensure that, for any pair of values supplied to the conversion algorithm, the result of comparing the original values (with a numeric comparison operator) will be the same as the result of comparing the resulting values (with a string comparison operator). On platforms which represent doubles with the precisions specified by IEEE_754, this will be the case: if the representation of doubles is more precise, it is possible that two very close doubles will be mapped to the same string, so will compare equal.

Note also that both zero and -zero will be converted to the same representation: since these compare equal, this satisfies the comparison constraint, but it's worth knowing this if you wish to use the encoding in some situation where this distinction matters.

Handling of NaN isn't (currently) guaranteed to be sensible.

Parameters:

value The number to serialise.

6.1.3.5 double Xapian::sortable_unserialise (const std::string & value)

Convert a string encoded using *sortable_serialise* back to a floating point number.

This expects the input to be a string produced by *sortable_serialise()*. If the input is not such a string, the value returned is undefined (but no error will be thrown).

The result of the conversion will be exactly the value which was supplied to *sortable_serialise()* when making the string on platforms which represent doubles with the precisions specified by IEEE_754, but may be a different (nearby) value on other platforms.

Parameters:

value The serialised string to decode.

6.1.3.6 const char* Xapian::version_string ()

Report the version string of the library which the program is linked with.

This may be different to the version compiled against (given by XAPIAN_VERSION) if shared libraries are being used.

6.1.4 Variable Documentation**6.1.4.1 const valueno Xapian::BAD_VALUENO = static_cast<valueno>(-1)**

Reserved value to indicate "no valueno".

6.1.4.2 const int Xapian::DB_CREATE = 2

Create a new database; fail if db exists.

6.1.4.3 const int Xapian::DB_CREATE_OR_OPEN = 1

Open for read/write; create if no db exists.

6.1.4.4 const int Xapian::DB_CREATE_OR_OVERWRITE = 3

Overwrite existing db; create if none exists.

6.1.4.5 const int Xapian::DB_OPEN = 4

Open for read/write; fail if no db exists.

6.2 Xapian::Auto Namespace Reference

[Database](#) factory functions which determine the database type automatically.

Functions

- [Database open_stub](#) (const std::string &file)
Construct a [Database](#) object for a stub database file.
- [WritableDatabase open_stub](#) (const std::string &file, int action)
Construct a [WritableDatabase](#) object for a stub database file.

6.2.1 Detailed Description

[Database](#) factory functions which determine the database type automatically.

6.2.2 Function Documentation

6.2.2.1 WritableDatabase Xapian::Auto::open_stub (const std::string &file, int action)

Construct a [WritableDatabase](#) object for a stub database file.

The stub database file must contain serialised parameters for exactly one database.

Parameters:

file pathname of the stub database file.

action determines handling of existing/non-existing database:

- [Xapian::DB_CREATE](#) fail if database already exist, otherwise create new database.
- [Xapian::DB_CREATE_OR_OPEN](#) open existing database, or create new database if none exists.
- [Xapian::DB_CREATE_OR_OVERWRITE](#) overwrite existing database, or create new database if none exists.
- [Xapian::DB_OPEN](#) open existing database, failing if none exists.

6.2.2.2 Database Xapian::Auto::open_stub (const std::string &file)

Construct a [Database](#) object for a stub database file.

The stub database file contains serialised parameters for one or more databases.

Parameters:

file pathname of the stub database file.

6.3 Xapian::Brass Namespace Reference

[Database](#) factory functions for the brass backend.

Functions

- [Database open](#) (const std::string &dir)
Construct a [Database](#) object for read-only access to a [Brass](#) database.
- [WritableDatabase open](#) (const std::string &dir, int action, int block_size=8192)
Construct a [Database](#) object for update access to a [Brass](#) database.

6.3.1 Detailed Description

[Database](#) factory functions for the brass backend.

6.3.2 Function Documentation

6.3.2.1 WritableDatabase Xapian::Brass::open (const std::string & dir, int action, int block_size = 8192)

Construct a [Database](#) object for update access to a [Brass](#) database.

Parameters:

dir pathname of the directory containing the database.

action determines handling of existing/non-existing database:

- [Xapian::DB_CREATE](#) fail if database already exist, otherwise create new database.
- [Xapian::DB_CREATE_OR_OPEN](#) open existing database, or create new database if none exists.
- [Xapian::DB_CREATE_OR_OVERWRITE](#) overwrite existing database, or create new database if none exists.
- [Xapian::DB_OPEN](#) open existing database, failing if none exists.

block_size the Btree blocksize to use (in bytes), which must be a power of two between 2048 and 65536 (inclusive). The default (also used if an invalid value is passed) is 8192 bytes. This parameter is ignored when opening an existing database.

6.3.2.2 Database Xapian::Brass::open (const std::string & dir)

Construct a [Database](#) object for read-only access to a [Brass](#) database.

Parameters:

dir pathname of the directory containing the database.

6.4 Xapian::Chert Namespace Reference

[Database](#) factory functions for the chert backend.

Functions

- [Database open](#) (const std::string &dir)
Construct a [Database](#) object for read-only access to a [Chert](#) database.
- [WritableDatabase open](#) (const std::string &dir, int action, int block_size=8192)
Construct a [Database](#) object for update access to a [Chert](#) database.

6.4.1 Detailed Description

[Database](#) factory functions for the chert backend.

6.4.2 Function Documentation

6.4.2.1 WritableDatabase Xapian::Chert::open (const std::string & dir, int action, int block_size = 8192)

Construct a [Database](#) object for update access to a [Chert](#) database.

Parameters:

dir pathname of the directory containing the database.

action determines handling of existing/non-existing database:

- [Xapian::DB_CREATE](#) fail if database already exist, otherwise create new database.
- [Xapian::DB_CREATE_OR_OPEN](#) open existing database, or create new database if none exists.
- [Xapian::DB_CREATE_OR_OVERWRITE](#) overwrite existing database, or create new database if none exists.
- [Xapian::DB_OPEN](#) open existing database, failing if none exists.

block_size the Btree blocksize to use (in bytes), which must be a power of two between 2048 and 65536 (inclusive). The default (also used if an invalid value is passed) is 8192 bytes. This parameter is ignored when opening an existing database.

6.4.2.2 Database Xapian::Chert::open (const std::string & dir)

Construct a [Database](#) object for read-only access to a [Chert](#) database.

Parameters:

dir pathname of the directory containing the database.

6.5 Xapian::Flint Namespace Reference

[Database](#) factory functions for the flint backend.

Functions

- [Database open](#) (const std::string &dir)
Construct a [Database](#) object for read-only access to a [Flint](#) database.
- [WritableDatabase open](#) (const std::string &dir, int action, int block_size=8192)
Construct a [Database](#) object for update access to a [Flint](#) database.

6.5.1 Detailed Description

[Database](#) factory functions for the flint backend.

6.5.2 Function Documentation

6.5.2.1 WritableDatabase Xapian::Flint::open (const std::string & dir, int action, int block_size = 8192)

Construct a [Database](#) object for update access to a [Flint](#) database.

Parameters:

dir pathname of the directory containing the database.

action determines handling of existing/non-existing database:

- [Xapian::DB_CREATE](#) fail if database already exist, otherwise create new database.
- [Xapian::DB_CREATE_OR_OPEN](#) open existing database, or create new database if none exists.
- [Xapian::DB_CREATE_OR_OVERWRITE](#) overwrite existing database, or create new database if none exists.
- [Xapian::DB_OPEN](#) open existing database, failing if none exists.

block_size the Btree blocksize to use (in bytes), which must be a power of two between 2048 and 65536 (inclusive). The default (also used if an invalid value is passed) is 8192 bytes. This parameter is ignored when opening an existing database.

6.5.2.2 Database Xapian::Flint::open (const std::string & dir)

Construct a [Database](#) object for read-only access to a [Flint](#) database.

Parameters:

dir pathname of the directory containing the database.

6.6 Xapian::InMemory Namespace Reference

[Database](#) factory functions for the inmemory backend.

Functions

- [WritableDatabase](#) `open ()`

Construct a [WritableDatabase](#) object for a new, empty [InMemory](#) database.

6.6.1 Detailed Description

[Database](#) factory functions for the inmemory backend.

6.6.2 Function Documentation

6.6.2.1 WritableDatabase Xapian::InMemory::open ()

Construct a [WritableDatabase](#) object for a new, empty [InMemory](#) database.

Only a writable [InMemory](#) database can be created, since a read-only one would always remain empty.

6.7 Xapian::Remote Namespace Reference

[Database](#) factory functions for the remote backend.

Functions

- [Database open](#) (const std::string &host, unsigned int port, [Xapian::timeout timeout=10000](#), [Xapian::timeout connect_timeout=10000](#))
Construct a [Database](#) object for read-only access to a remote database accessed via a TCP connection.
- [WritableDatabase open_writable](#) (const std::string &host, unsigned int port, [Xapian::timeout timeout=0](#), [Xapian::timeout connect_timeout=10000](#))
Construct a [WritableDatabase](#) object for update access to a remote database accessed via a TCP connection.
- [Database open](#) (const std::string &program, const std::string &args, [Xapian::timeout timeout=10000](#))
Construct a [Database](#) object for read-only access to a remote database accessed via a program.
- [WritableDatabase open_writable](#) (const std::string &program, const std::string &args, [Xapian::timeout timeout=0](#))
Construct a [WritableDatabase](#) object for update access to a remote database accessed via a program.

6.7.1 Detailed Description

[Database](#) factory functions for the remote backend.

6.7.2 Function Documentation

6.7.2.1 Database Xapian::Remote::open (const std::string & *program*, const std::string & *args*, Xapian::timeout *timeout* = 10000)

Construct a [Database](#) object for read-only access to a remote database accessed via a program.

Access to the remote database is done by running an external program and communicating with it on stdin/stdout.

Parameters:

program the external program to run.

args space-separated list of arguments to pass to program.

timeout timeout in milliseconds. If this timeout is exceeded for any individual operation on the remote database then [Xapian::NetworkTimeoutError](#) is thrown. A timeout of 0 means don't timeout. (Default is 10000ms, which is 10 seconds).

6.7.2.2 Database `Xapian::Remote::open` (`const std::string & host`, `unsigned int port`, `Xapian::timeout timeout = 10000`, `Xapian::timeout connect_timeout = 10000`)

Construct a [Database](#) object for read-only access to a remote database accessed via a TCP connection.

Access to the remote database is via a TCP connection to the specified host and port.

Parameters:

host hostname to connect to.

port port number to connect to.

timeout timeout in milliseconds. If this timeout is exceeded for any individual operation on the remote database then [Xapian::NetworkTimeoutError](#) is thrown. A timeout of 0 means don't timeout. (Default is 10000ms, which is 10 seconds).

connect_timeout timeout to use when connecting to the server. If this timeout is exceeded then [Xapian::NetworkTimeoutError](#) is thrown. A timeout of 0 means don't timeout. (Default is 10000ms, which is 10 seconds).

6.7.2.3 WritableDatabase `Xapian::Remote::open_writable` (`const std::string & program`, `const std::string & args`, `Xapian::timeout timeout = 0`)

Construct a [WritableDatabase](#) object for update access to a remote database accessed via a program.

Access to the remote database is done by running an external program and communicating with it on stdin/stdout.

Parameters:

program the external program to run.

args space-separated list of arguments to pass to program.

timeout timeout in milliseconds. If this timeout is exceeded for any individual operation on the remote database then [Xapian::NetworkTimeoutError](#) is thrown. (Default is 0, which means don't timeout).

6.7.2.4 WritableDatabase Xapian::Remote::open_writable (const std::string & *host*, unsigned int *port*, Xapian::timeout *timeout* = 0, Xapian::timeout *connect_timeout* = 10000)

Construct a [WritableDatabase](#) object for update access to a remote database accessed via a TCP connection.

Access to the remote database is via a TCP connection to the specified host and port.

Parameters:

host hostname to connect to.

port port number to connect to.

timeout timeout in milliseconds. If this timeout is exceeded for any individual operation on the remote database then [Xapian::NetworkTimeoutError](#) is thrown. (Default is 0, which means don't timeout).

connect_timeout timeout to use when connecting to the server. If this timeout is exceeded then [Xapian::NetworkTimeoutError](#) is thrown. A timeout of 0 means don't timeout. (Default is 10000ms, which is 10 seconds).

6.8 Xapian::Unicode Namespace Reference

Functions associated with handling [Unicode](#) characters.

Enumerations

- enum [category](#)

Each Unicode character is in exactly one of these categories.

Functions

- unsigned [nonascii_to_utf8](#) (unsigned ch, char *buf)
Convert a single non-ASCII [Unicode](#) character to UTF-8.

- unsigned [to_utf8](#) (unsigned ch, char *buf)
Convert a single [Unicode](#) character to UTF-8.

- void [append_utf8](#) (std::string &s, unsigned ch)
Append the UTF-8 representation of a single [Unicode](#) character to a std::string.

- [category](#) [get_category](#) (unsigned ch)
Return the category which a given [Unicode](#) character falls into.

- bool [is_wordchar](#) (unsigned ch)
Test if a given [Unicode](#) character is "word character".

- bool [is_whitespace](#) (unsigned ch)
Test if a given [Unicode](#) character is a whitespace character.

- bool [is_currency](#) (unsigned ch)
Test if a given [Unicode](#) character is a currency symbol.

- unsigned [tolower](#) (unsigned ch)
Convert a [Unicode](#) character to lowercase.

- unsigned [toupper](#) (unsigned ch)
Convert a [Unicode](#) character to uppercase.

- std::string [tolower](#) (const std::string &term)
Convert a UTF-8 std::string to lowercase.

- std::string [toupper](#) (const std::string &term)
Convert a UTF-8 std::string to uppercase.

6.8.1 Detailed Description

Functions associated with handling [Unicode](#) characters.

6.8.2 Enumeration Type Documentation

6.8.2.1 enum Xapian::Unicode::category

Each [Unicode](#) character is in exactly one of these categories.

6.8.3 Function Documentation

6.8.3.1 unsigned Xapian::Unicode::nonascii_to_utf8 (unsigned *ch*, char * *buf*)

Convert a single non-ASCII [Unicode](#) character to UTF-8.

This is intended mainly as a helper method for [to_utf8\(\)](#).

Parameters:

ch The character (which must be > 128) to write to *buf*.

buf The buffer to write the character to - it must have space for (at least) 4 bytes.

Returns:

The length of the resultant UTF-8 character in bytes.

Referenced by [to_utf8\(\)](#).

6.8.3.2 unsigned Xapian::Unicode::to_utf8 (unsigned *ch*, char * *buf*) [inline]

Convert a single [Unicode](#) character to UTF-8.

Parameters:

ch The character to write to *buf*.

buf The buffer to write the character to - it must have space for (at least) 4 bytes.

Returns:

The length of the resultant UTF-8 character in bytes.

References [nonascii_to_utf8\(\)](#).

Referenced by [append_utf8\(\)](#).

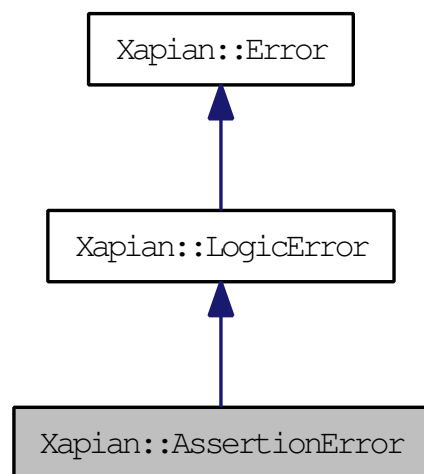
Chapter 7

Class Documentation

7.1 Xapian::AssertionError Class Reference

[AssertionError](#) is thrown if a logical assertion inside [Xapian](#) fails.

Inheritance diagram for Xapian::AssertionError:



Public Member Functions

- [AssertionError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_=0)
General purpose constructor.
- [AssertionError](#) (const std::string &msg_, int errno_)
Construct from message and errno value.

7.1.1 Detailed Description

[AssertionError](#) is thrown if a logical assertion inside [Xapian](#) fails.

In a debug build of [Xapian](#), a failed assertion in the core library code will cause [AssertionError](#) to be thrown.

This represents a bug in [Xapian](#) (either an invariant, precondition, etc has been violated, or the assertion is incorrect!)

7.1.2 Constructor & Destructor Documentation

7.1.2.1 [Xapian::AssertionError::AssertionError](#) (const std::string & *msg_*, const std::string & *context_* = std::string(), int *errno_* = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.1.2.2 [Xapian::AssertionError::AssertionError](#) (const std::string & *msg_*, int *errno_*) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

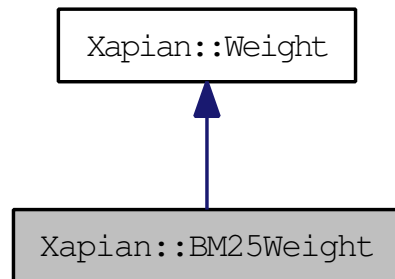
The documentation for this class was generated from the following file:

- [xapian/error.h](#)

7.2 Xapian::BM25Weight Class Reference

[Xapian::Weight](#) subclass implementing the BM25 probabilistic formula.

Inheritance diagram for Xapian::BM25Weight:



Public Member Functions

- [BM25Weight](#) (double k1, double k2, double k3, double b, double min_normlen)
Construct a [BM25Weight](#).
- std::string [name](#) () const
Return the name of this weighting scheme.
- std::string [serialise](#) () const
Return this object's parameters serialised as a single string.
- [BM25Weight](#) * [unserialise](#) (const std::string &s) const
Unserialise parameters.
- [Xapian::weight](#) [get_sumpart](#) ([Xapian::termcount](#) wdf, [Xapian::termcount](#) doclen) const
Calculate the weight contribution for this object's term to a document.
- [Xapian::weight](#) [get_maxpart](#) () const
Return an upper bound on what [get_sumpart\(\)](#) can return for any document.
- [Xapian::weight](#) [get_sumextra](#) ([Xapian::termcount](#) doclen) const
Calculate the term-independent weight component for a document.
- [Xapian::weight](#) [get_maxextra](#) () const
Return an upper bound on what [get_sumextra\(\)](#) can return for any document.

7.2.1 Detailed Description

[Xapian::Weight](#) subclass implementing the BM25 probabilistic formula.

7.2.2 Constructor & Destructor Documentation

7.2.2.1 `Xapian::BM25Weight::BM25Weight (double k1, double k2, double k3, double b, double min_normlen)` [inline]

Construct a [BM25Weight](#).

Parameters:

- k1* A non-negative parameter controlling how influential within-document-frequency (wdf) is. *k1*=0 means that wdf doesn't affect the weights. The larger *k1* is, the more wdf influences the weights. (default 1)
- k2* A non-negative parameter which controls the strength of a correction factor which depends upon query length and normalised document length. *k2*=0 disable this factor; larger *k2* makes it stronger. (default 0)
- k3* A non-negative parameter controlling how influential within-query-frequency (wqf) is. *k3*=0 means that wqf doesn't affect the weights. The larger *k3* is, the more wqf influences the weights. (default 1)
- b* A parameter between 0 and 1, controlling how strong the document length normalisation of wdf is. 0 means no normalisation; 1 means full normalisation. (default 0.5)
- min_normlen* A parameter specifying a minimum value for normalised document length. Normalised document length values less than this will be clamped to this value, helping to prevent very short documents getting large weights. (default 0.5)

7.2.3 Member Function Documentation

7.2.3.1 `Xapian::weight Xapian::BM25Weight::get_maxextra () const` [virtual]

Return an upper bound on what [get_sumextra\(\)](#) can return for any document.

This information is used by the matcher to perform various optimisations, so strive to make the bound as tight as possible.

Implements [Xapian::Weight](#).

7.2.3.2 `Xapian::weight Xapian::BM25Weight::get_maxpart () const` [virtual]

Return an upper bound on what [get_sumpart\(\)](#) can return for any document.

This information is used by the matcher to perform various optimisations, so strive to make the bound as tight as possible.

Implements [Xapian::Weight](#).

7.2.3.3 Xapian::weight Xapian::BM25Weight::get_sumextra (Xapian::termcount *doclen*) const [virtual]

Calculate the term-independent weight component for a document.

The parameter gives information about the document which may be used in the calculations:

Parameters:

doclen The document's length (unnormalised).

Implements [Xapian::Weight](#).

7.2.3.4 Xapian::weight Xapian::BM25Weight::get_sumpart (Xapian::termcount *wdf*, Xapian::termcount *doclen*) const [virtual]

Calculate the weight contribution for this object's term to a document.

The parameters give information about the document which may be used in the calculations:

Parameters:

wdf The within document frequency of the term in the document.

doclen The document's length (unnormalised).

Implements [Xapian::Weight](#).

7.2.3.5 std::string Xapian::BM25Weight::name () const [virtual]

Return the name of this weighting scheme.

This name is used by the remote backend. It is passed along with the serialised parameters to the remote server so that it knows which class to create.

Return the full namespace-qualified name of your class here - if your class is called FooWeight, return "FooWeight" from this method ([Xapian::BM25Weight](#) returns "Xapian::BM25Weight" here).

If you don't want to support the remote backend, you can use the default implementation which simply returns an empty string.

Reimplemented from [Xapian::Weight](#).

7.2.3.6 `std::string Xapian::BM25Weight::serialise () const` [virtual]

Return this object's parameters serialised as a single string.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented from [Xapian::Weight](#).

7.2.3.7 `BM25Weight* Xapian::BM25Weight::unserialise (const std::string & s) const` [virtual]

Unserialise parameters.

This method unserialises parameters serialised by the [serialise\(\)](#) method and allocates and returns a new object initialised with them.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Parameters:

- s* A string containing the serialised parameters.

Reimplemented from [Xapian::Weight](#).

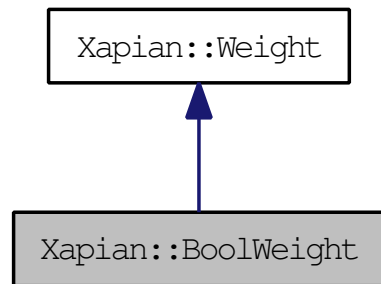
The documentation for this class was generated from the following file:

- [xapian/weight.h](#)

7.3 Xapian::BoolWeight Class Reference

Class implementing a "boolean" weighting scheme.

Inheritance diagram for Xapian::BoolWeight:



Public Member Functions

- [BoolWeight \(\)](#)
Construct a [BoolWeight](#).
- [std::string name \(\) const](#)
Return the name of this weighting scheme.
- [std::string serialise \(\) const](#)
Return this object's parameters serialised as a single string.
- [BoolWeight * unserialise \(const std::string &s\) const](#)
Unserialise parameters.
- [Xapian::weight get_sumpart \(Xapian::termcount wdf, Xapian::termcount doclen\) const](#)
Calculate the weight contribution for this object's term to a document.
- [Xapian::weight get_maxpart \(\) const](#)
Return an upper bound on what [get_sumpart\(\)](#) can return for any document.
- [Xapian::weight get_sumextra \(Xapian::termcount doclen\) const](#)
Calculate the term-independent weight component for a document.
- [Xapian::weight get_maxextra \(\) const](#)
Return an upper bound on what [get_sumextra\(\)](#) can return for any document.

7.3.1 Detailed Description

Class implementing a "boolean" weighting scheme.

This weighting scheme gives all documents zero weight.

7.3.2 Constructor & Destructor Documentation

7.3.2.1 `Xapian::BoolWeight::BoolWeight ()` [inline]

Construct a [BoolWeight](#).

7.3.3 Member Function Documentation

7.3.3.1 `Xapian::weight Xapian::BoolWeight::get_maxextra () const` [virtual]

Return an upper bound on what [get_sumextra\(\)](#) can return for any document.

This information is used by the matcher to perform various optimisations, so strive to make the bound as tight as possible.

Implements [Xapian::Weight](#).

7.3.3.2 `Xapian::weight Xapian::BoolWeight::get_maxpart () const` [virtual]

Return an upper bound on what [get_sumpart\(\)](#) can return for any document.

This information is used by the matcher to perform various optimisations, so strive to make the bound as tight as possible.

Implements [Xapian::Weight](#).

7.3.3.3 `Xapian::weight Xapian::BoolWeight::get_sumextra (Xapian::termcount doclen) const` [virtual]

Calculate the term-independent weight component for a document.

The parameter gives information about the document which may be used in the calculations:

Parameters:

doclen The document's length (unnormalised).

Implements [Xapian::Weight](#).

7.3.3.4 Xapian::weight Xapian::BoolWeight::get_sumpart (Xapian::termcount *wdf*, Xapian::termcount *doclen*) const [virtual]

Calculate the weight contribution for this object's term to a document.

The parameters give information about the document which may be used in the calculations:

Parameters:

wdf The within document frequency of the term in the document.

doclen The document's length (unnormalised).

Implements [Xapian::Weight](#).

7.3.3.5 std::string Xapian::BoolWeight::name () const [virtual]

Return the name of this weighting scheme.

This name is used by the remote backend. It is passed along with the serialised parameters to the remote server so that it knows which class to create.

Return the full namespace-qualified name of your class here - if your class is called FooWeight, return "FooWeight" from this method ([Xapian::BM25Weight](#) returns "Xapian::BM25Weight" here).

If you don't want to support the remote backend, you can use the default implementation which simply returns an empty string.

Reimplemented from [Xapian::Weight](#).

7.3.3.6 std::string Xapian::BoolWeight::serialise () const [virtual]

Return this object's parameters serialised as a single string.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented from [Xapian::Weight](#).

7.3.3.7 BoolWeight* Xapian::BoolWeight::unserialise (const std::string & s) const [virtual]

Unserialise parameters.

This method unserialises parameters serialised by the [serialise\(\)](#) method and allocates and returns a new object initialised with them.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example

when wrapping the [Xapian](#) API for use from another language) then you can define a static `operator delete` method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Parameters:

- `s` A string containing the serialised parameters.

Reimplemented from [Xapian::Weight](#).

The documentation for this class was generated from the following file:

- `xapian/weight.h`

7.4 Xapian::Compactor Class Reference

Compact a database, or merge and compact several.

Public Member Functions

- void [set_block_size](#) (size_t block_size)
Set the block size to use for tables in the output database.
- void [set_renumber](#) (bool renumber)
Set whether to preserve existing document id values.
- void [set_multipass](#) (bool multipass)
Set whether to merge postlists in multiple passes.
- void [set_compaction_level](#) (compaction_level compaction)
Set the compaction level.
- void [set_destdir](#) (const std::string &destdir)
Set where to write the output.
- void [add_source](#) (const std::string &srcdir)
Add a source database.
- void [compact](#) ()
Perform the actual compaction/merging operation.
- virtual void [set_status](#) (const std::string &table, const std::string &status)
Update progress.
- virtual std::string [resolve_duplicate_metadata](#) (const std::string &key, size_t num_tags, const std::string tags[])
Resolve multiple user metadata entries with the same key.

7.4.1 Detailed Description

Compact a database, or merge and compact several.

7.4.2 Member Function Documentation

7.4.2.1 void Xapian::Compactor::add_source (const std::string &srcdir)

Add a source database.

Parameters:

srcdir The path to the source database to add.

7.4.2.2 **virtual std::string Xapian::Compactor::resolve_duplicate_metadata** **(const std::string & key, size_t num_tags, const std::string tags[])** [virtual]

Resolve multiple user metadata entries with the same key.

When merging, if the same user metadata key is set in more than one input, then this method is called to allow this to be resolving in an appropriate way.

The default implementation just returns tags[0].

For multipass this will currently get called multiple times for the same key if there are duplicates to resolve in each pass, but this may change in the future.

Parameters:

key The metadata key with duplicate entries.

num_tags How many tags there are.

tags An array of num_tags strings containing the tags to merge.

7.4.2.3 **void Xapian::Compactor::set_block_size (size_t block_size)**

Set the block size to use for tables in the output database.

Parameters:

block_size The block size to use. Valid block sizes are currently powers of two between 2048 and 65536, with the default being 8192, but the valid sizes and default may change in the future.

7.4.2.4 **void Xapian::Compactor::set_compaction_level (compaction_level compaction)**

Set the compaction level.

Parameters:

compaction Available values are: - Xapian::Compactor::STANDARD - Don't split items unnecessarily. - Xapian::Compactor::FULL - Split items whenever it saves space (the default). - Xapian::Compactor::FULLER - Allow oversize items to save more space (not recommended if you ever plan to update the compacted database).

7.4.2.5 void Xapian::Compactor::set_destdir (const std::string & *destdir*)

Set where to write the output.

Parameters:

destdir Output path. This can be the same as an input if that input is a stub database (in which case the database(s) listed in the stub will be compacted to a new database and then the stub will be atomically updated to point to this new database).

7.4.2.6 void Xapian::Compactor::set_multipass (bool *multipass*)

Set whether to merge postlists in multiple passes.

Parameters:

multipass If true and merging more than 3 databases, merge the postlists in multiple passes, which is generally faster but requires more disk space for temporary files. By default we don't do this.

7.4.2.7 void Xapian::Compactor::set_renumber (bool *renumber*)

Set whether to preserve existing document id values.

Parameters:

renumber The default is true, which means that document ids will be renumbered - currently by applying the same offset to all the document ids in a particular source database.

If false, then the document ids must be unique over all source databases. Currently the ranges of document ids in each source must not overlap either, though this restriction may be removed in the future.

7.4.2.8 virtual void Xapian::Compactor::set_status (const std::string & *table*, const std::string & *status*) [virtual]

Update progress.

Subclass this method if you want to get progress updates during compaction. This is called for each table first with empty status, And then one or more times with non-empty status.

The default implementation does nothing.

Parameters:

table The table currently being compacted.

status A status message.

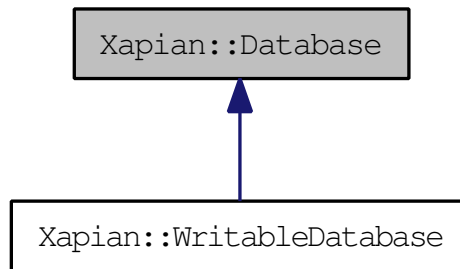
The documentation for this class was generated from the following file:

- xapian/[compactor.h](#)

7.5 Xapian::Database Class Reference

This class is used to access a database, or a group of databases.

Inheritance diagram for Xapian::Database:



Public Member Functions

- void [add_database](#) (const [Database](#) &database)
Add an existing database (or group of databases) to those accessed by this object.
- [Database](#) ()
Create a [Database](#) with no databases in.
- [Database](#) (const std::string &path)
Open a [Database](#), automatically determining the database backend to use.
- virtual [~Database](#) ()
Destroy this handle on the database.
- [Database](#) (const [Database](#) &other)
Copying is allowed.
- void [operator=](#) (const [Database](#) &other)
Assignment is allowed.
- void [reopen](#) ()
Re-open the database.
- virtual void [close](#) ()
Close the database.
- virtual std::string [get_description](#) () const
Return a string describing this object.
- [PostingIterator](#) [postlist_begin](#) (const std::string &tname) const

An iterator pointing to the start of the postlist for a given term.

- [PostingIterator postlist_end](#) (const std::string &) const
Corresponding end iterator to [postlist_begin\(\)](#).
- [TermIterator termlist_begin](#) (Xapian::docid did) const
An iterator pointing to the start of the termlist for a given document.
- [TermIterator termlist_end](#) (Xapian::docid) const
Corresponding end iterator to [termlist_begin\(\)](#).
- bool [has_positions](#) () const
Does this database have any positional information?
- [PositionIterator positionlist_begin](#) (Xapian::docid did, const std::string &tname) const
An iterator pointing to the start of the position list for a given term in a given document.
- [PositionIterator positionlist_end](#) (Xapian::docid, const std::string &) const
Corresponding end iterator to [positionlist_begin\(\)](#).
- [TermIterator allterms_begin](#) () const
An iterator which runs across all terms in the database.
- [TermIterator allterms_end](#) () const
Corresponding end iterator to [allterms_begin\(\)](#).
- [TermIterator allterms_begin](#) (const std::string &prefix) const
An iterator which runs across all terms with a given prefix.
- [TermIterator allterms_end](#) (const std::string &) const
Corresponding end iterator to [allterms_begin\(prefix\)](#).
- [Xapian::doccount get_doccount](#) () const
Get the number of documents in the database.
- [Xapian::docid get_lastdocid](#) () const
Get the highest document id which has been used in the database.
- [Xapian::doclength get_avlength](#) () const
Get the average length of the documents in the database.
- [Xapian::doccount get_termfreq](#) (const std::string &tname) const
Get the number of documents in the database indexed by a given term.

- `bool term_exists (const std::string &tname) const`
Check if a given term exists in the database.
- `Xapian::termcount get_collection_freq (const std::string &tname) const`
Return the total number of occurrences of the given term.
- `Xapian::doccount get_value_freq (Xapian::valueno slot) const`
Return the frequency of a given value slot.
- `std::string get_value_lower_bound (Xapian::valueno slot) const`
Get a lower bound on the values stored in the given value slot.
- `std::string get_value_upper_bound (Xapian::valueno slot) const`
Get an upper bound on the values stored in the given value slot.
- `Xapian::termcount get_doclength_lower_bound () const`
Get a lower bound on the length of a document in this DB.
- `Xapian::termcount get_doclength_upper_bound () const`
Get an upper bound on the length of a document in this DB.
- `Xapian::termcount get_wdf_upper_bound (const std::string &term) const`
Get an upper bound on the wdf of term term.
- `ValueIterator valuestream_begin (Xapian::valueno slot) const`
Return an iterator over the value in slot slot for each document.
- `ValueIteratorEnd_ valuestream_end (Xapian::valueno) const`
Return end iterator corresponding to `valuestream_begin()`.
- `Xapian::termcount get_doclength (Xapian::docid did) const`
Get the length of a document.
- `void keep_alive ()`
Send a "keep-alive" to remote databases to stop them timing out.
- `Xapian::Document get_document (Xapian::docid did) const`
Get a document from the database, given its document id.
- `std::string get_spelling_suggestion (const std::string &word, unsigned max_edit_distance=2) const`
Suggest a spelling correction.
- `Xapian::TermIterator spellings_begin () const`
An iterator which returns all the spelling correction targets.

- [Xapian::TermIterator spellings_end](#) () const
Corresponding end iterator to [spellings_begin\(\)](#).
- [Xapian::TermIterator synonyms_begin](#) (const std::string &term) const
An iterator which returns all the synonyms for a given term.
- [Xapian::TermIterator synonyms_end](#) (const std::string &) const
Corresponding end iterator to [synonyms_begin\(term\)](#).
- [Xapian::TermIterator synonym_keys_begin](#) (const std::string &prefix=std::string()) const
An iterator which returns all terms which have synonyms.
- [Xapian::TermIterator synonym_keys_end](#) (const std::string &=std::string()) const
Corresponding end iterator to [synonym_keys_begin\(prefix\)](#).
- std::string [get_metadata](#) (const std::string &key) const
Get the user-specified metadata associated with a given key.
- [Xapian::TermIterator metadata_keys_begin](#) (const std::string &prefix=std::string()) const
An iterator which returns all user-specified metadata keys.
- [Xapian::TermIterator metadata_keys_end](#) (const std::string &=std::string()) const
Corresponding end iterator to [metadata_keys_begin\(\)](#).
- std::string [get_uuid](#) () const
Get a UUID for the database.

7.5.1 Detailed Description

This class is used to access a database, or a group of databases.

For searching, this class is used in conjunction with an [Enquire](#) object.

Exceptions:

[InvalidArgumentError](#) will be thrown if an invalid argument is supplied, for example, an unknown database type.

[DatabaseOpeningError](#) may be thrown if the database cannot be opened (for example, a required file cannot be found).

[DatabaseVersionError](#) may be thrown if the database is in an unsupported format (for example, created by a newer version of [Xapian](#) which uses an incompatible format).

7.5.2 Constructor & Destructor Documentation

7.5.2.1 Xapian::Database::Database (const std::string & *path*) [explicit]

Open a [Database](#), automatically determining the database backend to use.

Parameters:

path directory that the database is stored in.

7.5.2.2 virtual Xapian::Database::~~Database () [virtual]

Destroy this handle on the database.

If there are no copies of this object remaining, the database(s) will be closed.

7.5.2.3 Xapian::Database::Database (const Database & *other*)

Copying is allowed.

The internals are reference counted, so copying is cheap.

Parameters:

other The object to copy.

7.5.3 Member Function Documentation

7.5.3.1 void Xapian::Database::add_database (const Database & *database*)

Add an existing database (or group of databases) to those accessed by this object.

Parameters:

database the database(s) to add.

7.5.3.2 TermIterator Xapian::Database::allterms_begin (const std::string & *prefix*) const

An iterator which runs across all terms with a given prefix.

This is functionally similar to getting an iterator with [allterms_begin\(\)](#) and then calling [skip_to\(prefix\)](#) on that iterator to move to the start of the prefix, but is more convenient (because it detects the end of the prefixed terms), and may be more efficient than simply calling [skip_to\(\)](#) after opening the iterator, particularly for remote databases.

Parameters:

prefix The prefix to restrict the returned terms to.

7.5.3.3 virtual void Xapian::Database::close () [virtual]

Close the database.

This closes the database and closes all its file handles.

For a [WritableDatabase](#), if a transaction is active it will be aborted, while if no transaction is active `commit()` will be implicitly called. Also the write lock is released.

Closing a database cannot be undone - in particular, calling `reopen()` after `close()` will not reopen it, but will instead throw a [Xapian::DatabaseError](#) exception.

Calling `close()` again on a database which has already been closed has no effect (and doesn't raise an exception).

After `close()` has been called, calls to other methods of the database, and to methods of other objects associated with the database, will either:

- behave exactly as they would have done if the database had not been closed (this can only happen if all the required data is cached)
- raise a [Xapian::DatabaseError](#) exception indicating that the database is closed.

The reason for this behaviour is that otherwise we'd have to check that the database is still open on every method call on every object associated with a [Database](#), when in many cases they are working on data which has already been loaded and so they are able to just behave correctly.

This method was added in [Xapian](#) 1.1.0.

7.5.3.4 Xapian::termcount Xapian::Database::get_collection_freq (const std::string & *tname*) const

Return the total number of occurrences of the given term.

This is the sum of the number of occurrences of the term in each document it indexes: i.e., the sum of the within document frequencies of the term.

Parameters:

tname The term whose collection frequency is being requested.

7.5.3.5 Xapian::termcount Xapian::Database::get_doclength_lower_bound () const

Get a lower bound on the length of a document in this DB.

This bound does not include any zero-length documents.

7.5.3.6 Xapian::Document Xapian::Database::get_document (Xapian::docid *did*) const

Get a document from the database, given its document id.

This method returns a [Xapian::Document](#) object which provides the information about a document.

Parameters:

did The document id of the document to retrieve.

Returns:

A [Xapian::Document](#) object containing the document data

Exceptions:

[Xapian::DocNotFoundError](#) The document specified could not be found in the database.

[Xapian::InvalidArgumentError](#) *did* was 0, which is not a valid document id.

7.5.3.7 std::string Xapian::Database::get_metadata (const std::string & *key*) const

Get the user-specified metadata associated with a given key.

User-specified metadata allows you to store arbitrary information in the form of (key,tag) pairs. See [WritableDatabase::set_metadata\(\)](#) for more information.

When invoked on a [Xapian::Database](#) object representing multiple databases, currently only the metadata for the first is considered but this behaviour may change in the future.

If there is no piece of metadata associated with the specified key, an empty string is returned (this applies even for backends which don't support metadata).

Empty keys are not valid, and specifying one will cause an exception.

Parameters:

key The key of the metadata item to access.

Returns:

The retrieved metadata item's value.

Exceptions:

[Xapian::InvalidArgumentError](#) will be thrown if the key supplied is empty.

7.5.3.8 `std::string Xapian::Database::get_spelling_suggestion (const std::string & word, unsigned max_edit_distance = 2) const`

Suggest a spelling correction.

Parameters:

word The potentially misspelled word.

max_edit_distance Only consider words which are at most *max_edit_distance* edits from *word*. An edit is a character insertion, deletion, or the transposition of two adjacent characters (default is 2).

7.5.3.9 `std::string Xapian::Database::get_uuid () const`

Get a UUID for the database.

The UUID will persist for the lifetime of the database.

Replicas (eg, made with the replication protocol, or by copying all the database files) will have the same UUID. However, copies (made with copydatabase, or xapian-compact) will have different UUIDs.

If the backend does not support UUIDs or this database has no subdatabases, the UUID will be empty.

If this database has multiple sub-databases, the UUID string will contain the UUIDs of all the sub-databases.

7.5.3.10 `Xapian::doccount Xapian::Database::get_value_freq (Xapian::valueno slot) const`

Return the frequency of a given value slot.

This is the number of documents which have a (non-empty) value stored in the slot.

Parameters:

slot The value slot to examine.

Exceptions:

UnimplementedError The frequency of the value isn't available for this database type.

7.5.3.11 `std::string Xapian::Database::get_value_lower_bound (Xapian::valueno slot) const`

Get a lower bound on the values stored in the given value slot.

If there are no values stored in the given value slot, this will return an empty string.

If the lower bound isn't available for the given database type, this will return the lowest possible bound - the empty string.

Parameters:

slot The value slot to examine.

7.5.3.12 `std::string Xapian::Database::get_value_upper_bound (Xapian::valueno slot) const`

Get an upper bound on the values stored in the given value slot.

If there are no values stored in the given value slot, this will return an empty string.

Parameters:

slot The value slot to examine.

Exceptions:

UnimplementedError The upper bound of the values isn't available for this database type.

7.5.3.13 `void Xapian::Database::keep_alive ()`

Send a "keep-alive" to remote databases to stop them timing out.

Has no effect on non-remote databases.

7.5.3.14 `Xapian::TermIterator Xapian::Database::metadata_keys_begin (const std::string & prefix = std::string()) const`

An iterator which returns all user-specified metadata keys.

When invoked on a [Xapian::Database](#) object representing multiple databases, currently only the metadata for the first is considered but this behaviour may change in the future.

If the backend doesn't support metadata, then this method returns an iterator which compares equal to that returned by [metadata_keys_end\(\)](#).

Parameters:

prefix If non-empty, only keys with this prefix are returned.

Exceptions:

Xapian::UnimplementedError will be thrown if the backend implements user-specified metadata, but doesn't implement iterating its keys (currently this happens for the [InMemory](#) backend).

7.5.3.15 void Xapian::Database::operator= (const Database & *other*)

Assignment is allowed.

The internals are reference counted, so assignment is cheap.

Parameters:

other The object to copy.

7.5.3.16 PostingIterator Xapian::Database::postlist_begin (const std::string & *tname*) const

An iterator pointing to the start of the postlist for a given term.

Parameters:

tname The termname to iterate postings for. If the term name is the empty string, the iterator returned will list all the documents in the database. Such an iterator will always return a WDF value of 1, since there is no obvious meaning for this quantity in this case.

7.5.3.17 void Xapian::Database::reopen ()

Re-open the database.

This re-opens the database(s) to the latest available version(s). It can be used either to make sure the latest results are returned, or to recover from a [Xapian::DatabaseModifiedError](#).

Calling [reopen\(\)](#) on a database which has been closed (with [close\(\)](#)) will always raise a [Xapian::DatabaseError](#).

7.5.3.18 Xapian::TermIterator Xapian::Database::spellings_begin () const

An iterator which returns all the spelling correction targets.

This returns all the words which are considered as targets for the spelling correction algorithm. The frequency of each word is available as the term frequency of each entry in the returned iterator.

7.5.3.19 Xapian::TermIterator Xapian::Database::synonym_keys_begin (const std::string & *prefix* = std::string()) const

An iterator which returns all terms which have synonyms.

Parameters:

prefix If non-empty, only terms with this prefix are returned.

7.5.3.20 Xapian::TermIterator Xapian::Database::synonyms_begin (const std::string & *term*) const

An iterator which returns all the synonyms for a given term.

Parameters:

term The term to return synonyms for.

7.5.3.21 bool Xapian::Database::term_exists (const std::string & *tname*) const

Check if a given term exists in the database.

Parameters:

tname The term to test the existence of.

Returns:

true if and only if the term exists in the database. This is the same as (get_termfreq(*tname*) != 0), but will often be more efficient.

7.5.3.22 TermIterator Xapian::Database::termlist_begin (Xapian::docid *did*) const

An iterator pointing to the start of the termlist for a given document.

Parameters:

did The document id of the document to iterate terms for.

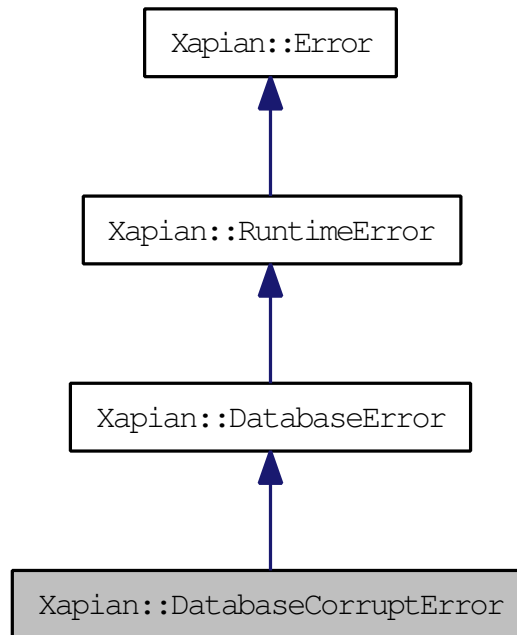
The documentation for this class was generated from the following file:

- xapian/[database.h](#)

7.6 Xapian::DatabaseCorruptError Class Reference

[DatabaseCorruptError](#) indicates database corruption was detected.

Inheritance diagram for Xapian::DatabaseCorruptError:



Public Member Functions

- [DatabaseCorruptError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0)

General purpose constructor.

- [DatabaseCorruptError](#) (const std::string &msg_, int errno_)

Construct from message and errno value.

7.6.1 Detailed Description

[DatabaseCorruptError](#) indicates database corruption was detected.

7.6.2 Constructor & Destructor Documentation

7.6.2.1 Xapian::DatabaseCorruptError::DatabaseCorruptError (const std::string & *msg_*, const std::string & *context_* = std::string(), int *errno_* = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.6.2.2 Xapian::DatabaseCorruptError::DatabaseCorruptError (const std::string & *msg_*, int *errno_*) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

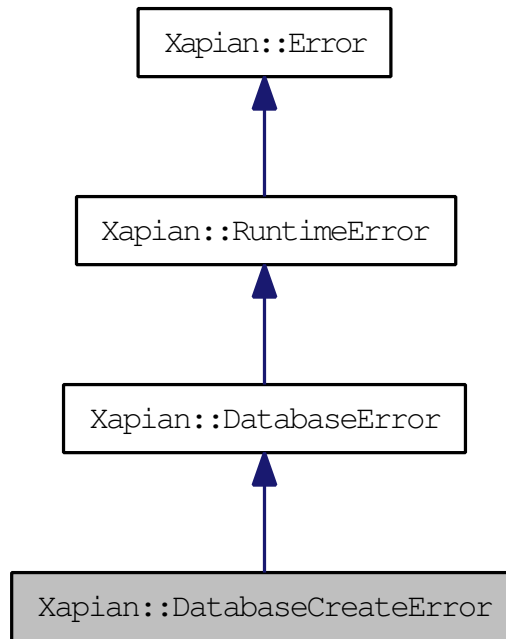
The documentation for this class was generated from the following file:

- [xapian/error.h](#)

7.7 Xapian::DatabaseCreateError Class Reference

[DatabaseCreateError](#) indicates a failure to create a database.

Inheritance diagram for Xapian::DatabaseCreateError:



Public Member Functions

- [DatabaseCreateError](#) (const std::string &msg_, const std::string &context_
=std::string(), int errno_=0)

General purpose constructor.

- [DatabaseCreateError](#) (const std::string &msg_, int errno_)

Construct from message and errno value.

7.7.1 Detailed Description

[DatabaseCreateError](#) indicates a failure to create a database.

7.7.2 Constructor & Destructor Documentation

7.7.2.1 Xapian::DatabaseCreateError::DatabaseCreateError (const std::string & msg_, const std::string & context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.7.2.2 Xapian::DatabaseCreateError::DatabaseCreateError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

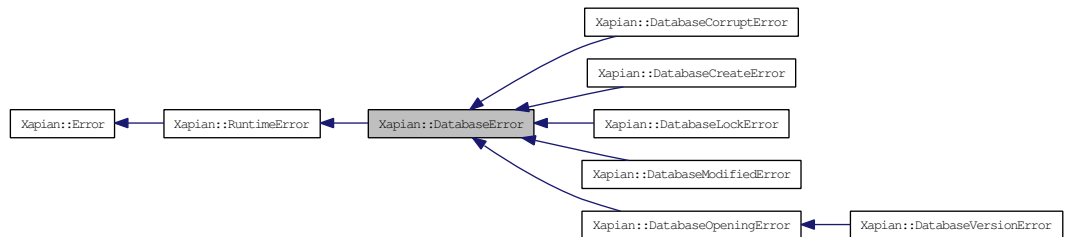
The documentation for this class was generated from the following file:

- [xapian/error.h](#)

7.8 Xapian::DatabaseError Class Reference

[DatabaseError](#) indicates some sort of database related error.

Inheritance diagram for Xapian::DatabaseError:



Public Member Functions

- [DatabaseError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0)

General purpose constructor.

- [DatabaseError](#) (const std::string &msg_, int errno_)

Construct from message and errno value.

7.8.1 Detailed Description

[DatabaseError](#) indicates some sort of database related error.

7.8.2 Constructor & Destructor Documentation

- 7.8.2.1 Xapian::DatabaseError::DatabaseError (const std::string & msg_, const std::string & context_ = std::string(), int errno_ = 0) [inline, explicit]**

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.8.2.2 Xapian::DatabaseError::DatabaseError (const std::string & *msg_*, int *errno_*) [inline]

Construct from message and errno value.

Parameters:

- msg_* Message giving details of the error, intended for human consumption.
- errno_* Optional errno value associated with this error.

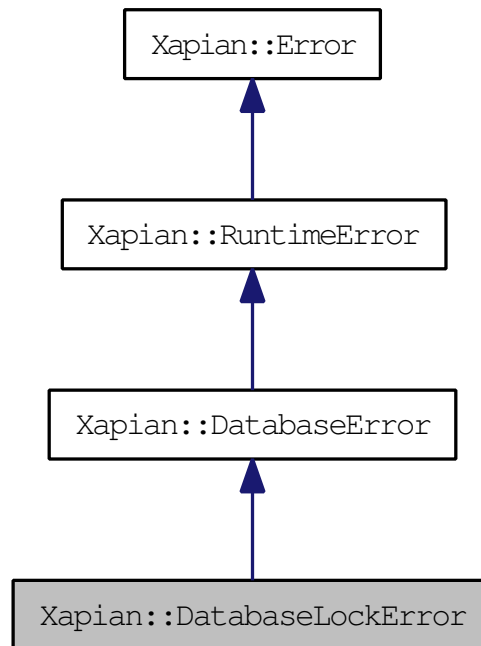
The documentation for this class was generated from the following file:

- [xapian/error.h](#)

7.9 Xapian::DatabaseLockError Class Reference

[DatabaseLockError](#) indicates failure to lock a database.

Inheritance diagram for Xapian::DatabaseLockError:



Public Member Functions

- [DatabaseLockError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0)

General purpose constructor.

- [DatabaseLockError](#) (const std::string &msg_, int errno_)

Construct from message and errno value.

7.9.1 Detailed Description

[DatabaseLockError](#) indicates failure to lock a database.

7.9.2 Constructor & Destructor Documentation

7.9.2.1 Xapian::DatabaseLockError::DatabaseLockError (const std::string & msg_, const std::string & context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.9.2.2 Xapian::DatabaseLockError::DatabaseLockError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

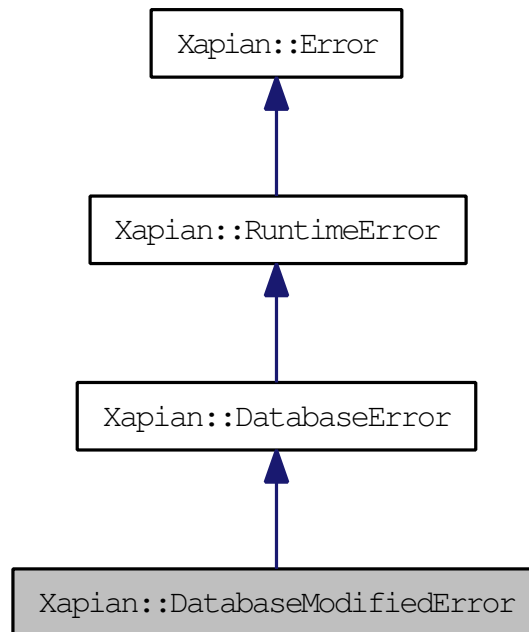
The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.10 Xapian::DatabaseModifiedError Class Reference

[DatabaseModifiedError](#) indicates a database was modified.

Inheritance diagram for Xapian::DatabaseModifiedError:



Public Member Functions

- [DatabaseModifiedError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0)

General purpose constructor.

- [DatabaseModifiedError](#) (const std::string &msg_, int errno_)

Construct from message and errno value.

7.10.1 Detailed Description

[DatabaseModifiedError](#) indicates a database was modified.

To recover after catching this error, you need to call [Xapian::Database::reopen\(\)](#) on the [Database](#) and repeat the operation which failed.

7.10.2 Constructor & Destructor Documentation

7.10.2.1 Xapian::DatabaseModifiedError::DatabaseModifiedError (const std::string & msg_, const std::string & context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.10.2.2 Xapian::DatabaseModifiedError::DatabaseModifiedError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

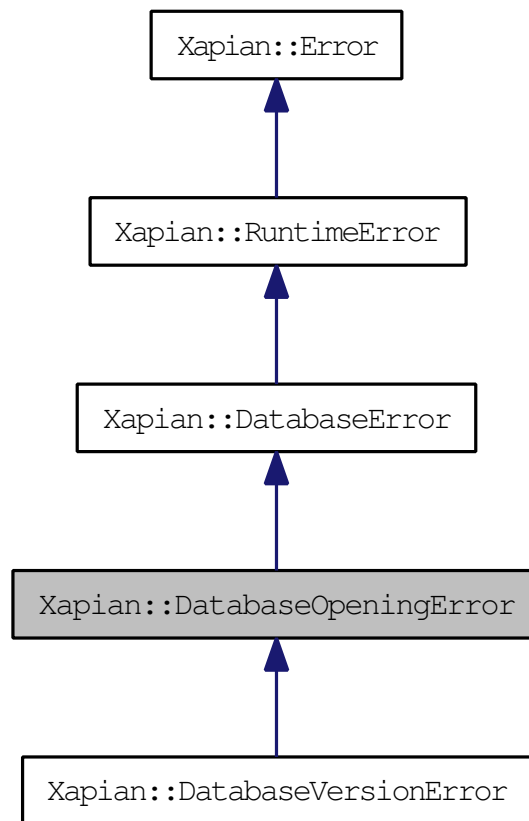
The documentation for this class was generated from the following file:

- [xapian/error.h](#)

7.11 Xapian::DatabaseOpeningError Class Reference

[DatabaseOpeningError](#) indicates failure to open a database.

Inheritance diagram for Xapian::DatabaseOpeningError:



Public Member Functions

- [DatabaseOpeningError](#) (const std::string &msg_, const std::string &context_
=std::string(), int errno_=0)
General purpose constructor.
- [DatabaseOpeningError](#) (const std::string &msg_, int errno_)
Construct from message and errno value.

7.11.1 Detailed Description

[DatabaseOpeningError](#) indicates failure to open a database.

7.11.2 Constructor & Destructor Documentation

7.11.2.1 Xapian::DatabaseOpeningError::DatabaseOpeningError (const std::string & *msg_*, const std::string & *context_* = std::string(), int *errno_* = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.11.2.2 Xapian::DatabaseOpeningError::DatabaseOpeningError (const std::string & *msg_*, int *errno_*) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

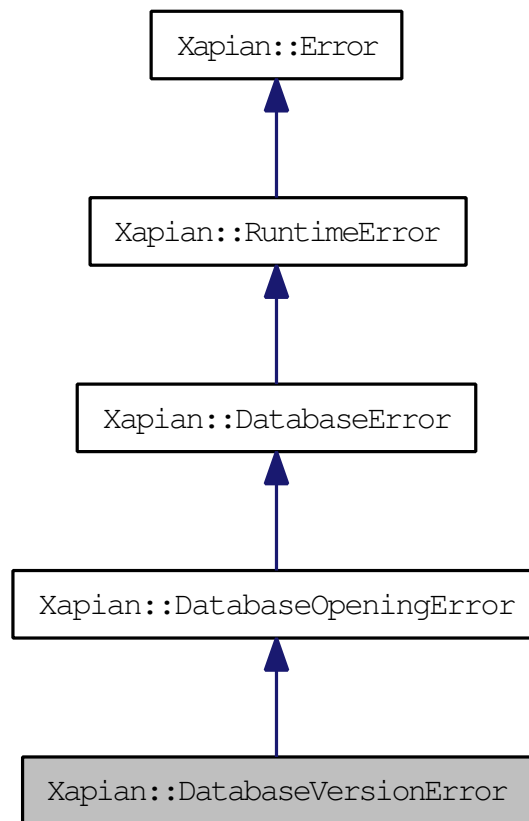
The documentation for this class was generated from the following file:

- [xapian/error.h](#)

7.12 Xapian::DatabaseVersionError Class Reference

[DatabaseVersionError](#) indicates that a database is in an unsupported format.

Inheritance diagram for Xapian::DatabaseVersionError:



Public Member Functions

- [DatabaseVersionError](#) (const std::string &msg_, const std::string &context_
=std::string(), int errno_=0)
General purpose constructor.
- [DatabaseVersionError](#) (const std::string &msg_, int errno_)
Construct from message and errno value.

7.12.1 Detailed Description

[DatabaseVersionError](#) indicates that a database is in an unsupported format.

From time to time, new versions of [Xapian](#) will require the database format to be changed, to allow new information to be stored or new optimisations to be performed. Backwards compatibility will sometimes be maintained, so that new versions of [Xapian](#) can open old databases, but in some cases [Xapian](#) will be unable to open a database because it is in too old (or new) a format. This can be resolved either by upgrading or downgrading the version of [Xapian](#) in use, or by rebuilding the database from scratch with the current version of [Xapian](#).

7.12.2 Constructor & Destructor Documentation

7.12.2.1 Xapian::DatabaseVersionError::DatabaseVersionError (const std::string & msg_, const std::string & context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

- msg_* Message giving details of the error, intended for human consumption.
- context_* Optional context information for this error.
- errno_* Optional errno value associated with this error.

7.12.2.2 Xapian::DatabaseVersionError::DatabaseVersionError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

- msg_* Message giving details of the error, intended for human consumption.
- errno_* Optional errno value associated with this error.

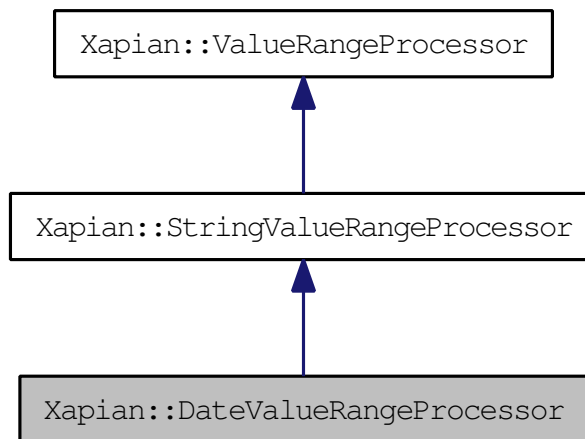
The documentation for this class was generated from the following file:

- [xapian/error.h](#)

7.13 Xapian::DateValueRangeProcessor Class Reference

Handle a date range.

Inheritance diagram for Xapian::DateValueRangeProcessor:



Public Member Functions

- [DateValueRangeProcessor](#) ([Xapian::valueno](#) slot_, bool prefer_mdy_=false, int epoch_year_=1970)
Constructor.
- [DateValueRangeProcessor](#) ([Xapian::valueno](#) slot_, const std::string &str_, bool prefix_=true, bool prefer_mdy_=false, int epoch_year_=1970)
Constructor.
- [DateValueRangeProcessor](#) ([Xapian::valueno](#) slot_, const char *str_, bool prefix_=true, bool prefer_mdy_=false, int epoch_year_=1970)
Constructor.
- [Xapian::valueno operator\(\)](#) (std::string &begin, std::string &end)
Check for a valid date range.

7.13.1 Detailed Description

Handle a date range.

Begin and end must be dates in a recognised format.

7.13.2 Constructor & Destructor Documentation

7.13.2.1 Xapian::DateValueRangeProcessor::DateValueRangeProcessor
(Xapian::valueno *slot_*, bool *prefer_mdy_* = false, int *epoch_year_* = 1970) [inline]

Constructor.

Parameters:

- slot_* The value number to return from operator().
- prefer_mdy_* Should ambiguous dates be interpreted as month/day/year rather than day/month/year? (default: false)
- epoch_year_* Year to use as the epoch for dates with 2 digit years (default: 1970, so 1/1/69 is 2069 while 1/1/70 is 1970).

7.13.2.2 Xapian::DateValueRangeProcessor::DateValueRangeProcessor
(Xapian::valueno *slot_*, const std::string & *str_*, bool *prefix_* = true, bool *prefer_mdy_* = false, int *epoch_year_* = 1970) [inline]

Constructor.

Parameters:

- slot_* The value number to return from operator().
- str_* A string to look for to recognise values as belonging to this date range.
- prefix_* Whether to look for the string at the start or end of the values. If true, the string is a prefix; if false, the string is a suffix (default: true).
- prefer_mdy_* Should ambiguous dates be interpreted as month/day/year rather than day/month/year? (default: false)
- epoch_year_* Year to use as the epoch for dates with 2 digit years (default: 1970, so 1/1/69 is 2069 while 1/1/70 is 1970).

The string supplied in *str_* is used by *operator()* to decide whether the pair of strings supplied to it constitute a valid range. If *prefix_* is true, the first value in a range must begin with *str_* (and the second value may optionally begin with *str_*); if *prefix_* is false, the second value in a range must end with *str_* (and the first value may optionally end with *str_*).

If *str_* is empty, the setting of *prefix_* is irrelevant, and no special strings are required at the start or end of the strings defining the range.

The remainder of both strings defining the endpoints must be valid dates.

For example, if *str_* is "created:" and *prefix_* is true, and the range processor has been added to the queryparser, the queryparser will accept "created:1/1/2000..31/12/2001".

7.13.2.3 Xapian::DateValueRangeProcessor::DateValueRangeProcessor (Xapian::valueno *slot_*, const char * *str_*, bool *prefix_* = true, bool *prefer_mdy_* = false, int *epoch_year_* = 1970) [inline]

Constructor.

This is like the previous version, but with const char * instead of std::string - we need this overload as otherwise `DateValueRangeProcessor(1, "date:")` quietly interprets the second argument as a boolean in preference to std::string. If you want to be compatible with 1.2.12 and earlier, then explicitly convert to std::string, i.e.: `DateValueRangeProcessor(1, std::string("date:"))`

Parameters:

- slot_* The value number to return from operator().
- str_* A string to look for to recognise values as belonging to this date range.
- prefix_* Whether to look for the string at the start or end of the values. If true, the string is a prefix; if false, the string is a suffix (default: true).
- prefer_mdy_* Should ambiguous dates be interpreted as month/day/year rather than day/month/year? (default: false)
- epoch_year_* Year to use as the epoch for dates with 2 digit years (default: 1970, so 1/1/69 is 2069 while 1/1/70 is 1970).

The string supplied in *str_* is used by *operator()* to decide whether the pair of strings supplied to it constitute a valid range. If *prefix_* is true, the first value in a range must begin with *str_* (and the second value may optionally begin with *str_*); if *prefix_* is false, the second value in a range must end with *str_* (and the first value may optionally end with *str_*).

If *str_* is empty, the setting of *prefix_* is irrelevant, and no special strings are required at the start or end of the strings defining the range.

The remainder of both strings defining the endpoints must be valid dates.

For example, if *str_* is "created:" and *prefix_* is true, and the range processor has been added to the queryparser, the queryparser will accept "created:1/1/2000..31/12/2001".

7.13.3 Member Function Documentation

7.13.3.1 Xapian::valueno Xapian::DateValueRangeProcessor::operator() (std::string & *begin*, std::string & *end*) [virtual]

Check for a valid date range.

Parameters:

- ↔ *begin* The start of the range as specified in the query string by the user. This parameter is a non-const reference so the `ValueRangeProcessor` can modify it to return the value to start the range with.
- ↔ *end* The end of the range. This is also a non-const reference so it can be modified.

Returns:

If BEGIN..END is a sensible date range, this method modifies them into the format YYYYMMDD and returns the value of slot_ passed at construction time. Otherwise it returns [Xapian::BAD_VALUENO](#).

Reimplemented from [Xapian::StringValueRangeProcessor](#).

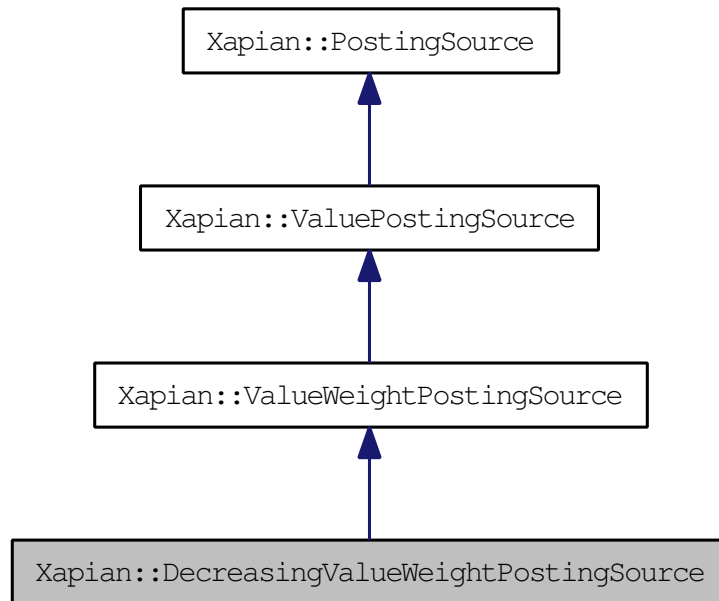
The documentation for this class was generated from the following file:

- [xapian/queryparser.h](#)

7.14 Xapian::DecreasingValueWeightPostingSource Class Reference

Read weights from a value which is known to decrease as docid increases.

Inheritance diagram for Xapian::DecreasingValueWeightPostingSource:



Public Member Functions

- [Xapian::weight](#) [get_weight](#) () const
Return the weight contribution for the current document.
- [DecreasingValueWeightPostingSource](#) * [clone](#) () const
Clone the posting source.
- std::string [name](#) () const
Name of the posting source class.
- std::string [serialise](#) () const
Serialise object parameters into a string.
- [DecreasingValueWeightPostingSource](#) * [unserialise](#) (const std::string &s)
const
Create object given string serialisation returned by [serialise\(\)](#).
- void [init](#) (const [Xapian::Database](#) &db_)

Set this [PostingSource](#) to the start of the list of postings.

- void [next](#) ([Xapian::weight](#) min_wt)
Advance the current position to the next matching document.
- void [skip_to](#) ([Xapian::docid](#) min_docid, [Xapian::weight](#) min_wt)
Advance to the specified docid.
- bool [check](#) ([Xapian::docid](#) min_docid, [Xapian::weight](#) min_wt)
Check if the specified docid occurs.
- std::string [get_description](#) () const
Return a string describing this object.

Protected Member Functions

- void [skip_if_in_range](#) ([Xapian::weight](#) min_wt)
Skip the iterator forward if in the decreasing range, and weight is low.

Protected Attributes

- bool [items_at_end](#)
Flag, set to true if there are docs after the end of the range.

7.14.1 Detailed Description

Read weights from a value which is known to decrease as docid increases.

This posting source can be used, like [ValueWeightPostingSource](#), to add a weight contribution to a query based on the values stored in a slot. The values in the slot must be serialised as by [sortable_serialise\(\)](#).

However, this posting source is additionally given a range of document IDs, within which the weight is known to be decreasing. ie, for all documents with ids A and B within this range (including the endpoints), where A is less than B, the weight of A is less than or equal to the weight of B. This can allow the posting source to skip to the end of the range quickly if insufficient weight is left in the posting source for a particular source.

By default, the range is assumed to cover all document IDs.

The ordering property can be arranged at index time, or by sorting an indexed database to produce a new, sorted, database.

7.14.2 Member Function Documentation

7.14.2.1 `bool Xapian::DecreasingValueWeightPostingSource::check` `(Xapian::docid did, Xapian::weight min_wt)` [virtual]

Check if the specified docid occurs.

The caller is required to ensure that the specified document id *did* actually exists in the database. If it does, it must move to that document id, and return true. If it does not, it may either:

- return true, having moved to a definite position (including "at_end"), which must be the same position as `skip_to()` would have moved to.

or

- return false, having moved to an "indeterminate" position, such that a subsequent call to `next()` or `skip_to()` will move to the next matching position after *did*.

Generally, this method should act like `skip_to()` and return true if that can be done at little extra cost.

Otherwise it should simply check if a particular docid is present, returning true if it is, and false if it isn't.

The default implementation calls `skip_to()` and always returns true.

`Xapian` will always call `init()` on a `PostingSource` before calling this for the first time.

Note: in the case of a multi-database search, the docid specified is the docid in the single subdatabase relevant to this posting source. See the `init()` method for details.

Parameters:

did The document id to check.

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Reimplemented from `Xapian::ValuePostingSource`.

7.14.2.2 `DecreasingValueWeightPostingSource*` `Xapian::DecreasingValueWeightPostingSource::clone ()` const [virtual]

Clone the posting source.

The clone should inherit the configuration of the parent, but need not inherit the state. ie, the clone does not need to be in the same iteration position as the original: the matcher will always call `init()` on the clone before attempting to move the iterator, or read the information about the current position of the iterator.

This may return NULL to indicate that cloning is not supported. In this case, the [PostingSource](#) may only be used with a single-database search.

The default implementation returns NULL.

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Reimplemented from [Xapian::ValueWeightPostingSource](#).

7.14.2.3 `std::string Xapian::DecreasingValueWeightPostingSource::get_description() const` [virtual]

Return a string describing this object.

This default implementation returns a generic answer. This default is provided to avoid forcing those deriving their own [PostingSource](#) subclass from having to implement this (they may not care what `get_description()` gives for their subclass).

Reimplemented from [Xapian::ValueWeightPostingSource](#).

7.14.2.4 `Xapian::weight Xapian::DecreasingValueWeightPostingSource::get_weight() const` [virtual]

Return the weight contribution for the current document.

This default implementation always returns 0, for convenience when implementing "weight-less" [PostingSource](#) subclasses.

This method may assume that it will only be called when there is a "current document". In detail: [Xapian](#) will always call `init()` on a [PostingSource](#) before calling this for the first time. It will also only call this if the [PostingSource](#) reports that it is pointing to a valid document (ie, it will not call it before calling at least one of `next()`, `skip_to()` or `check()`, and will ensure that the [PostingSource](#) is not at the end by calling `at_end()`).

Reimplemented from [Xapian::ValueWeightPostingSource](#).

7.14.2.5 `void Xapian::DecreasingValueWeightPostingSource::init (const Xapian::Database & db)` [virtual]

Set this [PostingSource](#) to the start of the list of postings.

This is called automatically by the matcher prior to each query being processed.

If a [PostingSource](#) is used for multiple searches, `init()` will therefore be called multiple times, and must handle this by using the database passed in the most recent call.

Parameters:

db The database which the [PostingSource](#) should iterate through.

Note: the database supplied to this method must not be modified: in particular, the `reopen()` method should not be called on it.

Note: in the case of a multi-database search, a separate [PostingSource](#) will be used for each database (the separate PostingSources will be obtained using `clone()`), and each [PostingSource](#) will be passed one of the sub-databases as the `db` parameter here. The `db` parameter will therefore always refer to a single database. All docids passed to, or returned from, the [PostingSource](#) refer to docids in that single database, rather than in the multi-database.

Reimplemented from [Xapian::ValueWeightPostingSource](#).

7.14.2.6 `std::string Xapian::DecreasingValueWeightPostingSource::name ()` `const` [virtual]

Name of the posting source class.

This is used when serialising and unserialising posting sources; for example, for performing remote searches.

If the subclass is in a C++ namespace, the namespace should be included in the name, using `::` as a separator. For example, for a [PostingSource](#) subclass called "FooPostingSource" in the "Xapian" namespace the result of this call should be "Xapian::FooPostingSource".

This should only be implemented if `serialise()` and `unserialise()` are also implemented. The default implementation returns an empty string.

If this returns an empty string, [Xapian](#) will assume that `serialise()` and `unserialise()` are not implemented.

Reimplemented from [Xapian::ValueWeightPostingSource](#).

7.14.2.7 `void Xapian::DecreasingValueWeightPostingSource::next` `(Xapian::weight min_wt)` [virtual]

Advance the current position to the next matching document.

The [PostingSource](#) starts before the first entry in the list, so `next()` must be called before any methods which need the context of the current position.

[Xapian](#) will always call `init()` on a [PostingSource](#) before calling this for the first time.

Parameters:

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Reimplemented from [Xapian::ValuePostingSource](#).

7.14.2.8 `std::string Xapian::DecreasingValueWeightPostingSource::serialise () const` [virtual]

Serialise object parameters into a string.

The serialised parameters should represent the configuration of the posting source, but need not (indeed, should not) represent the current iteration state.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented from [Xapian::ValueWeightPostingSource](#).

7.14.2.9 `void Xapian::DecreasingValueWeightPostingSource::skip_to (Xapian::docid did, Xapian::weight min_wt)` [virtual]

Advance to the specified docid.

If the specified docid isn't in the list, position ourselves on the first document after it (or [at_end\(\)](#) if no greater docids are present).

If the current position is already the specified docid, this method will leave the position unmodified.

If the specified docid is earlier than the current position, the behaviour is unspecified. A sensible behaviour would be to leave the current position unmodified, but it is also reasonable to move to the specified docid.

The default implementation calls [next\(\)](#) repeatedly, which works but [skip_to\(\)](#) can often be implemented much more efficiently.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Note: in the case of a multi-database search, the docid specified is the docid in the single subdatabase relevant to this posting source. See the [init\(\)](#) method for details.

Parameters:

did The document id to advance to.

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Reimplemented from [Xapian::ValuePostingSource](#).

7.14.2.10 `DecreasingValueWeightPostingSource*` `Xapian::DecreasingValueWeightPostingSource::unserialise (const std::string & s) const` [virtual]

Create object given string serialisation returned by [serialise\(\)](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can

define a static `operator delete` method in your subclass as shown here:
<http://trac.xapian.org/ticket/554#comment:1>

If you don't want to support the remote backend, you can use the default implementation which simply throws `Xapian::UnimplementedError`.

Parameters:

- `s` A serialised instance of this `PostingSource` subclass.

Reimplemented from `Xapian::ValueWeightPostingSource`.

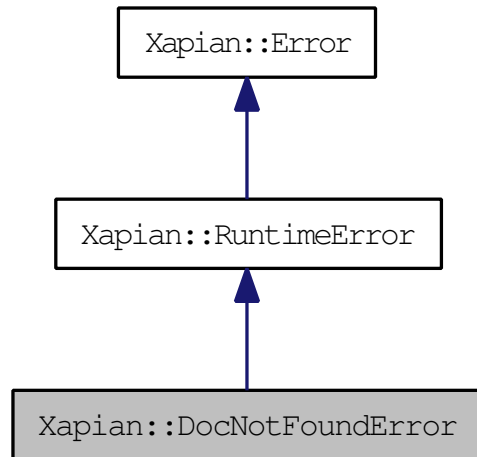
The documentation for this class was generated from the following file:

- `xapian/postingsource.h`

7.15 Xapian::DocNotFoundError Class Reference

Indicates an attempt to access a document not present in the database.

Inheritance diagram for Xapian::DocNotFoundError:



Public Member Functions

- [DocNotFoundError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0)
General purpose constructor.
- [DocNotFoundError](#) (const std::string &msg_, int errno_)
Construct from message and errno value.

7.15.1 Detailed Description

Indicates an attempt to access a document not present in the database.

7.15.2 Constructor & Destructor Documentation

- 7.15.2.1** [Xapian::DocNotFoundError::DocNotFoundError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.15.2.2 Xapian::DocNotFoundError::DocNotFoundError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.16 Xapian::Document Class Reference

A handle representing a document in a [Xapian](#) database.

Public Member Functions

- [Document](#) (const [Document](#) &other)
Copying is allowed.
- void [operator=](#) (const [Document](#) &other)
Assignment is allowed.
- [Document](#) ()
Make a new empty Document.
- [~Document](#) ()
Destructor.
- std::string [get_value](#) ([Xapian::valueno](#) slot) const
Get value by number.
- void [add_value](#) ([Xapian::valueno](#) slot, const std::string &value)
Add a new value.
- void [remove_value](#) ([Xapian::valueno](#) slot)
Remove any value with the given number.
- void [clear_values](#) ()
Remove all values associated with the document.
- std::string [get_data](#) () const
Get data stored in the document.
- void [set_data](#) (const std::string &data)
Set data stored in the document.
- void [add_posting](#) (const std::string &tname, [Xapian::termpos](#) tpos, [Xapian::termcount](#) wdfinc=1)
Add an occurrence of a term at a particular position.
- void [add_term](#) (const std::string &tname, [Xapian::termcount](#) wdfinc=1)
Add a term to the document, without positional information.
- void [add_boolean_term](#) (const std::string &term)
Add a boolean filter term to the document.

- void [remove_posting](#) (const std::string &tname, [Xapian::termpos](#) tpos, [Xapian::termcount](#) wdfdec=1)
Remove a posting of a term from the document.
- void [remove_term](#) (const std::string &tname)
Remove a term and all postings associated with it.
- void [clear_terms](#) ()
Remove all terms (and postings) from the document.
- [Xapian::termcount](#) [termlist_count](#) () const
The length of the termlist - i.e.
- [TermIterator](#) [termlist_begin](#) () const
Iterator for the terms in this document.
- [TermIterator](#) [termlist_end](#) () const
Equivalent end iterator for [termlist_begin\(\)](#).
- [Xapian::termcount](#) [values_count](#) () const
Count the values in this document.
- [ValueIterator](#) [values_begin](#) () const
Iterator for the values in this document.
- [ValueIteratorEnd](#) [values_end](#) () const
Equivalent end iterator for [values_begin\(\)](#).
- [docid](#) [get_docid](#) () const
Get the document id which is associated with this document (if any).
- std::string [serialise](#) () const
Serialise document into a string.
- std::string [get_description](#) () const
Return a string describing this object.

Static Public Member Functions

- static [Document](#) [unserialise](#) (const std::string &s)
Unserialise a document from a string produced by [serialise\(\)](#).

7.16.1 Detailed Description

A handle representing a document in a [Xapian](#) database.

The [Document](#) class fetches information from the database lazily. Usually this behaviour isn't visible to users (except for the speed benefits), but if the document in the database is modified or deleted, then preexisting [Document](#) objects may return the old or new versions of data (or throw [Xapian::DocNotFoundError](#) in the case of deletion).

Since [Database](#) objects work on a snapshot of the database's state, the situation above can only happen with a [WritableDatabase](#) object, or if you call [Database::reopen\(\)](#) on a [Database](#) object.

We recommend you avoid designs where this behaviour is an issue, but if you need a way to make a non-lazy version of a [Document](#) object, you can do this like so:

```
doc = Xapian::Document::unserialise(doc.serialise());
```

7.16.2 Constructor & Destructor Documentation

7.16.2.1 [Xapian::Document::Document](#) (const [Document](#) & *other*)

Copying is allowed.

The internals are reference counted, so copying is cheap.

Parameters:

other The object to copy.

7.16.3 Member Function Documentation

7.16.3.1 [void Xapian::Document::add_boolean_term](#) (const std::string & *term*) [inline]

Add a boolean filter term to the document.

This method adds *term* to the document with wdf of 0 - this is generally what you want for a term used for boolean filtering as the wdf of such terms is ignored, and it doesn't make sense for them to contribute to the document's length.

If the specified term already indexes this document, this method has no effect.

It is exactly the same as `add_term(term, 0)`.

This method was added in [Xapian](#) 1.0.18.

Parameters:

term The term to add.

7.16.3.2 void Xapian::Document::add_posting (const std::string & *tname*, Xapian::termpos *tpos*, Xapian::termcount *wdfinc* = 1)

Add an occurrence of a term at a particular position.

Multiple occurrences of the term at the same position are represented only once in the positional information, but do increase the wdf.

If the term is not already in the document, it will be added to it.

Parameters:

tname The name of the term.

tpos The position of the term.

wdfinc The increment that will be applied to the wdf for this term.

7.16.3.3 void Xapian::Document::add_term (const std::string & *tname*, Xapian::termcount *wdfinc* = 1)

Add a term to the document, without positional information.

Any existing positional information for the term will be left unmodified.

Parameters:

tname The name of the term.

wdfinc The increment that will be applied to the wdf for this term (default: 1).

7.16.3.4 void Xapian::Document::add_value (Xapian::valueno *slot*, const std::string & *value*)

Add a new value.

The new value will replace any existing value with the same number (or if the new value is empty, it will remove any existing value with the same number).

Parameters:

slot The value slot to add the value in.

value The value to set.

7.16.3.5 std::string Xapian::Document::get_data () const

Get data stored in the document.

This is potentially a relatively expensive operation, and shouldn't normally be used during the match (e.g. in a [PostingSource](#) or match decider functor. Put data for use by match deciders in a value instead.

7.16.3.6 docid Xapian::Document::get_docid () const

Get the document id which is associated with this document (if any).

NB If multiple databases are being searched together, then this will be the document id in the individual database, not the merged database!

Returns:

If this document came from a database, return the document id in that database. Otherwise, return 0 (in [Xapian 1.0.22/1.2.4](#) or later; prior to this the returned value was uninitialised).

7.16.3.7 std::string Xapian::Document::get_value (Xapian::valueno slot) const

Get value by number.

Returns an empty string if no value with the given number is present in the document.

Parameters:

slot The number of the value.

7.16.3.8 void Xapian::Document::operator= (const Document & other)

Assignment is allowed.

The internals are reference counted, so assignment is cheap.

Parameters:

other The object to copy.

7.16.3.9 void Xapian::Document::remove_posting (const std::string & tname, Xapian::termpos tpos, Xapian::termcount wdfdec = 1)

Remove a posting of a term from the document.

Note that the term will still index the document even if all occurrences are removed. To remove a term from a document completely, use [remove_term\(\)](#).

Parameters:

tname The name of the term.

tpos The position of the term.

wdfdec The decrement that will be applied to the wdf when removing this posting. The wdf will not go below the value of 0.

Exceptions:

[*Xapian::InvalidArgumentError*](#) will be thrown if the term is not at the position specified in the position list for this term in this document.

[*Xapian::InvalidArgumentError*](#) will be thrown if the term is not in the document

7.16.3.10 void Xapian::Document::remove_term (const std::string & tname)

Remove a term and all postings associated with it.

Parameters:

tname The name of the term.

Exceptions:

[*Xapian::InvalidArgumentError*](#) will be thrown if the term is not in the document

7.16.3.11 std::string Xapian::Document::serialise () const

Serialise document into a string.

The document representation may change between [Xapian](#) releases: even between minor versions. However, it is guaranteed not to change if the remote database protocol has not changed between releases.

7.16.3.12 void Xapian::Document::set_data (const std::string & data)

Set data stored in the document.

[Xapian](#) treats the data as an opaque blob. It may try to compress it, but other than that it will just store it and return it when requested.

Parameters:

data The data to store.

7.16.3.13 Xapian::termcount Xapian::Document::termlist_count () const

The length of the termlist - i.e.

the number of different terms which index this document.

The documentation for this class was generated from the following file:

- [xapian/document.h](#)

7.17 Xapian::Enquire Class Reference

This class provides an interface to the information retrieval system for the purpose of searching.

Public Member Functions

- [Enquire](#) (const [Enquire](#) &other)
Copying is allowed (and is cheap).
- void [operator=](#) (const [Enquire](#) &other)
Assignment is allowed (and is cheap).
- [Enquire](#) (const [Database](#) &database, [ErrorHandler](#) *errorhandler_=0)
Create a [Xapian::Enquire](#) object.
- [~Enquire](#) ()
Close the [Xapian::Enquire](#) object.
- void [set_query](#) (const [Xapian::Query](#) &query, [Xapian::termcount](#) qlen=0)
Set the query to run.
- const [Xapian::Query](#) & [get_query](#) () const
Get the query which has been set.
- void [add_matchspy](#) ([MatchSpy](#) *spy)
Add a matchspy.
- void [clear_matchspies](#) ()
Remove all the matchspies.
- void [set_weighting_scheme](#) (const [Weight](#) &weight_)
Set the weighting scheme to use for queries.
- void [set_collapse_key](#) ([Xapian::valueno](#) collapse_key, [Xapian::doccount](#) collapse_max=1)
Set the collapse key to use for queries.
- void [set_docid_order](#) (docid_order order)
Set the direction in which documents are ordered by document id in the returned [MSet](#).
- void [set_cutoff](#) ([Xapian::percent](#) percent_cutoff, [Xapian::weight](#) weight_cutoff=0)
Set the percentage and/or weight cutoffs.
- void [set_sort_by_relevance](#) ()

Set the sorting to be by relevance only.

- void `set_sort_by_value` (`Xapian::valueno` sort_key, bool reverse)
Set the sorting to be by value only.
- void `set_sort_by_key` (`Xapian::KeyMaker` *sorter, bool reverse)
Set the sorting to be by key generated from values only.
- void `set_sort_by_value_then_relevance` (`Xapian::valueno` sort_key, bool reverse)
Set the sorting to be by value, then by relevance for documents with the same value.
- void `set_sort_by_key_then_relevance` (`Xapian::KeyMaker` *sorter, bool reverse)
Set the sorting to be by keys generated from values, then by relevance for documents with identical keys.
- void `set_sort_by_relevance_then_value` (`Xapian::valueno` sort_key, bool reverse)
Set the sorting to be by relevance then value.
- void `set_sort_by_relevance_then_key` (`Xapian::KeyMaker` *sorter, bool reverse)
Set the sorting to be by relevance, then by keys generated from values.
- `ESet` `get_eset` (`Xapian::termcount` maxitems, const `RSet` &omrset, int flags=0, double k=1.0, const `Xapian::ExpandDecider` *edecider=0) const
Get the expand set for the given rset.
- `ESet` `get_eset` (`Xapian::termcount` maxitems, const `RSet` &omrset, const `Xapian::ExpandDecider` *edecider) const
Get the expand set for the given rset.
- `ESet` `get_eset` (`Xapian::termcount` maxitems, const `RSet` &omrset, int flags, double k, const `Xapian::ExpandDecider` *edecider, `Xapian::weight` min_wt) const
Get the expand set for the given rset.
- `TermIterator` `get_matching_terms_begin` (`Xapian::docid` did) const
Get terms which match a given document, by document id.
- `TermIterator` `get_matching_terms_end` (`Xapian::docid`) const
End iterator corresponding to `get_matching_terms_begin()`.
- `TermIterator` `get_matching_terms_begin` (const `MSetIterator` &it) const
Get terms which match a given document, by match set item.
- `TermIterator` `get_matching_terms_end` (const `MSetIterator` &) const

End iterator corresponding to [get_matching_terms_begin\(\)](#).

- `std::string get_description () const`
Return a string describing this object.
- `MSet get_mset (Xapian::doccount first, Xapian::doccount maxitems, Xapian::doccount checkatleast=0, const RSet *omrset=0, const MatchDecider *mdecider=0) const`
Get (a portion of) the match set for the current query.
- `MSet get_mset (Xapian::doccount first, Xapian::doccount maxitems, Xapian::doccount checkatleast, const RSet *omrset, const MatchDecider *mdecider, const MatchDecider *matchspy) const`
Get (a portion of) the match set for the current query.
- `MSet get_mset (Xapian::doccount first, Xapian::doccount maxitems, const RSet *omrset, const MatchDecider *mdecider=0) const`
Get (a portion of) the match set for the current query.

7.17.1 Detailed Description

This class provides an interface to the information retrieval system for the purpose of searching.

Databases are usually opened lazily, so exceptions may not be thrown where you would expect them to be. You should catch [Xapian::Error](#) exceptions when calling any method in [Xapian::Enquire](#).

Exceptions:

[Xapian::InvalidArgumentError](#) will be thrown if an invalid argument is supplied, for example, an unknown database type.

7.17.2 Constructor & Destructor Documentation

7.17.2.1 Xapian::Enquire::Enquire (const Database & database, ErrorHandler * errorhandler_ = 0) [explicit]

Create a [Xapian::Enquire](#) object.

This specification cannot be changed once the [Xapian::Enquire](#) is opened: you must create a new [Xapian::Enquire](#) object to access a different database, or set of databases.

The database supplied must have been initialised (ie, must not be the result of calling the [Database::Database\(\)](#) constructor). If you need to handle a situation where you have no index gracefully, a database created with [InMemory::open\(\)](#) can be passed here, which represents a completely empty database.

Parameters:

database Specification of the database or databases to use.

errorhandler_ A pointer to the error handler to use. Ownership of the object pointed to is not assumed by the [Xapian::Enquire](#) object - the user should delete the [Xapian::ErrorHandler](#) object after the [Xapian::Enquire](#) object is deleted. To use no error handler, this parameter should be 0.

Exceptions:

[Xapian::InvalidArgumentError](#) will be thrown if an empty [Database](#) object is supplied.

7.17.3 Member Function Documentation**7.17.3.1 void Xapian::Enquire::add_matchspy (MatchSpy * spy)**

Add a matchspy.

This matchspy will be called with some of the documents which match the query, during the match process. Exactly which of the matching documents are passed to it depends on exactly when certain optimisations occur during the match process, but it can be controlled to some extent by setting the *checkatleast* parameter to [get_mset\(\)](#).

In particular, if there are enough matching documents, at least the number specified by *checkatleast* will be passed to the matchspy. This means that you can force the matchspy to be shown all matching documents by setting *checkatleast* to the number of documents in the database.

Parameters:

spy The [MatchSpy](#) subclass to add. The caller must ensure that this remains valid while the [Enquire](#) object remains active, or until [clear_matchspies\(\)](#) is called.

7.17.3.2 ESet Xapian::Enquire::get_eset (Xapian::termcount maxitems, const RSet & omrset, int flags, double k, const Xapian::ExpandDecider * edecider, Xapian::weight min_wt) const

Get the expand set for the given rset.

Parameters:

maxitems the maximum number of items to return.

omrset the relevance set to use when performing the expand operation.

flags zero or more of these values |ed together:

- [Xapian::Enquire::INCLUDE_QUERY_TERMS](#) query terms may be returned from expand
- [Xapian::Enquire::USE_EXACT_TERM_FREQ](#) for multi dbs, calculate the exact termfreq; otherwise an approximation is used which can greatly improve efficiency, but still returns good results.

k the parameter *k* in the query expansion algorithm (default is 1.0)
edecider a decision functor to use to decide whether a given term should be put in the [ESet](#)
min_wt the minimum weight for included terms

Returns:

An [ESet](#) object containing the results of the expand.

Exceptions:

[Xapian::InvalidArgumentError](#) See class documentation.

7.17.3.3 `ESet Xapian::Enquire::get_eset (Xapian::termcount maxitems, const RSet & omrset, const Xapian::ExpandDecider * edecider) const` `[inline]`

Get the expand set for the given rset.

Parameters:

maxitems the maximum number of items to return.
omrset the relevance set to use when performing the expand operation.
edecider a decision functor to use to decide whether a given term should be put in the [ESet](#)

Returns:

An [ESet](#) object containing the results of the expand.

Exceptions:

[Xapian::InvalidArgumentError](#) See class documentation.

7.17.3.4 `ESet Xapian::Enquire::get_eset (Xapian::termcount maxitems, const RSet & omrset, int flags = 0, double k = 1.0, const Xapian::ExpandDecider * edecider = 0) const`

Get the expand set for the given rset.

Parameters:

maxitems the maximum number of items to return.
omrset the relevance set to use when performing the expand operation.
flags zero or more of these values |'ed together:

- `Xapian::Enquire::INCLUDE_QUERY_TERMS` query terms may be returned from expand

- `Xapian::Enquire::USE_EXACT_TERMFREQ` for multi dbs, calculate the exact termfreq; otherwise an approximation is used which can greatly improve efficiency, but still returns good results.

k the parameter k in the query expansion algorithm (default is 1.0)

edecider a decision functor to use to decide whether a given term should be put in the [ESet](#)

Returns:

An [ESet](#) object containing the results of the expand.

Exceptions:

[*Xapian::InvalidArgumentError*](#) See class documentation.

7.17.3.5 TermIterator `Xapian::Enquire::get_matching_terms_begin (const MSetIterator & it) const`

Get terms which match a given document, by match set item.

This method returns the terms in the current query which match the given document.

If the underlying database has suitable support, using this call (rather than passing a [Xapian::docid](#)) will enable the system to ensure that the correct data is returned, and that the document has not been deleted or changed since the query was performed.

Parameters:

it The iterator for which to retrieve the matching terms.

Returns:

An iterator returning the terms which match the document. The terms will be returned (as far as this makes any sense) in the same order as the terms in the query. Terms will not occur more than once, even if they do in the query.

Exceptions:

[*Xapian::InvalidArgumentError*](#) See class documentation.

[*Xapian::DocNotFoundError*](#) The document specified could not be found in the database.

7.17.3.6 TermIterator `Xapian::Enquire::get_matching_terms_begin (Xapian::docid did) const`

Get terms which match a given document, by document id.

This method returns the terms in the current query which match the given document.

It is possible for the document to have been removed from the database between the time it is returned in an [MSet](#), and the time that this call is made. If possible, you should specify an [MSetIterator](#) instead of a [Xapian::docid](#), since this will enable database backends with suitable support to prevent this occurring.

Note that a query does not need to have been run in order to make this call.

Parameters:

did The document id for which to retrieve the matching terms.

Returns:

An iterator returning the terms which match the document. The terms will be returned (as far as this makes any sense) in the same order as the terms in the query. Terms will not occur more than once, even if they do in the query.

Exceptions:

[Xapian::InvalidArgumentError](#) See class documentation.

[Xapian::DocNotFoundError](#) The document specified could not be found in the database.

7.17.3.7 MSet Xapian::Enquire::get_mset (Xapian::doccount *first*, Xapian::doccount *maxitems*, const RSet * *omrset*, const MatchDecider * *mdecider* = 0) const [inline]

Get (a portion of) the match set for the current query.

Parameters:

first the first item in the result set to return. A value of zero corresponds to the first item returned being that with the highest score. A value of 10 corresponds to the first 10 items being ignored, and the returned items starting at the eleventh.

maxitems the maximum number of items to return. If you want all matches, then you can pass the result of calling `get_doccount()` on the [Database](#) object (though if you are doing this so you can filter results, you are likely to get much better performance by using Xapian's match-time filtering features instead). You can pass 0 for *maxitems* which will give you an empty [MSet](#) with valid statistics (such as `get_matches_estimated()`) calculated without looking at any postings, which is very quick, but means the estimates may be more approximate and the bounds may be much looser.

checkatleast the minimum number of items to check. Because the matcher optimises, it won't consider every document which might match, so the total number of matches is estimated. Setting *checkatleast* forces it to consider at least this many matches and so allows for reliable paging links.

omrset the relevance set to use when performing the query.

mdecider a decision functor to use to decide whether a given document should be put in the [MSet](#).

matchspy a decision functor to use to decide whether a given document should be put in the [MSet](#). The matchspy is applied to every document which is a potential candidate for the [MSet](#), so if there are atleast or more such documents, the matchspy will see at least atleast. The mdecider is assumed to be a relatively expensive test so may be applied in a lazier fashion.

Deprecated

this parameter is deprecated - use the newer [MatchSpy](#) class and [add_matchspy\(\)](#) method instead.

Returns:

A [Xapian::MSet](#) object containing the results of the query.

Exceptions:

[Xapian::InvalidArgumentError](#) See class documentation.

7.17.3.8 MSet Xapian::Enquire::get_mset (Xapian::doccount *first*, Xapian::doccount *maxitems*, Xapian::doccount *checkatleast*, const RSet * *omrset*, const MatchDecider * *mdecider*, const MatchDecider * *matchspy*) const

Get (a portion of) the match set for the current query.

Parameters:

first the first item in the result set to return. A value of zero corresponds to the first item returned being that with the highest score. A value of 10 corresponds to the first 10 items being ignored, and the returned items starting at the eleventh.

maxitems the maximum number of items to return. If you want all matches, then you can pass the result of calling [get_doccount\(\)](#) on the [Database](#) object (though if you are doing this so you can filter results, you are likely to get much better performance by using Xapian's match-time filtering features instead). You can pass 0 for maxitems which will give you an empty [MSet](#) with valid statistics (such as [get_matches_estimated\(\)](#)) calculated without looking at any postings, which is very quick, but means the estimates may be more approximate and the bounds may be much looser.

checkatleast the minimum number of items to check. Because the matcher optimises, it won't consider every document which might match, so the total number of matches is estimated. Setting checkatleast forces it to consider at least this many matches and so allows for reliable paging links.

omrset the relevance set to use when performing the query.

mdecider a decision functor to use to decide whether a given document should be put in the [MSet](#).

matchspy a decision functor to use to decide whether a given document should be put in the [MSet](#). The *matchspy* is applied to every document which is a potential candidate for the [MSet](#), so if there are *checkatleast* or more such documents, the *matchspy* will see at least *checkatleast*. The *mdecider* is assumed to be a relatively expensive test so may be applied in a lazier fashion.

Deprecated

this parameter is deprecated - use the newer [MatchSpy](#) class and [add_matchspy\(\)](#) method instead.

Returns:

A [Xapian::MSet](#) object containing the results of the query.

Exceptions:

[Xapian::InvalidArgumentError](#) See class documentation.

7.17.3.9 MSet Xapian::Enquire::get_mset (Xapian::doccount *first*, Xapian::doccount *maxitems*, Xapian::doccount *checkatleast* = 0, const RSet * *omrset* = 0, const MatchDecider * *mdecider* = 0) const

Get (a portion of) the match set for the current query.

Parameters:

first the first item in the result set to return. A value of zero corresponds to the first item returned being that with the highest score. A value of 10 corresponds to the first 10 items being ignored, and the returned items starting at the eleventh.

maxitems the maximum number of items to return. If you want all matches, then you can pass the result of calling [get_doccount\(\)](#) on the [Database](#) object (though if you are doing this so you can filter results, you are likely to get much better performance by using Xapian's match-time filtering features instead). You can pass 0 for *maxitems* which will give you an empty [MSet](#) with valid statistics (such as [get_matches_estimated\(\)](#)) calculated without looking at any postings, which is very quick, but means the estimates may be more approximate and the bounds may be much looser.

checkatleast the minimum number of items to check. Because the matcher optimises, it won't consider every document which might match, so the total number of matches is estimated. Setting *checkatleast* forces it to consider at least this many matches and so allows for reliable paging links.

omrset the relevance set to use when performing the query.

mdecider a decision functor to use to decide whether a given document should be put in the [MSet](#).

matchspy a decision functor to use to decide whether a given document should be put in the [MSet](#). The *matchspy* is applied to every document which is a

potential candidate for the [MSet](#), so if there are atleast or more such documents, the matchspy will see atleast. The mdecider is assumed to be a relatively expensive test so may be applied in a lazier fashion.

Deprecated

this parameter is deprecated - use the newer [MatchSpy](#) class and [add_matchspy\(\)](#) method instead.

Returns:

A [Xapian::MSet](#) object containing the results of the query.

Exceptions:

[Xapian::InvalidArgumentError](#) See class documentation.

7.17.3.10 `const Xapian::Query& Xapian::Enquire::get_query () const`

Get the query which has been set.

This is only valid after [set_query\(\)](#) has been called.

Exceptions:

[Xapian::InvalidArgumentError](#) will be thrown if query has not yet been set.

7.17.3.11 `void Xapian::Enquire::set_collapse_key (Xapian::valueo collapse_key, Xapian::doccount collapse_max = 1)`

Set the collapse key to use for queries.

Parameters:

collapse_key value number to collapse on - at most one [MSet](#) entry with each particular value will be returned (default is [Xapian::BAD_VALUENO](#) which means no collapsing).

collapse_max Max number of items with the same key to leave after collapsing (default 1).

The [MSet](#) returned by [get_mset\(\)](#) will have only the "best" (at most) *collapse_max* entries with each particular value of *collapse_key* ("best" being highest ranked - i.e. highest weight or highest sorting key).

An example use might be to create a value for each document containing an MD5 hash of the document contents. Then duplicate documents from different sources can be eliminated at search time by collapsing with *collapse_max* = 1 (it's better to eliminate duplicates at index time, but this may not be always be possible - for example the search may be over more than one [Xapian](#) database).

Another use is to group matches in a particular category (e.g. you might collapse a mailing list search on the Subject: so that there's only one result per discussion thread). In this case you can use `get_collapse_count()` to give the user some idea how many other results there are. And if you index the Subject: as a boolean term as well as putting it in a value, you can offer a link to a non-collapsed search restricted to that thread using a boolean filter.

7.17.3.12 `void Xapian::Enquire::set_cutoff (Xapian::percent percent_cutoff, Xapian::weight weight_cutoff = 0)`

Set the percentage and/or weight cutoffs.

Parameters:

percent_cutoff Minimum percentage score for returned documents. If a document has a lower percentage score than this, it will not appear in the [MSet](#). If your intention is to return only matches which contain all the terms in the query, then it's more efficient to use [Xapian::Query::OP_AND](#) instead of [Xapian::Query::OP_OR](#) in the query than to use `set_cutoff(100)`. (default 0 => no percentage cut-off).

weight_cutoff Minimum weight for a document to be returned. If a document has a lower score than this, it will not appear in the [MSet](#). It is usually only possible to choose an appropriate weight for cutoff based on the results of a previous run of the same query; this is thus mainly useful for alerting operations. The other potential use is with a user specified weighting scheme. (default 0 => no weight cut-off).

7.17.3.13 `void Xapian::Enquire::set_docid_order (docid_order order)`

Set the direction in which documents are ordered by document id in the returned [MSet](#).

This order only has an effect on documents which would otherwise have equal rank. For a weighted probabilistic match with no sort value, this means documents with equal weight. For a boolean match, with no sort value, this means all documents. And if a sort value is used, this means documents with equal sort value (and also equal weight if ordering on relevance after the sort).

Parameters:

order This can be:

- `Xapian::Enquire::ASCENDING` docids sort in ascending order (default)
- `Xapian::Enquire::DESCENDING` docids sort in descending order
- `Xapian::Enquire::DONT_CARE` docids sort in whatever order is most efficient for the backend

Note: If you add documents in strict date order, then a boolean search - i.e. `set_weighting_scheme(Xapian::BoolWeight())` - with `set_docid_order(Xapian::Enquire::DESCENDING)` is an efficient way to perform "sort by

date, newest first", and with `set_docid_order(Xapian::Enquire::ASCENDING)` a very efficient way to perform "sort by date, oldest first".

7.17.3.14 `void Xapian::Enquire::set_query (const Xapian::Query & query, Xapian::termcount qlen = 0)`

Set the query to run.

Parameters:

query the new query to run.

qlen the query length to use in weight calculations - by default the sum of the wqf of all terms is used.

7.17.3.15 `void Xapian::Enquire::set_sort_by_key (Xapian::KeyMaker * sorter, bool reverse)`

Set the sorting to be by key generated from values only.

Parameters:

sorter The functor to use for generating keys.

reverse If true, reverses the sort order.

7.17.3.16 `void Xapian::Enquire::set_sort_by_key_then_relevance (Xapian::KeyMaker * sorter, bool reverse)`

Set the sorting to be by keys generated from values, then by relevance for documents with identical keys.

Parameters:

sorter The functor to use for generating keys.

reverse If true, reverses the sort order.

7.17.3.17 `void Xapian::Enquire::set_sort_by_relevance ()`

Set the sorting to be by relevance only.

This is the default.

7.17.3.18 void Xapian::Enquire::set_sort_by_relevance_then_key (Xapian::KeyMaker * *sorter*, bool *reverse*)

Set the sorting to be by relevance, then by keys generated from values.

Note that with the default BM25 weighting scheme parameters, non-identical documents will rarely have the same weight, so this setting will give very similar results to [set_sort_by_relevance\(\)](#). It becomes more useful with particular BM25 parameter settings (e.g. BM25Weight(1,0,1,0,0)) or custom weighting schemes.

Parameters:

sorter The functor to use for generating keys.

reverse If true, reverses the sort order of the generated keys.

7.17.3.19 void Xapian::Enquire::set_sort_by_relevance_then_value (Xapian::value no *sort_key*, bool *reverse*)

Set the sorting to be by relevance then value.

Note that sorting by values uses a string comparison, so to use this to sort by a numeric value you'll need to store the numeric values in a manner which sorts appropriately. For example, you could use [Xapian::sortable_serialise\(\)](#) (which works for floating point numbers as well as integers), or store numbers padded with leading zeros or spaces, or with the number of digits prepended.

Note that with the default BM25 weighting scheme parameters, non-identical documents will rarely have the same weight, so this setting will give very similar results to [set_sort_by_relevance\(\)](#). It becomes more useful with particular BM25 parameter settings (e.g. BM25Weight(1,0,1,0,0)) or custom weighting schemes.

Parameters:

sort_key value number to sort on.

reverse If true, reverses the sort order of *sort_key*.

7.17.3.20 void Xapian::Enquire::set_sort_by_value (Xapian::value no *sort_key*, bool *reverse*)

Set the sorting to be by value only.

Note that sorting by values uses a string comparison, so to use this to sort by a numeric value you'll need to store the numeric values in a manner which sorts appropriately. For example, you could use [Xapian::sortable_serialise\(\)](#) (which works for floating point numbers as well as integers), or store numbers padded with leading zeros or spaces, or with the number of digits prepended.

Parameters:

sort_key value number to sort on.

reverse If true, reverses the sort order.

7.17.3.21 void Xapian::Enquire::set_sort_by_value_then_relevance (Xapian::value *sort_key*, bool *reverse*)

Set the sorting to be by value, then by relevance for documents with the same value.

Note that sorting by values uses a string comparison, so to use this to sort by a numeric value you'll need to store the numeric values in a manner which sorts appropriately. For example, you could use [Xapian::sortable_serialise\(\)](#) (which works for floating point numbers as well as integers), or store numbers padded with leading zeros or spaces, or with the number of digits prepended.

Parameters:

sort_key value number to sort on.

reverse If true, reverses the sort order.

7.17.3.22 void Xapian::Enquire::set_weighting_scheme (const Weight & *weight_*)

Set the weighting scheme to use for queries.

Parameters:

weight_ the new weighting scheme. If no weighting scheme is specified, the default is BM25 with the default parameters.

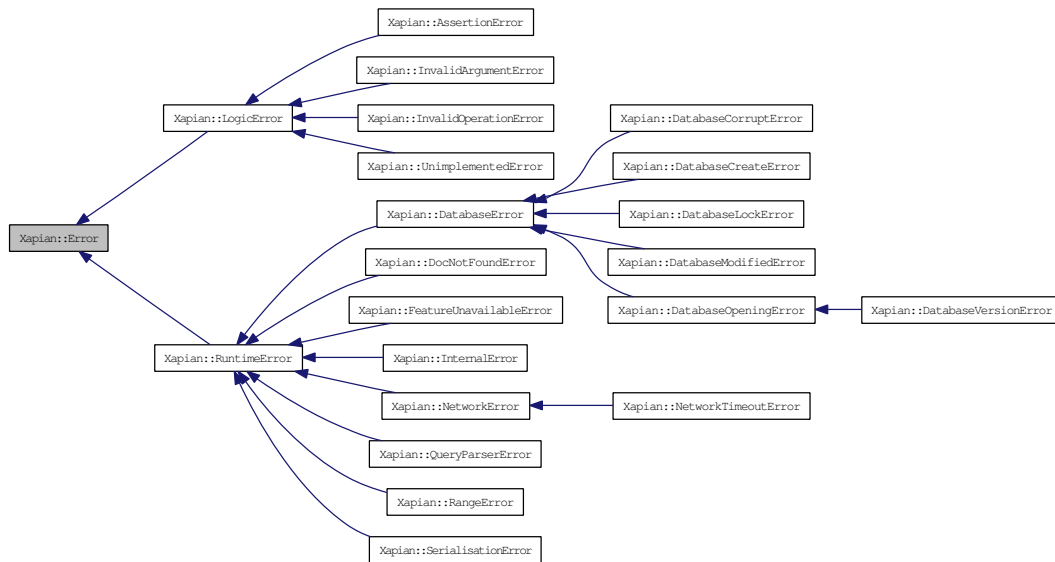
The documentation for this class was generated from the following file:

- [xapian/enquire.h](#)

7.18 Xapian::Error Class Reference

All exceptions thrown by [Xapian](#) are subclasses of [Xapian::Error](#).

Inheritance diagram for [Xapian::Error](#):



Public Member Functions

- `const char * get_type () const`
The type of this error (e.g. "DocNotFoundError").
- `const std::string & get_msg () const`
Message giving details of the error, intended for human consumption.
- `const std::string & get_context () const`
Optional context information.
- `const char * get_error_string () const`
Returns any system error string associated with this exception.
- `std::string get_description () const`
Return a string describing this object.

7.18.1 Detailed Description

All exceptions thrown by [Xapian](#) are subclasses of [Xapian::Error](#).

This class can not be instantiated directly - instead a subclass should be used.

7.18.2 Member Function Documentation

7.18.2.1 `const std::string& Xapian::Error::get_context () const` [inline]

Optional context information.

This context is intended for use by [Xapian::ErrorHandler](#) (for example so it can know which remote server is unreliable and report the problem and remove that server from those being searched). But it's typically a plain-text string, and so also fit for human consumption.

7.18.2.2 `const char* Xapian::Error::get_error_string () const`

Returns any system error string associated with this exception.

The system error string may come from `errno`, `h_errno` (on UNIX), or `GetLastError()` (on MS Windows). If there is no associated system error string, `NULL` is returned.

The documentation for this class was generated from the following file:

- [xapian/error.h](#)

7.19 Xapian::ErrorHandler Class Reference

Decide if a [Xapian::Error](#) exception should be ignored.

Public Member Functions

- [ErrorHandler](#) ()
Default constructor.
- virtual [~ErrorHandler](#) ()
We require a virtual destructor because we have virtual methods.
- void [operator\(\)](#) ([Xapian::Error](#) &error)
Handle a [Xapian::Error](#) object.

7.19.1 Detailed Description

Decide if a [Xapian::Error](#) exception should be ignored.

You can create your own subclass of this class and pass in an instance of it when you construct a [Xapian::Enquire](#) object. [Xapian::Error](#) exceptions which happen during the match process are passed to this object and it can decide whether they should propagate or whether [Enquire](#) should attempt to continue.

The motivation is to allow searching over remote databases to handle a remote server which has died (both to allow results to be returned, and also so that such errors can be logged and dead servers temporarily removed from use).

7.19.2 Member Function Documentation

7.19.2.1 void Xapian::ErrorHandler::operator() (Xapian::Error & error)

Handle a [Xapian::Error](#) object.

This method is called when a [Xapian::Error](#) object is thrown and caught inside [Enquire](#). If this is the first [ErrorHandler](#) that the [Error](#) has been passed to, then the `handle_error()` virtual method is called, which allows the API user to decide how to handle the error.

Parameters:

error The [Xapian::Error](#) object under consideration.

The documentation for this class was generated from the following file:

- `xapian/errorhandler.h`

7.20 Xapian::ESet Class Reference

Class representing an ordered set of expand terms (an [ESet](#)).

Public Member Functions

- [ESet](#) ()
Construct an empty [ESet](#).
- [~ESet](#) ()
Destructor.
- [ESet](#) (const [ESet](#) &other)
Copying is allowed (and is cheap).
- void [operator=](#) (const [ESet](#) &other)
Assignment is allowed (and is cheap).
- [Xapian::termcount](#) [get_ebound](#) () const
A lower bound on the number of terms which are in the full set of results of the expand.
- [Xapian::termcount](#) [size](#) () const
The number of terms in this E-Set.
- [Xapian::termcount](#) [max_size](#) () const
Required to allow use as an STL container.
- bool [empty](#) () const
Test if this E-Set is empty.
- void [swap](#) ([ESet](#) &other)
Swap the E-Set we point to with another.
- [ESetIterator](#) [begin](#) () const
Iterator for the terms in this E-Set.
- [ESetIterator](#) [end](#) () const
End iterator corresponding to [begin\(\)](#).
- [ESetIterator](#) [back](#) () const
Iterator pointing to the last element of this E-Set.
- [ESetIterator](#) [operator\[\]](#) ([Xapian::termcount](#) i) const
This returns the term at position i in this E-Set.
- std::string [get_description](#) () const

Return a string describing this object.

7.20.1 Detailed Description

Class representing an ordered set of expand terms (an [ESet](#)).

This set represents the results of an expand operation, which is performed by [Xapian::Enquire::get_eset\(\)](#).

7.20.2 Member Function Documentation

7.20.2.1 `Xapian::termcount Xapian::ESet::get_ebound () const`

A lower bound on the number of terms which are in the full set of results of the expand.

This will be greater than or equal to [size\(\)](#)

7.20.2.2 `Xapian::termcount Xapian::ESet::max_size () const` `[inline]`

Required to allow use as an STL container.

7.20.2.3 `ESetIterator Xapian::ESet::operator[] (Xapian::termcount i) const`

This returns the term at position *i* in this E-Set.

Parameters:

- i* The index into the [ESet](#).

The documentation for this class was generated from the following file:

- [xapian/enquire.h](#)

7.21 Xapian::ESetIterator Class Reference

Iterate through terms in the [ESet](#).

Public Types

- typedef std::bidirectional_iterator_tag [iterator_category](#)
Allow use as an STL iterator.
- typedef std::string [value_type](#)
Allow use as an STL iterator.
- typedef [Xapian::termcount_diff](#) [difference_type](#)
Allow use as an STL iterator.
- typedef std::string * [pointer](#)
Allow use as an STL iterator.
- typedef std::string & [reference](#)
Allow use as an STL iterator.

Public Member Functions

- [ESetIterator](#) ()
Create an uninitialised iterator; this cannot be used, but is convenient syntactically.
- [ESetIterator](#) (const [ESetIterator](#) &other)
Copying is allowed (and is cheap).
- void [operator=](#) (const [ESetIterator](#) &other)
Assignment is allowed (and is cheap).
- [ESetIterator](#) & [operator++](#) ()
Advance the iterator.
- [ESetIterator](#) [operator++](#) (int)
Advance the iterator (postfix variant).
- [ESetIterator](#) & [operator--](#) ()
Decrement the iterator.
- [ESetIterator](#) [operator--](#) (int)
Decrement the iterator (postfix variant).
- const std::string & [operator*](#) () const

Get the term for the current position.

- [Xapian::weight](#) [get_weight](#) () const
Get the weight of the term at the current position.
- `std::string` [get_description](#) () const
Return a string describing this object.

Friends

- `bool` [operator==](#) (const [ESetIterator](#) &a, const [ESetIterator](#) &b)
Equality test for [ESetIterator](#) objects.
- `bool` [operator!=](#) (const [ESetIterator](#) &a, const [ESetIterator](#) &b)
Inequality test for [ESetIterator](#) objects.

7.21.1 Detailed Description

Iterate through terms in the [ESet](#).

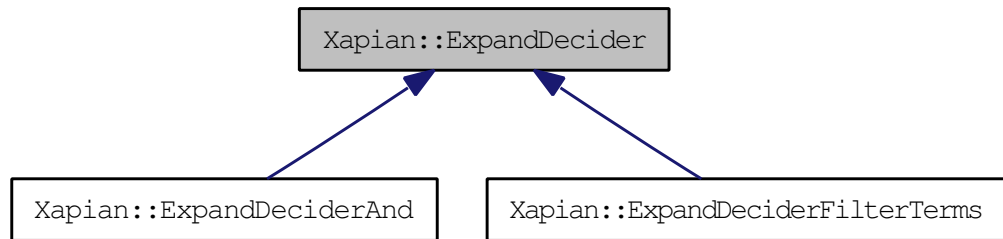
The documentation for this class was generated from the following file:

- [xapian/enquire.h](#)

7.22 Xapian::ExpandDecider Class Reference

Virtual base class for expand decider functor.

Inheritance diagram for Xapian::ExpandDecider:



Public Member Functions

- virtual bool [operator\(\)](#) (const std::string &term) const =0
Do we want this term in the [ESet](#)?
- virtual [~ExpandDecider](#) ()
Virtual destructor, because we have virtual methods.

7.22.1 Detailed Description

Virtual base class for expand decider functor.

7.22.2 Constructor & Destructor Documentation

7.22.2.1 virtual Xapian::ExpandDecider::~~ExpandDecider () [virtual]

Virtual destructor, because we have virtual methods.

7.22.3 Member Function Documentation

7.22.3.1 virtual bool Xapian::ExpandDecider::operator() (const std::string &term) const [pure virtual]

Do we want this term in the [ESet](#)?

Parameters:

term The term to test.

Implemented in [Xapian::ExpandDeciderAnd](#), and [Xapian::ExpandDeciderFilterTerms](#).

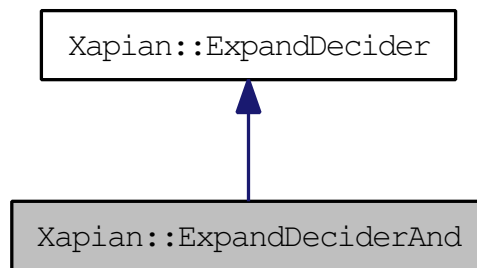
The documentation for this class was generated from the following file:

- [xapian/expanddecider.h](#)

7.23 Xapian::ExpandDeciderAnd Class Reference

[ExpandDecider](#) subclass which rejects terms using two [ExpandDeciders](#).

Inheritance diagram for Xapian::ExpandDeciderAnd:



Public Member Functions

- [ExpandDeciderAnd](#) (const [ExpandDecider](#) &first_, const [ExpandDecider](#) &second_)

Terms will be checked with first, and if accepted, then checked with second.

- [ExpandDeciderAnd](#) (const [ExpandDecider](#) *first_, const [ExpandDecider](#) *second_)

Compatibility method.

- virtual bool [operator\(\)](#) (const std::string &term) const

Do we want this term in the [ESet](#)?

7.23.1 Detailed Description

[ExpandDecider](#) subclass which rejects terms using two [ExpandDeciders](#).

Terms are only accepted if they are accepted by both of the specified [ExpandDecider](#) objects.

7.23.2 Constructor & Destructor Documentation

7.23.2.1 Xapian::ExpandDeciderAnd::ExpandDeciderAnd (const [ExpandDecider](#) &first_, const [ExpandDecider](#) &second_) [inline]

Terms will be checked with *first*, and if accepted, then checked with *second*.

Parameters:

first_ First [ExpandDecider](#) object to test with.

second_ [ExpandDecider](#) object to test with if *first_* accepts.

7.23.2.2 Xapian::ExpandDeciderAnd::ExpandDeciderAnd (const ExpandDecider * *first_*, const ExpandDecider * *second_*) `[inline]`

Compatibility method.

Parameters:

first_ First [ExpandDecider](#) object to test with.

second_ [ExpandDecider](#) object to test with if *first_* accepts.

7.23.3 Member Function Documentation**7.23.3.1 virtual bool Xapian::ExpandDeciderAnd::operator() (const std::string & *term*) const** `[virtual]`

Do we want this term in the [ESet](#)?

Parameters:

term The term to test.

Implements [Xapian::ExpandDecider](#).

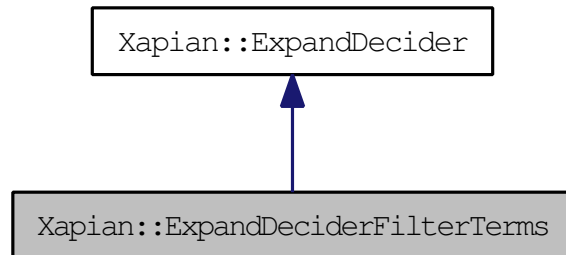
The documentation for this class was generated from the following file:

- [xapian/expanddecider.h](#)

7.24 Xapian::ExpandDeciderFilterTerms Class Reference

[ExpandDecider](#) subclass which rejects terms in a specified list.

Inheritance diagram for Xapian::ExpandDeciderFilterTerms:



Public Member Functions

- `template<class Iterator >`
[ExpandDeciderFilterTerms](#) (Iterator reject_begin, Iterator reject_end)
The two iterators specify a list of terms to be rejected.
- virtual bool [operator\(\)](#) (const std::string &term) const
Do we want this term in the [ESet](#)?

7.24.1 Detailed Description

[ExpandDecider](#) subclass which rejects terms in a specified list.

[ExpandDeciderFilterTerms](#) provides an easy way to filter out terms from a fixed list when generating an [ESet](#).

7.24.2 Constructor & Destructor Documentation

- #### 7.24.2.1 `template<class Iterator >` **Xapian::ExpandDeciderFilterTerms::ExpandDeciderFilterTerms** (Iterator *reject_begin*, Iterator *reject_end*) `[inline]`

The two iterators specify a list of terms to be rejected.

Parameters:

reject_begin Begin iterator for the list of terms to reject. It can be any input_iterator type which returns std::string or char * (e.g. [TermIterator](#) or char **).

reject_end End iterator for the list of terms to reject.

7.24.3 Member Function Documentation

7.24.3.1 virtual bool Xapian::ExpandDeciderFilterTerms::operator() (const std::string & *term*) const [virtual]

Do we want this term in the [ESet](#)?

Parameters:

term The term to test.

Implements [Xapian::ExpandDecider](#).

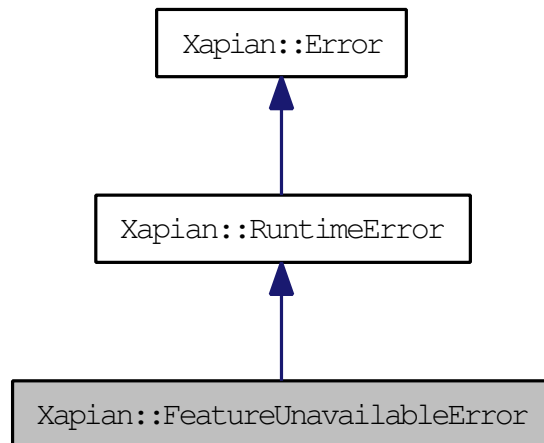
The documentation for this class was generated from the following file:

- [xapian/expanddecider.h](#)

7.25 Xapian::FeatureUnavailableError Class Reference

Indicates an attempt to use a feature which is unavailable.

Inheritance diagram for Xapian::FeatureUnavailableError:



Public Member Functions

- [FeatureUnavailableError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0)
General purpose constructor.
- [FeatureUnavailableError](#) (const std::string &msg_, int errno_)
Construct from message and errno value.

7.25.1 Detailed Description

Indicates an attempt to use a feature which is unavailable.

Typically a feature is unavailable because it wasn't compiled in, or because it requires other software or facilities which aren't available.

7.25.2 Constructor & Destructor Documentation

- #### 7.25.2.1 Xapian::FeatureUnavailableError::FeatureUnavailableError (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

- msg_* Message giving details of the error, intended for human consumption.
- context_* Optional context information for this error.
- errno_* Optional errno value associated with this error.

7.25.2.2 Xapian::FeatureUnavailableError::FeatureUnavailableError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

- msg_* Message giving details of the error, intended for human consumption.
- errno_* Optional errno value associated with this error.

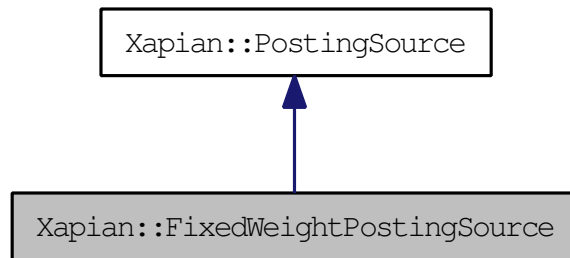
The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.26 Xapian::FixedWeightPostingSource Class Reference

A posting source which returns a fixed weight for all documents.

Inheritance diagram for Xapian::FixedWeightPostingSource:



Public Member Functions

- [FixedWeightPostingSource](#) ([Xapian::weight](#) wt)
Construct a [FixedWeightPostingSource](#).
- [Xapian::doccount](#) [get_termfreq_min](#) () const
A lower bound on the number of documents this object can return.
- [Xapian::doccount](#) [get_termfreq_est](#) () const
An estimate of the number of documents this object can return.
- [Xapian::doccount](#) [get_termfreq_max](#) () const
An upper bound on the number of documents this object can return.
- [Xapian::weight](#) [get_weight](#) () const
Return the weight contribution for the current document.
- void [next](#) ([Xapian::weight](#) min_wt)
Advance the current position to the next matching document.
- void [skip_to](#) ([Xapian::docid](#) min_docid, [Xapian::weight](#) min_wt)
Advance to the specified docid.
- bool [check](#) ([Xapian::docid](#) min_docid, [Xapian::weight](#) min_wt)
Check if the specified docid occurs.
- bool [at_end](#) () const
Return true if the current position is past the last entry in this list.

- [Xapian::docid get_docid \(\)](#) const
Return the current docid.
- [FixedWeightPostingSource * clone \(\)](#) const
Clone the posting source.
- [std::string name \(\)](#) const
Name of the posting source class.
- [std::string serialise \(\)](#) const
Serialise object parameters into a string.
- [FixedWeightPostingSource * unserialise \(const std::string &s\)](#) const
Create object given string serialisation returned by [serialise\(\)](#).
- [void init \(const Database &db_\)](#)
Set this [PostingSource](#) to the start of the list of postings.
- [std::string get_description \(\)](#) const
Return a string describing this object.

7.26.1 Detailed Description

A posting source which returns a fixed weight for all documents.

This returns entries for all documents in the given database, with a fixed weight (specified by a parameter to the constructor).

7.26.2 Constructor & Destructor Documentation

7.26.2.1 Xapian::FixedWeightPostingSource::FixedWeightPostingSource (Xapian::weight *wt*)

Construct a [FixedWeightPostingSource](#).

Parameters:

wt The fixed weight to return.

7.26.3 Member Function Documentation

7.26.3.1 bool Xapian::FixedWeightPostingSource::at_end () const [virtual]

Return true if the current position is past the last entry in this list.

At least one of [next\(\)](#), [skip_to\(\)](#) or [check\(\)](#) will be called before this method is first called.

Implements [Xapian::PostingSource](#).

7.26.3.2 `bool Xapian::FixedWeightPostingSource::check (Xapian::docid did, Xapian::weight min_wt)` [virtual]

Check if the specified docid occurs.

The caller is required to ensure that the specified document id *did* actually exists in the database. If it does, it must move to that document id, and return true. If it does not, it may either:

- return true, having moved to a definite position (including "at_end"), which must be the same position as [skip_to\(\)](#) would have moved to.

or

- return false, having moved to an "indeterminate" position, such that a subsequent call to [next\(\)](#) or [skip_to\(\)](#) will move to the next matching position after *did*.

Generally, this method should act like [skip_to\(\)](#) and return true if that can be done at little extra cost.

Otherwise it should simply check if a particular docid is present, returning true if it is, and false if it isn't.

The default implementation calls [skip_to\(\)](#) and always returns true.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Note: in the case of a multi-database search, the docid specified is the docid in the single subdatabase relevant to this posting source. See the [init\(\)](#) method for details.

Parameters:

did The document id to check.

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Reimplemented from [Xapian::PostingSource](#).

7.26.3.3 `FixedWeightPostingSource*` `Xapian::FixedWeightPostingSource::clone ()` const [virtual]

Clone the posting source.

The clone should inherit the configuration of the parent, but need not inherit the state. ie, the clone does not need to be in the same iteration position as the original: the

matcher will always call [init\(\)](#) on the clone before attempting to move the iterator, or read the information about the current position of the iterator.

This may return NULL to indicate that cloning is not supported. In this case, the [PostingSource](#) may only be used with a single-database search.

The default implementation returns NULL.

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Reimplemented from [Xapian::PostingSource](#).

7.26.3.4 `std::string Xapian::FixedWeightPostingSource::get_description () const` [virtual]

Return a string describing this object.

This default implementation returns a generic answer. This default is provided to avoid forcing those deriving their own [PostingSource](#) subclass from having to implement this (they may not care what [get_description\(\)](#) gives for their subclass).

Reimplemented from [Xapian::PostingSource](#).

7.26.3.5 `Xapian::docid Xapian::FixedWeightPostingSource::get_docid () const` [virtual]

Return the current docid.

This method may assume that it will only be called when there is a "current document". See [get_weight\(\)](#) for details.

Note: in the case of a multi-database search, the returned docid should be in the single subdatabase relevant to this posting source. See the [init\(\)](#) method for details.

Implements [Xapian::PostingSource](#).

7.26.3.6 `Xapian::doccount Xapian::FixedWeightPostingSource::get_termfreq_est () const` [virtual]

An estimate of the number of documents this object can return.

It must always be true that:

[get_termfreq_min\(\)](#) <= [get_termfreq_est\(\)](#) <= [get_termfreq_max\(\)](#)

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Implements [Xapian::PostingSource](#).

7.26.3.7 **Xapian::doccount Xapian::FixedWeightPostingSource::get_termfreq_max () const** [virtual]

An upper bound on the number of documents this object can return.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Implements [Xapian::PostingSource](#).

7.26.3.8 **Xapian::doccount Xapian::FixedWeightPostingSource::get_termfreq_min () const** [virtual]

A lower bound on the number of documents this object can return.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Implements [Xapian::PostingSource](#).

7.26.3.9 **Xapian::weight Xapian::FixedWeightPostingSource::get_weight () const** [virtual]

Return the weight contribution for the current document.

This default implementation always returns 0, for convenience when implementing "weight-less" [PostingSource](#) subclasses.

This method may assume that it will only be called when there is a "current document". In detail: [Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time. It will also only call this if the [PostingSource](#) reports that it is pointing to a valid document (ie, it will not call it before calling at least one of [next\(\)](#), [skip_to\(\)](#) or [check\(\)](#), and will ensure that the [PostingSource](#) is not at the end by calling [at_end\(\)](#)).

Reimplemented from [Xapian::PostingSource](#).

7.26.3.10 **void Xapian::FixedWeightPostingSource::init (const Database & db)** [virtual]

Set this [PostingSource](#) to the start of the list of postings.

This is called automatically by the matcher prior to each query being processed.

If a [PostingSource](#) is used for multiple searches, [init\(\)](#) will therefore be called multiple times, and must handle this by using the database passed in the most recent call.

Parameters:

db The database which the [PostingSource](#) should iterate through.

Note: the database supplied to this method must not be modified: in particular, the [reopen\(\)](#) method should not be called on it.

Note: in the case of a multi-database search, a separate [PostingSource](#) will be used for each database (the separate [PostingSources](#) will be obtained using [clone\(\)](#)), and each

[PostingSource](#) will be passed one of the sub-databases as the *db* parameter here. The *db* parameter will therefore always refer to a single database. All docids passed to, or returned from, the [PostingSource](#) refer to docids in that single database, rather than in the multi-database.

Implements [Xapian::PostingSource](#).

7.26.3.11 `std::string Xapian::FixedWeightPostingSource::name () const` [virtual]

Name of the posting source class.

This is used when serialising and unserialising posting sources; for example, for performing remote searches.

If the subclass is in a C++ namespace, the namespace should be included in the name, using "::" as a separator. For example, for a [PostingSource](#) subclass called "FooPostingSource" in the "Xapian" namespace the result of this call should be "Xapian::FooPostingSource".

This should only be implemented if [serialise\(\)](#) and [unserialise\(\)](#) are also implemented. The default implementation returns an empty string.

If this returns an empty string, [Xapian](#) will assume that [serialise\(\)](#) and [unserialise\(\)](#) are not implemented.

Reimplemented from [Xapian::PostingSource](#).

7.26.3.12 `void Xapian::FixedWeightPostingSource::next (Xapian::weight min_wt)` [virtual]

Advance the current position to the next matching document.

The [PostingSource](#) starts before the first entry in the list, so [next\(\)](#) must be called before any methods which need the context of the current position.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Parameters:

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Implements [Xapian::PostingSource](#).

7.26.3.13 `std::string Xapian::FixedWeightPostingSource::serialise () const` [virtual]

Serialise object parameters into a string.

The serialised parameters should represent the configuration of the posting source, but need not (indeed, should not) represent the current iteration state.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented from [Xapian::PostingSource](#).

7.26.3.14 `void Xapian::FixedWeightPostingSource::skip_to (Xapian::docid did, Xapian::weight min_wt)` [virtual]

Advance to the specified docid.

If the specified docid isn't in the list, position ourselves on the first document after it (or [at_end\(\)](#) if no greater docids are present).

If the current position is already the specified docid, this method will leave the position unmodified.

If the specified docid is earlier than the current position, the behaviour is unspecified. A sensible behaviour would be to leave the current position unmodified, but it is also reasonable to move to the specified docid.

The default implementation calls [next\(\)](#) repeatedly, which works but [skip_to\(\)](#) can often be implemented much more efficiently.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Note: in the case of a multi-database search, the docid specified is the docid in the single subdatabase relevant to this posting source. See the [init\(\)](#) method for details.

Parameters:

did The document id to advance to.

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Reimplemented from [Xapian::PostingSource](#).

7.26.3.15 `FixedWeightPostingSource* Xapian::FixedWeightPostingSource::unserialise (const std::string & s) const` [virtual]

Create object given string serialisation returned by [serialise\(\)](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Parameters:

s A serialised instance of this [PostingSource](#) subclass.

Reimplemented from [Xapian::PostingSource](#).

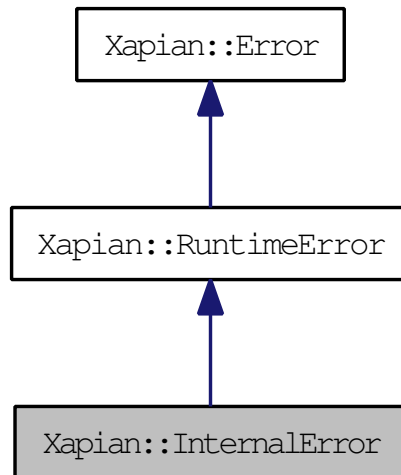
The documentation for this class was generated from the following file:

- [xapian/postingsource.h](#)

7.27 Xapian::InternalError Class Reference

[InternalError](#) indicates a runtime problem of some sort.

Inheritance diagram for Xapian::InternalError:



Public Member Functions

- [InternalError](#) (const std::string &msg_, const std::string &context_=std::string(), int errno_=0)

General purpose constructor.

- [InternalError](#) (const std::string &msg_, int errno_)

Construct from message and errno value.

7.27.1 Detailed Description

[InternalError](#) indicates a runtime problem of some sort.

7.27.2 Constructor & Destructor Documentation

- #### 7.27.2.1 Xapian::InternalError::InternalError (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

- msg_* Message giving details of the error, intended for human consumption.
- context_* Optional context information for this error.
- errno_* Optional errno value associated with this error.

7.27.2.2 Xapian::InternalError::InternalError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

- msg_* Message giving details of the error, intended for human consumption.
- errno_* Optional errno value associated with this error.

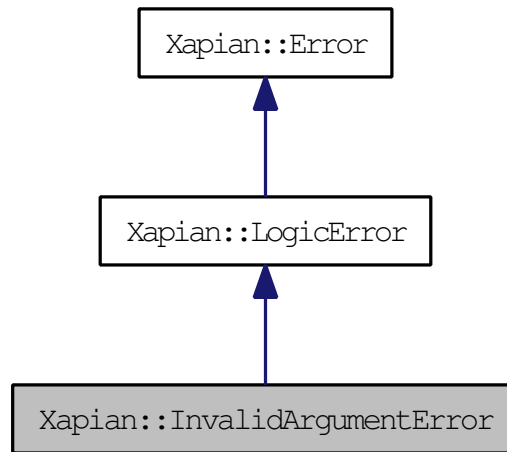
The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.28 Xapian::InvalidArgumentError Class Reference

[InvalidArgumentError](#) indicates an invalid parameter value was passed to the API.

Inheritance diagram for Xapian::InvalidArgumentError:



Public Member Functions

- [InvalidArgumentError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0)
General purpose constructor.
- [InvalidArgumentError](#) (const std::string &msg_, int errno_)
Construct from message and errno value.

7.28.1 Detailed Description

[InvalidArgumentError](#) indicates an invalid parameter value was passed to the API.

7.28.2 Constructor & Destructor Documentation

7.28.2.1 Xapian::InvalidArgumentError::InvalidArgumentError (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.28.2.2 Xapian::InvalidArgumentError::InvalidArgumentError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

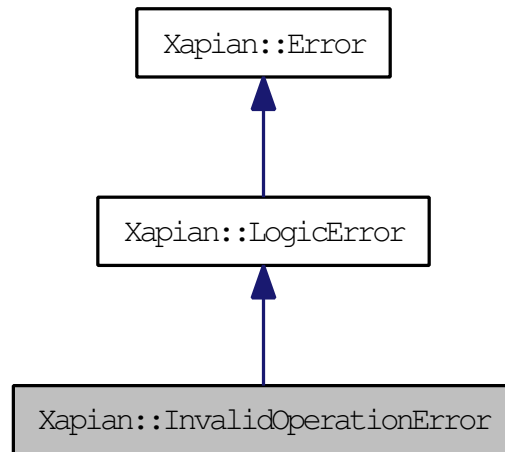
The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.29 Xapian::InvalidOperationError Class Reference

[InvalidOperationError](#) indicates the API was used in an invalid way.

Inheritance diagram for Xapian::InvalidOperationError:



Public Member Functions

- [InvalidOperationError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0)
General purpose constructor.
- [InvalidOperationError](#) (const std::string &msg_, int errno_)
Construct from message and errno value.

7.29.1 Detailed Description

[InvalidOperationError](#) indicates the API was used in an invalid way.

7.29.2 Constructor & Destructor Documentation

7.29.2.1 Xapian::InvalidOperationError::InvalidOperationError (const std::string & msg_, const std::string & context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.29.2.2 Xapian::InvalidOperationError::InvalidOperationError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

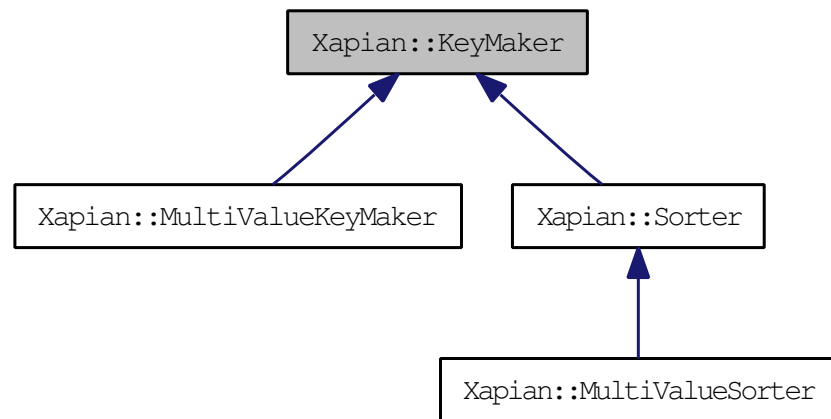
The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.30 Xapian::KeyMaker Class Reference

Virtual base class for key making functors.

Inheritance diagram for Xapian::KeyMaker:



Public Member Functions

- virtual std::string [operator\(\)](#) (const [Xapian::Document](#) &doc) const =0
Build a key string for a [Document](#).
- virtual [~KeyMaker](#) ()
Virtual destructor, because we have virtual methods.

7.30.1 Detailed Description

Virtual base class for key making functors.

7.30.2 Constructor & Destructor Documentation

7.30.2.1 virtual Xapian::KeyMaker::~~KeyMaker () [virtual]

Virtual destructor, because we have virtual methods.

7.30.3 Member Function Documentation

7.30.3.1 virtual std::string Xapian::KeyMaker::operator() (const Xapian::Document & doc) const [pure virtual]

Build a key string for a [Document](#).

These keys can be used for sorting or collapsing matching documents.

Parameters:

doc [Document](#) object to build a key for.

Implemented in [Xapian::MultiValueKeyMaker](#), and [Xapian::MultiValueSorter](#).

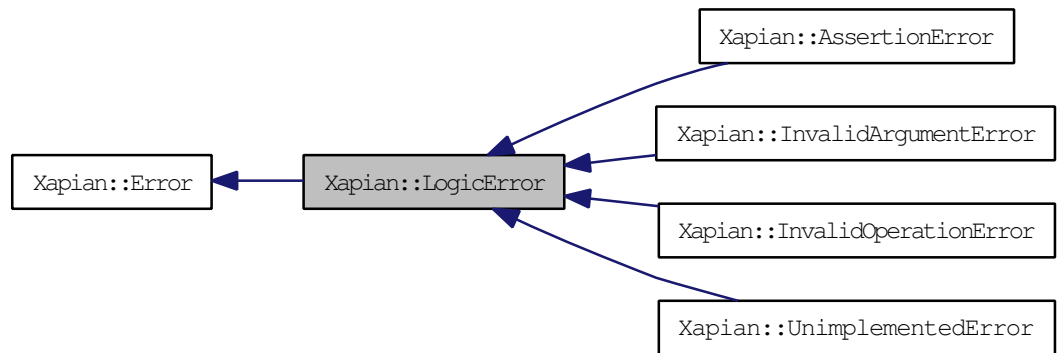
The documentation for this class was generated from the following file:

- [xapian/keymaker.h](#)

7.31 Xapian::LogicError Class Reference

The base class for exceptions indicating errors in the program logic.

Inheritance diagram for Xapian::LogicError:



7.31.1 Detailed Description

The base class for exceptions indicating errors in the program logic.

A subclass of [LogicError](#) will be thrown if [Xapian](#) detects a violation of a class invariant or a logical precondition or postcondition, etc.

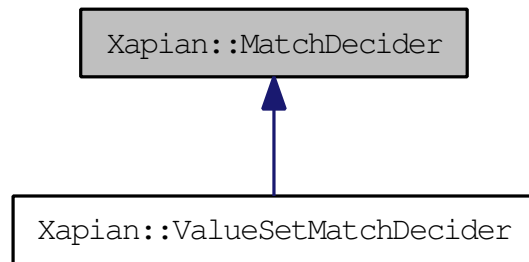
The documentation for this class was generated from the following file:

- [xapian/error.h](#)

7.32 Xapian::MatchDecider Class Reference

Base class for matcher decision functor.

Inheritance diagram for Xapian::MatchDecider:



Public Member Functions

- virtual bool [operator\(\)](#) (const [Xapian::Document](#) &doc) const =0
Decide whether we want this document to be in the [MSet](#).
- virtual [~MatchDecider](#) ()
Destructor.

7.32.1 Detailed Description

Base class for matcher decision functor.

7.32.2 Member Function Documentation

7.32.2.1 virtual bool Xapian::MatchDecider::operator() (const Xapian::Document & doc) const [pure virtual]

Decide whether we want this document to be in the [MSet](#).

Parameters:

doc The document to test.

Returns:

true if the document is acceptable, or false if the document should be excluded from the [MSet](#).

Implemented in [Xapian::ValueSetMatchDecider](#).

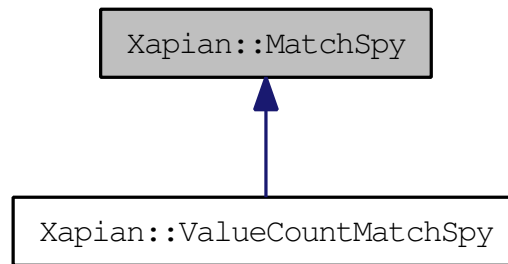
The documentation for this class was generated from the following file:

- [xapian/enquire.h](#)

7.33 Xapian::MatchSpy Class Reference

Abstract base class for match spies.

Inheritance diagram for Xapian::MatchSpy:



Public Member Functions

- virtual `~MatchSpy()`
Virtual destructor, because we have virtual methods.
- virtual void `operator()` (const `Xapian::Document` &doc, `Xapian::weight` wt)=0
Register a document with the match spy.
- virtual `MatchSpy * clone()` const
Clone the match spy.
- virtual std::string `name()` const
Return the name of this match spy.
- virtual std::string `serialise()` const
Return this object's parameters serialised as a single string.
- virtual `MatchSpy * unserialise` (const std::string &s, const `Registry` &context) const
Unserialise parameters.
- virtual std::string `serialise_results()` const
Serialise the results of this match spy.
- virtual void `merge_results` (const std::string &s)
Unserialise some results, and merge them into this matchspy.
- virtual std::string `get_description()` const
Return a string describing this object.

Protected Member Functions

- [MatchSpy](#) ()

Default constructor, needed by subclass constructors.

7.33.1 Detailed Description

Abstract base class for match spies.

The subclasses will generally accumulate information seen during the match, to calculate aggregate functions, or other profiles of the matching documents.

7.33.2 Constructor & Destructor Documentation

7.33.2.1 `virtual Xapian::MatchSpy::~~MatchSpy ()` [virtual]

Virtual destructor, because we have virtual methods.

7.33.3 Member Function Documentation

7.33.3.1 `virtual MatchSpy* Xapian::MatchSpy::clone () const` [virtual]

Clone the match spy.

The clone should inherit the configuration of the parent, but need not inherit the state. ie, the clone does not need to be passed information about the results seen by the parent.

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Reimplemented in [Xapian::ValueCountMatchSpy](#).

7.33.3.2 `virtual std::string Xapian::MatchSpy::get_description () const` [virtual]

Return a string describing this object.

This default implementation returns a generic answer, to avoid forcing those deriving their own [MatchSpy](#) subclasses from having to implement this (they may not care what [get_description\(\)](#) gives for their subclass).

Reimplemented in [Xapian::ValueCountMatchSpy](#).

7.33.3.3 virtual void Xapian::MatchSpy::merge_results (const std::string & s) [virtual]

Unserialise some results, and merge them into this matchspy.

The order in which results are merged should not be significant, since this order is not specified (and will vary depending on the speed of the search in each sub-database).

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Parameters:

s A string containing the serialised results.

Reimplemented in [Xapian::ValueCountMatchSpy](#).

7.33.3.4 virtual std::string Xapian::MatchSpy::name () const [virtual]

Return the name of this match spy.

This name is used by the remote backend. It is passed with the serialised parameters to the remote server so that it knows which class to create.

Return the full namespace-qualified name of your class here - if your class is called MyApp::FooMatchSpy, return "MyApp::FooMatchSpy" from this method.

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented in [Xapian::ValueCountMatchSpy](#).

7.33.3.5 virtual void Xapian::MatchSpy::operator() (const Xapian::Document & doc, Xapian::weight wt) [pure virtual]

Register a document with the match spy.

This is called by the matcher once with each document seen by the matcher during the match process. Note that the matcher will often not see all the documents which match the query, due to optimisations which allow low-weighted documents to be skipped, and allow the match process to be terminated early.

Parameters:

doc The document seen by the match spy.

wt The weight of the document.

Implemented in [Xapian::ValueCountMatchSpy](#).

7.33.3.6 virtual std::string Xapian::MatchSpy::serialise () const [virtual]

Return this object's parameters serialised as a single string.

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented in [Xapian::ValueCountMatchSpy](#).

7.33.3.7 `virtual std::string Xapian::MatchSpy::serialise_results () const` [virtual]

Serialise the results of this match spy.

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented in [Xapian::ValueCountMatchSpy](#).

7.33.3.8 `virtual MatchSpy* Xapian::MatchSpy::unserialise (const std::string & s, const Registry & context) const` [virtual]

Unserialise parameters.

This method unserialises parameters serialised by the [serialise\(\)](#) method and allocates and returns a new object initialised with them.

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Parameters:

s A string containing the serialised results.

context [Registry](#) object to use for unserialisation to permit [MatchSpy](#) subclasses with sub-MatchSpy objects to be implemented.

Reimplemented in [Xapian::ValueCountMatchSpy](#).

The documentation for this class was generated from the following file:

- [xapian/matchspy.h](#)

7.34 Xapian::MSet Class Reference

A match set ([MSet](#)).

Public Types

- typedef [MSetIterator](#) [value_type](#)
Allow use as an STL container.
- typedef [MSetIterator](#) [iterator](#)
Allow use as an STL container.
- typedef [MSetIterator](#) [const_iterator](#)
Allow use as an STL container.
- typedef [MSetIterator](#) & [reference](#)
Allow use as an STL container.
- typedef [MSetIterator](#) & [const_reference](#)
Allow use as an STL container.
- typedef [MSetIterator](#) * [pointer](#)
Allow use as an STL container.
- typedef [Xapian::doccount_diff](#) [difference_type](#)
Allow use as an STL container.
- typedef [Xapian::doccount](#) [size_type](#)
Allow use as an STL container.

Public Member Functions

- [MSet](#) ()
Create an empty [Xapian::MSet](#).
- [~MSet](#) ()
Destroy a [Xapian::MSet](#).
- [MSet](#) (const [MSet](#) &other)
Copying is allowed (and is cheap).
- void [operator=](#) (const [MSet](#) &other)
Assignment is allowed (and is cheap).
- void [fetch](#) (const [MSetIterator](#) &begin, const [MSetIterator](#) &end) const

Fetch the document info for a set of items in the [MSet](#).

- `void fetch (const MSetIterator &item) const`
Fetch the single item specified.
- `void fetch () const`
Fetch all the items in the [MSet](#).
- `Xapian::percent convert_to_percent (Xapian::weight wt) const`
This converts the weight supplied to a percentage score.
- `Xapian::percent convert_to_percent (const MSetIterator &it) const`
Return the percentage score for a particular item.
- `Xapian::doccount get_termfreq (const std::string &name) const`
Return the term frequency of the given query term.
- `Xapian::weight get_termweight (const std::string &name) const`
Return the term weight of the given query term.
- `Xapian::doccount get_firstitem () const`
The index of the first item in the result which was put into the [MSet](#).
- `Xapian::doccount get_matches_lower_bound () const`
A lower bound on the number of documents in the database which match the query.
- `Xapian::doccount get_matches_estimated () const`
An estimate for the number of documents in the database which match the query.
- `Xapian::doccount get_matches_upper_bound () const`
An upper bound on the number of documents in the database which match the query.
- `Xapian::doccount get_uncollapsed_matches_lower_bound () const`
A lower bound on the number of documents in the database which would match the query if collapsing wasn't used.
- `Xapian::doccount get_uncollapsed_matches_estimated () const`
A estimate of the number of documents in the database which would match the query if collapsing wasn't used.
- `Xapian::doccount get_uncollapsed_matches_upper_bound () const`
A upper bound on the number of documents in the database which would match the query if collapsing wasn't used.
- `Xapian::weight get_max_possible () const`
The maximum possible weight in the [MSet](#).

- [Xapian::weight get_max_attained \(\)](#) const
The greatest weight which is attained by any document in the database.
- [Xapian::doccount size \(\)](#) const
The number of items in this [MSet](#).
- [Xapian::doccount max_size \(\)](#) const
Required to allow use as an STL container.
- [bool empty \(\)](#) const
Test if this [MSet](#) is empty.
- [void swap \(MSet &other\)](#)
Swap the [MSet](#) we point to with another.
- [MSetIterator begin \(\)](#) const
Iterator for the items in this [MSet](#).
- [MSetIterator end \(\)](#) const
End iterator corresponding to [begin\(\)](#).
- [MSetIterator back \(\)](#) const
Iterator pointing to the last element of this [MSet](#).
- [MSetIterator operator\[\] \(Xapian::doccount i\)](#) const
*This returns the document at position *i* in this [MSet](#) object.*
- [std::string get_description \(\)](#) const
Return a string describing this object.

7.34.1 Detailed Description

A match set ([MSet](#)).

This class represents (a portion of) the results of a query.

7.34.2 Member Function Documentation

7.34.2.1 [Xapian::percent Xapian::MSet::convert_to_percent \(Xapian::weight wt\)](#) const

This converts the weight supplied to a percentage score.

The return value will be in the range 0 to 100, and will be 0 if and only if the item did not match the query at all.

Parameters:

wt The weight to convert.

7.34.2.2 void Xapian::MSet::fetch (const MSetIterator & *begin*, const MSetIterator & *end*) const

Fetch the document info for a set of items in the [MSet](#).

This method causes the documents in the range specified by the iterators to be fetched from the database, and cached in the [Xapian::MSet](#) object. This has little effect when performing a search across a local database, but will greatly speed up subsequent access to the document contents when the documents are stored in a remote database.

The iterators must be over this [Xapian::MSet](#) - undefined behaviour will result otherwise.

Parameters:

begin [MSetIterator](#) for first item to fetch.

end [MSetIterator](#) for item after last item to fetch.

7.34.2.3 Xapian::doccount Xapian::MSet::get_firstitem () const

The index of the first item in the result which was put into the [MSet](#).

This corresponds to the parameter "first" specified in [Xapian::Enquire::get_mset\(\)](#). A value of 0 corresponds to the highest result being the first item in the [MSet](#).

7.34.2.4 Xapian::doccount Xapian::MSet::get_matches_estimated () const

An estimate for the number of documents in the database which match the query.

This figure takes into account collapsing of duplicates, and weighting cutoff values.

This value is returned because there is sometimes a request to display such information. However, our experience is that presenting this value to users causes them to worry about the large number of results, rather than how useful those at the top of the result set are, and is thus undesirable.

7.34.2.5 Xapian::doccount Xapian::MSet::get_matches_lower_bound () const

A lower bound on the number of documents in the database which match the query.

This figure takes into account collapsing of duplicates, and weighting cutoff values.

This number is usually considerably less than the actual number of documents which match the query.

7.34.2.6 Xapian::doccount Xapian::MSet::get_matches_upper_bound () const

An upper bound on the number of documents in the database which match the query.

This figure takes into account collapsing of duplicates, and weighting cutoff values.

This number is usually considerably greater than the actual number of documents which match the query.

7.34.2.7 Xapian::weight Xapian::MSet::get_max_attained () const

The greatest weight which is attained by any document in the database.

If firstitem == 0 and the primary ordering is by relevance, this is the weight of the first entry in the [MSet](#).

If no documents are found by the query, this will be 0.

Note that calculation of max_attained requires calculation of at least one result item - therefore, if no items were requested when the query was performed (by specifying maxitems = 0 in [Xapian::Enquire::get_mset\(\)](#)), this value will be 0.

7.34.2.8 Xapian::weight Xapian::MSet::get_max_possible () const

The maximum possible weight in the [MSet](#).

This weight is likely not to be attained in the set of results, but represents an upper bound on the weight which a document could attain for the given query.

7.34.2.9 Xapian::doccount Xapian::MSet::get_termfreq (const std::string & tname) const

Return the term frequency of the given query term.

Parameters:

tname The term to look for.

This is sometimes more efficient than asking the database directly for the term frequency - in particular, if the term was in the query, its frequency will usually be cached in the [MSet](#).

7.34.2.10 Xapian::weight Xapian::MSet::get_termweight (const std::string & tname) const

Return the term weight of the given query term.

Parameters:

tname The term to look for.

Exceptions:

[*Xapian::InvalidArgumentError*](#) is thrown if the term was not in the query.

7.34.2.11 Xapian::doccount Xapian::MSet::max_size () const [inline]

Required to allow use as an STL container.

7.34.2.12 MSetIterator Xapian::MSet::operator[] (Xapian::doccount *i*) const

This returns the document at position *i* in this [MSet](#) object.

Note that this is not the same as the document at rank *i* in the query, unless the "first" parameter to [Xapian::Enquire::get_mset](#) was 0. Rather, it is the document at rank *i* + first.

In other words, the offset is into the documents represented by this object, not into the set of documents matching the query.

Parameters:

i The index into the [MSet](#).

The documentation for this class was generated from the following file:

- [xapian/enquire.h](#)

7.35 Xapian::MSetIterator Class Reference

An iterator pointing to items in an [MSet](#).

Public Types

- typedef std::bidirectional_iterator_tag [iterator_category](#)
Allow use as an STL iterator.
- typedef [Xapian::docid](#) value_type
Allow use as an STL iterator.
- typedef [Xapian::doccount_diff](#) difference_type
Allow use as an STL iterator.
- typedef [Xapian::docid](#) * pointer
Allow use as an STL iterator.
- typedef [Xapian::docid](#) & reference
Allow use as an STL iterator.

Public Member Functions

- [MSetIterator](#) ()
Create an uninitialised iterator; this cannot be used, but is convenient syntactically.
- [MSetIterator](#) (const [MSetIterator](#) &other)
Copying is allowed (and is cheap).
- void [operator=](#) (const [MSetIterator](#) &other)
Assignment is allowed (and is cheap).
- [MSetIterator](#) & [operator++](#) ()
Advance the iterator.
- [MSetIterator](#) [operator++](#) (int)
Advance the iterator (postfix variant).
- [MSetIterator](#) & [operator--](#) ()
Decrement the iterator.
- [MSetIterator](#) [operator--](#) (int)
Decrement the iterator (postfix variant).
- [Xapian::docid](#) [operator*](#) () const

Get the document ID for the current position.

- [Xapian::Document](#) `get_document ()` const
Get a [Xapian::Document](#) object for the current position.
- [Xapian::doccount](#) `get_rank ()` const
Get the rank of the document at the current position.
- [Xapian::weight](#) `get_weight ()` const
Get the weight of the document at the current position.
- `std::string` `get_collapse_key ()` const
Get the collapse key for this document.
- [Xapian::doccount](#) `get_collapse_count ()` const
Get an estimate of the number of documents that have been collapsed into this one.
- [Xapian::percent](#) `get_percent ()` const
This returns the weight of the document as a percentage score.
- `std::string` `get_description ()` const
Return a string describing this object.

Friends

- `bool` `operator==` (const [MSetIterator](#) &a, const [MSetIterator](#) &b)
Equality test for [MSetIterator](#) objects.
- `bool` `operator!=` (const [MSetIterator](#) &a, const [MSetIterator](#) &b)
Inequality test for [MSetIterator](#) objects.

7.35.1 Detailed Description

An iterator pointing to items in an [MSet](#).

This is used for access to individual results of a match.

7.35.2 Member Function Documentation

7.35.2.1 [Xapian::doccount](#) [Xapian::MSetIterator](#)::`get_collapse_count ()` const

Get an estimate of the number of documents that have been collapsed into this one.

The estimate will always be less than or equal to the actual number of other documents satisfying the match criteria with the same collapse key as this document.

This method may return 0 even though there are other documents with the same collapse key which satisfying the match criteria. However if this method returns non-zero, there definitely are other such documents. So this method may be used to inform the user that there are "at least N other matches in this group", or to control whether to offer a "show other documents in this group" feature (but note that it may not offer it in every case where it would show other documents).

7.35.2.2 Xapian::Document Xapian::MSetIterator::get_document () const

Get a [Xapian::Document](#) object for the current position.

This method returns a [Xapian::Document](#) object which provides the information about the document pointed to by the [MSetIterator](#).

If the underlying database has suitable support, using this call (rather than asking the database for a document based on its document ID) will enable the system to ensure that the correct data is returned, and that the document has not been deleted or changed since the query was performed.

Returns:

A [Xapian::Document](#) object containing the document data.

Exceptions:

[Xapian::DocNotFoundError](#) The document specified could not be found in the database.

7.35.2.3 Xapian::percent Xapian::MSetIterator::get_percent () const

This returns the weight of the document as a percentage score.

The return value will be an integer in the range 0 to 100: 0 meaning that the item did not match the query at all.

The intention is that the highest weighted document will get 100 if it matches all the weight-contributing terms in the query. However, currently it may get a lower percentage score if you use a [MatchDecider](#) and the sorting is primarily by value. In this case, the percentage for a particular document may vary depending on the first, max_size, and checkatleast parameters passed to [Enquire::get_mset\(\)](#) (this bug is hard to fix without having to apply the [MatchDecider](#) to potentially many more documents, which is potentially costly).

7.35.2.4 Xapian::doccount Xapian::MSetIterator::get_rank () const [inline]

Get the rank of the document at the current position.

The rank is the position that this document is at in the ordered list of results of the query. The result is 0-based - i.e. the top-ranked document has a rank of 0.

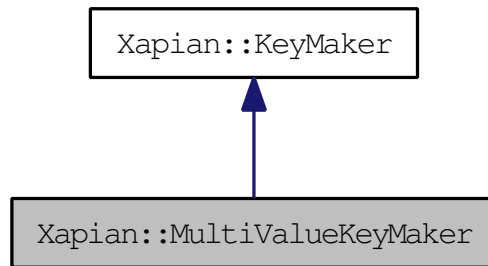
The documentation for this class was generated from the following file:

- xapian/[enquire.h](#)

7.36 Xapian::MultiValueKeyMaker Class Reference

[KeyMaker](#) subclass which combines several values.

Inheritance diagram for Xapian::MultiValueKeyMaker:



Public Member Functions

- virtual std::string [operator\(\)](#) (const [Xapian::Document](#) &doc) const
Build a key string for a [Document](#).

7.36.1 Detailed Description

[KeyMaker](#) subclass which combines several values.

When the result is used for sorting, results are ordered by the first value. In the event of a tie, the second is used. If this is the same for both, the third is used, and so on. If *reverse* is true for a value, then the sort order for that value is reversed.

When used for collapsing, the documents will only be considered equal if all the values specified match. If none of the specified values are set then the generated key will be empty, so such documents won't be collapsed (which is consistent with the behaviour in the "collapse on a value" case). If you'd prefer that documents with none of the keys set are collapsed together, then you can set *reverse* for at least one of the values. Other than this, it isn't useful to set *reverse* for collapsing.

7.36.2 Member Function Documentation

7.36.2.1 virtual std::string Xapian::MultiValueKeyMaker::operator() (const Xapian::Document & doc) const [virtual]

Build a key string for a [Document](#).

These keys can be used for sorting or collapsing matching documents.

Parameters:

doc [Document](#) object to build a key for.

Implements [Xapian::KeyMaker](#).

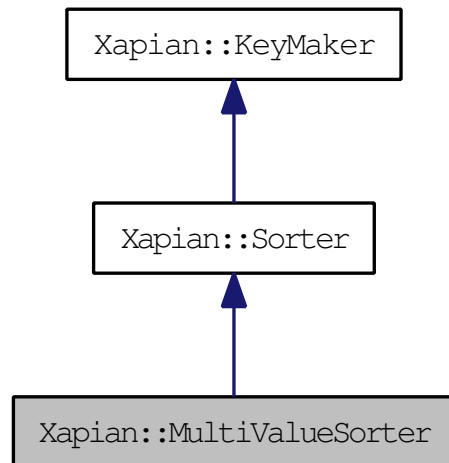
The documentation for this class was generated from the following file:

- [xapian/keymaker.h](#)

7.37 Xapian::MultiValueSorter Class Reference

[Sorter](#) subclass which sorts by a several values.

Inheritance diagram for Xapian::MultiValueSorter:



Public Member Functions

- virtual std::string [operator\(\)](#) (const [Xapian::Document](#) &doc) const
Build a key string for a [Document](#).

7.37.1 Detailed Description

[Sorter](#) subclass which sorts by a several values.

Results are ordered by the first value. In the event of a tie, the second is used. If this is the same for both, the third is used, and so on.

Deprecated

This class is deprecated - you should migrate to using [MultiValueKeyMaker](#) instead. Note that `MultiValueSorter::add()` becomes `MultiValueKeyMaker::add_value()`, but the sense of the direction flag is reversed (to be consistent with [Enquire::set_sort_by_value\(\)](#)), so:

```
MultiValueSorter sorter; // Primary ordering is forwards on value 4. sorter.add(4); //  
Secondary ordering is reverse on value 5. sorter.add(5, false);
```

becomes:

```
MultiValueKeyMaker sorter; // Primary ordering is forwards on value 4. sorter.add_  
value(4); // Secondary ordering is reverse on value 5. sorter.add_value(5, true);
```

7.37.2 Member Function Documentation

7.37.2.1 `virtual std::string Xapian::MultiValueSorter::operator() (const Xapian::Document & doc) const` [virtual]

Build a key string for a [Document](#).

These keys can be used for sorting or collapsing matching documents.

Parameters:

doc [Document](#) object to build a key for.

Implements [Xapian::KeyMaker](#).

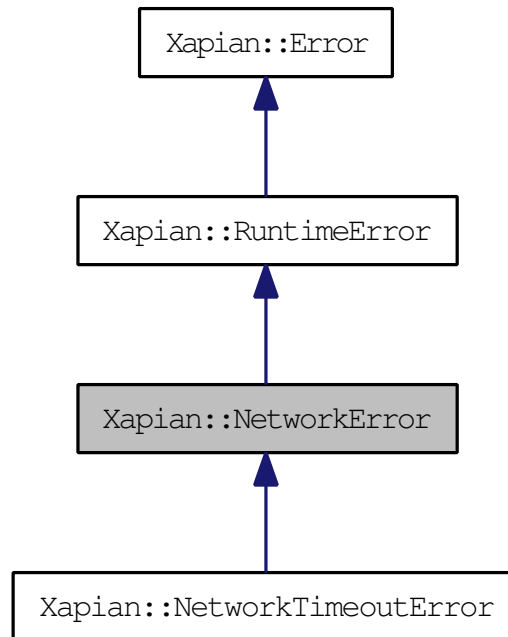
The documentation for this class was generated from the following file:

- [xapian/keymaker.h](#)

7.38 Xapian::NetworkError Class Reference

Indicates a problem communicating with a remote database.

Inheritance diagram for Xapian::NetworkError:



Public Member Functions

- [NetworkError](#) (const std::string &msg_, const std::string &context_
=std::string(), int errno_=0)

General purpose constructor.

- [NetworkError](#) (const std::string &msg_, int errno_)

Construct from message and errno value.

7.38.1 Detailed Description

Indicates a problem communicating with a remote database.

7.38.2 Constructor & Destructor Documentation

7.38.2.1 Xapian::NetworkError::NetworkError (const std::string & *msg_*, const std::string & *context_* = std::string(), int *errno_* = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.38.2.2 Xapian::NetworkError::NetworkError (const std::string & *msg_*, int *errno_*) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

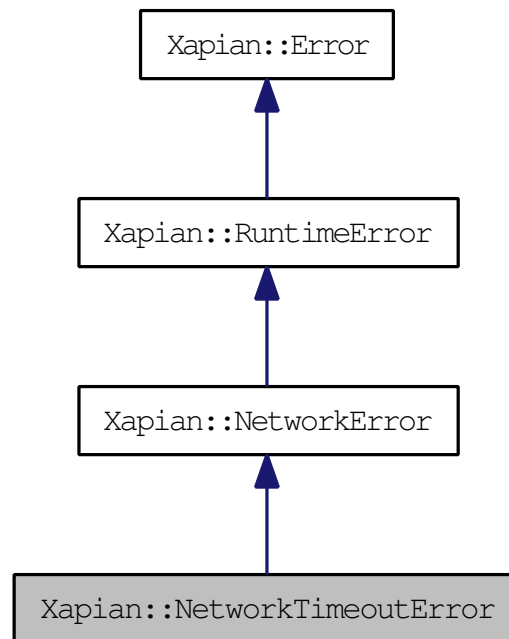
The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.39 Xapian::NetworkTimeoutError Class Reference

Indicates a timeout expired while communicating with a remote database.

Inheritance diagram for Xapian::NetworkTimeoutError:



Public Member Functions

- [NetworkTimeoutError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0)

General purpose constructor.

- [NetworkTimeoutError](#) (const std::string &msg_, int errno_)

Construct from message and errno value.

7.39.1 Detailed Description

Indicates a timeout expired while communicating with a remote database.

7.39.2 Constructor & Destructor Documentation

7.39.2.1 Xapian::NetworkTimeoutError::NetworkTimeoutError (const std::string & msg_, const std::string & context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.39.2.2 Xapian::NetworkTimeoutError::NetworkTimeoutError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

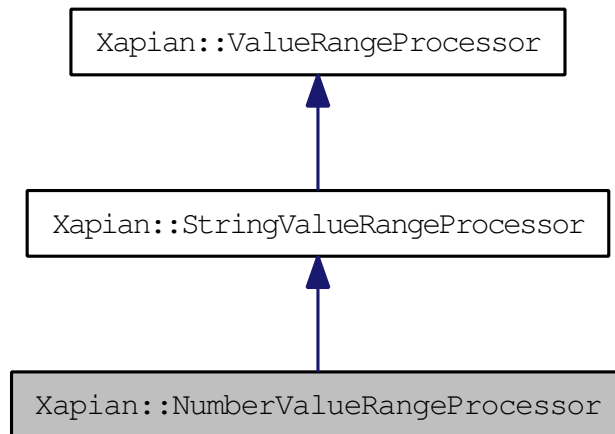
The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.40 Xapian::NumberValueRangeProcessor Class Reference

Handle a number range.

Inheritance diagram for Xapian::NumberValueRangeProcessor:



Public Member Functions

- [NumberValueRangeProcessor](#) ([Xapian::valueno](#) slot_)
Constructor.
- [NumberValueRangeProcessor](#) ([Xapian::valueno](#) slot_, const std::string &str_, bool prefix_=true)
Constructor.
- [Xapian::valueno operator\(\)](#) (std::string &begin, std::string &end)
Check for a valid numeric range.

7.40.1 Detailed Description

Handle a number range.

This class must be used on values which have been encoded using [Xapian::sortable_serialise\(\)](#) which turns numbers into strings which will sort in the same order as the numbers (the same values can be used to implement a numeric sort).

7.40.2 Constructor & Destructor Documentation

7.40.2.1 Xapian::NumberValueRangeProcessor::NumberValueRangeProcessor (Xapian::valueno *slot_*) [inline]

Constructor.

Parameters:

slot_ The value number to return from operator().

7.40.2.2 Xapian::NumberValueRangeProcessor::NumberValueRangeProcessor (Xapian::valueno *slot_*, const std::string & *str_*, bool *prefix_* = true) [inline]

Constructor.

Parameters:

slot_ The value number to return from operator().

str_ A string to look for to recognise values as belonging to this numeric range.

prefix_ Whether to look for the string at the start or end of the values. If true, the string is a prefix; if false, the string is a suffix (default: true).

The string supplied in *str_* is used by *operator()* to decide whether the pair of strings supplied to it constitute a valid range. If *prefix_* is true, the first value in a range must begin with *str_* (and the second value may optionally begin with *str_*); if *prefix_* is false, the second value in a range must end with *str_* (and the first value may optionally end with *str_*).

If *str_* is empty, the setting of *prefix_* is irrelevant, and no special strings are required at the start or end of the strings defining the range.

The remainder of both strings defining the endpoints must be valid floating point numbers. (FIXME: define format recognised).

For example, if *str_* is "\$" and *prefix_* is true, and the range processor has been added to the queryparser, the queryparser will accept "\$10..50" or "\$10..\$50", but not "10..50" or "10..\$50" as valid ranges. If *str_* is "kg" and *prefix_* is false, the queryparser will accept "10..50kg" or "10kg..50kg", but not "10..50" or "10kg..50" as valid ranges.

7.40.3 Member Function Documentation

7.40.3.1 Xapian::valueno Xapian::NumberValueRangeProcessor::operator() (std::string & *begin*, std::string & *end*) [virtual]

Check for a valid numeric range.

Parameters:

- ↔ *begin* The start of the range as specified in the query string by the user. This parameter is a non-const reference so the [ValueRangeProcessor](#) can modify it to return the value to start the range with.
- ↔ *end* The end of the range. This is also a non-const reference so it can be modified.

Returns:

If BEGIN..END is a valid numeric range with the specified prefix/suffix (if one was specified), this method modifies them by removing the prefix/suffix, converting to a number, and encoding with [Xapian::sortable_serialise\(\)](#), and returns the value of slot_ passed at construction time. Otherwise it returns [Xapian::BAD_VALUENO](#).

Reimplemented from [Xapian::StringValueRangeProcessor](#).

The documentation for this class was generated from the following file:

- [xapian/queryparser.h](#)

7.41 Xapian::PositionIterator Class Reference

An iterator pointing to items in a list of positions.

Public Member Functions

- [PositionIterator](#) ()
Default constructor - for declaring an uninitialised iterator.
- [~PositionIterator](#) ()
Destructor.
- [PositionIterator](#) (const [PositionIterator](#) &o)
Copying is allowed.
- void [operator=](#) (const [PositionIterator](#) &o)
Assignment is allowed.
- [Xapian::termpos operator*](#) () const
Return the term position at the current iterator position.
- [PositionIterator & operator++](#) ()
Advance the iterator to the next position.
- [DerefWrapper_< termpos > operator++](#) (int)
Advance the iterator to the next position (postfix version).
- void [skip_to](#) ([Xapian::termpos](#) pos)
Advance the iterator to the specified termpos.
- std::string [get_description](#) () const
Return a string describing this object.

Friends

- bool [operator==](#) (const [PositionIterator](#) &a, const [PositionIterator](#) &b)
Test equality of two PositionIterators.

7.41.1 Detailed Description

An iterator pointing to items in a list of positions.

7.41.2 Constructor & Destructor Documentation

7.41.2.1 Xapian::PositionIterator::PositionIterator (const PositionIterator & *o*)

Copying is allowed.

The internals are reference counted, so copying is also cheap.

7.41.3 Member Function Documentation

7.41.3.1 void Xapian::PositionIterator::operator= (const PositionIterator & *o*)

Assignment is allowed.

The internals are reference counted, so assignment is also cheap.

7.41.3.2 void Xapian::PositionIterator::skip_to (Xapian::termpos *pos*)

Advance the iterator to the specified termpos.

If the specified termpos isn't in the list, position ourselves on the first termpos after it (or at_end() if no greater term positions are present).

The documentation for this class was generated from the following file:

- xapian/[positioniterator.h](#)

7.42 Xapian::PostingIterator Class Reference

An iterator pointing to items in a list of postings.

Public Types

- typedef std::input_iterator_tag [iterator_category](#)
Allow use as an STL iterator.
- typedef [Xapian::docid](#) [value_type](#)
Allow use as an STL iterator.
- typedef [Xapian::doccount_diff](#) [difference_type](#)
Allow use as an STL iterator.
- typedef [Xapian::docid](#) * [pointer](#)
Allow use as an STL iterator.
- typedef [Xapian::docid](#) & [reference](#)
Allow use as an STL iterator.

Public Member Functions

- [PostingIterator](#) ()
Default constructor - for declaring an uninitialised iterator.
- [~PostingIterator](#) ()
Destructor.
- [PostingIterator](#) (const [PostingIterator](#) &other)
Copying is allowed.
- void [operator=](#) (const [PostingIterator](#) &other)
Assignment is allowed.
- [PostingIterator](#) & [operator++](#) ()
Advance the iterator to the next position.
- [DerefWrapper_< docid > operator++](#) (int)
Advance the iterator to the next position (postfix version).
- void [skip_to](#) ([Xapian::docid](#) did)
Advance the iterator to the specified docid.
- [Xapian::docid operator*](#) () const

Get the document id at the current position in the postlist.

- [Xapian::termcount get_doclength \(\)](#) const
Get the length of the document at the current position in the postlist.
- [Xapian::termcount get_wdf \(\)](#) const
Get the within document frequency of the document at the current position in the postlist.
- [PositionIterator positionlist_begin \(\)](#) const
Return [PositionIterator](#) pointing to start of positionlist for current document.
- [PositionIterator positionlist_end \(\)](#) const
Return [PositionIterator](#) pointing to end of positionlist for current document.
- [std::string get_description \(\)](#) const
Return a string describing this object.

Friends

- [bool operator== \(const \[PostingIterator\]\(#\) &a, const \[PostingIterator\]\(#\) &b\)](#)
Test equality of two PostingIterators.

7.42.1 Detailed Description

An iterator pointing to items in a list of postings.

7.42.2 Constructor & Destructor Documentation

7.42.2.1 [Xapian::PostingIterator::PostingIterator \(const \[PostingIterator\]\(#\) &other\)](#)

Copying is allowed.

The internals are reference counted, so copying is also cheap.

7.42.3 Member Function Documentation

7.42.3.1 [Xapian::termcount \[Xapian::PostingIterator::get_doclength \\(\\)\]\(#\) const](#)

Get the length of the document at the current position in the postlist.

This information may be stored in the postlist, in which case this lookup should be extremely fast (indeed, not require further disk access). If the information is not present in the postlist, it will be retrieved from the database, at a greater performance cost.

7.42.3.2 `void Xapian::PostingIterator::operator= (const PostingIterator & other)`

Assignment is allowed.

The internals are reference counted, so assignment is also cheap.

7.42.3.3 `void Xapian::PostingIterator::skip_to (Xapian::docid did)`

Advance the iterator to the specified docid.

If the specified docid isn't in the list, position ourselves on the first document after it (or `at_end()` if no greater docids are present).

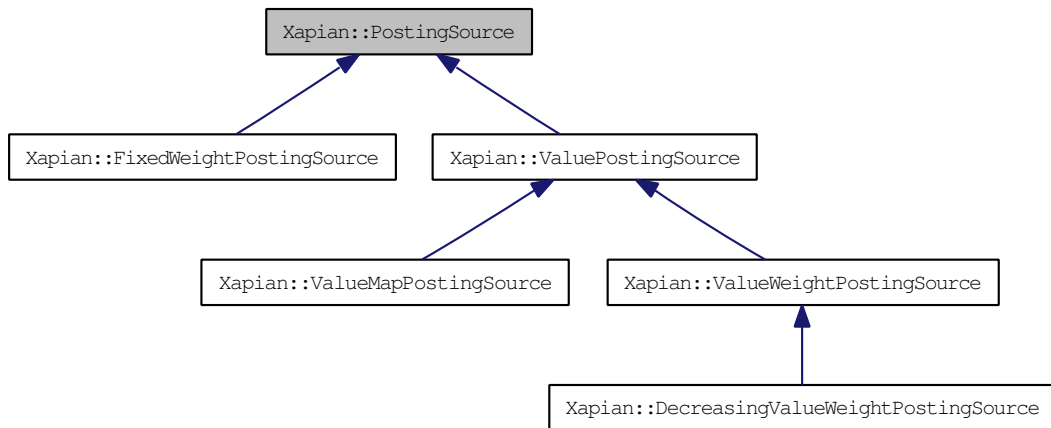
The documentation for this class was generated from the following file:

- [xapian/postingiterator.h](#)

7.43 Xapian::PostingSource Class Reference

Base class which provides an "external" source of postings.

Inheritance diagram for Xapian::PostingSource:



Public Member Functions

- virtual [Xapian::doccount get_termfreq_min](#) () const =0
A lower bound on the number of documents this object can return.
- virtual [Xapian::doccount get_termfreq_est](#) () const =0
An estimate of the number of documents this object can return.
- virtual [Xapian::doccount get_termfreq_max](#) () const =0
An upper bound on the number of documents this object can return.
- [Xapian::weight get_maxweight](#) () const
Return the currently set upper bound on what [get_weight\(\)](#) can return.
- virtual [Xapian::weight get_weight](#) () const
Return the weight contribution for the current document.
- virtual [Xapian::docid get_docid](#) () const =0
Return the current docid.
- virtual void [next](#) ([Xapian::weight](#) min_wt)=0
Advance the current position to the next matching document.
- virtual void [skip_to](#) ([Xapian::docid](#) did, [Xapian::weight](#) min_wt)
Advance to the specified docid.

- virtual bool [check](#) ([Xapian::docid](#) did, [Xapian::weight](#) min_wt)
Check if the specified docid occurs.
- virtual bool [at_end](#) () const =0
Return true if the current position is past the last entry in this list.
- virtual [PostingSource](#) * [clone](#) () const
Clone the posting source.
- virtual std::string [name](#) () const
Name of the posting source class.
- virtual std::string [serialise](#) () const
Serialise object parameters into a string.
- virtual [PostingSource](#) * [unserialise](#) (const std::string &s) const
Create object given string serialisation returned by [serialise\(\)](#).
- virtual void [init](#) (const [Database](#) &db)=0
Set this [PostingSource](#) to the start of the list of postings.
- virtual std::string [get_description](#) () const
Return a string describing this object.

Protected Member Functions

- [PostingSource](#) ()
Allow subclasses to be instantiated.
- void [set_maxweight](#) ([Xapian::weight](#) max_weight)
Set an upper bound on what [get_weight\(\)](#) can return from now on.

7.43.1 Detailed Description

Base class which provides an "external" source of postings.

7.43.2 Member Function Documentation

7.43.2.1 virtual bool [Xapian::PostingSource::at_end](#) () const [pure virtual]

Return true if the current position is past the last entry in this list.

At least one of [next\(\)](#), [skip_to\(\)](#) or [check\(\)](#) will be called before this method is first called.

Implemented in [Xapian::ValuePostingSource](#), [Xapian::FixedWeightPostingSource](#), and [Xapian::FixedWeightPostingSource](#).

7.43.2.2 virtual bool Xapian::PostingSource::check (Xapian::docid *did*, Xapian::weight *min_wt*) [virtual]

Check if the specified docid occurs.

The caller is required to ensure that the specified document id *did* actually exists in the database. If it does, it must move to that document id, and return true. If it does not, it may either:

- return true, having moved to a definite position (including "at_end"), which must be the same position as [skip_to\(\)](#) would have moved to.

or

- return false, having moved to an "indeterminate" position, such that a subsequent call to [next\(\)](#) or [skip_to\(\)](#) will move to the next matching position after *did*.

Generally, this method should act like [skip_to\(\)](#) and return true if that can be done at little extra cost.

Otherwise it should simply check if a particular docid is present, returning true if it is, and false if it isn't.

The default implementation calls [skip_to\(\)](#) and always returns true.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Note: in the case of a multi-database search, the docid specified is the docid in the single subdatabase relevant to this posting source. See the [init\(\)](#) method for details.

Parameters:

did The document id to check.

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Reimplemented in [Xapian::ValuePostingSource](#), [Xapian::DecreasingValueWeightPostingSource](#), and [Xapian::FixedWeightPostingSource](#).

7.43.2.3 virtual PostingSource* Xapian::PostingSource::clone () const [virtual]

Clone the posting source.

The clone should inherit the configuration of the parent, but need not inherit the state. ie, the clone does not need to be in the same iteration position as the original: the matcher will always call `init()` on the clone before attempting to move the iterator, or read the information about the current position of the iterator.

This may return NULL to indicate that cloning is not supported. In this case, the `PostingSource` may only be used with a single-database search.

The default implementation returns NULL.

Note that the returned object will be deallocated by `Xapian` after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the `Xapian` API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Reimplemented in `Xapian::ValueWeightPostingSource`, `Xapian::DecreasingValueWeightPostingSource`, `Xapian::ValueMapPostingSource`, and `Xapian::FixedWeightPostingSource`.

7.43.2.4 `virtual std::string Xapian::PostingSource::get_description () const` [virtual]

Return a string describing this object.

This default implementation returns a generic answer. This default is provided to avoid forcing those deriving their own `PostingSource` subclass from having to implement this (they may not care what `get_description()` gives for their subclass).

Reimplemented in `Xapian::ValueWeightPostingSource`, `Xapian::DecreasingValueWeightPostingSource`, `Xapian::ValueMapPostingSource`, and `Xapian::FixedWeightPostingSource`.

7.43.2.5 `virtual Xapian::docid Xapian::PostingSource::get_docid () const` [pure virtual]

Return the current docid.

This method may assume that it will only be called when there is a "current document". See `get_weight()` for details.

Note: in the case of a multi-database search, the returned docid should be in the single subdatabase relevant to this posting source. See the `init()` method for details.

Implemented in `Xapian::ValuePostingSource`, and `Xapian::FixedWeightPostingSource`.

7.43.2.6 `virtual Xapian::doccount Xapian::PostingSource::get_termfreq_est () const` [pure virtual]

An estimate of the number of documents this object can return.

It must always be true that:

[get_termfreq_min\(\)](#) <= [get_termfreq_est\(\)](#) <= [get_termfreq_max\(\)](#)

Xapian will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Implemented in [Xapian::ValuePostingSource](#), and [Xapian::FixedWeightPostingSource](#).

7.43.2.7 virtual Xapian::doccount Xapian::PostingSource::get_termfreq_max () const [pure virtual]

An upper bound on the number of documents this object can return.

Xapian will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Implemented in [Xapian::ValuePostingSource](#), and [Xapian::FixedWeightPostingSource](#).

7.43.2.8 virtual Xapian::doccount Xapian::PostingSource::get_termfreq_min () const [pure virtual]

A lower bound on the number of documents this object can return.

Xapian will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Implemented in [Xapian::ValuePostingSource](#), and [Xapian::FixedWeightPostingSource](#).

7.43.2.9 virtual Xapian::weight Xapian::PostingSource::get_weight () const [virtual]

Return the weight contribution for the current document.

This default implementation always returns 0, for convenience when implementing "weight-less" [PostingSource](#) subclasses.

This method may assume that it will only be called when there is a "current document". In detail: Xapian will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time. It will also only call this if the [PostingSource](#) reports that it is pointing to a valid document (ie, it will not call it before calling at least one of [next\(\)](#), [skip_to\(\)](#) or [check\(\)](#), and will ensure that the [PostingSource](#) is not at the end by calling [at_end\(\)](#)).

Reimplemented in [Xapian::ValueWeightPostingSource](#), [Xapian::DecreasingValueWeightPostingSource](#), [Xapian::ValueMapPostingSource](#), and [Xapian::FixedWeightPostingSource](#).

7.43.2.10 virtual void Xapian::PostingSource::init (const Database & db) [pure virtual]

Set this [PostingSource](#) to the start of the list of postings.

This is called automatically by the matcher prior to each query being processed.

If a [PostingSource](#) is used for multiple searches, [init\(\)](#) will therefore be called multiple times, and must handle this by using the database passed in the most recent call.

Parameters:

db The database which the [PostingSource](#) should iterate through.

Note: the database supplied to this method must not be modified: in particular, the `reopen()` method should not be called on it.

Note: in the case of a multi-database search, a separate [PostingSource](#) will be used for each database (the separate [PostingSources](#) will be obtained using [clone\(\)](#)), and each [PostingSource](#) will be passed one of the sub-databases as the *db* parameter here. The *db* parameter will therefore always refer to a single database. All docids passed to, or returned from, the [PostingSource](#) refer to docids in that single database, rather than in the multi-database.

Implemented in [Xapian::ValuePostingSource](#), [Xapian::ValueWeightPostingSource](#), [Xapian::DecreasingValueWeightPostingSource](#), [Xapian::ValueMapPostingSource](#), and [Xapian::FixedWeightPostingSource](#).

7.43.2.11 `virtual std::string Xapian::PostingSource::name () const` [virtual]

Name of the posting source class.

This is used when serialising and unserialising posting sources; for example, for performing remote searches.

If the subclass is in a C++ namespace, the namespace should be included in the name, using "::" as a separator. For example, for a [PostingSource](#) subclass called "FooPostingSource" in the "Xapian" namespace the result of this call should be "Xapian::FooPostingSource".

This should only be implemented if [serialise\(\)](#) and [unserialise\(\)](#) are also implemented. The default implementation returns an empty string.

If this returns an empty string, [Xapian](#) will assume that [serialise\(\)](#) and [unserialise\(\)](#) are not implemented.

Reimplemented in [Xapian::ValueWeightPostingSource](#), [Xapian::DecreasingValueWeightPostingSource](#), [Xapian::ValueMapPostingSource](#), and [Xapian::FixedWeightPostingSource](#).

7.43.2.12 `virtual void Xapian::PostingSource::next (Xapian::weight min_wt)` [pure virtual]

Advance the current position to the next matching document.

The [PostingSource](#) starts before the first entry in the list, so [next\(\)](#) must be called before any methods which need the context of the current position.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Parameters:

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Implemented in [Xapian::ValuePostingSource](#), [Xapian::DecreasingValueWeightPostingSource](#), and [Xapian::FixedWeightPostingSource](#).

7.43.2.13 `virtual std::string Xapian::PostingSource::serialise () const` [virtual]

Serialise object parameters into a string.

The serialised parameters should represent the configuration of the posting source, but need not (indeed, should not) represent the current iteration state.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented in [Xapian::ValueWeightPostingSource](#), [Xapian::DecreasingValueWeightPostingSource](#), [Xapian::ValueMapPostingSource](#), and [Xapian::FixedWeightPostingSource](#).

7.43.2.14 `void Xapian::PostingSource::set_maxweight (Xapian::weight max_weight)` [protected]

Set an upper bound on what [get_weight\(\)](#) can return from now on.

This upper bound is used by the matcher to perform various optimisations, so if you can return a good bound, then matches will generally run faster.

This method should be called after calling [init\(\)](#), and may be called during iteration if the upper bound drops.

It is valid for the posting source to have returned a higher value from [get_weight\(\)](#) earlier in the iteration, but the posting source must not return a higher value from [get_weight\(\)](#) than the currently set upper bound, and the upper bound must not be increased (until [init\(\)](#) has been called).

If you don't call this method, the upper bound will default to 0, for convenience when implementing "weight-less" [PostingSource](#) subclasses.

Parameters:

max_weight The upper bound to set.

7.43.2.15 `virtual void Xapian::PostingSource::skip_to (Xapian::docid did, Xapian::weight min_wt)` [virtual]

Advance to the specified docid.

If the specified docid isn't in the list, position ourselves on the first document after it (or `at_end()` if no greater docids are present).

If the current position is already the specified docid, this method will leave the position unmodified.

If the specified docid is earlier than the current position, the behaviour is unspecified. A sensible behaviour would be to leave the current position unmodified, but it is also reasonable to move to the specified docid.

The default implementation calls `next()` repeatedly, which works but `skip_to()` can often be implemented much more efficiently.

`Xapian` will always call `init()` on a `PostingSource` before calling this for the first time.

Note: in the case of a multi-database search, the docid specified is the docid in the single subdatabase relevant to this posting source. See the `init()` method for details.

Parameters:

did The document id to advance to.

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Reimplemented in `Xapian::ValuePostingSource`, `Xapian::DecreasingValueWeightPostingSource`, and `Xapian::FixedWeightPostingSource`.

7.43.2.16 `virtual PostingSource* Xapian::PostingSource::unserialise (const std::string & s) const` [virtual]

Create object given string serialisation returned by `serialise()`.

Note that the returned object will be deallocated by `Xapian` after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the `Xapian` API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

If you don't want to support the remote backend, you can use the default implementation which simply throws `Xapian::UnimplementedError`.

Parameters:

s A serialised instance of this `PostingSource` subclass.

Reimplemented in `Xapian::ValueWeightPostingSource`, `Xapian::DecreasingValueWeightPostingSource`, `Xapian::ValueMapPostingSource`, and `Xapian::FixedWeightPostingSource`.

The documentation for this class was generated from the following file:

- `xapian/postingsource.h`

7.44 Xapian::Query Class Reference

Class representing a query.

Public Types

- enum `op` {
`OP_AND`, `OP_OR`, `OP_AND_NOT`, `OP_XOR`,
`OP_AND_MAYBE`, `OP_FILTER`, `OP_NEAR`, `OP_PHRASE`,
`OP_VALUE_RANGE`, `OP_SCALE_WEIGHT`, `OP_ELITE_SET`, `OP_VALUE_GE`,
`OP_VALUE_LE`, `OP_SYNONYM` }

Enum of possible query operations.

Public Member Functions

- `Query` (const `Query` ©yme)
Copy constructor.
- `Query` & `operator=` (const `Query` ©yme)
Assignment.
- `Query` ()
Default constructor: makes an empty query which matches no documents.
- `~Query` ()
Destructor.
- `Query` (const std::string &tname_, `Xapian::termcount` wqf_=1, `Xapian::termpos` pos_=0)
A query consisting of a single term.
- `Query` (`Query::op` op_, const `Query` &left, const `Query` &right)
A query consisting of two subqueries, opp-ed together.
- `Query` (`Query::op` op_, const std::string &left, const std::string &right)
A query consisting of two termnames opp-ed together.
- template<class Iterator >
`Query` (`Query::op` op_, Iterator qbegin, Iterator qend, `Xapian::termcount` parameter=0)
Combine a number of Xapian::Query-s with the specified operator.
- `Query` (`Query::op` op_, `Xapian::Query` q, double parameter)

Apply the specified operator to a single [Xapian::Query](#) object, with a double parameter.

- [Query](#) ([Query::op](#) op_, [Xapian::value](#)no slot, const std::string &begin, const std::string &end)
Construct a value range query on a document value.
- [Query](#) ([Query::op](#) op_, [Xapian::value](#)no slot, const std::string &value)
Construct a value comparison query on a document value.
- [Query](#) ([Xapian::PostingSource](#) *external_source)
Construct an external source query.
- [Xapian::termcount](#) get_length () const
Get the length of the query, used by some ranking formulae.
- [TermIterator](#) get_terms_begin () const
Return a [Xapian::TermIterator](#) returning all the terms in the query, in order of termpos.
- [TermIterator](#) get_terms_end () const
Return a [Xapian::TermIterator](#) to the end of the list of terms in the query.
- bool empty () const
Test if the query is empty (i.e.
- std::string serialise () const
Serialise query into a string.
- std::string get_description () const
Return a string describing this object.

Static Public Member Functions

- static [Query](#) unserialise (const std::string &s)
Unserialise a query from a string produced by [serialise\(\)](#).
- static [Query](#) unserialise (const std::string &s, const [Registry](#) ®istry)
Unserialise a query from a string produced by [serialise\(\)](#).

Static Public Attributes

- static const [Xapian::Query](#) MatchAll
A query which matches all documents in the database.

- static const [Xapian::Query MatchNothing](#)

A query which matches no documents.

7.44.1 Detailed Description

Class representing a query.

Queries are represented as a tree of objects.

7.44.2 Member Enumeration Documentation

7.44.2.1 enum Xapian::Query::op

Enum of possible query operations.

Enumerator:

OP_AND Return iff both subqueries are satisfied.

OP_OR Return if either subquery is satisfied.

OP_AND_NOT Return if left but not right satisfied.

OP_XOR Return if one query satisfied, but not both.

OP_AND_MAYBE Return iff left satisfied, but use weights from both.

OP_FILTER As AND, but use only weights from left subquery.

OP_NEAR Find occurrences of a list of terms with all the terms occurring within a specified window of positions.

Each occurrence of a term must be at a different position, but the order they appear in is irrelevant.

The window parameter should be specified for this operation, but will default to the number of terms in the list.

OP_PHRASE Find occurrences of a list of terms with all the terms occurring within a specified window of positions, and all the terms appearing in the order specified.

Each occurrence of a term must be at a different position.

The window parameter should be specified for this operation, but will default to the number of terms in the list.

OP_VALUE_RANGE Filter by a range test on a document value.

OP_SCALE_WEIGHT Scale the weight of a subquery by the specified factor.

A factor of 0 means this subquery will contribute no weight to the query - it will act as a purely boolean subquery.

If the factor is negative, [Xapian::InvalidArgumentError](#) will be thrown.

OP_ELITE_SET Pick the best N subqueries and combine with OP_OR.

If you want to implement a feature which finds documents similar to a piece of text, an obvious approach is to build an "OR" query from all the terms in the text, and run this query against a database containing the documents. However such a query can contain a lots of terms and be quite slow to perform, yet many of these terms don't contribute usefully to the results.

The OP_ELITE_SET operator can be used instead of OP_OR in this situation. OP_ELITE_SET selects the most important "N" terms and then acts as an OP_OR query with just these, ignoring any other terms. This will usually return results just as good as the full OP_OR query, but much faster.

In general, the OP_ELITE_SET operator can be used when you have a large OR query, but it doesn't matter if the search completely ignores some of the less important terms in the query.

The subqueries don't have to be terms, but if they aren't then OP_ELITE_SET will look at the estimated frequencies of the subqueries and so could pick a subset which don't actually match any documents even if the full OR would match some.

You can specify a parameter to the query constructor which control the number of terms which OP_ELITE_SET will pick. If not specified, this defaults to 10 (or `ceil(sqrt(number_of_subqueries))` if there are more than 100 subqueries, but this rather arbitrary special case will be dropped in 1.3.0). For example, this will pick the best 7 terms:

```
Xapian::Query query(Xapian::Query::OP_ELITE_SET, subqs.begin(), subqs.end()
```

If the number of subqueries is less than this threshold, OP_ELITE_SET behaves identically to OP_OR.

OP_VALUE_GE Filter by a greater-than-or-equal test on a document value.

OP_VALUE_LE Filter by a less-than-or-equal test on a document value.

OP_SYNONYM Treat a set of queries as synonyms.

This returns all results which match at least one of the queries, but weighting as if all the sub-queries are instances of the same term: so multiple matching terms for a document increase the wdf value used, and the term frequency is based on the number of documents which would match an OR of all the subqueries.

The term frequency used will usually be an approximation, because calculating the precise combined term frequency would be overly expensive.

Identical to OP_OR, except for the weightings returned.

7.44.3 Constructor & Destructor Documentation

7.44.3.1 Xapian::Query::Query (const Query & *copyme*)

Copy constructor.

7.44.3.2 Xapian::Query::Query ()

Default constructor: makes an empty query which matches no documents.

Also useful for defining a [Query](#) object to be assigned to later.

An exception will be thrown if an attempt is made to use an undefined query when building up a composite query.

7.44.3.3 Xapian::Query::~~Query ()

Destructor.

**7.44.3.4 Xapian::Query::Query (const std::string & *tname*_,
Xapian::termcount *wqf*_ = 1, Xapian::termpos *pos*_ = 0)**

A query consisting of a single term.

**7.44.3.5 Xapian::Query::Query (Query::op *op*_, const Query & *left*, const
Query & *right*)**

A query consisting of two subqueries, opp-ed together.

**7.44.3.6 Xapian::Query::Query (Query::op *op*_, const std::string & *left*, const
std::string & *right*)**

A query consisting of two termnames opp-ed together.

**7.44.3.7 template<class Iterator > Xapian::Query::Query (Query::op *op*_,
Iterator *qbegin*, Iterator *qend*, Xapian::termcount *parameter* = 0)
[inline]**

Combine a number of [Xapian::Query](#)-s with the specified operator.

The [Xapian::Query](#) objects are specified with begin and end iterators.

AND, OR, XOR, ELITE_SET, SYNONYM, NEAR and PHRASE can take any number of subqueries. Other operators take exactly two subqueries.

The iterators may be to [Xapian::Query](#) objects, pointers to [Xapian::Query](#) objects, or termnames (std::string-s).

For NEAR and PHRASE, a window size can be specified in parameter.

For ELITE_SET, the elite set size can be specified in parameter.

7.44.3.8 Xapian::Query::Query (Query::op *op_*, Xapian::value *slot*, const std::string & *begin*, const std::string & *end*)

Construct a value range query on a document value.

A value range query matches those documents which have a value stored in the slot given by *slot* which is in the range specified by *begin* and *end* (in lexicographical order), including the endpoints.

Parameters:

op_ The operator to use for the query. Currently, must be OP_VALUE_RANGE.

slot The slot number to get the value from.

begin The start of the range.

end The end of the range.

7.44.3.9 Xapian::Query::Query (Query::op *op_*, Xapian::value *slot*, const std::string & *value*)

Construct a value comparison query on a document value.

This query matches those documents which have a value stored in the slot given by *slot* which compares, as specified by the operator, to *value*.

Parameters:

op_ The operator to use for the query. Currently, must be OP_VALUE_GE or OP_VALUE_LE.

slot The slot number to get the value from.

value The value to compare.

7.44.3.10 Xapian::Query::Query (Xapian::PostingSource * *external_source*) [explicit]

Construct an external source query.

An attempt to clone the posting source will be made immediately, so if the posting source supports clone(), the source supplied may be safely deallocated after this call. If the source does not support clone(), the caller must ensure that the posting source remains valid until the [Query](#) is deallocated.

Parameters:

external_source The source to use in the query.

7.44.4 Member Function Documentation

7.44.4.1 `bool Xapian::Query::empty () const`

Test if the query is empty (i.e. was constructed using the default ctor or with an empty iterator ctor).

7.44.4.2 `Xapian::termcount Xapian::Query::get_length () const`

Get the length of the query, used by some ranking formulae.

This value is calculated automatically - if you want to override it you can pass a different value to [Enquire::set_query\(\)](#).

7.44.4.3 `TermIterator Xapian::Query::get_terms_begin () const`

Return a [Xapian::TermIterator](#) returning all the terms in the query, in order of termpos. If multiple terms have the same term position, their order is unspecified. Duplicates (same term and termpos) will be removed.

7.44.4.4 `Query& Xapian::Query::operator= (const Query & copyme)`

Assignment.

7.44.4.5 `std::string Xapian::Query::serialise () const`

Serialise query into a string.

The query representation may change between [Xapian](#) releases: even between minor versions. However, it is guaranteed not to change unless the remote database protocol has also changed between releases.

7.44.4.6 `static Query Xapian::Query::unserialise (const std::string & s, const Registry & registry) [static]`

Unserialise a query from a string produced by [serialise\(\)](#).

The supplied registry will be used to attempt to unserialise any external [PostingSource](#) leaf nodes. This method will fail if the query contains any external [PostingSource](#) leaf nodes which are not registered in the registry.

Parameters:

- s* The string representing the serialised query.
- registry* [Xapian::Registry](#) to use.

7.44.4.7 `static Query Xpian::Query::unserialise (const std::string & s)` [static]

Unserialise a query from a string produced by [serialise\(\)](#).

This method will fail if the query contains any external [PostingSource](#) leaf nodes.

Parameters:

s The string representing the serialised query.

7.44.5 Member Data Documentation

7.44.5.1 `const Xpian::Query Xpian::Query::MatchAll` [static]

A query which matches all documents in the database.

7.44.5.2 `const Xpian::Query Xpian::Query::MatchNothing` [static]

A query which matches no documents.

The documentation for this class was generated from the following file:

- [xpian/query.h](#)

7.45 Xapian::QueryParser Class Reference

Build a [Xapian::Query](#) object from a user query string.

Public Types

- enum [feature_flag](#) {
 [FLAG_BOOLEAN](#) = 1, [FLAG_PHRASE](#) = 2, [FLAG_LOVEHATE](#) = 4,
 [FLAG_BOOLEAN_ANY_CASE](#) = 8,
 [FLAG_WILDCARD](#) = 16, [FLAG_PURE_NOT](#) = 32, [FLAG_PARTIAL](#) = 64,
 [FLAG_SPELLING_CORRECTION](#) = 128,
 [FLAG_SYNONYM](#) = 256, [FLAG_AUTO_SYNONYMS](#) = 512, [FLAG_-](#)
 [AUTO_MULTIWORD_SYNONYMS](#) = 1024 | [FLAG_AUTO_SYNONYMS](#),
 [FLAG_DEFAULT](#) = [FLAG_PHRASE](#)|[FLAG_BOOLEAN](#)|[FLAG_LOVEHATE](#)
}
- Enum of feature flags.
- enum [stem_strategy](#)
 Stemming strategies, for use with [set_stemming_strategy\(\)](#).

Public Member Functions

- [QueryParser](#) (const [QueryParser](#) &o)
 Copy constructor.
- [QueryParser](#) & operator= (const [QueryParser](#) &o)
 Assignment.
- [QueryParser](#) ()
 Default constructor.
- ~[QueryParser](#) ()
 Destructor.
- void [set_stemmer](#) (const [Xapian::Stem](#) &stemmer)
 Set the stemmer.
- void [set_stemming_strategy](#) ([stem_strategy](#) strategy)
 Set the stemming strategy.
- void [set_stopper](#) (const [Stopper](#) *stop=NULL)
 Set the stopper.
- void [set_default_op](#) ([Query::op](#) default_op)

Set the default operator.

- [Query::op](#) [get_default_op](#) () const

Get the current default operator.

- void [set_database](#) (const [Database](#) &db)

Specify the database being searched.

- void [set_max_wildcard_expansion](#) ([Xapian::termcount](#) limit)

Specify the maximum expansion of a wildcard term.

- [Query](#) [parse_query](#) (const std::string &query_string, unsigned flags=FLAG_DEFAULT, const std::string &default_prefix=std::string())

Parse a query.

- void [add_prefix](#) (const std::string &field, const std::string &prefix)

Add a probabilistic term prefix.

- void [add_boolean_prefix](#) (const std::string &field, const std::string &prefix, bool exclusive)

Add a boolean term prefix allowing the user to restrict a search with a boolean filter specified in the free text query.

- [TermIterator](#) [stoplist_begin](#) () const

Iterate over terms omitted from the query as stopwords.

- [TermIterator](#) [unstem_begin](#) (const std::string &term) const

Iterate over unstemmed forms of the given (stemmed) term used in the query.

- void [add_valuerangeprocessor](#) ([Xapian::ValueRangeProcessor](#) *vrproc)

Register a [ValueRangeProcessor](#).

- std::string [get_corrected_query_string](#) () const

Get the spelling-corrected query string.

- std::string [get_description](#) () const

Return a string describing this object.

7.45.1 Detailed Description

Build a [Xapian::Query](#) object from a user query string.

7.45.2 Member Enumeration Documentation

7.45.2.1 enum Xapian::QueryParser::feature_flag

Enum of feature flags.

Enumerator:

FLAG_BOOLEAN Support AND, OR, etc and bracketed subexpressions.

FLAG_PHRASE Support quoted phrases.

FLAG_LOVEHATE Support + and -.

FLAG_BOOLEAN_ANY_CASE Support AND, OR, etc even if they aren't in ALLCAPS.

FLAG_WILDCARD Support right truncation (e.g. Xap*).

Currently you can't use wildcards with boolean filter prefixes, or in a phrase (either an explicitly quoted one, or one implicitly generated by hyphens or other punctuation).

NB: You need to tell the [QueryParser](#) object which database to expand wildcards from by calling `set_database`.

FLAG_PURE_NOT Allow queries such as 'NOT apples'.

These require the use of a list of all documents in the database which is potentially expensive, so this feature isn't enabled by default.

FLAG_PARTIAL Enable partial matching.

Partial matching causes the parser to treat the query as a "partially entered" search. This will automatically treat the final word as a wildcarded match, unless it is followed by whitespace, to produce more stable results from interactive searches.

Currently **FLAG_PARTIAL** doesn't do anything if the final word in the query has a boolean filter prefix, or if it is in a phrase (either an explicitly quoted one, or one implicitly generated by hyphens or other punctuation). It also doesn't do anything if the final word is part of a value range.

NB: You need to tell the [QueryParser](#) object which database to expand wildcards from by calling `set_database`.

FLAG_SPELLING_CORRECTION Enable spelling correction.

For each word in the query which doesn't exist as a term in the database, [Database::get_spelling_suggestion\(\)](#) will be called and if a suggestion is returned, a corrected version of the query string will be built up which can be read using [QueryParser::get_corrected_query_string\(\)](#). The query returned is based on the uncorrected query string however - if you want a parsed query based on the corrected query string, you must call [QueryParser::parse_query\(\)](#) again.

NB: You must also call [set_database\(\)](#) for this to work.

FLAG_SYNONYM Enable synonym operator '~'.

NB: You must also call [set_database\(\)](#) for this to work.

FLAG_AUTO_SYNONYMS Enable automatic use of synonyms for single terms.

NB: You must also call `set_database()` for this to work.

FLAG_AUTO_MULTIWORD_SYNONYMS Enable automatic use of synonyms for single terms and groups of terms.

NB: You must also call `set_database()` for this to work.

FLAG_DEFAULT The default flags.

Used if you don't explicitly pass any to `parse_query()`. The default flags are `FLAG_PHRASE|FLAG_BOOLEAN|FLAG_LOVEHATE`.

Added in [Xapian 1.0.11](#).

7.45.3 Member Function Documentation

7.45.3.1 `void Xapian::QueryParser::add_boolean_prefix (const std::string &field, const std::string &prefix, bool exclusive)`

Add a boolean term prefix allowing the user to restrict a search with a boolean filter specified in the free text query.

For example:

```
qp.add_boolean_prefix("site", "H");
```

This allows the user to restrict a search with `site:xapian.org` which will be converted to `Hxapian.org` combined with any probabilistic query with `Xapian::Query::OP_FILTER`.

If multiple boolean filters are specified in a query for the same prefix, they will be combined with the `Xapian::Query::OP_OR` operator. Then, if there are boolean filters for different prefixes, they will be combined with the `Xapian::Query::OP_AND` operator.

Multiple fields can be mapped to the same prefix (so for example you can make `site:` and `domain:` aliases for each other). Instances of fields with different aliases but the same prefix will still be combined with the OR operator.

For example, if `"site"` and `"domain"` map to `"H"`, but `author` maps to `"A"`, a search for `"site:foo domain:bar author:Fred"` will map to `"(Hfoo OR Hbar) AND Afred"`.

As of 1.0.4, you can call this method multiple times with the same value of `field` to allow a single field to be mapped to multiple prefixes. Multiple terms being generated for such a field, and combined with `Xapian::Query::OP_OR`.

Calling this method with an empty string for `field` will cause a `Xapian::InvalidArgumentError`.

If you call `add_prefix()` and `add_boolean_prefix()` for the same value of `field`, a `Xapian::InvalidOperationError` exception will be thrown.

In 1.0.3 and earlier, subsequent calls to this method with the same value of `field` had no effect.

Parameters:

field The user visible field name

prefix The term prefix to map this to

exclusive If true, each document can have at most one term with this prefix, so multiple filters with this prefix should be combined with OP_OR. If false, each document can have multiple terms with this prefix, so multiple filters should be combined with OP_AND, like happens with filters with different prefixes. [default: true]

7.45.3.2 void Xapian::QueryParser::add_prefix (const std::string & *field*, const std::string & *prefix*)

Add a probabilistic term prefix.

For example:

```
qp.add_prefix("author", "A");
```

This allows the user to search for author:Orwell which will be converted to a search for the term "Aorwell".

Multiple fields can be mapped to the same prefix. For example, you can make title: and subject: aliases for each other.

As of 1.0.4, you can call this method multiple times with the same value of *field* to allow a single field to be mapped to multiple prefixes. Multiple terms being generated for such a field, and combined with `Xapian::Query::OP_OR`.

If any prefixes are specified for the empty field name (i.e. you call this method with an empty string as the first parameter) these prefixes will be used for terms without a field specifier. If you do this and also specify the `default_prefix` parameter to `parse_query()`, then the `default_prefix` parameter will override.

If the prefix parameter is empty, then "field:word" will produce the term "word" (and this can be one of several prefixes for a particular field, or for terms without a field specifier).

If you call `add_prefix()` and `add_boolean_prefix()` for the same value of *field*, a `Xapian::InvalidOperationError` exception will be thrown.

In 1.0.3 and earlier, subsequent calls to this method with the same value of *field* had no effect.

Parameters:

field The user visible field name

prefix The term prefix to map this to

7.45.3.3 `std::string Xapian::QueryParser::get_corrected_query_string () const`

Get the spelling-corrected query string.

This will only be set if `FLAG_SPELLING_CORRECTION` is specified when [QueryParser::parse_query\(\)](#) was last called.

If there were no corrections, an empty string is returned.

7.45.3.4 `Query::op Xapian::QueryParser::get_default_op () const`

Get the current default operator.

7.45.3.5 `Query Xapian::QueryParser::parse_query (const std::string & query_string, unsigned flags = FLAG_DEFAULT, const std::string & default_prefix = std::string())`

Parse a query.

Parameters:

query_string A free-text query as entered by a user

flags Zero or more `Query::feature_flag` specifying what features the [Query-Parser](#) should support. Combine multiple values with bitwise-or (`|`) (default `FLAG_DEFAULT`).

default_prefix The default term prefix to use (default none). For example, you can pass "A" when parsing an "Author" field.

Exceptions:

If the query string can't be parsed, then [Xapian::QueryParserError](#) is thrown. You can get an English error message to report to the user by catching it and calling `get_msg()` on the caught exception. The current possible values (in case you want to translate them) are:

- Unknown range operation
- parse error
- Syntax: `<expression> AND <expression>`
- Syntax: `<expression> AND NOT <expression>`
- Syntax: `<expression> NOT <expression>`
- Syntax: `<expression> OR <expression>`
- Syntax: `<expression> XOR <expression>`

7.45.3.6 void Xapian::QueryParser::set_database (const Database & *db*)

Specify the database being searched.

Parameters:

db The database to use for wildcard expansion (FLAG_WILDCARD and FLAG_PARTIAL), spelling correction (FLAG_SPELLING_CORRECTION), and synonyms (FLAG_SYNONYM, FLAG_AUTO_SYNONYMS, and FLAG_AUTO_MULTIWORD_SYNONYMS).

7.45.3.7 void Xapian::QueryParser::set_default_op (Query::op *default_op*)

Set the default operator.

Parameters:

default_op The operator to use to combine non-filter query items when no explicit operator is used.

The most useful values for this are OP_OR (the default) and OP_AND. OP_NEAR and OP_PHRASE can also be useful.

So for example, 'weather forecast' is parsed as if it were 'weather OR forecast' by default.

7.45.3.8 void Xapian::QueryParser::set_max_wildcard_expansion (Xapian::termcount *limit*)

Specify the maximum expansion of a wildcard term.

Note: you must also set FLAG_WILDCARD for wildcard expansion to happen.

Parameters:

limit The maximum number of terms each wildcard in the query can expand to, or 0 for no limit (which is the default).

7.45.3.9 void Xapian::QueryParser::set_stemmer (const Xapian::Stem & *stemmer*)

Set the stemmer.

This sets the stemming algorithm which will be used by the query parser. Note that the stemming algorithm will only be used according to the stemming strategy set by [set_stemming_strategy\(\)](#), which defaults to STEM_NONE. Therefore, to use a stemming algorithm, you will also need to call [set_stemming_strategy\(\)](#) with a value other than STEM_NONE.

Parameters:

stemmer The [Xapian::Stem](#) object to set.

7.45.3.10 void Xapian::QueryParser::set_stemming_strategy (stem_strategy strategy)

Set the stemming strategy.

This controls how the query parser will apply the stemming algorithm. Note that the stemming algorithm is only applied to words in probabilistic fields - boolean filter terms are never stemmed.

Parameters:

strategy The strategy to use - possible values are:

- STEM_NONE: Don't perform any stemming. (default in [Xapian](#) <= 1.3.0)
- STEM_SOME: Search for stemmed forms of terms except for those which start with a capital letter, or are followed by certain characters (currently: (/@<>=*["), or are used with operators which need positional information. Stemmed terms are prefixed with 'Z'. (default in [Xapian](#) >= 1.3.1)
- STEM_ALL: Search for stemmed forms of all words (note: no 'Z' prefix is added).
- STEM_ALL_Z: Search for stemmed forms of all words (note: 'Z' prefix is added). (new in [Xapian](#) 1.2.11 and 1.3.1)

7.45.3.11 void Xapian::QueryParser::set_stopper (const Stopper * stop = NULL)

Set the stopper.

Parameters:

stop The [Stopper](#) object to set (default NULL, which means no stopwords).

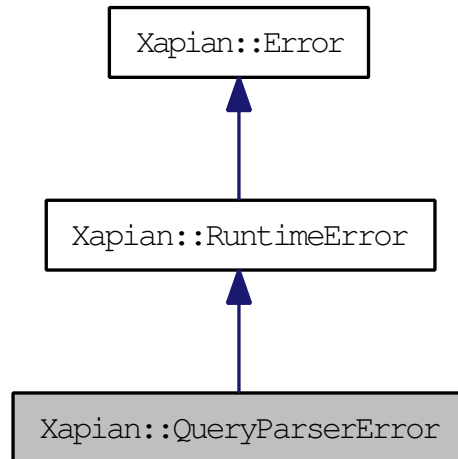
The documentation for this class was generated from the following file:

- [xapian/queryparser.h](#)

7.46 Xapian::QueryParserError Class Reference

Indicates a query string can't be parsed.

Inheritance diagram for Xapian::QueryParserError:



Public Member Functions

- [QueryParserError](#) (const std::string &msg_, const std::string &context_
=std::string(), int errno_=0)
General purpose constructor.
- [QueryParserError](#) (const std::string &msg_, int errno_)
Construct from message and errno value.

7.46.1 Detailed Description

Indicates a query string can't be parsed.

7.46.2 Constructor & Destructor Documentation

- 7.46.2.1** Xapian::QueryParserError::QueryParserError (const std::string &
msg_, const std::string & *context_* = std::string(), int *errno_* =
0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.46.2.2 Xapian::QueryParserError::QueryParserError (const std::string & *msg_*, int *errno_*) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

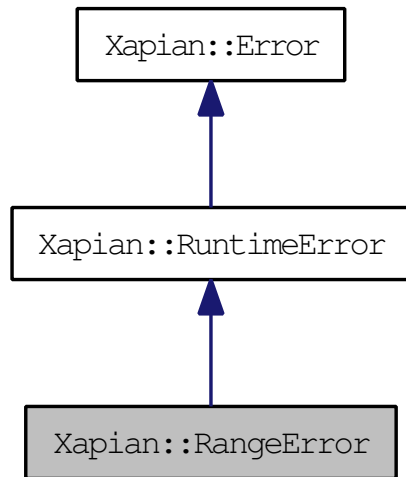
The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.47 Xapian::RangeError Class Reference

[RangeError](#) indicates an attempt to access outside the bounds of a container.

Inheritance diagram for Xapian::RangeError:



Public Member Functions

- [RangeError](#) (const std::string &msg_, const std::string &context_=std::string(), int errno_=0)

General purpose constructor.

- [RangeError](#) (const std::string &msg_, int errno_)

Construct from message and errno value.

7.47.1 Detailed Description

[RangeError](#) indicates an attempt to access outside the bounds of a container.

7.47.2 Constructor & Destructor Documentation

- 7.47.2.1** `Xapian::RangeError::RangeError (const std::string & msg_, const std::string & context_ = std::string(), int errno_ = 0) [inline, explicit]`

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.
context_ Optional context information for this error.
errno_ Optional errno value associated with this error.

7.47.2.2 Xapian::RangeError::RangeError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.
errno_ Optional errno value associated with this error.

The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.48 Xapian::Registry Class Reference

[Registry](#) for user subclasses.

Public Member Functions

- [Registry](#) (const [Registry](#) &other)
Copy constructor.
- [Registry](#) & operator= (const [Registry](#) &other)
Assignment operator.
- [Registry](#) ()
Default constructor.
- void [register_weighting_scheme](#) (const [Xapian::Weight](#) &wt)
Register a weighting scheme.
- const [Xapian::Weight](#) * [get_weighting_scheme](#) (const std::string &name)
const
Get the weighting scheme given a name.
- void [register_posting_source](#) (const [Xapian::PostingSource](#) &source)
Register a user-defined posting source class.
- const [Xapian::PostingSource](#) * [get_posting_source](#) (const std::string &name)
const
Get a posting source given a name.
- void [register_match_spy](#) (const [Xapian::MatchSpy](#) &spy)
Register a user-defined match spy class.
- const [Xapian::MatchSpy](#) * [get_match_spy](#) (const std::string &name) const
Get a match spy given a name.

7.48.1 Detailed Description

[Registry](#) for user subclasses.

This class provides a way for the remote server to look up user subclasses when unserialising.

7.48.2 Constructor & Destructor Documentation

7.48.2.1 Xapian::Registry::Registry (const Registry & *other*)

Copy constructor.

The internals are reference counted, so copying is cheap.

Parameters:

other The object to copy.

7.48.2.2 Xapian::Registry::Registry ()

Default constructor.

The registry will contain all standard subclasses of user-subclassable classes.

7.48.3 Member Function Documentation

7.48.3.1 const Xapian::MatchSpy* Xapian::Registry::get_match_spy (const std::string & *name*) const

Get a match spy given a name.

Parameters:

name The name of the match spy to find.

Returns:

An object with the requested name, or NULL if the match spy could not be found. The returned object is owned by the registry and so must not be deleted by the caller.

7.48.3.2 const Xapian::PostingSource* Xapian::Registry::get_posting_source (const std::string & *name*) const

Get a posting source given a name.

Parameters:

name The name of the posting source to find.

Returns:

An object with the requested name, or NULL if the posting source could not be found. The returned object is owned by the registry and so must not be deleted by the caller.

7.48.3.3 `const Xapian::Weight* Xapian::Registry::get_weighting_scheme (const std::string & name) const`

Get the weighting scheme given a name.

Parameters:

name The name of the weighting scheme to find.

Returns:

An object with the requested name, or NULL if the weighting scheme could not be found. The returned object is owned by the registry and so must not be deleted by the caller.

7.48.3.4 `Registry& Xapian::Registry::operator= (const Registry & other)`

Assignment operator.

The internals are reference counted, so assignment is cheap.

Parameters:

other The object to copy.

7.48.3.5 `void Xapian::Registry::register_match_spy (const Xapian::MatchSpy & spy)`

Register a user-defined match spy class.

Parameters:

spy The match spy to register.

7.48.3.6 `void Xapian::Registry::register_posting_source (const Xapian::PostingSource & source)`

Register a user-defined posting source class.

Parameters:

source The posting source to register.

7.48.3.7 void Xapian::Registry::register_weighting_scheme (const Xapian::Weight & *wt*)

Register a weighting scheme.

Parameters:

wt The weighting scheme to register.

The documentation for this class was generated from the following file:

- [xapian/registry.h](#)

7.49 Xapian::RSet Class Reference

A relevance set (R-Set).

Public Member Functions

- [RSet](#) (const [RSet](#) &rset)
Copy constructor.
- void [operator=](#) (const [RSet](#) &rset)
Assignment operator.
- [RSet](#) ()
Default constructor.
- [~RSet](#) ()
Destructor.
- [Xapian::doccount size](#) () const
The number of documents in this R-Set.
- bool [empty](#) () const
Test if this R-Set is empty.
- void [add_document](#) ([Xapian::docid](#) did)
Add a document to the relevance set.
- void [add_document](#) (const [Xapian::MSetIterator](#) &i)
Add a document to the relevance set.
- void [remove_document](#) ([Xapian::docid](#) did)
Remove a document from the relevance set.
- void [remove_document](#) (const [Xapian::MSetIterator](#) &i)
Remove a document from the relevance set.
- bool [contains](#) ([Xapian::docid](#) did) const
Test if a given document in the relevance set.
- bool [contains](#) (const [Xapian::MSetIterator](#) &i) const
Test if a given document in the relevance set.
- std::string [get_description](#) () const
Return a string describing this object.

7.49.1 Detailed Description

A relevance set (R-Set).

This is the set of documents which are marked as relevant, for use in modifying the term weights, and in performing query expansion.

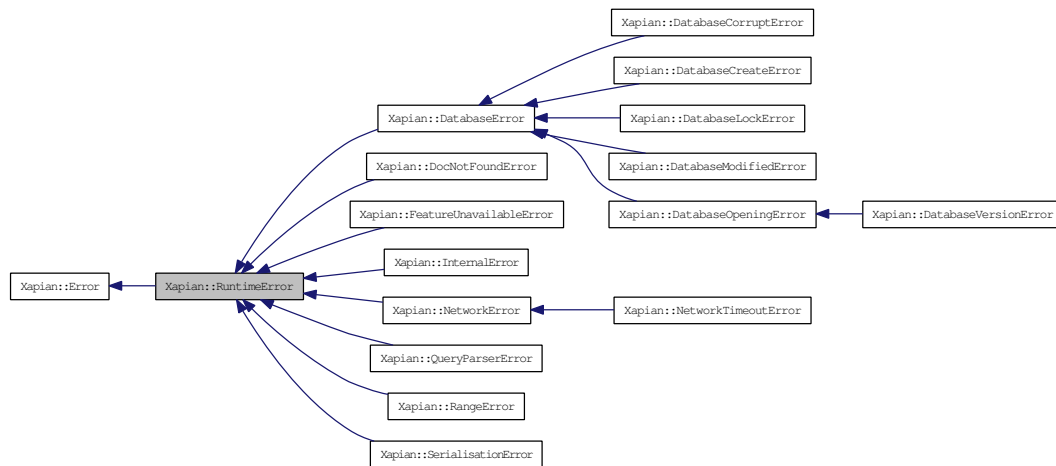
The documentation for this class was generated from the following file:

- xapian/[enquire.h](#)

7.50 Xapian::RuntimeError Class Reference

The base class for exceptions indicating errors only detectable at runtime.

Inheritance diagram for Xapian::RuntimeError:



7.50.1 Detailed Description

The base class for exceptions indicating errors only detectable at runtime.

A subclass of [RuntimeError](#) will be thrown if [Xapian](#) detects an error which is exception derived from [RuntimeError](#) is thrown when an error is caused by problems with the data or environment rather than a programming mistake.

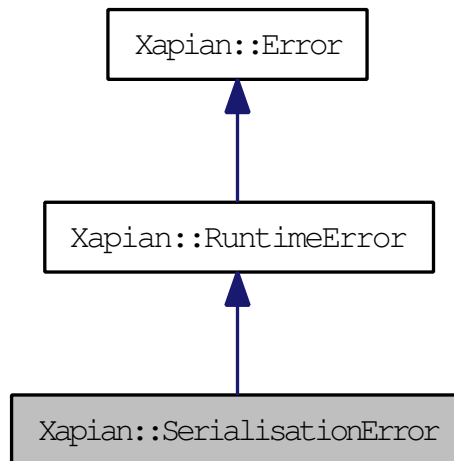
The documentation for this class was generated from the following file:

- [xapian/error.h](#)

7.51 Xapian::SerialisationError Class Reference

Indicates an error in the `std::string` serialisation of an object.

Inheritance diagram for Xapian::SerialisationError:



Public Member Functions

- [SerialisationError](#) (const `std::string` &msg_, const `std::string` &context_
=std::string(), int errno_=0)
General purpose constructor.
- [SerialisationError](#) (const `std::string` &msg_, int errno_)
Construct from message and errno value.

7.51.1 Detailed Description

Indicates an error in the `std::string` serialisation of an object.

7.51.2 Constructor & Destructor Documentation

7.51.2.1 Xapian::SerialisationError::SerialisationError (const `std::string` &
msg_, const `std::string` & *context_* = std::string(), int *errno_* =
0) [`inline`, `explicit`]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.51.2.2 Xapian::SerialisationError::SerialisationError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

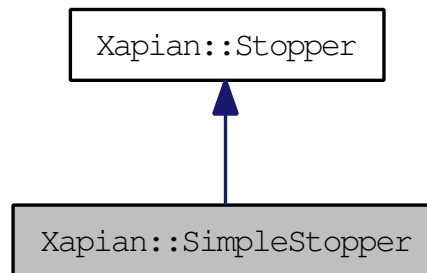
The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.52 Xapian::SimpleStopper Class Reference

Simple implementation of [Stopper](#) class - this will suit most users.

Inheritance diagram for Xapian::SimpleStopper:



Public Member Functions

- [SimpleStopper](#) ()
Default constructor.
- `template<class Iterator >`
[SimpleStopper](#) (Iterator begin, Iterator end)
Initialise from a pair of iterators.
- `void` [add](#) (const std::string &word)
Add a single stop word.
- `virtual bool` [operator\(\)](#) (const std::string &term) const
Is term a stop-word?
- `virtual std::string` [get_description](#) () const
Return a string describing this object.

7.52.1 Detailed Description

Simple implementation of [Stopper](#) class - this will suit most users.

7.52.2 Member Function Documentation

7.52.2.1 `virtual bool Xapian::SimpleStopper::operator() (const std::string &term) const` [`inline`, `virtual`]

Is term a stop-word?

Parameters:

term The term to test.

Implements [Xapian::Stopper](#).

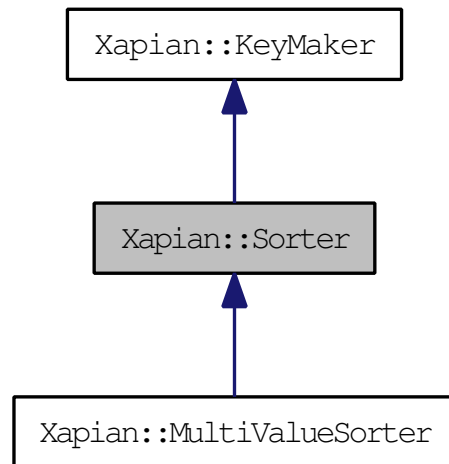
The documentation for this class was generated from the following file:

- [xapian/queryparser.h](#)

7.53 Xapian::Sorter Class Reference

Virtual base class for sorter functor.

Inheritance diagram for Xapian::Sorter:



7.53.1 Detailed Description

Virtual base class for sorter functor.

The documentation for this class was generated from the following file:

- [xapian/keymaker.h](#)

7.54 Xapian::Stem Class Reference

Class representing a stemming algorithm.

Public Member Functions

- [Stem](#) (const [Stem](#) &o)
Copy constructor.
- void [operator=](#) (const [Stem](#) &o)
Assignment.
- [Stem](#) ()
Construct a [Xapian::Stem](#) object which doesn't change terms.
- [Stem](#) (const std::string &language)
Construct a [Xapian::Stem](#) object for a particular language.
- [Stem](#) ([StemImplementation](#) *p)
Construct a [Xapian::Stem](#) object with a user-provided stemming algorithm.
- [~Stem](#) ()
Destructor.
- std::string [operator\(\)](#) (const std::string &word) const
[Stem](#) a word.
- std::string [get_description](#) () const
Return a string describing this object.

Static Public Member Functions

- static std::string [get_available_languages](#) ()
Return a list of available languages.

7.54.1 Detailed Description

Class representing a stemming algorithm.

7.54.2 Constructor & Destructor Documentation

7.54.2.1 Xapian::Stem::Stem ()

Construct a [Xapian::Stem](#) object which doesn't change terms.

Equivalent to [Stem](#)("none").

7.54.2.2 Xapian::Stem::Stem (const std::string & *language*) [explicit]

Construct a [Xapian::Stem](#) object for a particular language.

Parameters:

language Either the English name for the language or the two letter ISO639 code.

The following language names are understood (aliases follow the name):

- none - don't stem terms
- danish (da)
- dutch (nl)
- english (en) - Martin Porter's 2002 revision of his stemmer
- english_lovins (lovins) - Lovin's stemmer
- english_porter (porter) - Porter's stemmer as described in his 1980 paper
- finnish (fi)
- french (fr)
- german (de)
- german2 - Normalises umlauts and ß
- hungarian (hu)
- italian (it)
- kraaij_pohlmann - A different Dutch stemmer
- norwegian (nb, nn, no)
- portuguese (pt)
- romanian (ro)
- russian (ru)
- spanish (es)
- swedish (sv)

- `turkish (tr)`

Exceptions:

[`Xapian::InvalidArgumentError`](#) is thrown if language isn't recognised.

7.54.2.3 Xapian::Stem::Stem (StemImplementation * *p*) [explicit]

Construct a [`Xapian::Stem`](#) object with a user-provided stemming algorithm.

You can subclass [`Xapian::StemImplementation`](#) to implement your own stemming algorithm (or to wrap a third-party algorithm) and then wrap your implementation in a [`Xapian::Stem`](#) object to pass to the [`Xapian`](#) API.

Parameters:

- p* The user-subclassed [`StemImplementation`](#) object. This is reference counted, and so will be automatically deleted by the [`Xapian::Stem`](#) wrapper when no longer required.

7.54.3 Member Function Documentation**7.54.3.1 static std::string Xapian::Stem::get_available_languages ()**
[static]

Return a list of available languages.

Each stemmer is only included once in the list (not once for each alias). The name included is the English name of the language.

The list is returned as a string, with language names separated by spaces. This is a static method, so a [`Xapian::Stem`](#) object is not required for this operation.

7.54.3.2 std::string Xapian::Stem::operator() (const std::string & *word*) const

[`Stem`](#) a word.

Parameters:

- word* a word to stem.

Returns:

- the stem

The documentation for this class was generated from the following file:

- [xapian/stem.h](#)

7.55 Xapian::StemImplementation Struct Reference

Class representing a stemming algorithm implementation.

Public Member Functions

- virtual [~StemImplementation](#) ()
Virtual destructor.
- virtual std::string [operator\(\)](#) (const std::string &word)=0
[Stem](#) the specified word.
- virtual std::string [get_description](#) () const =0
Return a string describing this object.

7.55.1 Detailed Description

Class representing a stemming algorithm implementation.

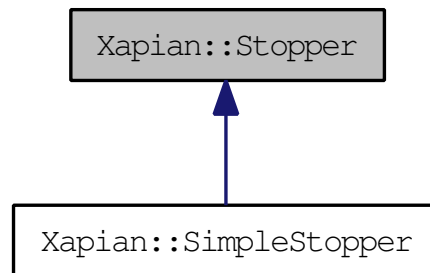
The documentation for this struct was generated from the following file:

- [xapian/stem.h](#)

7.56 Xapian::Stopper Class Reference

Base class for stop-word decision functor.

Inheritance diagram for Xapian::Stopper:



Public Member Functions

- virtual bool [operator\(\)](#) (const std::string &term) const =0
Is term a stop-word?
- virtual [~Stopper](#) ()
Class has virtual methods, so provide a virtual destructor.
- virtual std::string [get_description](#) () const
Return a string describing this object.

7.56.1 Detailed Description

Base class for stop-word decision functor.

7.56.2 Member Function Documentation

7.56.2.1 virtual bool Xapian::Stopper::operator() (const std::string & term) const [pure virtual]

Is term a stop-word?

Parameters:

term The term to test.

Implemented in [Xapian::SimpleStopper](#).

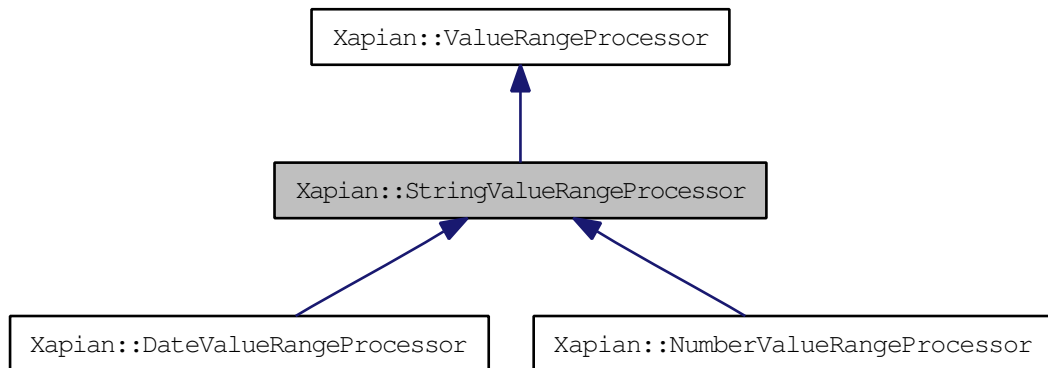
The documentation for this class was generated from the following file:

- [xapian/queryparser.h](#)

7.57 Xapian::StringValueRangeProcessor Class Reference

Handle a string range.

Inheritance diagram for Xapian::StringValueRangeProcessor:



Public Member Functions

- [StringValueRangeProcessor](#) ([Xapian::valueno](#) slot_)
Constructor.
- [StringValueRangeProcessor](#) ([Xapian::valueno](#) slot_, const std::string &str_, bool prefix__{_=true})
Constructor.
- [Xapian::valueno operator\(\)](#) (std::string &begin, std::string &end)
Check for a valid string range.

7.57.1 Detailed Description

Handle a string range.

The end points can be any strings.

7.57.2 Constructor & Destructor Documentation

7.57.2.1 Xapian::StringValueRangeProcessor::StringValueRangeProcessor ([Xapian::valueno](#) slot_) `[inline]`

Constructor.

Parameters:

slot_ The value number to return from operator().

7.57.2.2 Xapian::StringValueRangeProcessor::StringValueRangeProcessor
 (Xapian::valueno *slot_*, const std::string & *str_*, bool *prefix_* = true)
 [inline]

Constructor.

Parameters:

slot_ The value number to return from operator().

str_ A string to look for to recognise values as belonging to this range.

prefix_ Flag specifying whether to check for *str_* as a prefix or a suffix.

7.57.3 Member Function Documentation

7.57.3.1 Xapian::valueno Xapian::StringValueRangeProcessor::operator()
 (std::string & *begin*, std::string & *end*) [virtual]

Check for a valid string range.

Parameters:

↔ ***begin*** The start of the range as specified in the query string by the user. This parameter is a non-const reference so the [ValueRangeProcessor](#) can modify it to return the value to start the range with.

↔ ***end*** The end of the range. This is also a non-const reference so it can be modified.

Returns:

A [StringValueRangeProcessor](#) always accepts a range it is offered, and returns the value of *slot_* passed at construction time. It doesn't modify *begin* or *end*.

Implements [Xapian::ValueRangeProcessor](#).

Reimplemented in [Xapian::DateValueRangeProcessor](#), and [Xapian::NumberValueRangeProcessor](#).

The documentation for this class was generated from the following file:

- [xapian/queryparser.h](#)

7.58 Xapian::TermGenerator Class Reference

Parses a piece of text and generate terms.

Public Types

- enum [flags](#) { [FLAG_SPELLING](#) = 128 }
Flags to OR together and pass to [TermGenerator::set_flags\(\)](#).
- enum [stem_strategy](#)
Stemming strategies, for use with [set_stemming_strategy\(\)](#).

Public Member Functions

- [TermGenerator](#) (const [TermGenerator](#) &o)
Copy constructor.
- [TermGenerator](#) & [operator=](#) (const [TermGenerator](#) &o)
Assignment.
- [TermGenerator](#) ()
Default constructor.
- [~TermGenerator](#) ()
Destructor.
- void [set_stemmer](#) (const [Xapian::Stem](#) &stemmer)
Set the [Xapian::Stem](#) object to be used for generating stemmed terms.
- void [set_stopper](#) (const [Xapian::Stopper](#) *stop=NULL)
Set the [Xapian::Stopper](#) object to be used for identifying stopwords.
- void [set_document](#) (const [Xapian::Document](#) &doc)
Set the current document.
- const [Xapian::Document](#) & [get_document](#) () const
Get the current document.
- void [set_database](#) (const [Xapian::WritableDatabase](#) &db)
Set the database to index spelling data to.
- [flags](#) [set_flags](#) ([flags](#) toggle, [flags](#) mask=[flags](#)(0))
Set flags.

- void [set_stemming_strategy](#) ([stem_strategy](#) strategy)
Set the stemming strategy.
- void [set_max_word_length](#) (unsigned max_word_length)
Set the maximum length word to index.
- void [index_text](#) (const [Xapian::Utf8Iterator](#) &itor, [Xapian::termcount](#) wdf_inc=1, const std::string &prefix=std::string())
Index some text.
- void [index_text](#) (const std::string &text, [Xapian::termcount](#) wdf_inc=1, const std::string &prefix=std::string())
Index some text in a std::string.
- void [index_text_without_positions](#) (const [Xapian::Utf8Iterator](#) &itor, [Xapian::termcount](#) wdf_inc=1, const std::string &prefix=std::string())
Index some text without positional information.
- void [index_text_without_positions](#) (const std::string &text, [Xapian::termcount](#) wdf_inc=1, const std::string &prefix=std::string())
Index some text in a std::string without positional information.
- void [increase_termpos](#) ([Xapian::termcount](#) delta=100)
Increase the term position used by index_text.
- [Xapian::termcount](#) [get_termpos](#) () const
Get the current term position.
- void [set_termpos](#) ([Xapian::termcount](#) termpos)
Set the current term position.
- std::string [get_description](#) () const
Return a string describing this object.

7.58.1 Detailed Description

Parses a piece of text and generate terms.

This module takes a piece of text and parses it to produce words which are then used to generate suitable terms for indexing. The terms generated are suitable for use with [Query](#) objects produced by the [QueryParser](#) class.

7.58.2 Member Enumeration Documentation

7.58.2.1 enum Xapian::TermGenerator::flags

Flags to OR together and pass to [TermGenerator::set_flags\(\)](#).

Enumerator:

FLAG_SPELLING Index data required for spelling correction.

7.58.3 Member Function Documentation

7.58.3.1 void Xapian::TermGenerator::increase_termpos (Xapian::termcount *delta* = 100)

Increase the term position used by `index_text`.

This can be used between indexing text from different fields or other places to prevent phrase searches from spanning between them (e.g. between the title and body text, or between two chapters in a book).

Parameters:

delta Amount to increase the term position by (default: 100).

7.58.3.2 void Xapian::TermGenerator::index_text (const std::string & *text*, Xapian::termcount *wdf_inc* = 1, const std::string & *prefix* = std::string()) [inline]

Index some text in a `std::string`.

Parameters:

text The text to index.

wdf_inc The wdf increment (default 1).

prefix The term prefix to use (default is no prefix).

7.58.3.3 void Xapian::TermGenerator::index_text (const Xapian::Utf8Iterator & *itor*, Xapian::termcount *wdf_inc* = 1, const std::string & *prefix* = std::string())

Index some text.

Parameters:

itor [Utf8Iterator](#) pointing to the text to index.

wdf_inc The wdf increment (default 1).

prefix The term prefix to use (default is no prefix).

7.58.3.4 `void Xapian::TermGenerator::index_text_without_positions (const std::string & text, Xapian::termcount wdf_inc = 1, const std::string & prefix = std::string()) [inline]`

Index some text in a `std::string` without positional information.

Just like `index_text`, but no positional information is generated. This means that the database will be significantly smaller, but that phrase searching and NEAR won't be supported.

Parameters:

text The text to index.

wdf_inc The wdf increment (default 1).

prefix The term prefix to use (default is no prefix).

7.58.3.5 `void Xapian::TermGenerator::index_text_without_positions (const Xapian::Utf8Iterator & itor, Xapian::termcount wdf_inc = 1, const std::string & prefix = std::string())`

Index some text without positional information.

Just like `index_text`, but no positional information is generated. This means that the database will be significantly smaller, but that phrase searching and NEAR won't be supported.

Parameters:

itor [Utf8Iterator](#) pointing to the text to index.

wdf_inc The wdf increment (default 1).

prefix The term prefix to use (default is no prefix).

7.58.3.6 `flags Xapian::TermGenerator::set_flags (flags toggle, flags mask = flags(0))`

Set flags.

The new value of flags is: $(\text{flags} \& \text{mask}) \wedge \text{toggle}$

To just set the flags, pass the new flags in `toggle` and the default value for `mask`.

Parameters:

toggle Flags to XOR.

mask Flags to AND with first.

Returns:

The old flags setting.

7.58.3.7 void Xapian::TermGenerator::set_max_word_length (unsigned *max_word_length*)

Set the maximum length word to index.

The limit is on the length of a word prior to stemming and prior to adding any term prefix.

The backends mostly impose a limit on the length of terms (often of about 240 bytes), but it's generally useful to have a lower limit to help prevent the index being bloated by useless junk terms from trying to indexing things like binary data, uuencoded data, ASCII art, etc.

This method was new in [Xapian 1.3.1](#).

Parameters:

max_word_length The maximum length word to index, in bytes in UTF-8 representation. Default is 64.

7.58.3.8 void Xapian::TermGenerator::set_stemming_strategy (stem_strategy *strategy*)

Set the stemming strategy.

This method controls how the stemming algorithm is applied. It was new in [Xapian 1.3.1](#).

Parameters:

strategy The strategy to use - possible values are:

- STEM_NONE: Don't perform any stemming - only unstemmed terms are generated.
- STEM_SOME: Generate both stemmed (with a "Z" prefix) and unstemmed terms. This is the default strategy.
- STEM_ALL: Generate only stemmed terms (but without a "Z" prefix).
- STEM_ALL_Z: Generate only stemmed terms (with a "Z" prefix).

7.58.3.9 void Xapian::TermGenerator::set_stopper (const Xapian::Stopper * *stop* = NULL)

Set the [Xapian::Stopper](#) object to be used for identifying stopwords.

Stemmed forms of stopwords aren't indexed, but unstemmed forms still are so that searches for phrases including stop words still work.

Parameters:

stop The [Stopper](#) object to set (default NULL, which means no stopwords).

**7.58.3.10 void Xapian::TermGenerator::set_termpos (Xapian::termcount
termpos)**

Set the current term position.

Parameters:

termpos The new term position to set.

The documentation for this class was generated from the following file:

- xapian/[termgenerator.h](#)

7.59 Xapian::TermIterator Class Reference

An iterator pointing to items in a list of terms.

Public Types

- typedef std::input_iterator_tag [iterator_category](#)
Allow use as an STL iterator.
- typedef std::string [value_type](#)
Allow use as an STL iterator.
- typedef [Xapian::termcount_diff](#) [difference_type](#)
Allow use as an STL iterator.
- typedef std::string * [pointer](#)
Allow use as an STL iterator.
- typedef std::string & [reference](#)
Allow use as an STL iterator.

Public Member Functions

- [TermIterator](#) ()
Default constructor - for declaring an uninitialised iterator.
- [~TermIterator](#) ()
Destructor.
- [TermIterator](#) (const [TermIterator](#) &other)
Copying is allowed.
- void [operator=](#) (const [TermIterator](#) &other)
Assignment is allowed.
- std::string [operator*](#) () const
Return the current term.
- [TermIterator](#) & [operator++](#) ()
Advance the iterator to the next position.
- [DerefWrapper_< std::string > operator++](#) (int)
Advance the iterator to the next position (postfix version).
- void [skip_to](#) (const std::string &tname)

Advance the iterator to the specified term.

- [Xapian::termcount get_wdf \(\)](#) const
Return the wdf of the current term (if meaningful).
- [Xapian::doccount get_termfreq \(\)](#) const
Return the term frequency of the current term (if meaningful).
- [Xapian::termcount positionlist_count \(\)](#) const
Return length of positionlist for current term.
- [PositionIterator positionlist_begin \(\)](#) const
Return [PositionIterator](#) pointing to start of positionlist for current term.
- [PositionIterator positionlist_end \(\)](#) const
Return [PositionIterator](#) pointing to end of positionlist for current term.
- [std::string get_description \(\)](#) const
Return a string describing this object.

7.59.1 Detailed Description

An iterator pointing to items in a list of terms.

7.59.2 Constructor & Destructor Documentation

7.59.2.1 [Xapian::TermIterator::TermIterator \(const TermIterator & other\)](#)

Copying is allowed.

The internals are reference counted, so copying is also cheap.

7.59.3 Member Function Documentation

7.59.3.1 [Xapian::doccount Xapian::TermIterator::get_termfreq \(\)](#) const

Return the term frequency of the current term (if meaningful).

The term frequency is the number of documents which a term indexes.

7.59.3.2 [Xapian::termcount Xapian::TermIterator::get_wdf \(\)](#) const

Return the wdf of the current term (if meaningful).

The wdf (within document frequency) is the number of occurrences of a term in a particular document.

7.59.3.3 void Xapian::TermIterator::operator= (const TermIterator & *other*)

Assignment is allowed.

The internals are reference counted, so assignment is also cheap.

7.59.3.4 void Xapian::TermIterator::skip_to (const std::string & *tname*)

Advance the iterator to the specified term.

If the specified term isn't in the list, position ourselves on the first term after it (or `at_end()` if no greater terms are present).

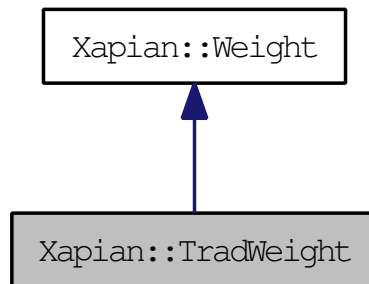
The documentation for this class was generated from the following file:

- `xapian/termiterator.h`

7.60 Xapian::TradWeight Class Reference

[Xapian::Weight](#) subclass implementing the traditional probabilistic formula.

Inheritance diagram for Xapian::TradWeight:



Public Member Functions

- [TradWeight](#) (double k=1.0)
Construct a [TradWeight](#).
- std::string [name](#) () const
Return the name of this weighting scheme.
- std::string [serialise](#) () const
Return this object's parameters serialised as a single string.
- [TradWeight](#) * [unserialise](#) (const std::string &s) const
Unserialise parameters.
- [Xapian::weight](#) [get_sumpart](#) ([Xapian::termcount](#) wdf, [Xapian::termcount](#) doclen) const
Calculate the weight contribution for this object's term to a document.
- [Xapian::weight](#) [get_maxpart](#) () const
Return an upper bound on what [get_sumpart\(\)](#) can return for any document.
- [Xapian::weight](#) [get_sumextra](#) ([Xapian::termcount](#) doclen) const
Calculate the term-independent weight component for a document.
- [Xapian::weight](#) [get_maxextra](#) () const
Return an upper bound on what [get_sumextra\(\)](#) can return for any document.

7.60.1 Detailed Description

[Xapian::Weight](#) subclass implementing the traditional probabilistic formula.

This class implements the "traditional" Probabilistic Weighting scheme, as described by the early papers on Probabilistic Retrieval. BM25 generally gives better results.

TradWeight(k) is equivalent to BM25Weight(k, 0, 0, 1, 0), except that the latter returns weights (k+1) times larger.

7.60.2 Constructor & Destructor Documentation

7.60.2.1 Xapian::TradWeight::TradWeight (double *k* = 1.0) [inline, explicit]

Construct a [TradWeight](#).

Parameters:

- k* A non-negative parameter controlling how influential within-document-frequency (wdf) and document length are. k=0 means that wdf and document length don't affect the weights. The larger k is, the more they do. (default 1)

7.60.3 Member Function Documentation

7.60.3.1 Xapian::weight Xapian::TradWeight::get_maxextra () const [virtual]

Return an upper bound on what [get_sumextra\(\)](#) can return for any document.

This information is used by the matcher to perform various optimisations, so strive to make the bound as tight as possible.

Implements [Xapian::Weight](#).

7.60.3.2 Xapian::weight Xapian::TradWeight::get_maxpart () const [virtual]

Return an upper bound on what [get_sumpart\(\)](#) can return for any document.

This information is used by the matcher to perform various optimisations, so strive to make the bound as tight as possible.

Implements [Xapian::Weight](#).

7.60.3.3 Xapian::weight Xapian::TradWeight::get_sumextra (Xapian::termcount *doclen*) const [virtual]

Calculate the term-independent weight component for a document.

The parameter gives information about the document which may be used in the calculations:

Parameters:

doclen The document's length (unnormalised).

Implements [Xapian::Weight](#).

**7.60.3.4 Xapian::weight Xapian::TradWeight::get_sumpart
(Xapian::termcount *wdf*, Xapian::termcount *doclen*) const
[virtual]**

Calculate the weight contribution for this object's term to a document.

The parameters give information about the document which may be used in the calculations:

Parameters:

wdf The within document frequency of the term in the document.

doclen The document's length (unnormalised).

Implements [Xapian::Weight](#).

7.60.3.5 std::string Xapian::TradWeight::name () const [virtual]

Return the name of this weighting scheme.

This name is used by the remote backend. It is passed along with the serialised parameters to the remote server so that it knows which class to create.

Return the full namespace-qualified name of your class here - if your class is called FooWeight, return "FooWeight" from this method ([Xapian::BM25Weight](#) returns "Xapian::BM25Weight" here).

If you don't want to support the remote backend, you can use the default implementation which simply returns an empty string.

Reimplemented from [Xapian::Weight](#).

7.60.3.6 std::string Xapian::TradWeight::serialise () const [virtual]

Return this object's parameters serialised as a single string.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented from [Xapian::Weight](#).

7.60.3.7 TradWeight* Xapian::TradWeight::unserialise (const std::string & s) const [virtual]

Unserialise parameters.

This method unserialises parameters serialised by the [serialise\(\)](#) method and allocates and returns a new object initialised with them.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Parameters:

- s* A string containing the serialised parameters.

Reimplemented from [Xapian::Weight](#).

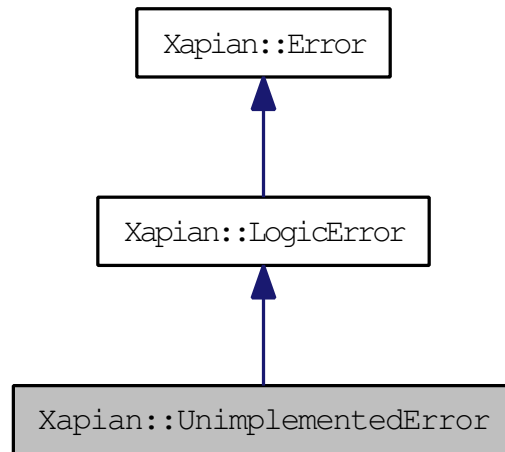
The documentation for this class was generated from the following file:

- [xapian/weight.h](#)

7.61 Xapian::UnimplementedError Class Reference

[UnimplementedError](#) indicates an attempt to use an unimplemented feature.

Inheritance diagram for Xapian::UnimplementedError:



Public Member Functions

- [UnimplementedError](#) (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0)
General purpose constructor.
- [UnimplementedError](#) (const std::string &msg_, int errno_)
Construct from message and errno value.

7.61.1 Detailed Description

[UnimplementedError](#) indicates an attempt to use an unimplemented feature.

7.61.2 Constructor & Destructor Documentation

7.61.2.1 Xapian::UnimplementedError::UnimplementedError (const std::string &msg_, const std::string &context_ = std::string(), int errno_ = 0) [inline, explicit]

General purpose constructor.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

context_ Optional context information for this error.

errno_ Optional errno value associated with this error.

7.61.2.2 Xapian::UnimplementedError::UnimplementedError (const std::string & msg_, int errno_) [inline]

Construct from message and errno value.

Parameters:

msg_ Message giving details of the error, intended for human consumption.

errno_ Optional errno value associated with this error.

The documentation for this class was generated from the following file:

- xapian/[error.h](#)

7.62 Xapian::Utf8Iterator Class Reference

An iterator which returns [Unicode](#) character values from a UTF-8 encoded string.

Public Types

- typedef std::input_iterator_tag [iterator_category](#)
We implement the semantics of an STL input_iterator.
- typedef unsigned [value_type](#)
We implement the semantics of an STL input_iterator.
- typedef size_t [difference_type](#)
We implement the semantics of an STL input_iterator.
- typedef const unsigned * [pointer](#)
We implement the semantics of an STL input_iterator.
- typedef const unsigned & [reference](#)
We implement the semantics of an STL input_iterator.

Public Member Functions

- const char * [raw](#) () const
*Return the raw const char * pointer for the current position.*
- size_t [left](#) () const
Return the number of bytes left in the iterator's buffer.
- void [assign](#) (const char *p_, size_t len)
Assign a new string to the iterator.
- void [assign](#) (const std::string &s)
Assign a new string to the iterator.
- [Utf8Iterator](#) (const char *p_)
Create an iterator given a pointer to a null terminated string.
- [Utf8Iterator](#) (const char *p_, size_t len)
Create an iterator given a pointer and a length.
- [Utf8Iterator](#) (const std::string &s)
Create an iterator given a string.
- [Utf8Iterator](#) ()

Create an iterator which is at the end of its iteration.

- unsigned `operator*` () const
Get the current [Unicode](#) character value pointed to by the iterator.
- `Utf8Iterator operator++` (int)
Move forward to the next [Unicode](#) character.
- `Utf8Iterator & operator++` ()
Move forward to the next [Unicode](#) character.
- bool `operator==` (const `Utf8Iterator` &other) const
Test two `Utf8Iterators` for equality.
- bool `operator!=` (const `Utf8Iterator` &other) const
Test two `Utf8Iterators` for inequality.

7.62.1 Detailed Description

An iterator which returns [Unicode](#) character values from a UTF-8 encoded string.

7.62.2 Constructor & Destructor Documentation

7.62.2.1 Xapian::Utf8Iterator::Utf8Iterator (const char * *p_*) [`explicit`]

Create an iterator given a pointer to a null terminated string.

The iterator will return characters from the start of the string when next called. The string is not copied into the iterator, so it must remain valid while the iteration is in progress.

Parameters:

p_ A pointer to the start of the null terminated string to read.

7.62.2.2 Xapian::Utf8Iterator::Utf8Iterator (const char * *p_*, `size_t` *len*) [`inline`]

Create an iterator given a pointer and a length.

The iterator will return characters from the start of the string when next called. The string is not copied into the iterator, so it must remain valid while the iteration is in progress.

Parameters:

p_ A pointer to the start of the string to read.

len The length of the string to read.

7.62.2.3 Xapian::Utf8Iterator::Utf8Iterator (const std::string & s) [inline]

Create an iterator given a string.

The iterator will return characters from the start of the string when next called. The string is not copied into the iterator, so it must remain valid while the iteration is in progress.

Parameters:

s The string to read. Must not be modified while the iteration is in progress.

7.62.2.4 Xapian::Utf8Iterator::Utf8Iterator () [inline]

Create an iterator which is at the end of its iteration.

This can be compared to another iterator to check if the other iterator has reached its end.

7.62.3 Member Function Documentation

7.62.3.1 void Xapian::Utf8Iterator::assign (const std::string & s) [inline]

Assign a new string to the iterator.

The iterator will forget the string it was iterating through, and return characters from the start of the new string when next called. The string is not copied into the iterator, so it must remain valid while the iteration is in progress.

Parameters:

s The string to read. Must not be modified while the iteration is in progress.

References assign().

Referenced by assign().

7.62.3.2 void Xapian::Utf8Iterator::assign (const char * p_, size_t len) [inline]

Assign a new string to the iterator.

The iterator will forget the string it was iterating through, and return characters from the start of the new string when next called. The string is not copied into the iterator, so it must remain valid while the iteration is in progress.

Parameters:

- p_* A pointer to the start of the string to read.
len The length of the string to read.

7.62.3.3 `size_t Xapian::Utf8Iterator::left () const` `[inline]`

Return the number of bytes left in the iterator's buffer.

7.62.3.4 `bool Xapian::Utf8Iterator::operator!= (const Utf8Iterator & other) const` `[inline]`

Test two Utf8Iterators for inequality.

Parameters:

- other* The [Utf8Iterator](#) to compare this one with.

Returns:

- true iff the iterators do not point to the same position.

7.62.3.5 `unsigned Xapian::Utf8Iterator::operator* () const`

Get the current [Unicode](#) character value pointed to by the iterator.
Returns unsigned(-1) if the iterator has reached the end of its buffer.

7.62.3.6 `Utf8Iterator& Xapian::Utf8Iterator::operator++ ()` `[inline]`

Move forward to the next [Unicode](#) character.

Returns:

- A reference to this object.

7.62.3.7 `Utf8Iterator Xapian::Utf8Iterator::operator++ (int)` `[inline]`

Move forward to the next [Unicode](#) character.

Returns:

- An iterator pointing to the position before the move.

7.62.3.8 `bool Xapian::Utf8Iterator::operator==(const Utf8Iterator & other) const` `[inline]`

Test two Utf8Iterators for equality.

Parameters:

other The [Utf8Iterator](#) to compare this one with.

Returns:

true iff the iterators point to the same position.

7.62.3.9 `const char* Xapian::Utf8Iterator::raw () const` `[inline]`

Return the raw const char * pointer for the current position.

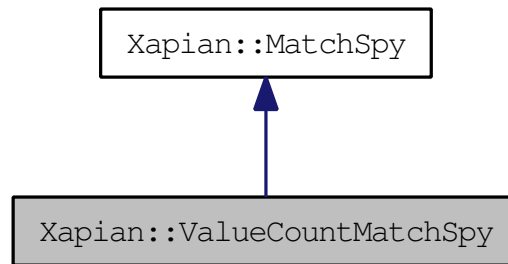
The documentation for this class was generated from the following file:

- [xapian/unicode.h](#)

7.63 Xapian::ValueCountMatchSpy Class Reference

Class for counting the frequencies of values in the matching documents.

Inheritance diagram for Xapian::ValueCountMatchSpy:



Public Member Functions

- [ValueCountMatchSpy](#) ()
Construct an empty [ValueCountMatchSpy](#).
- [ValueCountMatchSpy](#) (Xapian::valueno slot_)
Construct a [MatchSpy](#) which counts the values in a particular slot.
- [size_t](#) [get_total](#) () const
Return the total number of documents tallied.
- [TermIterator](#) [values_begin](#) () const
Get an iterator over the values seen in the slot.
- [TermIterator](#) [values_end](#) () const
End iterator corresponding to [values_begin](#)().
- [TermIterator](#) [top_values_begin](#) (size_t maxvalues) const
Get an iterator over the most frequent values seen in the slot.
- [TermIterator](#) [top_values_end](#) (size_t) const
End iterator corresponding to [top_values_begin](#)().
- void [operator\(\)](#) (const [Xapian::Document](#) &doc, [Xapian::weight](#) wt)
Implementation of virtual operator().
- virtual [MatchSpy](#) * [clone](#) () const
Clone the match spy.
- virtual std::string [name](#) () const

Return the name of this match spy.

- virtual std::string [serialise](#) () const
Return this object's parameters serialised as a single string.
- virtual [MatchSpy](#) * [unserialise](#) (const std::string &s, const [Registry](#) &context) const
Unserialise parameters.
- virtual std::string [serialise_results](#) () const
Serialise the results of this match spy.
- virtual void [merge_results](#) (const std::string &s)
Unserialise some results, and merge them into this matchspy.
- virtual std::string [get_description](#) () const
Return a string describing this object.

7.63.1 Detailed Description

Class for counting the frequencies of values in the matching documents.

7.63.2 Member Function Documentation

7.63.2.1 virtual [MatchSpy](#)* [Xapian::ValueCountMatchSpy::clone](#) () const [virtual]

Clone the match spy.

The clone should inherit the configuration of the parent, but need not inherit the state. ie, the clone does not need to be passed information about the results seen by the parent.

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Reimplemented from [Xapian::MatchSpy](#).

7.63.2.2 virtual std::string [Xapian::ValueCountMatchSpy::get_description](#) () const [virtual]

Return a string describing this object.

This default implementation returns a generic answer, to avoid forcing those deriving their own [MatchSpy](#) subclasses from having to implement this (they may not care what [get_description\(\)](#) gives for their subclass).

Reimplemented from [Xapian::MatchSpy](#).

7.63.2.3 `size_t Xapian::ValueCountMatchSpy::get_total() const` [inline]

Return the total number of documents tallied.

7.63.2.4 `virtual void Xapian::ValueCountMatchSpy::merge_results(const std::string & s)` [virtual]

Unserialise some results, and merge them into this matchspy.

The order in which results are merged should not be significant, since this order is not specified (and will vary depending on the speed of the search in each sub-database).

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Parameters:

s A string containing the serialised results.

Reimplemented from [Xapian::MatchSpy](#).

7.63.2.5 `virtual std::string Xapian::ValueCountMatchSpy::name() const` [virtual]

Return the name of this match spy.

This name is used by the remote backend. It is passed with the serialised parameters to the remote server so that it knows which class to create.

Return the full namespace-qualified name of your class here - if your class is called `MyApp::FooMatchSpy`, return `"MyApp::FooMatchSpy"` from this method.

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented from [Xapian::MatchSpy](#).

7.63.2.6 `void Xapian::ValueCountMatchSpy::operator()(const Xapian::Document & doc, Xapian::weight wt)` [virtual]

Implementation of virtual operator().

This implementation tallies values for a matching document.

Parameters:

doc The document to tally values for.

wt The weight of the document (ignored by this class).

Implements [Xapian::MatchSpy](#).

7.63.2.7 **virtual std::string Xapian::ValueCountMatchSpy::serialise () const** [virtual]

Return this object's parameters serialised as a single string.

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented from [Xapian::MatchSpy](#).

7.63.2.8 **virtual std::string Xapian::ValueCountMatchSpy::serialise_results () const** [virtual]

Serialise the results of this match spy.

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented from [Xapian::MatchSpy](#).

7.63.2.9 **TermIterator Xapian::ValueCountMatchSpy::top_values_begin (size_t maxvalues) const**

Get an iterator over the most frequent values seen in the slot.

Items will be returned in descending order of frequency. Values with the same frequency will be returned in ascending alphabetical order.

During the iteration, the frequency of the current value can be obtained with the `get_termfreq()` method on the iterator.

Parameters:

maxvalues The maximum number of values to return.

7.63.2.10 **virtual MatchSpy* Xapian::ValueCountMatchSpy::unserialise (const std::string & s, const Registry & context) const** [virtual]

Unserialise parameters.

This method unserialises parameters serialised by the [serialise\(\)](#) method and allocates and returns a new object initialised with them.

If you don't want to support the remote backend in your match spy, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Parameters:

s A string containing the serialised results.

context [Registry](#) object to use for unserialisation to permit [MatchSpy](#) subclasses with sub-MatchSpy objects to be implemented.

Reimplemented from [Xapian::MatchSpy](#).

7.63.2.11 TermIterator Xapian::ValueCountMatchSpy::values_begin () const

Get an iterator over the values seen in the slot.

Items will be returned in ascending alphabetical order.

During the iteration, the frequency of the current value can be obtained with the `get_termfreq()` method on the iterator.

The documentation for this class was generated from the following file:

- [xapian/matchspy.h](#)

7.64 Xapian::ValueIterator Class Reference

Class for iterating over document values.

Public Member Functions

- [ValueIterator](#) (const [ValueIterator](#) &o)
Copy constructor.
- [ValueIterator](#) & [operator=](#) (const [ValueIterator](#) &o)
Assignment.
- [ValueIterator](#) ()
Default constructor.
- [~ValueIterator](#) ()
Destructor.
- std::string [operator*](#) () const
Return the value at the current position.
- [ValueIterator](#) & [operator++](#) ()
Advance the iterator to the next position.
- DerefWrapper_< std::string > [operator++](#) (int)
Advance the iterator to the next position (postfix version).
- [Xapian::docid](#) [get_docid](#) () const
Return the docid at the current position.
- [Xapian::valueno](#) [get_valueno](#) () const
Return the value slot number for the current position.
- void [skip_to](#) ([Xapian::docid](#) docid_or_slot)
Advance the iterator to document id or value slot docid_or_slot.
- bool [check](#) ([Xapian::docid](#) docid)
Check if the specified docid occurs.
- std::string [get_description](#) () const
Return a string describing this object.

7.64.1 Detailed Description

Class for iterating over document values.

7.64.2 Constructor & Destructor Documentation

7.64.2.1 Xapian::ValueIterator::ValueIterator ()

Default constructor.

Creates an uninitialised iterator, which can't be used before being assigned to, but is sometimes syntactically convenient.

7.64.3 Member Function Documentation

7.64.3.1 bool Xapian::ValueIterator::check (Xapian::docid *docid*)

Check if the specified docid occurs.

The caller is required to ensure that the specified document id *did* actually exists in the database.

This method acts like [skip_to\(\)](#) if that can be done at little extra cost, in which case it then returns true. This is how brass and chert databases behave because they store values in streams which allow for an efficient implementation of [skip_to\(\)](#).

Otherwise it simply checks if a particular docid is present. If it is, it returns true. If it isn't, it returns false, and leaves the position unspecified (and hence the result of calling methods which depends on the current position, such as [get_docid\(\)](#), are also unspecified). In this state, [next\(\)](#) will advance to the first matching position after document *did*, and [skip_to\(\)](#) will act as it would if the position was the first matching position after document *did*.

Currently the inmemory, flint, and remote backends behave in the latter way because they don't support streamed values and so [skip_to\(\)](#) must check each document it skips over which is significantly slower.

Parameters:

docid The document id to check.

7.64.3.2 Xapian::docid Xapian::ValueIterator::get_docid () const

Return the docid at the current position.

If we're iterating over values of a document, this method will throw [Xapian::InvalidOperationError](#).

7.64.3.3 Xapian::valueno Xapian::ValueIterator::get_valueno () const

Return the value slot number for the current position.

If the iterator is over all values in a slot, this returns that slot's number. If the iterator is over the values in a particular document, it returns the number of each slot in turn.

7.64.3.4 void Xapian::ValueIterator::skip_to (Xapian::docid *docid_or_slot*)

Advance the iterator to document id or value slot *docid_or_slot*.

If this iterator is over values in a document, then this method advances the iterator to value slot *docid_or_slot*, or the first slot after it if there is no value in slot *slot*.

If this iterator is over values in a particular slot, then this method advances the iterator to document id *docid_or_slot*, or the first document id after it if there is no value in the slot we're iterating over for document *docid_or_slot*.

Note: The "two-faced" nature of this method is due to how C++ overloading works. [Xapian::docid](#) and [Xapian::valueno](#) are both typedefs for the same unsigned integer type, so overloading can't distinguish them.

Parameters:

docid_or_slot The docid/slot to advance to.

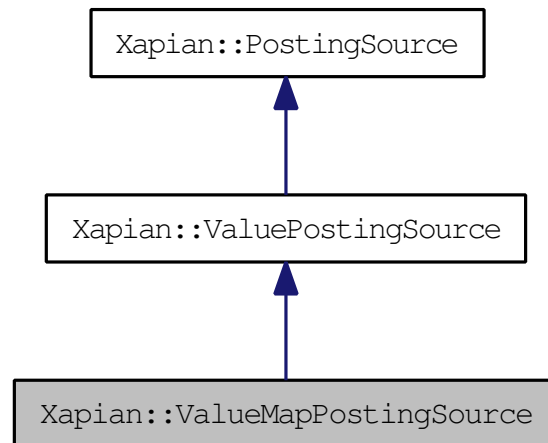
The documentation for this class was generated from the following file:

- [xapian/valueiterator.h](#)

7.65 Xapian::ValueMapPostingSource Class Reference

A posting source which looks up weights in a map using values as the key.

Inheritance diagram for Xapian::ValueMapPostingSource:



Public Member Functions

- [ValueMapPostingSource](#) ([Xapian::valueno](#) slot_)
Construct a [ValueWeightPostingSource](#).
- void [add_mapping](#) (const std::string &key, double wt)
Add a mapping.
- void [clear_mappings](#) ()
Clear all mappings.
- void [set_default_weight](#) (double wt)
Set a default weight for document values not in the map.
- [Xapian::weight](#) [get_weight](#) () const
Return the weight contribution for the current document.
- [ValueMapPostingSource](#) * [clone](#) () const
Clone the posting source.
- std::string [name](#) () const
Name of the posting source class.
- std::string [serialise](#) () const
Serialise object parameters into a string.

- [ValueMapPostingSource](#) * [unserialise](#) (const std::string &s) const
Create object given string serialisation returned by [serialise\(\)](#).
- void [init](#) (const [Database](#) &db_)
Set this [PostingSource](#) to the start of the list of postings.
- std::string [get_description](#) () const
Return a string describing this object.

7.65.1 Detailed Description

A posting source which looks up weights in a map using values as the key.

This allows will return entries for all documents in the given database which have a value in the slot specified. The values will be mapped to the corresponding weight in the weight map. If there is no mapping for a particular value, the default weight will be returned (which itself defaults to 0.0).

7.65.2 Constructor & Destructor Documentation

7.65.2.1 [Xapian::ValueMapPostingSource::ValueMapPostingSource](#) ([Xapian::valueno slot_](#))

Construct a [ValueWeightPostingSource](#).

Parameters:

slot_ The value slot to read values from.

7.65.3 Member Function Documentation

7.65.3.1 void [Xapian::ValueMapPostingSource::add_mapping](#) (const std::string & *key*, double *wt*)

Add a mapping.

Parameters:

key The key looked up from the value slot.

wt The weight to give this key.

7.65.3.2 void [Xapian::ValueMapPostingSource::clear_mappings](#) ()

Clear all mappings.

7.65.3.3 ValueMapPostingSource* Xapian::ValueMapPostingSource::clone () const [virtual]

Clone the posting source.

The clone should inherit the configuration of the parent, but need not inherit the state. ie, the clone does not need to be in the same iteration position as the original: the matcher will always call [init\(\)](#) on the clone before attempting to move the iterator, or read the information about the current position of the iterator.

This may return NULL to indicate that cloning is not supported. In this case, the [PostingSource](#) may only be used with a single-database search.

The default implementation returns NULL.

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Reimplemented from [Xapian::PostingSource](#).

7.65.3.4 std::string Xapian::ValueMapPostingSource::get_description () const [virtual]

Return a string describing this object.

This default implementation returns a generic answer. This default is provided to avoid forcing those deriving their own [PostingSource](#) subclass from having to implement this (they may not care what [get_description\(\)](#) gives for their subclass).

Reimplemented from [Xapian::PostingSource](#).

7.65.3.5 Xapian::weight Xapian::ValueMapPostingSource::get_weight () const [virtual]

Return the weight contribution for the current document.

This default implementation always returns 0, for convenience when implementing "weight-less" [PostingSource](#) subclasses.

This method may assume that it will only be called when there is a "current document". In detail: [Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time. It will also only call this if the [PostingSource](#) reports that it is pointing to a valid document (ie, it will not call it before calling at least one of [next\(\)](#), [skip_to\(\)](#) or [check\(\)](#), and will ensure that the [PostingSource](#) is not at the end by calling [at_end\(\)](#)).

Reimplemented from [Xapian::PostingSource](#).

7.65.3.6 `void Xapian::ValueMapPostingSource::init (const Database & db)` [virtual]

Set this [PostingSource](#) to the start of the list of postings.

This is called automatically by the matcher prior to each query being processed.

If a [PostingSource](#) is used for multiple searches, *init()* will therefore be called multiple times, and must handle this by using the database passed in the most recent call.

Parameters:

db The database which the [PostingSource](#) should iterate through.

Note: the database supplied to this method must not be modified: in particular, the *reopen()* method should not be called on it.

Note: in the case of a multi-database search, a separate [PostingSource](#) will be used for each database (the separate PostingSources will be obtained using *clone()*), and each [PostingSource](#) will be passed one of the sub-databases as the *db* parameter here. The *db* parameter will therefore always refer to a single database. All docids passed to, or returned from, the [PostingSource](#) refer to docids in that single database, rather than in the multi-database.

Reimplemented from [Xapian::ValuePostingSource](#).

7.65.3.7 `std::string Xapian::ValueMapPostingSource::name () const` [virtual]

Name of the posting source class.

This is used when serialising and unserialising posting sources; for example, for performing remote searches.

If the subclass is in a C++ namespace, the namespace should be included in the name, using "::" as a separator. For example, for a [PostingSource](#) subclass called "FooPostingSource" in the "Xapian" namespace the result of this call should be "Xapian::FooPostingSource".

This should only be implemented if *serialise()* and *unserialise()* are also implemented. The default implementation returns an empty string.

If this returns an empty string, [Xapian](#) will assume that *serialise()* and *unserialise()* are not implemented.

Reimplemented from [Xapian::PostingSource](#).

7.65.3.8 `std::string Xapian::ValueMapPostingSource::serialise () const` [virtual]

Serialise object parameters into a string.

The serialised parameters should represent the configuration of the posting source, but need not (indeed, should not) represent the current iteration state.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented from [Xapian::PostingSource](#).

7.65.3.9 void Xapian::ValueMapPostingSource::set_default_weight (double *wt*)

Set a default weight for document values not in the map.

Parameters:

wt The weight to set as the default.

7.65.3.10 ValueMapPostingSource* Xapian::ValueMapPostingSource::unserialise (const std::string & *s*) const [virtual]

Create object given string serialisation returned by [serialise\(\)](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static `operator delete` method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Parameters:

s A serialised instance of this [PostingSource](#) subclass.

Reimplemented from [Xapian::PostingSource](#).

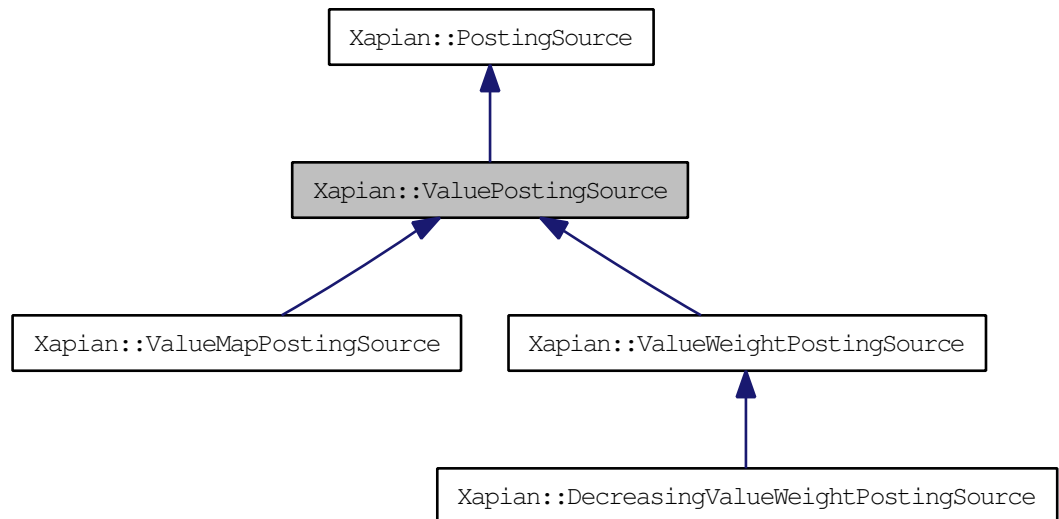
The documentation for this class was generated from the following file:

- [xapian/postingsource.h](#)

7.66 Xapian::ValuePostingSource Class Reference

A posting source which generates weights from a value slot.

Inheritance diagram for Xapian::ValuePostingSource:



Public Member Functions

- [ValuePostingSource](#) ([Xapian::valueno](#) slot_)
Construct a *ValuePostingSource*.
- [Xapian::doccount get_termfreq_min](#) () const
A lower bound on the number of documents this object can return.
- [Xapian::doccount get_termfreq_est](#) () const
An estimate of the number of documents this object can return.
- [Xapian::doccount get_termfreq_max](#) () const
An upper bound on the number of documents this object can return.
- void [next](#) ([Xapian::weight](#) min_wt)
Advance the current position to the next matching document.
- void [skip_to](#) ([Xapian::docid](#) min_docid, [Xapian::weight](#) min_wt)
Advance to the specified docid.
- bool [check](#) ([Xapian::docid](#) min_docid, [Xapian::weight](#) min_wt)
Check if the specified docid occurs.

- bool [at_end](#) () const
Return true if the current position is past the last entry in this list.
- [Xapian::docid get_docid](#) () const
Return the current docid.
- void [init](#) (const [Database](#) &db_)
Set this [PostingSource](#) to the start of the list of postings.

Protected Attributes

- [Xapian::Database db](#)
The database we're reading values from.
- [Xapian::valueno slot](#)
The slot we're reading values from.
- [Xapian::ValueIterator value_it](#)
Value stream iterator.
- bool [started](#)
Flag indicating if we've started (true if we have).
- [Xapian::doccount termfreq_min](#)
A lower bound on the term frequency.
- [Xapian::doccount termfreq_est](#)
An estimate of the term frequency.
- [Xapian::doccount termfreq_max](#)
An upper bound on the term frequency.

7.66.1 Detailed Description

A posting source which generates weights from a value slot.

This is a base class for classes which generate weights using values stored in the specified slot. For example, [ValueWeightPostingSource](#) uses `sortable_unserialise` to convert values directly to weights.

The upper bound on the weight returned is set to `DBL_MAX`. Subclasses should call [set_maxweight\(\)](#) in their [init\(\)](#) methods after calling [ValuePostingSource::init\(\)](#) if they know a tighter bound on the weight.

7.66.2 Constructor & Destructor Documentation

7.66.2.1 `Xapian::ValuePostingSource::ValuePostingSource (Xapian::valueno slot_)`

Construct a [ValuePostingSource](#).

Parameters:

slot_ The value slot to read values from.

7.66.3 Member Function Documentation

7.66.3.1 `bool Xapian::ValuePostingSource::at_end () const` [virtual]

Return true if the current position is past the last entry in this list.

At least one of [next\(\)](#), [skip_to\(\)](#) or [check\(\)](#) will be called before this method is first called.

Implements [Xapian::PostingSource](#).

7.66.3.2 `bool Xapian::ValuePostingSource::check (Xapian::docid did, Xapian::weight min_wt)` [virtual]

Check if the specified docid occurs.

The caller is required to ensure that the specified document id *did* actually exists in the database. If it does, it must move to that document id, and return true. If it does not, it may either:

- return true, having moved to a definite position (including "at_end"), which must be the same position as [skip_to\(\)](#) would have moved to.

or

- return false, having moved to an "indeterminate" position, such that a subsequent call to [next\(\)](#) or [skip_to\(\)](#) will move to the next matching position after *did*.

Generally, this method should act like [skip_to\(\)](#) and return true if that can be done at little extra cost.

Otherwise it should simply check if a particular docid is present, returning true if it is, and false if it isn't.

The default implementation calls [skip_to\(\)](#) and always returns true.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Note: in the case of a multi-database search, the docid specified is the docid in the single subdatabase relevant to this posting source. See the [init\(\)](#) method for details.

Parameters:

did The document id to check.

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Reimplemented from [Xapian::PostingSource](#).

Reimplemented in [Xapian::DecreasingValueWeightPostingSource](#).

7.66.3.3 Xapian::docid Xapian::ValuePostingSource::get_docid () const [virtual]

Return the current docid.

This method may assume that it will only be called when there is a "current document". See [get_weight\(\)](#) for details.

Note: in the case of a multi-database search, the returned docid should be in the single subdatabase relevant to this posting source. See the [init\(\)](#) method for details.

Implements [Xapian::PostingSource](#).

7.66.3.4 Xapian::doccount Xapian::ValuePostingSource::get_termfreq_est () const [virtual]

An estimate of the number of documents this object can return.

It must always be true that:

[get_termfreq_min\(\)](#) <= [get_termfreq_est\(\)](#) <= [get_termfreq_max\(\)](#)

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Implements [Xapian::PostingSource](#).

7.66.3.5 Xapian::doccount Xapian::ValuePostingSource::get_termfreq_max () const [virtual]

An upper bound on the number of documents this object can return.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Implements [Xapian::PostingSource](#).

7.66.3.6 Xapian::doccount Xapian::ValuePostingSource::get_termfreq_min () const [virtual]

A lower bound on the number of documents this object can return.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Implements [Xapian::PostingSource](#).

7.66.3.7 void Xapian::ValuePostingSource::init (const Database & *db*) [virtual]

Set this [PostingSource](#) to the start of the list of postings.

This is called automatically by the matcher prior to each query being processed.

If a [PostingSource](#) is used for multiple searches, *init()* will therefore be called multiple times, and must handle this by using the database passed in the most recent call.

Parameters:

db The database which the [PostingSource](#) should iterate through.

Note: the database supplied to this method must not be modified: in particular, the *reopen()* method should not be called on it.

Note: in the case of a multi-database search, a separate [PostingSource](#) will be used for each database (the separate PostingSources will be obtained using *clone()*), and each [PostingSource](#) will be passed one of the sub-databases as the *db* parameter here. The *db* parameter will therefore always refer to a single database. All docids passed to, or returned from, the [PostingSource](#) refer to docids in that single database, rather than in the multi-database.

Implements [Xapian::PostingSource](#).

Reimplemented in [Xapian::ValueWeightPostingSource](#),
[Xapian::DecreasingValueWeightPostingSource](#), and
[Xapian::ValueMapPostingSource](#).

7.66.3.8 void Xapian::ValuePostingSource::next (Xapian::weight *min_wt*) [virtual]

Advance the current position to the next matching document.

The [PostingSource](#) starts before the first entry in the list, so *next()* must be called before any methods which need the context of the current position.

[Xapian](#) will always call *init()* on a [PostingSource](#) before calling this for the first time.

Parameters:

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Implements [Xapian::PostingSource](#).

Reimplemented in [Xapian::DecreasingValueWeightPostingSource](#).

7.66.3.9 void Xapian::ValuePostingSource::skip_to (Xapian::docid *did*, Xapian::weight *min_wt*) [virtual]

Advance to the specified docid.

If the specified docid isn't in the list, position ourselves on the first document after it (or [at_end\(\)](#) if no greater docids are present).

If the current position is already the specified docid, this method will leave the position unmodified.

If the specified docid is earlier than the current position, the behaviour is unspecified. A sensible behaviour would be to leave the current position unmodified, but it is also reasonable to move to the specified docid.

The default implementation calls [next\(\)](#) repeatedly, which works but [skip_to\(\)](#) can often be implemented much more efficiently.

[Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time.

Note: in the case of a multi-database search, the docid specified is the docid in the single subdatabase relevant to this posting source. See the [init\(\)](#) method for details.

Parameters:

did The document id to advance to.

min_wt The minimum weight contribution that is needed (this is just a hint which subclasses may ignore).

Reimplemented from [Xapian::PostingSource](#).

Reimplemented in [Xapian::DecreasingValueWeightPostingSource](#).

7.66.4 Member Data Documentation

7.66.4.1 Xapian::doccount Xapian::ValuePostingSource::termfreq_est [protected]

An estimate of the term frequency.

Subclasses should set this if they are overriding the [next\(\)](#), [skip_to\(\)](#) or [check\(\)](#) methods.

7.66.4.2 Xapian::doccount Xapian::ValuePostingSource::termfreq_max [protected]

An upper bound on the term frequency.

Subclasses should set this if they are overriding the [next\(\)](#), [skip_to\(\)](#) or [check\(\)](#) methods.

7.66.4.3 Xapian::doccount Xapian::ValuePostingSource::termfreq_min [protected]

A lower bound on the term frequency.

Subclasses should set this if they are overriding the [next\(\)](#), [skip_to\(\)](#) or [check\(\)](#) methods to return fewer documents.

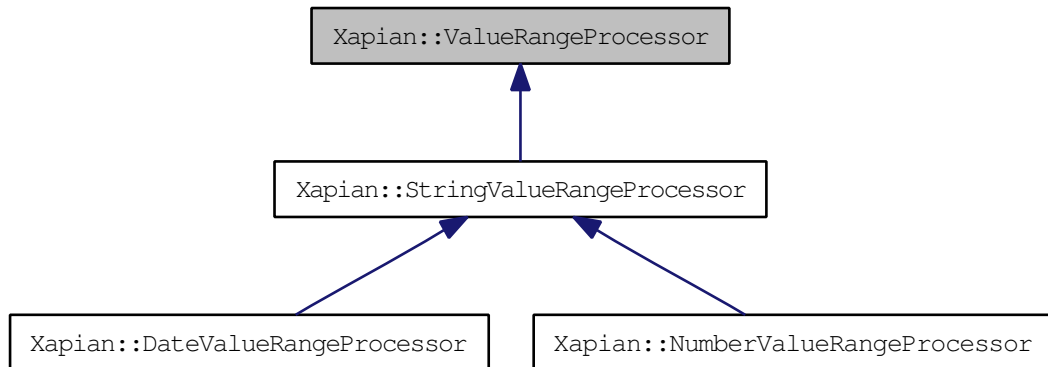
The documentation for this class was generated from the following file:

- [xapian/postingsource.h](#)

7.67 Xapian::ValueRangeProcessor Struct Reference

Base class for value range processors.

Inheritance diagram for Xapian::ValueRangeProcessor:



Public Member Functions

- virtual `~ValueRangeProcessor()`
Destructor.
- virtual `Xapian::valueno operator()(std::string &begin, std::string &end)=0`
Check for a valid range of this type.

7.67.1 Detailed Description

Base class for value range processors.

7.67.2 Member Function Documentation

7.67.2.1 virtual Xapian::valueno Xapian::ValueRangeProcessor::operator() (std::string &begin, std::string &end) [pure virtual]

Check for a valid range of this type.

Parameters:

- ↔ **begin** The start of the range as specified in the query string by the user. This parameter is a non-const reference so the `ValueRangeProcessor` can modify it to return the value to start the range with.
- ↔ **end** The end of the range. This is also a non-const reference so it can be modified.

Returns:

If this [ValueRangeProcessor](#) recognises the range BEGIN..END it returns the value slot number to range filter on. Otherwise it returns [Xapian::BAD_VALUENO](#).

Implemented in [Xapian::StringValueRangeProcessor](#), [Xapian::DateValueRangeProcessor](#), and [Xapian::NumberValueRangeProcessor](#).

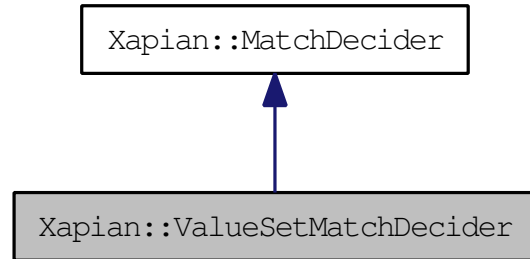
The documentation for this struct was generated from the following file:

- [xapian/queryparser.h](#)

7.68 Xapian::ValueSetMatchDecider Class Reference

[MatchDecider](#) filtering results based on whether document values are in a user-defined set.

Inheritance diagram for Xapian::ValueSetMatchDecider:



Public Member Functions

- [ValueSetMatchDecider](#) ([Xapian::valueno](#) slot, bool inclusive_)
Construct a [ValueSetMatchDecider](#).
- void [add_value](#) (const std::string &value)
Add a value to the test set.
- void [remove_value](#) (const std::string &value)
Remove a value from the test set.
- bool [operator\(\)](#) (const [Xapian::Document](#) &doc) const
Decide whether we want a particular document to be in the [MSet](#).

7.68.1 Detailed Description

[MatchDecider](#) filtering results based on whether document values are in a user-defined set.

7.68.2 Constructor & Destructor Documentation

7.68.2.1 Xapian::ValueSetMatchDecider::ValueSetMatchDecider (Xapian::valueno slot, bool inclusive_) [inline]

Construct a [ValueSetMatchDecider](#).

Parameters:

slot The value slot number to look in.

inclusive_ If true, match decider accepts documents which have a value in the specified slot which is a member of the test set; if false, match decider accepts documents which do not have a value in the specified slot.

7.68.3 Member Function Documentation

7.68.3.1 `void Xapian::ValueSetMatchDecider::add_value (const std::string &value) [inline]`

Add a value to the test set.

Parameters:

value The value to add to the test set.

7.68.3.2 `bool Xapian::ValueSetMatchDecider::operator() (const Xapian::Document &doc) const [virtual]`

Decide whether we want a particular document to be in the [MSet](#).

Parameters:

doc The document to test.

Returns:

true if the document is acceptable, or false if the document should be excluded from the [MSet](#).

Implements [Xapian::MatchDecider](#).

7.68.3.3 `void Xapian::ValueSetMatchDecider::remove_value (const std::string &value) [inline]`

Remove a value from the test set.

Parameters:

value The value to remove from the test set.

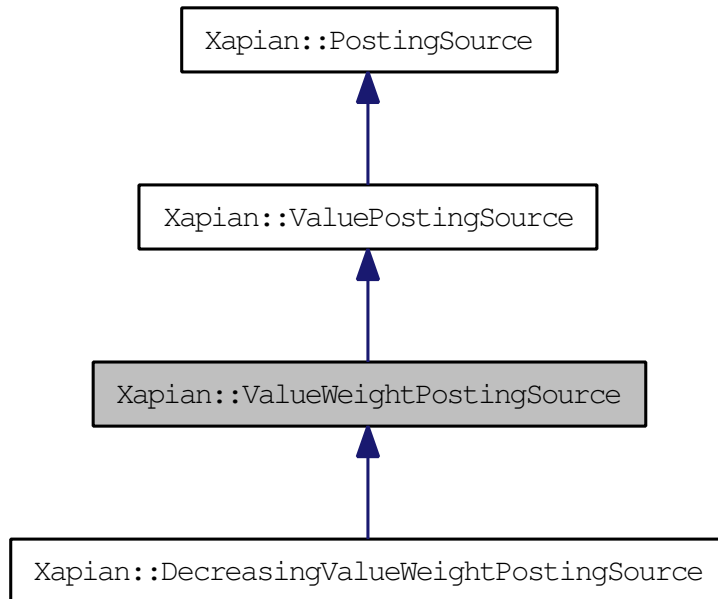
The documentation for this class was generated from the following file:

- [xapian/valuesetmatchdecider.h](#)

7.69 Xapian::ValueWeightPostingSource Class Reference

A posting source which reads weights from a value slot.

Inheritance diagram for Xapian::ValueWeightPostingSource:



Public Member Functions

- `ValueWeightPostingSource` (`Xapian::value`no slot_)
Construct a `ValueWeightPostingSource`.
- `Xapian::weight` `get_weight` () const
Return the weight contribution for the current document.
- `ValueWeightPostingSource` * `clone` () const
Clone the posting source.
- std::string `name` () const
Name of the posting source class.
- std::string `serialise` () const
Serialise object parameters into a string.
- `ValueWeightPostingSource` * `unserialise` (const std::string &s) const
Create object given string serialisation returned by `serialise()`.

- void `init` (const [Database](#) &db_)

Set this [PostingSource](#) to the start of the list of postings.

- std::string `get_description` () const

Return a string describing this object.

7.69.1 Detailed Description

A posting source which reads weights from a value slot.

This returns entries for all documents in the given database which have a non empty values in the specified slot. It returns a weight calculated by applying `sortable_unserialise` to the value stored in the slot (so the values stored should probably have been calculated by applying `sortable_serialise` to a floating point number at index time).

The upper bound on the weight returned is set using the upper bound on the values in the specified slot, or `DBL_MAX` if value bounds aren't supported by the current backend.

For efficiency, this posting source doesn't check that the stored values are valid in any way, so it will never raise an exception due to invalid stored values. In particular, it doesn't ensure that the unserialised values are positive, which is a requirement for weights. The behaviour if the slot contains values which unserialise to negative values is undefined.

7.69.2 Constructor & Destructor Documentation

7.69.2.1 `Xapian::ValueWeightPostingSource::ValueWeightPostingSource` (`Xapian::valueno slot_`)

Construct a [ValueWeightPostingSource](#).

Parameters:

`slot_` The value slot to read values from.

7.69.3 Member Function Documentation

7.69.3.1 `ValueWeightPostingSource*` `Xapian::ValueWeightPostingSource::clone` () const [virtual]

Clone the posting source.

The clone should inherit the configuration of the parent, but need not inherit the state, ie, the clone does not need to be in the same iteration position as the original: the

matcher will always call [init\(\)](#) on the clone before attempting to move the iterator, or read the information about the current position of the iterator.

This may return NULL to indicate that cloning is not supported. In this case, the [PostingSource](#) may only be used with a single-database search.

The default implementation returns NULL.

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Reimplemented from [Xapian::PostingSource](#).

Reimplemented in [Xapian::DecreasingValueWeightPostingSource](#).

7.69.3.2 `std::string Xapian::ValueWeightPostingSource::get_description ()` `const` [virtual]

Return a string describing this object.

This default implementation returns a generic answer. This default is provided to avoid forcing those deriving their own [PostingSource](#) subclass from having to implement this (they may not care what [get_description\(\)](#) gives for their subclass).

Reimplemented from [Xapian::PostingSource](#).

Reimplemented in [Xapian::DecreasingValueWeightPostingSource](#).

7.69.3.3 `Xapian::weight Xapian::ValueWeightPostingSource::get_weight ()` `const` [virtual]

Return the weight contribution for the current document.

This default implementation always returns 0, for convenience when implementing "weight-less" [PostingSource](#) subclasses.

This method may assume that it will only be called when there is a "current document". In detail: [Xapian](#) will always call [init\(\)](#) on a [PostingSource](#) before calling this for the first time. It will also only call this if the [PostingSource](#) reports that it is pointing to a valid document (ie, it will not call it before calling at least one of [next\(\)](#), [skip_to\(\)](#) or [check\(\)](#), and will ensure that the [PostingSource](#) is not at the end by calling [at_end\(\)](#)).

Reimplemented from [Xapian::PostingSource](#).

Reimplemented in [Xapian::DecreasingValueWeightPostingSource](#).

7.69.3.4 `void Xapian::ValueWeightPostingSource::init (const Database & db)` [virtual]

Set this [PostingSource](#) to the start of the list of postings.

This is called automatically by the matcher prior to each query being processed.

If a [PostingSource](#) is used for multiple searches, *init()* will therefore be called multiple times, and must handle this by using the database passed in the most recent call.

Parameters:

db The database which the [PostingSource](#) should iterate through.

Note: the database supplied to this method must not be modified: in particular, the *reopen()* method should not be called on it.

Note: in the case of a multi-database search, a separate [PostingSource](#) will be used for each database (the separate PostingSources will be obtained using *clone()*), and each [PostingSource](#) will be passed one of the sub-databases as the *db* parameter here. The *db* parameter will therefore always refer to a single database. All docids passed to, or returned from, the [PostingSource](#) refer to docids in that single database, rather than in the multi-database.

Reimplemented from [Xapian::ValuePostingSource](#).

Reimplemented in [Xapian::DecreasingValueWeightPostingSource](#).

7.69.3.5 `std::string Xapian::ValueWeightPostingSource::name () const` [virtual]

Name of the posting source class.

This is used when serialising and unserialising posting sources; for example, for performing remote searches.

If the subclass is in a C++ namespace, the namespace should be included in the name, using "::" as a separator. For example, for a [PostingSource](#) subclass called "FooPostingSource" in the "Xapian" namespace the result of this call should be "Xapian::FooPostingSource".

This should only be implemented if [serialise\(\)](#) and [unserialise\(\)](#) are also implemented. The default implementation returns an empty string.

If this returns an empty string, [Xapian](#) will assume that [serialise\(\)](#) and [unserialise\(\)](#) are not implemented.

Reimplemented from [Xapian::PostingSource](#).

Reimplemented in [Xapian::DecreasingValueWeightPostingSource](#).

7.69.3.6 `std::string Xapian::ValueWeightPostingSource::serialise () const` [virtual]

Serialise object parameters into a string.

The serialised parameters should represent the configuration of the posting source, but need not (indeed, should not) represent the current iteration state.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented from [Xapian::PostingSource](#).

Reimplemented in [Xapian::DecreasingValueWeightPostingSource](#).

7.69.3.7 ValueWeightPostingSource*

Xapian::ValueWeightPostingSource::unserialise
(const std::string & s) const [virtual]

Create object given string serialisation returned by [serialise\(\)](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Parameters:

- s* A serialised instance of this [PostingSource](#) subclass.

Reimplemented from [Xapian::PostingSource](#).

Reimplemented in [Xapian::DecreasingValueWeightPostingSource](#).

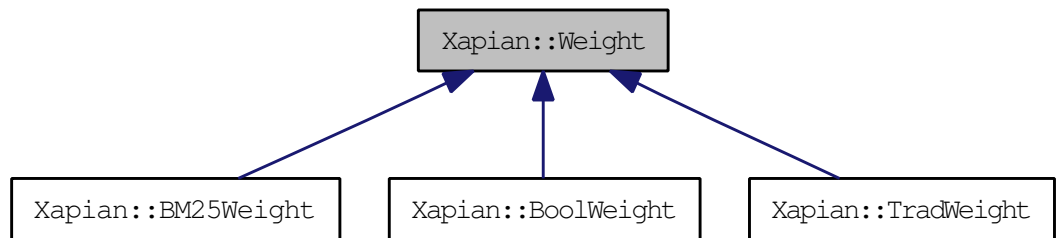
The documentation for this class was generated from the following file:

- [xapian/postingsource.h](#)

7.70 Xapian::Weight Class Reference

Abstract base class for weighting schemes.

Inheritance diagram for Xapian::Weight:



Public Member Functions

- virtual `~Weight()`
Virtual destructor, because we have virtual methods.
- virtual `Weight * clone() const = 0`
Clone this object.
- virtual `std::string name() const`
Return the name of this weighting scheme.
- virtual `std::string serialise() const`
Return this object's parameters serialised as a single string.
- virtual `Weight * unserialise(const std::string &s) const`
Unserialise parameters.
- virtual `Xapian::weight get_sumpart(Xapian::termcount wdf, Xapian::termcount doclen) const = 0`
Calculate the weight contribution for this object's term to a document.
- virtual `Xapian::weight get_maxpart() const = 0`
Return an upper bound on what `get_sumpart()` can return for any document.
- virtual `Xapian::weight get_sumextra(Xapian::termcount doclen) const = 0`
Calculate the term-independent weight component for a document.
- virtual `Xapian::weight get_maxextra() const = 0`
Return an upper bound on what `get_sumextra()` can return for any document.

Protected Types

- enum [stat_flags](#)
Stats which the weighting scheme can use (see [need_stat\(\)](#)).

Protected Member Functions

- void [need_stat](#) ([stat_flags](#) flag)
Tell [Xapian](#) that your subclass will want a particular statistic.
- virtual void [init](#) (double factor)=0
Allow the subclass to perform any initialisation it needs to.
- [Weight](#) (const [Weight](#) &)
Don't allow copying.
- [Weight](#) ()
Default constructor, needed by subclass constructors.
- [Xapian::doccount](#) [get_collection_size](#) () const
The number of documents in the collection.
- [Xapian::doccount](#) [get_rset_size](#) () const
The number of documents marked as relevant.
- [Xapian::doclength](#) [get_average_length](#) () const
The average length of a document in the collection.
- [Xapian::doccount](#) [get_termfreq](#) () const
The number of documents which this term indexes.
- [Xapian::doccount](#) [get_retermfreq](#) () const
The number of relevant documents which this term indexes.
- [Xapian::termcount](#) [get_query_length](#) () const
The length of the query.
- [Xapian::termcount](#) [get_wqf](#) () const
The within-query-frequency of this term.
- [Xapian::termcount](#) [get_doclength_upper_bound](#) () const
An upper bound on the maximum length of any document in the database.
- [Xapian::termcount](#) [get_doclength_lower_bound](#) () const
A lower bound on the minimum length of any document in the database.

- `Xapian::termcount get_wdf_upper_bound () const`

An upper bound on the wdf of this term.

7.70.1 Detailed Description

Abstract base class for weighting schemes.

7.70.2 Constructor & Destructor Documentation

7.70.2.1 `virtual Xapian::Weight::~~Weight () [virtual]`

Virtual destructor, because we have virtual methods.

7.70.2.2 `Xapian::Weight::Weight (const Weight &) [protected]`

Don't allow copying.

This would ideally be private, but that causes a compilation error with GCC 4.1 (which appears to be a bug).

7.70.3 Member Function Documentation

7.70.3.1 `virtual Weight* Xapian::Weight::clone () const [pure virtual]`

Clone this object.

This method allocates and returns a copy of the object it is called on.

If your subclass is called `FooWeight` and has parameters `a` and `b`, then you would implement `FooWeight::clone()` like so:

```
FooWeight * FooWeight::clone() const { return new FooWeight(a, b); }
```

Note that the returned object will be deallocated by `Xapian` after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the `Xapian` API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

7.70.3.2 `Xapian::termcount Xapian::Weight::get_doclength_lower_bound () const [inline, protected]`

A lower bound on the minimum length of any document in the database.

This bound does not include any zero-length documents.

This should only be used by `get_maxpart()` and `get_maxextra()`.

7.70.3.3 **Xapian::termcount Xapian::Weight::get_doclength_upper_bound ()** **const** [inline, protected]

An upper bound on the maximum length of any document in the database.

This should only be used by [get_maxpart\(\)](#) and [get_maxextra\(\)](#).

7.70.3.4 **virtual Xapian::weight Xapian::Weight::get_maxextra () const** [pure virtual]

Return an upper bound on what [get_sumextra\(\)](#) can return for any document.

This information is used by the matcher to perform various optimisations, so strive to make the bound as tight as possible.

Implemented in [Xapian::BoolWeight](#), [Xapian::BM25Weight](#), and [Xapian::TradWeight](#).

7.70.3.5 **virtual Xapian::weight Xapian::Weight::get_maxpart () const** [pure virtual]

Return an upper bound on what [get_sumpart\(\)](#) can return for any document.

This information is used by the matcher to perform various optimisations, so strive to make the bound as tight as possible.

Implemented in [Xapian::BoolWeight](#), [Xapian::BM25Weight](#), and [Xapian::TradWeight](#).

7.70.3.6 **virtual Xapian::weight Xapian::Weight::get_sumextra** **(Xapian::termcount doclen) const** [pure virtual]

Calculate the term-independent weight component for a document.

The parameter gives information about the document which may be used in the calculations:

Parameters:

doclen The document's length (unnormalised).

Implemented in [Xapian::BoolWeight](#), [Xapian::BM25Weight](#), and [Xapian::TradWeight](#).

7.70.3.7 **virtual Xapian::weight Xapian::Weight::get_sumpart** **(Xapian::termcount wdf, Xapian::termcount doclen) const** [pure virtual]

Calculate the weight contribution for this object's term to a document.

The parameters give information about the document which may be used in the calculations:

Parameters:

wdf The within document frequency of the term in the document.

doclen The document's length (unnormalised).

Implemented in [Xapian::BoolWeight](#), [Xapian::BM25Weight](#), and [Xapian::TradWeight](#).

7.70.3.8 Xapian::termcount Xapian::Weight::get_wdf_upper_bound () const [inline, protected]

An upper bound on the wdf of this term.

This should only be used by [get_maxpart\(\)](#) and [get_maxextra\(\)](#).

7.70.3.9 virtual void Xapian::Weight::init (double factor) [protected, pure virtual]

Allow the subclass to perform any initialisation it needs to.

Parameters:

factor Any scaling factor (e.g. from OP_SCALE_WEIGHT). If the [Weight](#) object is for the term-independent weight supplied by [get_sumextra\(\)/get_maxextra\(\)](#), then [init\(0.0\)](#) is called (starting from [Xapian 1.2.11](#) and [1.3.1](#) - earlier versions failed to call [init\(\)](#) for such [Weight](#) objects).

7.70.3.10 virtual std::string Xapian::Weight::name () const [virtual]

Return the name of this weighting scheme.

This name is used by the remote backend. It is passed along with the serialised parameters to the remote server so that it knows which class to create.

Return the full namespace-qualified name of your class here - if your class is called `FooWeight`, return `"FooWeight"` from this method ([Xapian::BM25Weight](#) returns `"Xapian::BM25Weight"` here).

If you don't want to support the remote backend, you can use the default implementation which simply returns an empty string.

Reimplemented in [Xapian::BoolWeight](#), [Xapian::BM25Weight](#), and [Xapian::TradWeight](#).

7.70.3.11 `void Xapian::Weight::need_stat (stat_flags flag)` [inline, protected]

Tell [Xapian](#) that your subclass will want a particular statistic.

Some of the statistics can be costly to fetch or calculate, so [Xapian](#) needs to know which are actually going to be used. You should call `need_stat()` from your constructor for each such statistic.

Parameters:

flag The stat_flags value for a required statistic.

7.70.3.12 `virtual std::string Xapian::Weight::serialise () const` [virtual]

Return this object's parameters serialised as a single string.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Reimplemented in [Xapian::BoolWeight](#), [Xapian::BM25Weight](#), and [Xapian::TradWeight](#).

7.70.3.13 `virtual Weight* Xapian::Weight::unserialise (const std::string & s) const` [virtual]

Unserialise parameters.

This method unserialises parameters serialised by the `serialise()` method and allocates and returns a new object initialised with them.

If you don't want to support the remote backend, you can use the default implementation which simply throws [Xapian::UnimplementedError](#).

Note that the returned object will be deallocated by [Xapian](#) after use with "delete". If you want to handle the deletion in a special way (for example when wrapping the [Xapian](#) API for use from another language) then you can define a static operator delete method in your subclass as shown here: <http://trac.xapian.org/ticket/554#comment:1>

Parameters:

s A string containing the serialised parameters.

Reimplemented in [Xapian::BoolWeight](#), [Xapian::BM25Weight](#), and [Xapian::TradWeight](#).

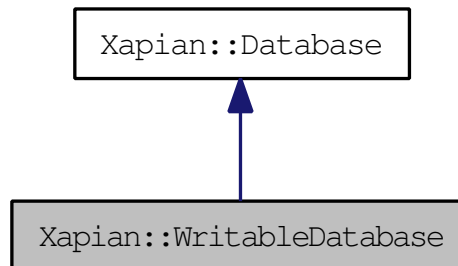
The documentation for this class was generated from the following file:

- [xapian/weight.h](#)

7.71 Xapian::WritableDatabase Class Reference

This class provides read/write access to a database.

Inheritance diagram for Xapian::WritableDatabase:



Public Member Functions

- virtual [~WritableDatabase\(\)](#)
Destroy this handle on the database.
- [WritableDatabase\(\)](#)
Create an empty [WritableDatabase](#).
- [WritableDatabase\(const std::string &path, int action\)](#)
Open a database for update, automatically determining the database backend to use.
- [WritableDatabase\(const \[WritableDatabase\]\(#\) &other\)](#)
Copying is allowed.
- void [operator=](#)(const [WritableDatabase](#) &other)
Assignment is allowed.
- void [commit\(\)](#)
Commit any pending modifications made to the database.
- void [flush\(\)](#)
Pre-1.1.0 name for [commit\(\)](#).
- void [begin_transaction](#)(bool flushed=true)
Begin a transaction.
- void [commit_transaction\(\)](#)
Complete the transaction currently in progress.
- void [cancel_transaction\(\)](#)

Abort the transaction currently in progress, discarding the pending modifications made to the database.

- `Xapian::docid add_document` (const `Xapian::Document` &document)
Add a new document to the database.
- `void delete_document` (`Xapian::docid` did)
Delete a document from the database.
- `void delete_document` (const `std::string` &unique_term)
Delete any documents indexed by a term from the database.
- `void replace_document` (`Xapian::docid` did, const `Xapian::Document` &document)
Replace a given document in the database.
- `Xapian::docid replace_document` (const `std::string` &unique_term, const `Xapian::Document` &document)
Replace any documents matching a term.
- `void add_spelling` (const `std::string` &word, `Xapian::termcount` freqinc=1) const
Add a word to the spelling dictionary.
- `void remove_spelling` (const `std::string` &word, `Xapian::termcount` freqdec=1) const
Remove a word from the spelling dictionary.
- `void add_synonym` (const `std::string` &term, const `std::string` &synonym) const
Add a synonym for a term.
- `void remove_synonym` (const `std::string` &term, const `std::string` &synonym) const
Remove a synonym for a term.
- `void clear_synonyms` (const `std::string` &term) const
Remove all synonyms for a term.
- `void set_metadata` (const `std::string` &key, const `std::string` &value)
Set the user-specified metadata associated with a given key.
- `std::string get_description` () const
Return a string describing this object.

7.71.1 Detailed Description

This class provides read/write access to a database.

7.71.2 Constructor & Destructor Documentation

7.71.2.1 `virtual Xapian::WritableDatabase::~~WritableDatabase ()` [virtual]

Destroy this handle on the database.

If no other handles to this database remain, the database will be closed.

If a transaction is active `cancel_transaction()` will be implicitly called; if no transaction is active `commit()` will be implicitly called, but any exception will be swallowed (because throwing exceptions in C++ destructors is problematic). If you aren't using transactions and want to know about any failure to commit changes, call `commit()` explicitly before the destructor gets called.

7.71.2.2 `Xapian::WritableDatabase::WritableDatabase (const std::string & path, int action)`

Open a database for update, automatically determining the database backend to use.

If the database is to be created, `Xapian` will try to create the directory indicated by `path` if it doesn't already exist (but only the leaf directory, not recursively).

Parameters:

path directory that the database is stored in.

action one of:

- `Xapian::DB_CREATE_OR_OPEN` open for read/write; create if no db exists
- `Xapian::DB_CREATE` create new database; fail if db exists
- `Xapian::DB_CREATE_OR_OVERWRITE` overwrite existing db; create if none exists
- `Xapian::DB_OPEN` open for read/write; fail if no db exists

Exceptions:

`Xapian::DatabaseCorruptError` will be thrown if the database is in a corrupt state.

`Xapian::DatabaseLockError` will be thrown if a lock couldn't be acquired on the database.

7.71.2.3 `Xapian::WritableDatabase::WritableDatabase (const WritableDatabase & other)`

Copying is allowed.

The internals are reference counted, so copying is cheap.

Parameters:

other The object to copy.

7.71.3 Member Function Documentation

7.71.3.1 Xapian::docid Xapian::WritableDatabase::add_document (const Xapian::Document & *document*)

Add a new document to the database.

This method adds the specified document to the database, returning a newly allocated document ID. Automatically allocated document IDs come from a per-database monotonically increasing counter, so IDs from deleted documents won't be reused.

If you want to specify the document ID to be used, you should call [replace_document\(\)](#) instead.

Note that changes to the database won't be immediately committed to disk; see [commit\(\)](#) for more details.

As with all database modification operations, the effect is atomic: the document will either be fully added, or the document fails to be added and an exception is thrown (possibly at a later time when [commit\(\)](#) is called or the database is closed).

Parameters:

document The new document to be added.

Returns:

The document ID of the newly added document.

Exceptions:

[Xapian::DatabaseError](#) will be thrown if a problem occurs while writing to the database.

[Xapian::DatabaseCorruptError](#) will be thrown if the database is in a corrupt state.

7.71.3.2 void Xapian::WritableDatabase::add_spelling (const std::string & *word*, Xapian::termcount *freqinc* = 1) const

Add a word to the spelling dictionary.

If the word is already present, its frequency is increased.

Parameters:

word The word to add.

freqinc How much to increase its frequency by (default 1).

7.71.3.3 void Xapian::WritableDatabase::add_synonym (const std::string &term, const std::string &synonym) const

Add a synonym for a term.

Parameters:

term The term to add a synonym for.

synonym The synonym to add. If this is already a synonym for *term*, then no action is taken.

7.71.3.4 void Xapian::WritableDatabase::begin_transaction (bool flushed = true)

Begin a transaction.

In [Xapian](#) a transaction is a group of modifications to the database which are linked such that either all will be applied simultaneously or none will be applied at all. Even in the case of a power failure, this characteristic should be preserved (as long as the filesystem isn't corrupted, etc).

A transaction is started with [begin_transaction\(\)](#) and can either be committed by calling [commit_transaction\(\)](#) or aborted by calling [cancel_transaction\(\)](#).

By default, a transaction implicitly calls [commit\(\)](#) before and after so that the modifications stand and fall without affecting modifications before or after.

The downside of these implicit calls to [commit\(\)](#) is that small transactions can harm indexing performance in the same way that explicitly calling [commit\(\)](#) frequently can.

If you're applying atomic groups of changes and only wish to ensure that each group is either applied or not applied, then you can prevent the automatic [commit\(\)](#) before and after the transaction by starting the transaction with [begin_transaction\(false\)](#). However, if [cancel_transaction](#) is called (or if [commit_transaction](#) isn't called before the [WritableDatabase](#) object is destroyed) then any changes which were pending before the transaction began will also be discarded.

Transactions aren't currently supported by the [InMemory](#) backend.

Parameters:

flushed Is this a flushed transaction? By default transactions are "flushed", which means that committing a transaction will ensure those changes are permanently written to the database. By contrast, unflushed transactions only ensure that changes within the transaction are either all applied or all aren't.

Exceptions:

[Xapian::UnimplementedError](#) will be thrown if transactions are not available for this database type.

[Xapian::InvalidOperationError](#) will be thrown if this is called at an invalid time, such as when a transaction is already in progress.

7.71.3.5 void Xapian::WritableDatabase::cancel_transaction ()

Abort the transaction currently in progress, discarding the pending modifications made to the database.

If an error occurs in this method, an exception will be thrown, but the transaction will be cancelled anyway.

Exceptions:

Xapian::DatabaseError will be thrown if a problem occurs while modifying the database.

Xapian::DatabaseCorruptError will be thrown if the database is in a corrupt state.

Xapian::InvalidOperationError will be thrown if a transaction is not currently in progress.

Xapian::UnimplementedError will be thrown if transactions are not available for this database type.

7.71.3.6 void Xapian::WritableDatabase::clear_synonyms (const std::string &term) const

Remove all synonyms for a term.

Parameters:

term The term to remove all synonyms for. If the term has no synonyms, no action is taken.

7.71.3.7 void Xapian::WritableDatabase::commit ()

Commit any pending modifications made to the database.

For efficiency reasons, when performing multiple updates to a database it is best (indeed, almost essential) to make as many modifications as memory will permit in a single pass through the database. To ensure this, Xapian batches up modifications.

This method may be called at any time to commit any pending modifications to the database.

If any of the modifications fail, an exception will be thrown and the database will be left in a state in which each separate addition, replacement or deletion operation has either been fully performed or not performed at all: it is then up to the application to work out which operations need to be repeated.

It's not valid to call `commit()` within a transaction.

Beware of calling `commit()` too frequently: this will make indexing take much longer.

Note that `commit()` need not be called explicitly: it will be called automatically when the database is closed, or when a sufficient number of modifications have been made.

By default, this is every 10000 documents added, deleted, or modified. This value is rather conservative, and if you have a machine with plenty of memory, you can improve indexing throughput dramatically by setting `XAPIAN_FLUSH_THRESHOLD` in the environment to a larger value.

This method was new in [Xapian](#) 1.1.0 - in earlier versions it was called `flush()`.

Exceptions:

[*Xapian::DatabaseError*](#) will be thrown if a problem occurs while modifying the database.

[*Xapian::DatabaseCorruptError*](#) will be thrown if the database is in a corrupt state.

7.71.3.8 void Xapian::WritableDatabase::commit_transaction ()

Complete the transaction currently in progress.

If this method completes successfully and this is a flushed transaction, all the database modifications made during the transaction will have been committed to the database.

If an error occurs, an exception will be thrown, and none of the modifications made to the database during the transaction will have been applied to the database.

In all cases the transaction will no longer be in progress.

Exceptions:

[*Xapian::DatabaseError*](#) will be thrown if a problem occurs while modifying the database.

[*Xapian::DatabaseCorruptError*](#) will be thrown if the database is in a corrupt state.

[*Xapian::InvalidOperationError*](#) will be thrown if a transaction is not currently in progress.

[*Xapian::UnimplementedError*](#) will be thrown if transactions are not available for this database type.

7.71.3.9 void Xapian::WritableDatabase::delete_document (const std::string & unique_term)

Delete any documents indexed by a term from the database.

This method removes any documents indexed by the specified term from the database.

A major use is for convenience when UUIDs from another system are mapped to terms in [Xapian](#), although this method has other uses (for example, you could add a "deletion date" term to documents at index time and use this method to delete all documents due for deletion on a particular date).

Parameters:

unique_term The term to remove references to.

Exceptions:

Xapian::DatabaseError will be thrown if a problem occurs while writing to the database.

Xapian::DatabaseCorruptError will be thrown if the database is in a corrupt state.

7.71.3.10 void Xapian::WritableDatabase::delete_document (Xapian::docid did)

Delete a document from the database.

This method removes the document with the specified document ID from the database.

Note that changes to the database won't be immediately committed to disk; see [commit\(\)](#) for more details.

As with all database modification operations, the effect is atomic: the document will either be fully removed, or the document fails to be removed and an exception is thrown (possibly at a later time when [commit\(\)](#) is called or the database is closed).

Parameters:

did The document ID of the document to be removed.

Exceptions:

Xapian::DatabaseError will be thrown if a problem occurs while writing to the database.

Xapian::DatabaseCorruptError will be thrown if the database is in a corrupt state.

7.71.3.11 void Xapian::WritableDatabase::flush () [inline]

Pre-1.1.0 name for [commit\(\)](#).

Use [commit\(\)](#) instead in new code. This alias may be deprecated in the future.

7.71.3.12 void Xapian::WritableDatabase::operator= (const WritableDatabase & other)

Assignment is allowed.

The internals are reference counted, so assignment is cheap.

Note that only an [WritableDatabase](#) may be assigned to an [WritableDatabase](#): an attempt to assign a [Database](#) is caught at compile-time.

Parameters:

other The object to copy.

7.71.3.13 void Xapian::WritableDatabase::remove_spelling (const std::string & word, Xapian::termcount freqdec = 1) const

Remove a word from the spelling dictionary.

The word's frequency is decreased, and if would become zero or less then the word is removed completely.

Parameters:

word The word to remove.

freqdec How much to decrease its frequency by (default 1).

7.71.3.14 void Xapian::WritableDatabase::remove_synonym (const std::string & term, const std::string & synonym) const

Remove a synonym for a term.

Parameters:

term The term to remove a synonym for.

synonym The synonym to remove. If this isn't currently a synonym for *term*, then no action is taken.

7.71.3.15 Xapian::docid Xapian::WritableDatabase::replace_document (const std::string & unique_term, const Xapian::Document & document)

Replace any documents matching a term.

This method replaces any documents indexed by the specified term with the specified document. If any documents are indexed by the term, the lowest document ID will be used for the document, otherwise a new document ID will be generated as for `add_document`.

One common use is to allow UIDs from another system to easily be mapped to terms in `Xapian`. Note that this method doesn't automatically add `unique_term` as a term, so you'll need to call `document.add_term(unique_term)` first when using `replace_document()` in this way.

Note that changes to the database won't be immediately committed to disk; see `commit()` for more details.

As with all database modification operations, the effect is atomic: the document(s) will either be fully replaced, or the document(s) fail to be replaced and an exception is thrown (possibly at a later time when `commit()` is called or the database is closed).

Parameters:

unique_term The "unique" term.

document The new document.

Returns:

The document ID that document was given.

Exceptions:

[*Xapian::DatabaseError*](#) will be thrown if a problem occurs while writing to the database.

[*Xapian::DatabaseCorruptError*](#) will be thrown if the database is in a corrupt state.

7.71.3.16 void Xapian::WritableDatabase::replace_document (Xapian::docid *did*, const Xapian::Document & *document*)

Replace a given document in the database.

This method replaces the document with the specified document ID. If document ID *did* isn't currently used, the document will be added with document ID *did*.

The monotonic counter used for automatically allocating document IDs is increased so that the next automatically allocated document ID will be *did* + 1. Be aware that if you use this method to specify a high document ID for a new document, and also use [`WritableDatabase::add_document\(\)`](#), [`Xapian`](#) may get to a state where this counter wraps around and will be unable to automatically allocate document IDs!

Note that changes to the database won't be immediately committed to disk; see [`commit\(\)`](#) for more details.

As with all database modification operations, the effect is atomic: the document will either be fully replaced, or the document fails to be replaced and an exception is thrown (possibly at a later time when [`commit\(\)`](#) is called or the database is closed).

Parameters:

did The document ID of the document to be replaced.

document The new document.

Exceptions:

[*Xapian::DatabaseError*](#) will be thrown if a problem occurs while writing to the database.

[*Xapian::DatabaseCorruptError*](#) will be thrown if the database is in a corrupt state.

7.71.3.17 void Xapian::WritableDatabase::set_metadata (const std::string & *key*, const std::string & *value*)

Set the user-specified metadata associated with a given key.

This method sets the metadata value associated with a given key. If there is already a metadata value stored in the database with the same key, the old value is replaced. If you want to delete an existing item of metadata, just set its value to the empty string.

User-specified metadata allows you to store arbitrary information in the form of (key,tag) pairs.

There's no hard limit on the number of metadata items, or the size of the metadata values. Metadata keys have a limited length, which depends on the backend. We recommend limiting them to 200 bytes. Empty keys are not valid, and specifying one will cause an exception.

Metadata modifications are committed to disk in the same way as modifications to the documents in the database are: i.e., modifications are atomic, and won't be committed to disk immediately (see [commit\(\)](#) for more details). This allows metadata to be used to link databases with versioned external resources by storing the appropriate version number in a metadata item.

You can also use the metadata to store arbitrary extra information associated with terms, documents, or postings by encoding the termname and/or document id into the metadata key.

Parameters:

key The key of the metadata item to set.

value The value of the metadata item to set.

Exceptions:

[*Xapian::DatabaseError*](#) will be thrown if a problem occurs while writing to the database.

[*Xapian::DatabaseCorruptError*](#) will be thrown if the database is in a corrupt state.

[*Xapian::InvalidArgumentError*](#) will be thrown if the key supplied is empty.

[*Xapian::UnimplementedError*](#) will be thrown if the database backend in use doesn't support user-specified metadata.

The documentation for this class was generated from the following file:

- [xapian/database.h](#)

Chapter 8

File Documentation

8.1 xapian/error.h File Reference

Hierarchy of classes which [Xapian](#) can throw as exceptions.

Classes

- class [Xapian::Error](#)
All exceptions thrown by [Xapian](#) are subclasses of [Xapian::Error](#).
- class [Xapian::LogicError](#)
The base class for exceptions indicating errors in the program logic.
- class [Xapian::RuntimeError](#)
The base class for exceptions indicating errors only detectable at runtime.
- class [Xapian::AssertionError](#)
[AssertionError](#) is thrown if a logical assertion inside [Xapian](#) fails.
- class [Xapian::InvalidArgumentError](#)
[InvalidArgumentError](#) indicates an invalid parameter value was passed to the API.
- class [Xapian::InvalidOperationError](#)
[InvalidOperationError](#) indicates the API was used in an invalid way.
- class [Xapian::UnimplementedError](#)
[UnimplementedError](#) indicates an attempt to use an unimplemented feature.
- class [Xapian::DatabaseError](#)
[DatabaseError](#) indicates some sort of database related error.

- class [Xapian::DatabaseCorruptError](#)
DatabaseCorruptError indicates database corruption was detected.
- class [Xapian::DatabaseCreateError](#)
DatabaseCreateError indicates a failure to create a database.
- class [Xapian::DatabaseLockError](#)
DatabaseLockError indicates failure to lock a database.
- class [Xapian::DatabaseModifiedError](#)
DatabaseModifiedError indicates a database was modified.
- class [Xapian::DatabaseOpeningError](#)
DatabaseOpeningError indicates failure to open a database.
- class [Xapian::DatabaseVersionError](#)
DatabaseVersionError indicates that a database is in an unsupported format.
- class [Xapian::DocNotFoundError](#)
Indicates an attempt to access a document not present in the database.
- class [Xapian::FeatureUnavailableError](#)
Indicates an attempt to use a feature which is unavailable.
- class [Xapian::InternalError](#)
InternalError indicates a runtime problem of some sort.
- class [Xapian::NetworkError](#)
Indicates a problem communicating with a remote database.
- class [Xapian::NetworkTimeoutError](#)
Indicates a timeout expired while communicating with a remote database.
- class [Xapian::QueryParserError](#)
Indicates a query string can't be parsed.
- class [Xapian::SerialisationError](#)
Indicates an error in the std::string serialisation of an object.
- class [Xapian::RangeError](#)
RangeError indicates an attempt to access outside the bounds of a container.

Namespaces

- namespace [Xapian](#)

The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.1.1 Detailed Description

Hierarchy of classes which [Xapian](#) can throw as exceptions.

8.2 xapian/version.h File Reference

Define preprocessor symbols for the library version.

Defines

- #define [XAPIAN_ENABLE_VISIBILITY](#)
The library was compiled with GCC's -fvisibility=hidden option.
- #define [XAPIAN_VERSION](#) "1.2.13"
The version of [Xapian](#) as a C string literal.
- #define [XAPIAN_MAJOR_VERSION](#) 1
The major component of the [Xapian](#) version.
- #define [XAPIAN_MINOR_VERSION](#) 2
The minor component of the [Xapian](#) version.
- #define [XAPIAN_REVISION](#) 13
The revision component of the [Xapian](#) version.
- #define [XAPIAN_HAS_BRASS_BACKEND](#) 1
XAPIAN_HAS_BRASS_BACKEND Defined if the brass backend is enabled.
- #define [XAPIAN_HAS_CHERT_BACKEND](#) 1
XAPIAN_HAS_CHERT_BACKEND Defined if the chert backend is enabled.
- #define [XAPIAN_HAS_FLINT_BACKEND](#) 1
XAPIAN_HAS_FLINT_BACKEND Defined if the flint backend is enabled.
- #define [XAPIAN_HAS_INMEMORY_BACKEND](#) 1
XAPIAN_HAS_INMEMORY_BACKEND Defined if the inmemory backend is enabled.
- #define [XAPIAN_HAS_REMOTE_BACKEND](#) 1
XAPIAN_HAS_REMOTE_BACKEND Defined if the remote backend is enabled.

8.2.1 Detailed Description

Define preprocessor symbols for the library version.

8.2.2 Define Documentation

8.2.2.1 `#define XAPIAN_MAJOR_VERSION 1`

The major component of the [Xapian](#) version.

E.g. for [Xapian](#) 1.0.14 this would be: 1

8.2.2.2 `#define XAPIAN_MINOR_VERSION 2`

The minor component of the [Xapian](#) version.

E.g. for [Xapian](#) 1.0.14 this would be: 0

8.2.2.3 `#define XAPIAN_REVISION 13`

The revision component of the [Xapian](#) version.

E.g. for [Xapian](#) 1.0.14 this would be: 14

8.3 xapian.h File Reference

Public interfaces for the [Xapian](#) library.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

Functions

- const char * [Xapian::version_string](#) ()
Report the version string of the library which the program is linked with.
- int [Xapian::major_version](#) ()
Report the major version of the library which the program is linked with.
- int [Xapian::minor_version](#) ()
Report the minor version of the library which the program is linked with.
- int [Xapian::revision](#) ()
Report the revision of the library which the program is linked with.

8.3.1 Detailed Description

Public interfaces for the [Xapian](#) library.

8.4 xapian/compactor.h File Reference

Compact a database, or merge and compact several.

Classes

- class [Xapian::Compactor](#)
Compact a database, or merge and compact several.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.4.1 Detailed Description

Compact a database, or merge and compact several.

8.5 xapian/database.h File Reference

API for working with [Xapian](#) databases.

Classes

- class [Xapian::Database](#)
This class is used to access a database, or a group of databases.
- class [Xapian::WritableDatabase](#)
This class provides read/write access to a database.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

Variables

- const int [Xapian::DB_CREATE_OR_OPEN](#) = 1
Open for read/write; create if no db exists.
- const int [Xapian::DB_CREATE](#) = 2
Create a new database; fail if db exists.
- const int [Xapian::DB_CREATE_OR_OVERWRITE](#) = 3
Overwrite existing db; create if none exists.
- const int [Xapian::DB_OPEN](#) = 4
Open for read/write; fail if no db exists.

8.5.1 Detailed Description

API for working with [Xapian](#) databases.

8.6 xapian/dbfactory.h File Reference

Factory functions for constructing Database and WritableDatabase objects.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.
- namespace [Xapian::Auto](#)
[Database](#) factory functions which determine the database type automatically.
- namespace [Xapian::InMemory](#)
[Database](#) factory functions for the inmemory backend.
- namespace [Xapian::Brass](#)
[Database](#) factory functions for the brass backend.
- namespace [Xapian::Chert](#)
[Database](#) factory functions for the chert backend.
- namespace [Xapian::Flint](#)
[Database](#) factory functions for the flint backend.
- namespace [Xapian::Remote](#)
[Database](#) factory functions for the remote backend.

Functions

- Database [Xapian::Auto::open_stub](#) (const std::string &file)
Construct a [Database](#) object for a stub database file.
- WritableDatabase [Xapian::Auto::open_stub](#) (const std::string &file, int action)
Construct a [WritableDatabase](#) object for a stub database file.
- WritableDatabase [Xapian::InMemory::open](#) ()
Construct a [WritableDatabase](#) object for a new, empty [InMemory](#) database.
- Database [Xapian::Brass::open](#) (const std::string &dir)
Construct a [Database](#) object for read-only access to a [Brass](#) database.
- WritableDatabase [Xapian::Brass::open](#) (const std::string &dir, int action, int block_size=8192)
Construct a [Database](#) object for update access to a [Brass](#) database.

- Database `Xapian::Chert::open` (const std::string &dir)
Construct a *Database* object for read-only access to a *Chert* database.
- WritableDatabase `Xapian::Chert::open` (const std::string &dir, int action, int block_size=8192)
Construct a *Database* object for update access to a *Chert* database.
- Database `Xapian::Flint::open` (const std::string &dir)
Construct a *Database* object for read-only access to a *Flint* database.
- WritableDatabase `Xapian::Flint::open` (const std::string &dir, int action, int block_size=8192)
Construct a *Database* object for update access to a *Flint* database.
- Database `Xapian::Remote::open` (const std::string &host, unsigned int port, `Xapian::timeout` timeout=10000, `Xapian::timeout` connect_timeout=10000)
Construct a *Database* object for read-only access to a remote database accessed via a TCP connection.
- WritableDatabase `Xapian::Remote::open_writable` (const std::string &host, unsigned int port, `Xapian::timeout` timeout=0, `Xapian::timeout` connect_timeout=10000)
Construct a *WritableDatabase* object for update access to a remote database accessed via a TCP connection.
- Database `Xapian::Remote::open` (const std::string &program, const std::string &args, `Xapian::timeout` timeout=10000)
Construct a *Database* object for read-only access to a remote database accessed via a program.
- WritableDatabase `Xapian::Remote::open_writable` (const std::string &program, const std::string &args, `Xapian::timeout` timeout=0)
Construct a *WritableDatabase* object for update access to a remote database accessed via a program.

8.6.1 Detailed Description

Factory functions for constructing Database and WritableDatabase objects.

8.7 xapian/document.h File Reference

API for working with documents.

Classes

- class [Xapian::Document](#)
A handle representing a document in a [Xapian](#) database.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.7.1 Detailed Description

API for working with documents.

8.8 xapian/enquire.h File Reference

API for running queries.

Classes

- class [Xapian::MSet](#)
*A match set (*MSet*).*
- class [Xapian::MSetIterator](#)
*An iterator pointing to items in an *MSet*.*
- class [Xapian::ESet](#)
*Class representing an ordered set of expand terms (an *ESet*).*
- class [Xapian::ESetIterator](#)
*Iterate through terms in the *ESet*.*
- class [Xapian::RSet](#)
*A relevance set (*R-Set*).*
- class [Xapian::MatchDecider](#)
Base class for matcher decision functor.
- class [Xapian::Enquire](#)
This class provides an interface to the information retrieval system for the purpose of searching.

Namespaces

- namespace [Xapian](#)
*The *Xapian* namespace contains public interfaces for the *Xapian* library.*

Functions

- bool [Xapian::operator==](#) (const [MSetIterator](#) &a, const [MSetIterator](#) &b)
*Equality test for *MSetIterator* objects.*
- bool [Xapian::operator!=](#) (const [MSetIterator](#) &a, const [MSetIterator](#) &b)
*Inequality test for *MSetIterator* objects.*
- bool [Xapian::operator==](#) (const [ESetIterator](#) &a, const [ESetIterator](#) &b)
*Equality test for *ESetIterator* objects.*

- bool [Xapian::operator!=](#) (const ESetIterator &a, const ESetIterator &b)
Inequality test for [ESetIterator](#) objects.

8.8.1 Detailed Description

API for running queries.

8.9 xapian/errorhandler.h File Reference

Decide if a [Xapian::Error](#) exception should be ignored.

Classes

- class [Xapian::ErrorHandler](#)
Decide if a [Xapian::Error](#) exception should be ignored.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.9.1 Detailed Description

Decide if a [Xapian::Error](#) exception should be ignored.

8.10 xapian/expanddecider.h File Reference

Allow rejection of terms during ESet generation.

Classes

- class [Xapian::ExpandDecider](#)
Virtual base class for expand decider functor.
- class [Xapian::ExpandDeciderAnd](#)
[ExpandDecider](#) subclass which rejects terms using two [ExpandDeciders](#).
- class [Xapian::ExpandDeciderFilterTerms](#)
[ExpandDecider](#) subclass which rejects terms in a specified list.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.10.1 Detailed Description

Allow rejection of terms during ESet generation.

8.11 xapian/keymaker.h File Reference

Build key strings for MSet ordering or collapsing.

Classes

- class [Xapian::KeyMaker](#)
Virtual base class for key making functors.
- class [Xapian::MultiValueKeyMaker](#)
[KeyMaker](#) subclass which combines several values.
- class [Xapian::Sorter](#)
Virtual base class for sorter functor.
- class [Xapian::MultiValueSorter](#)
[Sorter](#) subclass which sorts by a several values.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.11.1 Detailed Description

Build key strings for MSet ordering or collapsing.

8.12 xapian/matchspy.h File Reference

MatchSpy implementation.

Classes

- class [Xapian::MatchSpy](#)
Abstract base class for match spies.
- class [Xapian::ValueCountMatchSpy](#)
Class for counting the frequencies of values in the matching documents.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.12.1 Detailed Description

MatchSpy implementation.

8.13 xapian/positioniterator.h File Reference

Classes for iterating through position lists.

Classes

- class [Xapian::PositionIterator](#)
An iterator pointing to items in a list of positions.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

Functions

- bool [Xapian::operator==](#) (const PositionIterator &a, const PositionIterator &b)
Test equality of two PositionIterators.
- bool [Xapian::operator!=](#) (const PositionIterator &a, const PositionIterator &b)
Test inequality of two PositionIterators.

8.13.1 Detailed Description

Classes for iterating through position lists.

8.14 xapian/postingiterator.h File Reference

Classes for iterating through posting lists.

Classes

- class [Xapian::PostingIterator](#)
An iterator pointing to items in a list of postings.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

Functions

- bool [Xapian::operator==](#) (const PostingIterator &a, const PostingIterator &b)
Test equality of two PostingIterators.
- bool [Xapian::operator!=](#) (const PostingIterator &a, const PostingIterator &b)
Test inequality of two PostingIterators.

8.14.1 Detailed Description

Classes for iterating through posting lists.

8.15 xapian/postingsource.h File Reference

External sources of posting information.

Classes

- class [Xapian::PostingSource](#)
Base class which provides an "external" source of postings.
- class [Xapian::ValuePostingSource](#)
A posting source which generates weights from a value slot.
- class [Xapian::ValueWeightPostingSource](#)
A posting source which reads weights from a value slot.
- class [Xapian::DecreasingValueWeightPostingSource](#)
Read weights from a value which is known to decrease as docid increases.
- class [Xapian::ValueMapPostingSource](#)
A posting source which looks up weights in a map using values as the key.
- class [Xapian::FixedWeightPostingSource](#)
A posting source which returns a fixed weight for all documents.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.15.1 Detailed Description

External sources of posting information.

8.16 xapian/query.h File Reference

Classes for representing a query.

Classes

- class [Xapian::Query](#)
Class representing a query.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.16.1 Detailed Description

Classes for representing a query.

8.17 xapian/queryparser.h File Reference

parsing a user query string to build a [Xapian::Query](#) object

Classes

- class [Xapian::Stopper](#)
Base class for stop-word decision functor.
- class [Xapian::SimpleStopper](#)
Simple implementation of [Stopper](#) class - this will suit most users.
- struct [Xapian::ValueRangeProcessor](#)
Base class for value range processors.
- class [Xapian::StringValueRangeProcessor](#)
Handle a string range.
- class [Xapian::DateValueRangeProcessor](#)
Handle a date range.
- class [Xapian::NumberValueRangeProcessor](#)
Handle a number range.
- class [Xapian::QueryParser](#)
Build a [Xapian::Query](#) object from a user query string.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

Functions

- `std::string Xapian::sortable_serialise (double value)`
Convert a floating point number to a string, preserving sort order.
- `double Xapian::sortable_unserialise (const std::string &value)`
Convert a string encoded using [sortable_serialise](#) back to a floating point number.

8.17.1 Detailed Description

parsing a user query string to build a [Xapian::Query](#) object

8.18 xapian/registry.h File Reference

Class for looking up user subclasses during unserialisation.

Classes

- class [Xapian::Registry](#)
Registry for user subclasses.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.18.1 Detailed Description

Class for looking up user subclasses during unserialisation.

8.19 xapian/stem.h File Reference

stemming algorithms

Classes

- struct [Xapian::StemImplementation](#)
Class representing a stemming algorithm implementation.
- class [Xapian::Stem](#)
Class representing a stemming algorithm.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.19.1 Detailed Description

stemming algorithms

8.20 xapian/termgenerator.h File Reference

parse free text and generate terms

Classes

- class [Xapian::TermGenerator](#)
Parses a piece of text and generate terms.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.20.1 Detailed Description

parse free text and generate terms

8.21 xapian/termiterator.h File Reference

Classes for iterating through term lists.

Classes

- class [Xapian::TermIterator](#)
An iterator pointing to items in a list of terms.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

Functions

- bool [Xapian::operator==](#) (const TermIterator &a, const TermIterator &b)
Equality test for [TermIterator](#) objects.
- bool [Xapian::operator!=](#) (const TermIterator &a, const TermIterator &b)
Inequality test for [TermIterator](#) objects.

8.21.1 Detailed Description

Classes for iterating through term lists.

8.22 xapian/types.h File Reference

typedefs for [Xapian](#)

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

Typedefs

- typedef unsigned [Xapian::doccount](#)
A count of documents.
- typedef int [Xapian::doccount_diff](#)
A signed difference between two counts of documents.
- typedef unsigned [Xapian::docid](#)
A unique identifier for a document.
- typedef double [Xapian::doclength](#)
A normalised document length.
- typedef int [Xapian::percent](#)
The percentage score for a document in an [MSet](#).
- typedef unsigned [Xapian::termcount](#)
A counts of terms.
- typedef int [Xapian::termcount_diff](#)
A signed difference between two counts of terms.
- typedef unsigned [Xapian::termpos](#)
A term position within a document or query.
- typedef int [Xapian::termpos_diff](#)
A signed difference between two term positions.
- typedef unsigned [Xapian::timeout](#)
A timeout value in milliseconds.
- typedef unsigned [Xapian::valueno](#)
The number for a value slot in a document.

- typedef int [Xapian::valueno_diff](#)
A signed difference between two value slot numbers.
- typedef double [Xapian::weight](#)
The weight of a document or term.

Variables

- const valueno [Xapian::BAD_VALUENO](#) = static_cast<valueno>(-1)
Reserved value to indicate "no valueno".

8.22.1 Detailed Description

typedefs for [Xapian](#)

8.23 xapian/unicode.h File Reference

Unicode and UTF-8 related classes and functions.

Classes

- class [Xapian::Utf8Iterator](#)
An iterator which returns [Unicode](#) character values from a UTF-8 encoded string.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.
- namespace [Xapian::Unicode](#)
Functions associated with handling [Unicode](#) characters.

Enumerations

- enum [Xapian::Unicode::category](#)
Each Unicode character is in exactly one of these categories.

Functions

- unsigned [Xapian::Unicode::nonascii_to_utf8](#) (unsigned ch, char *buf)
Convert a single non-ASCII [Unicode](#) character to UTF-8.
- unsigned [Xapian::Unicode::to_utf8](#) (unsigned ch, char *buf)
Convert a single [Unicode](#) character to UTF-8.
- void [Xapian::Unicode::append_utf8](#) (std::string &s, unsigned ch)
Append the UTF-8 representation of a single [Unicode](#) character to a std::string.
- category [Xapian::Unicode::get_category](#) (unsigned ch)
Return the category which a given [Unicode](#) character falls into.
- bool [Xapian::Unicode::is_wordchar](#) (unsigned ch)
Test if a given [Unicode](#) character is "word character".
- bool [Xapian::Unicode::is_whitespace](#) (unsigned ch)
Test if a given [Unicode](#) character is a whitespace character.

- bool [Xapian::Unicode::is_currency](#) (unsigned ch)
Test if a given [Unicode](#) character is a currency symbol.
- unsigned [Xapian::Unicode::tolower](#) (unsigned ch)
Convert a [Unicode](#) character to lowercase.
- unsigned [Xapian::Unicode::toupper](#) (unsigned ch)
Convert a [Unicode](#) character to uppercase.
- std::string [Xapian::Unicode::tolower](#) (const std::string &term)
Convert a UTF-8 std::string to lowercase.
- std::string [Xapian::Unicode::toupper](#) (const std::string &term)
Convert a UTF-8 std::string to uppercase.

8.23.1 Detailed Description

Unicode and UTF-8 related classes and functions.

8.24 xapian/valueiterator.h File Reference

Class for iterating over document values.

Classes

- class [Xapian::ValueIterator](#)
Class for iterating over document values.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

Functions

- bool [Xapian::operator==](#) (const ValueIterator &a, const ValueIterator &b)
Equality test for [ValueIterator](#) objects.
- bool [Xapian::operator!=](#) (const ValueIterator &a, const ValueIterator &b)
Inequality test for [ValueIterator](#) objects.

8.24.1 Detailed Description

Class for iterating over document values.

8.25 xapian/valuesetmatchdecider.h File Reference

MatchDecider subclass for filtering results by value.

Classes

- class [Xapian::ValueSetMatchDecider](#)
MatchDecider filtering results based on whether document values are in a user-defined set.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.25.1 Detailed Description

MatchDecider subclass for filtering results by value.

8.26 xapian/weight.h File Reference

Weighting scheme API.

Classes

- class [Xapian::Weight](#)
Abstract base class for weighting schemes.
- class [Xapian::BoolWeight](#)
Class implementing a "boolean" weighting scheme.
- class [Xapian::BM25Weight](#)
[Xapian::Weight](#) subclass implementing the BM25 probabilistic formula.
- class [Xapian::TradWeight](#)
[Xapian::Weight](#) subclass implementing the traditional probabilistic formula.

Namespaces

- namespace [Xapian](#)
The [Xapian](#) namespace contains public interfaces for the [Xapian](#) library.

8.26.1 Detailed Description

Weighting scheme API.

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