MySQL++ Reference Manual

2.0.6

Generated by Doxygen 1.2.18

Wed Sep 28 07:44:06 2005

Contents

Chapter 1

MySQL++ Reference Manual

1.0.1 Getting Started

The best place to get started is the `user manual`. It provides a guide to the example programs and more.

1.0.2 Major Classes

In MySQL++, the main user-facing classes are **mysqlpp::Connection** (p. 50), **mysqlpp::Query** (p. 118), **mysqlpp::Result** (p. 130), and **mysqlpp::Row** (p. 138).

In addition, MySQL++ has a mechanism called Specialized SQL Structures (SSQLS), which allow you to create C++ structures that parallel the definition of the tables in your database schema. These let you manipulate the data in your database using native C++ data structures. Programs using this feature often include very little SQL code, because MySQL++ can generate most of what you need automatically when using SSQLSes. There is a whole chapter in the user manual on how to use this feature of the library, plus a section in the user manual's tutorial chapter to introduce it. It's possible to use MySQL++ effectively without using SSQLS, but it sure makes some things a lot easier.

1.0.3 Major Files

The only two header files your program ever needs to include are **mysql++.h**, and optionally custom.h. (The latter implements the SSQLS mechanism.) All of the other files are used within the library only.

1.0.4 If You Have Questions...

If you want to email someone to ask questions about this library, we greatly prefer that you send mail to the MySQL++ mailing list, which you can subscribe to here: `http://lists.mysql.com/plusplus`

That mailing list is archived, so if you have questions, do a search to see if the question has been asked before.

You may find people's individual email addresses in various files within the MySQL++ distribution. Please do not send mail to them unless you are sending something that is inherently personal.

Questions that are about MySQL++ usage may well be ignored if you send them to our personal email accounts. Those of us still active in MySQL++ development monitor the mailing list, so you aren't getting any extra "coverage" by sending messages to those addresses in addition to the mailing list.

1.0.5 Licensing

MySQL++ is licensed under the GNU Lesser General Public License, which you should have received with the distribution package in a file called "LGPL" or "LICENSE". You can also view it here: `http://www.gnu.org/licenses/lgpl.html` or receive a copy by writing to Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA.

Chapter 2

MySQL++ Namespace Index

2.1 MySQL++ Namespace List

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

Chapter 3

MySQL++ Hierarchical Index

3.1 MySQL++ Class Hierarchy

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

Chapter 4

MySQL++ Compound Index

4.1 MySQL++ Compound List

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

Chapter 5

MySQL++ File Index

5.1 MySQL++ File List

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

Chapter 6

MySQL++ Namespace Documentation

6.1 mysqlpp Namespace Reference

Compounds

- class **BadConversion**

  Exception (p. 88) *thrown when a bad type conversion is attempted.*

- class **BadFieldName**

  Exception (p. 88) *thrown when a requested named field doesn't exist.*

- class **BadNullConversion**

  Exception (p. 88) *thrown when you attempt to convert a SQL null to an incompatible type.*

- class **BadOption**

  Exception (p. 88) *thrown when you pass an unrecognized option to* **Connection::set_option()** (p. 58).

- class **BadParamCount**

  Exception (p. 88) *thrown when not enough query parameters are provided.*

- class **BadQuery**

  Exception (p. 88) *thrown when MySQL encounters a problem while processing your query.*

- class **BasicLock**

  Trivial **Lock** (p. 94) *subclass, using a boolean variable as the lock flag.*

- class **ColData_Tmpl**

  Template for string data that can convert itself to any standard C data type.

- class **Connection**

  Manages the connection to the MySQL database.

- class **ConnectionFailed**

  Exception (p. 88) *thrown when there is a problem establishing the database server connection. It's also thrown if* **Connection::shutdown()** (p. 59) *fails.*

- class **const_string**

  Wrapper for `const char*` *to make it behave in a way more useful to MySQL++.*

- class **const_subscript_container**

  A base class that one derives from to become a random access container, which can be accessed with subscript notation.

- struct **cstr_equal_to**

  Function object that returns true if one const char is equal to another.*

- struct **cstr_greater**

  Function object that returns true if one const char is lexically "greater than" another.*

- struct **cstr_greater_equal**

  Function object that returns true if one const char is lexically "greater than or equal to" another.*

- struct **cstr_less**

  Function object that returns true if one const char is lexically "less than" another.*

- struct **cstr_less_equal**

  Function object that returns true if one const char is lexically "less than or equal to" another.*

- struct **cstr_not_equal_to**

  Function object that returns true if one const char is not equal to another.*

- struct **Date**

  C++ form of MySQL's DATE type.

- struct **DateTime**

  C++ form of MySQL's DATETIME type.

- class **DBSelectionFailed**

  Exception (p. 88) *thrown when the program tries to select a new database and the server refuses for some reason.*

- struct **DTbase**

  Base class template for MySQL++ date and time classes.

- class **EndOfResults**

  Exception (p. 88) *thrown when* **ResUse::fetch_row()** (p. 136) *walks off the end of a use-query's result set.*

- class **EndOfResultSets**

  Exception (p. 88) *thrown when* **Query::store_next()** (p. 125) *walks off the end of a use-query's multi result sets.*

- struct **equal_list_b**

Same as **equal_list_ba** (p. 86)*, plus the option to have some elements of the equals clause suppressed.*

- struct **equal_list_ba**

  Holds two lists of items, typically used to construct a SQL "equals clause".

- class **Exception**

  Base class for all MySQL++ custom exceptions.

- class **FieldNames**

  Holds a list of SQL field names.

- class **Fields**

  A container similar to `std::vector` *for holding* **mysqlpp::Field** (p. 17) *records.*

- class **FieldTypes**

  A vector of SQL field types.

- class **Lock**

  Abstract base class for lock implementation, used by **Lockable** (p. 95)*.*

- class **Lockable**

  Interface allowing a class to declare itself as "lockable".

- class **LockFailed**

  Exception (p. 88) *thrown when a* **Lockable** (p. 95) *object fails.*

- class **mysql_type_info**

  Holds basic type information for ColData.

- class **MysqlCmp**

  Template for making function objects that can compare something against a **Row** (p. 138) *element.*

- class **MysqlCmpCStr**

  const char specialization of* **MysqlCmp** (p. 103)

- struct **OptionInfo**
- class **NoExceptions**

  Disable exceptions in an object derived from **OptionalExceptions** (p. 116)*.*

- class **Null**

  Class for holding data from a SQL column with the NULL attribute.

- class **null_type**

  The type of the global **mysqlpp::null** (p. 23) *object.*

- struct **NullisBlank**

  Class for objects that define SQL null as a blank C string.

- struct **NullisNull**

  Class for objects that define SQL null in terms of MySQL++'s **null_type** (p. 111).

- struct **NullisZero**

  Class for objects that define SQL null as 0.

- class **ObjectNotInitialized**

  Exception (p. 88) *thrown when you try to use an object that isn't completely initialized.*

- class **OptionalExceptions**

  Interface allowing a class to have optional exceptions.

- class **Query**

  A class for building and executing SQL queries.

- class **ResNSel**

  Holds the information on the success of queries that don't return any results.

- class **Result**

  This class manages SQL result sets.

- class **ResUse**

  A basic result set class, for use with "use" queries.

- class **Row**

  Manages rows from a result set.

- class **scoped_var_set**

  Sets a variable to a given value temporarily.

- class **Set**

  A special std::set derivative for holding MySQL data sets.

- struct **SQLParseElement**

  Used within **Query** (p. 118) *to hold elements for parameterized queries.*

- class **SQLQueryParms**

  This class holds the parameter values for filling template queries.

- class **SQLString**

  A specialized `std::string` *that will convert from any valid MySQL type.*

- class **subscript_iterator**

  Iterator that can be subscripted.

- struct **Time**

  C++ form of MySQL's TIME type.

- class **tiny_int**

  Class for holding an SQL `tiny_int` *object.*

- struct **value_list_b**

  Same as **value_list_ba** (p. 166)*, plus the option to have some elements of the list suppressed.*

- struct **value_list_ba**

  Holds a list of items, typically used to construct a SQL "value list".

Typedefs

- typedef **ColData_Tmpl**< **const_string** > **ColData**

  The type that is returned by constant rows.

- typedef **ColData_Tmpl**< std::string > **MutableColData**

  The type that is returned by mutable rows.

- typedef std::binary_function< const char ∗, const char ∗, bool > **bin_char_pred**

  Base class for the other predicate types defined in **compare.h**.

- typedef MYSQL_FIELD **Field**

  Alias for MYSQL_FIELD.

- typedef const char **cchar**

  Contraction for 'const char∗'.

- typedef unsigned int **uint**

  Contraction for 'unsigned int'.

Enumerations

- enum **sql_cmp_type**

  Used to disambiguate overloads of equal_list() in SSQLSes.

- enum **quote_type0** { **quote** }
- enum **quote_only_type0** { **quote_only** }
- enum **quote_double_only_type0** { **quote_double_only** }
- enum **escape_type0**
- enum **do_nothing_type0** { **do_nothing** }
- enum **ignore_type0** { **ignore** }
- enum **query_reset**

  Used for indicating whether a query object should auto-reset.

Functions

- template<class BinaryPred, class CmpType> **MysqlCmp**< BinaryPred, CmpType > **mysql_cmp** (**uint** i, const BinaryPred &func, const CmpType &cmp2)

  Template for function objects that compare any two objects, as long as they can be converted to **SQLString** (p. 154).

- template<class BinaryPred> **MysqlCmpCStr**< BinaryPred > **mysql_cmp_cstr** (**uint** i, const BinaryPred &func, const char *cmp2)

  Template for function objects that compare any two things that can be converted to `const char*`.

- std::ostream & **operator<<** (std::ostream &o, const **const_string** &str)

  Inserts a **const_string** (p. 61) *into a C++ stream.*

- int **compare** (const **const_string** &lhs, const **const_string** &rhs)

  Calls lhs.compare(), passing rhs.

- bool **operator==** (**const_string** &lhs, **const_string** &rhs)

  Returns true if lhs is the same as rhs.

- bool **operator!=** (**const_string** &lhs, **const_string** &rhs)

  Returns true if lhs is not the same as rhs.

- bool **operator<** (**const_string** &lhs, **const_string** &rhs)

  Returns true if lhs is lexically less than rhs.

- bool **operator<=** (**const_string** &lhs, **const_string** &rhs)

  Returns true if lhs is lexically less or equal to rhs.

- bool **operator>** (**const_string** &lhs, **const_string** &rhs)

  Returns true if lhs is lexically greater than rhs.

- bool **operator>=** (**const_string** &lhs, **const_string** &rhs)

  Returns true if lhs is lexically greater than or equal to rhs.

- std::ostream & **operator<<** (std::ostream &os, const **Date** &d)

  Inserts a **Date** (p. 73) *object into a C++ stream.*

- std::ostream & **operator<<** (std::ostream &os, const **Time** &t)

  Inserts a **Time** (p. 158) *object into a C++ stream in a MySQL-compatible format.*

- std::ostream & **operator<<** (std::ostream &os, const **DateTime** &dt)

  Inserts a **DateTime** (p. 76) *object into a C++ stream in a MySQL-compatible format.*

- **SQLQueryParms** & **operator<<** (quote_type2 p, **SQLString** &in)

  Inserts a **SQLString** (p. 154) *into a stream, quoted and escaped.*

- template<> ostream & **operator<<** (quote_type1 o, const string &in)

  Inserts a C++ string into a stream, quoted and escaped.

- template<> ostream & **operator**<< (quote_type1 o, const char *const &in)

  Inserts a C string into a stream, quoted and escaped.

- template<class Str> ostream & **_manip** (quote_type1 o, const **ColData_Tmpl**< Str > &in)

  Utility function used by operator<<(quote_type1, ColData).

- template<> ostream & **operator**<< (quote_type1 o, const **ColData_Tmpl**< string > &in)

  Inserts a ColData into a stream, quoted and escaped.

- template<> ostream & **operator**<< (quote_type1 o, const **ColData_Tmpl**< **const_-string** > &in)

  Inserts a ColData with const string into a stream, quoted and escaped.

- ostream & **operator**<< (ostream &o, const **ColData_Tmpl**< string > &in)

  Inserts a ColData into a stream.

- ostream & **operator**<< (ostream &o, const **ColData_Tmpl**< **const_string** > &in)

  Inserts a ColData with const string into a stream.

- **Query** & **operator**<< (**Query** &o, const **ColData_Tmpl**< string > &in)

  Insert a ColData into a SQLQuery.

- **Query** & **operator**<< (**Query** &o, const **ColData_Tmpl**< **const_string** > &in)

  Insert a ColData with const string into a SQLQuery.

- **SQLQueryParms** & **operator**<< (quote_only_type2 p, **SQLString** &in)

  Inserts a **SQLString** (p. 154) *into a stream, quoting it unless it's data that needs no quoting.*

- template<> ostream & **operator**<< (quote_only_type1 o, const **ColData_Tmpl**< string > &in)

  Inserts a ColData into a stream, quoted.

- template<> ostream & **operator**<< (quote_only_type1 o, const **ColData_Tmpl**< **const_-string** > &in)

  Inserts a ColData with const string into a stream, quoted.

- **SQLQueryParms** & **operator**<< (quote_double_only_type2 p, **SQLString** &in)

  Inserts a **SQLString** (p. 154) *into a stream, double-quoting it (") unless it's data that needs no quoting.*

- template<> ostream & **operator**<< (quote_double_only_type1 o, const **ColData_Tmpl**< string > &in)

  Inserts a ColData into a stream, double-quoted (").

- template<> ostream & **operator**<< (quote_double_only_type1 o, const **ColData_Tmpl**< **const_string** > &in)

  Inserts a ColData with const string into a stream, double-quoted (").

- **SQLQueryParms** & **operator**<< (escape_type2 p, **SQLString** &in)

  Inserts a **SQLString** (p. 154) *into a stream, escaping special SQL characters.*

- template<> std::ostream & **operator**<< (escape_type1 o, const std::string &in)

  Inserts a C++ string into a stream, escaping special SQL characters.

- template<> ostream & **operator**<< (escape_type1 o, const char ∗const &in)

  Inserts a C string into a stream, escaping special SQL characters.

- template<class Str> ostream & **_manip** (escape_type1 o, const **ColData_Tmpl**< Str > &in)

  Utility function used by operator<<(escape_type1, ColData).

- template<> std::ostream & **operator**<< (escape_type1 o, const **ColData_Tmpl**< std::string > &in)

  Inserts a ColData into a stream, escaping special SQL characters.

- template<> std::ostream & **operator**<< (escape_type1 o, const **ColData_Tmpl**< **const_-string** > &in)

  Inserts a ColData with const string into a stream, escaping special SQL characters.

- **SQLQueryParms** & **operator**<< (do_nothing_type2 p, **SQLString** &in)

  Inserts a **SQLString** (p. 154) *into a stream, with no escaping or quoting.*

- **SQLQueryParms** & **operator**<< (ignore_type2 p, **SQLString** &in)

  Inserts a **SQLString** (p. 154) *into a stream, with no escaping or quoting, and without marking the string as having been "processed".*

- template<class T> std::ostream & **operator**<< (escape_type1 o, const T &in)

  Inserts any type T into a stream that has an operator<< defined for it.

- template<> MYSQLPP_EXPORT std::ostream & **operator**<< (escape_type1 o, char ∗const &in)

  Inserts a C string into a stream, escaping special SQL characters.

- template<class Container> std::ostream & **operator**<< (std::ostream &s, const **Set**< Container > &d)

  Inserts a **Set** (p. 148) *object into a C++ stream.*

- template<class Type, class Behavior> std::ostream & **operator**<< (std::ostream &o, const **Null**< Type, Behavior > &n)

  Inserts null-able data into a C++ stream if it is not actually null. Otherwise, insert something appropriate for null data.

- void **swap** (**ResUse** &x, **ResUse** &y)

  Swaps two **ResUse** (p. 132) *objects.*

- void **swap** (**Result** &x, **Result** &y)

  Swaps two **Result** (p. 130) *objects.*

- template<class Strng, class T> Strng **stream2string** (const T &object)

Converts a stream-able object to any type that can be initialized from an `std::string`*.*

- void **strip** (std::string &s)

  Strips blanks at left and right ends.

- void **escape_string** (std::string &s)

  C++ equivalent of mysql_escape_string().

- MYSQLPP_EXPORT void **str_to_upr** (std::string &s)

  Changes case of string to upper.

- MYSQLPP_EXPORT void **str_to_lwr** (std::string &s)

  Changes case of string to lower.

- MYSQLPP_EXPORT void **strip_all_blanks** (std::string &s)

  Removes all blanks.

- MYSQLPP_EXPORT void **strip_all_non_num** (std::string &s)

  Removes all non-numerics.

- bool **operator==** (const **mysql_type_info** &a, const **mysql_type_info** &b)

  Returns true if two **mysql_type_info** (p. 98) *objects are equal.*

- bool **operator!=** (const **mysql_type_info** &a, const **mysql_type_info** &b)

  Returns true if two **mysql_type_info** (p. 98) *objects are not equal.*

- bool **operator==** (const std::type_info &a, const **mysql_type_info** &b)

  Returns true if a given **mysql_type_info** (p. 98) *object is equal to a given C++ type_info object.*

- bool **operator!=** (const std::type_info &a, const **mysql_type_info** &b)

  Returns true if a given **mysql_type_info** (p. 98) *object is not equal to a given C++ type_info object.*

- bool **operator==** (const **mysql_type_info** &a, const std::type_info &b)

  Returns true if a given **mysql_type_info** (p. 98) *object is equal to a given C++ type_info object.*

- bool **operator!=** (const **mysql_type_info** &a, const std::type_info &b)

  Returns true if a given **mysql_type_info** (p. 98) *object is not equal to a given C++ type_info object.*

- void **create_vector** (size_t size, std::vector< bool > &v, bool t0, bool t1, bool t2, bool t3, bool t4, bool t5, bool t6, bool t7, bool t8, bool t9, bool ta, bool tb, bool tc)

  Create a vector of bool with the given arguments as values.

- template<class Container> void **create_vector** (const Container &c, std::vector< bool > &v, std::string s0, std::string s1, std::string s2, std::string s3, std::string s4, std::string s5, std::string s6, std::string s7, std::string s8, std::string s9, std::string sa, std::string sb, std::string sc)

  Create a vector of bool using a list of named fields.

- template<class Seq1, class Seq2, class Manip> std::ostream & **operator**<< (std::ostream &o, const **equal_list_ba**< Seq1, Seq2, Manip > &el)

  Inserts an **equal_list_ba** (p. 86) *into an std::ostream.*

- template<class Seq1, class Seq2, class Manip> std::ostream & **operator**<< (std::ostream &o, const **equal_list_b**< Seq1, Seq2, Manip > &el)

  Same as operator<< for **equal_list_ba** (p. 86)*, plus the option to suppress insertion of some list items in the stream.*

- template<class Seq, class Manip> std::ostream & **operator**<< (std::ostream &o, const **value_list_ba**< Seq, Manip > &cl)

  Inserts a **value_list_ba** (p. 166) *into an std::ostream.*

- template<class Seq, class Manip> std::ostream & **operator**<< (std::ostream &o, const **value_list_b**< Seq, Manip > &cl)

  Same as operator<< for **value_list_ba** (p. 166)*, plus the option to suppress insertion of some list items in the stream.*

- template<class Seq> **value_list_ba**< Seq, **do_nothing_type0** > **value_list** (const Seq &s, const char ∗d=",")

  Constructs a **value_list_ba** (p. 166).

- template<class Seq, class Manip> **value_list_ba**< Seq, Manip > **value_list** (const Seq &s, const char ∗d, Manip m)

  Constructs a **value_list_ba** (p. 166).

- template<class Seq, class Manip> **value_list_b**< Seq, Manip > **value_list** (const Seq &s, const char ∗d, Manip m, const std::vector< bool > &vb)

  Constructs a **value_list_b** (p. 164) *(sparse value list).*

- template<class Seq, class Manip> **value_list_b**< Seq, Manip > **value_list** (const Seq &s, const char ∗d, Manip m, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false)

  Constructs a **value_list_b** (p. 164) *(sparse value list).*

- template<class Seq> **value_list_b**< Seq, **do_nothing_type0** > **value_list** (const Seq &s, const char ∗d, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false)

  Constructs a sparse value list.

- template<class Seq> **value_list_b**< Seq, **do_nothing_type0** > **value_list** (const Seq &s, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false)

  Constructs a sparse value list.

- template<class Seq1, class Seq2> **equal_list_ba**< Seq1, Seq2, **do_nothing_type0** > **equal_list** (const Seq1 &s1, const Seq2 &s2, const char ∗d=",", const char ∗e="=")

  Constructs an **equal_list_ba** (p. 86).

- template<class Seq1, class Seq2, class Manip> **equal_list_ba**< Seq1, Seq2, Manip > **equal_list** (const Seq1 &s1, const Seq2 &s2, const char ∗d, const char ∗e, Manip m)

  Constructs an **equal_list_ba** (p. 86)*.*

- template<class Seq1, class Seq2, class Manip> **equal_list_b**< Seq1, Seq2, Manip > **equal_list** (const Seq1 &s1, const Seq2 &s2, const char ∗d, const char ∗e, Manip m, const std::vector< bool > &vb)

  Constructs a **equal_list_b** (p. 84) *(sparse equal list).*

- template<class Seq1, class Seq2, class Manip> **equal_list_b**< Seq1, Seq2, Manip > **equal_list** (const Seq1 &s1, const Seq2 &s2, const char ∗d, const char ∗e, Manip m, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false)

  Constructs a **equal_list_b** (p. 84) *(sparse equal list).*

- template<class Seq1, class Seq2> **equal_list_b**< Seq1, Seq2, **do_nothing_type0** > **equal_list** (const Seq1 &s1, const Seq2 &s2, const char ∗d, const char ∗e, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false)

  Constructs a **equal_list_b** (p. 84) *(sparse equal list).*

- template<class Seq1, class Seq2> **equal_list_b**< Seq1, Seq2, **do_nothing_type0** > **equal_list** (const Seq1 &s1, const Seq2 &s2, const char ∗d, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false)

  Constructs a **equal_list_b** (p. 84) *(sparse equal list).*

- template<class Seq1, class Seq2> **equal_list_b**< Seq1, Seq2, **do_nothing_type0** > **equal_list** (const Seq1 &s1, const Seq2 &s2, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false)

  Constructs a **equal_list_b** (p. 84) *(sparse equal list).*

Variables

- const bool **use_exceptions** = true

  Alias for 'true', to make code requesting exceptions more readable.

- bool **dont_quote_auto** = false

  Set (p. 148) *to true if you want to suppress automatic quoting.*

- const **null_type null** = **null_type**()

  Global 'null' instance. Use wherever you need a SQL null. (As opposed to a C++ language null pointer or null character.).

6.1.1 Detailed Description

All global symbols in MySQL++ are in namespace mysqlpp. This is needed because many symbols are rather generic (e.g. **Row** (p. 138), **Query** (p. 118)...), so there is a serious danger of conflicts.

6.1.2 Enumeration Type Documentation

6.1.2.1 enum mysqlpp::do_nothing_type0

The 'do_nothing' manipulator.

Does exactly what it says: nothing. Used as a dummy manipulator when you are required to use some manipulator but don't want anything to be done to the following item. When used with **SQLQueryParms** (p. 151) it will make sure that it does not get formatted in any way, overriding any setting set by the template query.

Enumeration values:

do_nothing insert into a std::ostream to override manipulation of next item

6.1.2.2 enum mysqlpp::escape_type0

The 'escape' manipulator.

Calls mysql_escape_string() in the MySQL C API on the following argument to prevent any special SQL characters from being interpreted.

6.1.2.3 enum mysqlpp::ignore_type0

The 'ignore' manipulator.

Only valid when used with **SQLQueryParms** (p. 151). It's a dummy manipulator like the `do_nothing manipulator`, except that it will not override formatting set by the template query. It is simply ignored.

Enumeration values:

ignore insert into a std::ostream as a dummy manipulator

6.1.2.4 enum mysqlpp::quote_double_only_type0

The 'double_quote_only' manipulator.

Similar to `quote_only manipulator`, except that it uses double quotes instead of single quotes.

Enumeration values:

quote_double_only insert into a std::ostream to double-quote next item

6.1.2.5 enum mysqlpp::quote_only_type0

The 'quote_only' manipulator.

Similar to `quote manipulator`, except that it doesn't escape special SQL characters.

Enumeration values:

quote_only insert into a std::ostream to single-quote next item

6.1.2.6 enum mysqlpp::quote_type0

The standard 'quote' manipulator.

Insert this into a stream to put single quotes around the next item in the stream, and escape characters within it that are 'special' in SQL. This is the most generally useful of the manipulators.

Enumeration values:

quote insert into a std::ostream to single-quote and escape next item

6.1.3 Function Documentation

6.1.3.1 template<class Container> void mysqlpp::create_vector (const Container & *c*, std::vector< bool > & *v*, std::string *s0*, std::string *s1*, std::string *s2*, std::string *s3*, std::string *s4*, std::string *s5*, std::string *s6*, std::string *s7*, std::string *s8*, std::string *s9*, std::string *sa*, std::string *sb*, std::string *sc*)

Create a vector of bool using a list of named fields.

This function is used with the **ResUse** (p. 132) and **Result** (p. 130) containers, which have a field_num() member function that maps a field name to its position number. So for each named field, we set the bool in the vector at the corresponding position to true.

This function is used within the library to build the vector used in calling the vector form of **Row::equal_list()** (p. 141), **Row::value_list()** (p. 146), and **Row::field_list()** (p. 143). See the "Harnessing SSQLS Internals" section of the user manual to see that feature at work.

6.1.3.2 void mysqlpp::create_vector (size_t *size*, std::vector< bool > & *v*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false)

Create a vector of bool with the given arguments as values.

This function takes up to 13 bools, with the size parameter controlling the actual number of parameters we pay attention to.

This function is used within the library to build the vector used in calling the vector form of **Row::equal_list()** (p. 141), **Row::value_list()** (p. 146), and **Row::field_list()** (p. 143). See the "Harnessing SSQLS Internals" section of the user manual to see that feature at work.

6.1.3.3 template<class Seq1, class Seq2> equal_list_b<Seq1, Seq2, do_nothing_type0> equal_list (const Seq1 & *s1*, const Seq2 & *s2*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false)

Constructs a **equal_list_b** (p. 84) (sparse equal list).

Same as equal_list(Seq&, Seq&, const char*, bool, bool...) except that it doesn't take the const char* argument. It uses a comma for the delimiter. This form is useful for building simple equals lists, where no manipulators are necessary, and the default delimiter and equals symbol are suitable.

6.1.3.4 template<class Seq1, class Seq2> equal_list_b<Seq1, Seq2, do_nothing_type0> equal_list (const Seq1 & *s1*, const Seq2 & *s2*, const char * *d*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false)

Constructs a **equal_list_b** (p. 84) (sparse equal list).

Same as equal_list(Seq&, Seq&, const char*, const char*, bool, bool...) except that it doesn't take the second const char* argument. It uses " = " for the equals symbol.

6.1.3.5 template<class Seq1, class Seq2> equal_list_b<Seq1, Seq2, do_nothing_type0> equal_list (const Seq1 & *s1*, const Seq2 & *s2*, const char * *d*, const char * *e*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false)

Constructs a **equal_list_b** (p. 84) (sparse equal list).

Same as equal_list(Seq&, Seq&, const char*, const char*, Manip, bool, bool...) except that it doesn't take the Manip argument. It uses the do_nothing manipulator instead, meaning that none of the elements are escaped when being inserted into a stream.

6.1.3.6 template<class Seq1, class Seq2, class Manip> equal_list_b<Seq1, Seq2, Manip> equal_list (const Seq1 & *s1*, const Seq2 & *s2*, const char * *d*, const char * *e*, Manip *m*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false)

Constructs a **equal_list_b** (p. 84) (sparse equal list).

Same as equal_list(Seq&, Seq&, const char*, const char*, Manip, vector<bool>&) except that it takes boolean parameters instead of a list of bools.

6.1.3.7 template<class Seq1, class Seq2, class Manip> equal_list_b<Seq1, Seq2, Manip> equal_list (const Seq1 & *s1*, const Seq2 & *s2*, const char * *d*, const char * *e*, Manip *m*, const std::vector< bool > & *vb*)

Constructs a **equal_list_b** (p. 84) (sparse equal list).

Same as equal_list(Seq&, Seq&, const char*, const char*, Manip) except that you can pass a vector of bools. For each true item in that list, operator<< adds the corresponding item is put in the equal list. This lets you pass in sequences when you don't want all of the elements to be inserted into a stream.

6.1.3.8 template<class Seq1, class Seq2, class Manip> equal_list_ba<Seq1, Seq2, Manip> equal_list (const Seq1 & *s1*, const Seq2 & *s2*, const char * *d*, const char * *e*, Manip *m*)

Constructs an **equal_list_ba** (p. 86).

Same as equal_list(Seq&, Seq&, const char*, const char*) except that it also lets you specify the manipulator. Use this version if the data must be escaped or quoted when being inserted into a stream.

6.1.3.9 template<class Seq1, class Seq2> equal_list_ba<Seq1, Seq2, do_nothing_type0> equal_list (const Seq1 & *s1*, const Seq2 & *s2*, const char ∗ *d* = ",", const char ∗ *e* = " = ")

Constructs an **equal_list_ba** (p. 86).

This function returns an equal list that uses the 'do_nothing' manipulator. That is, the items are not quoted or escaped in any way when inserted into a stream. See equal_list(Seq, Seq, const char∗, const char∗, Manip) if you need a different manipulator.

The idea is for both lists to be of equal length because corresponding elements from each list are handled as pairs, but if one list is shorter than the other, the generated list will have that many elements.

Parameters:

s1 items on the left side of the equals sign when the equal list is inserted into a stream

s2 items on the right side of the equals sign

d delimiter operator<< should place between pairs

e what operator<< should place between items in each pair; by default, an equals sign, as that is the primary use for this mechanism.

6.1.3.10 template<class BinaryPred, class CmpType> MysqlCmp<BinaryPred, CmpType> mysql_cmp (uint *i*, const BinaryPred & *func*, const CmpType & *cmp2*)

Template for function objects that compare any two objects, as long as they can be converted to **SQLString** (p. 154).

This is a more generic form of **mysql_cmp_cstr()** (p. 27), and is therefore less efficient. Use this form only when necessary.

Parameters:

i field index number

func one of the functors in **compare.h**, or any compatible functor

cmp2 what to compare to

6.1.3.11 template<class BinaryPred> MysqlCmpCStr<BinaryPred> mysql_cmp_cstr (uint *i*, const BinaryPred & *func*, const char ∗ *cmp2*)

Template for function objects that compare any two things that can be converted to `const char*`.

Parameters:

i field index number

func one of **cstr_equal_to** (p. 67), **cstr_not_equal_to** (p. 72), **cstr_less** (p. 70), **cstr_less_-equal** (p. 71), **cstr_less_equal** (p. 71), or **cstr_less_equal** (p. 71).

cmp2 what to compare to

See also:

mysql_cmp() (p. 27)

6.1.3.12 template<class Seq, class Manip> std::ostream& operator<< (std::ostream & *o*, const value_list_b< Seq, Manip > & *cl*)

Same as operator<< for **value_list_ba** (p. 166), plus the option to suppress insertion of some list items in the stream.

See **value_list_b** (p. 164)'s documentation for examples of how this works.

6.1.3.13 template<class Seq, class Manip> std::ostream& operator<< (std::ostream & *o*, const value_list_ba< Seq, Manip > & *cl*)

Inserts a **value_list_ba** (p. 166) into an std::ostream.

Given a list (a, b) and a delimiter D, this operator will insert "aDb" into the stream.

See **value_list_ba** (p. 166)'s documentation for concrete examples.

See also:
value_list() (p. 34)

6.1.3.14 template<class Seq1, class Seq2, class Manip> std::ostream& operator<< (std::ostream & *o*, const equal_list_b< Seq1, Seq2, Manip > & *el*)

Same as operator<< for **equal_list_ba** (p. 86), plus the option to suppress insertion of some list items in the stream.

See **equal_list_b** (p. 84)'s documentation for examples of how this works.

6.1.3.15 template<class Seq1, class Seq2, class Manip> std::ostream& operator<< (std::ostream & *o*, const equal_list_ba< Seq1, Seq2, Manip > & *el*)

Inserts an **equal_list_ba** (p. 86) into an std::ostream.

Given two lists (a, b) and (c, d), a delimiter D, and an equals symbol E, this operator will insert "aEcDbEd" into the stream.

See **equal_list_ba** (p. 86)'s documentation for concrete examples.

See also:
equal_list() (p. 27)

6.1.3.16 template<> MYSQLPP_EXPORT std::ostream& operator<< (escape_type1 *o*, char *const & *in*) `[inline]`

Inserts a C string into a stream, escaping special SQL characters.

This version exists solely to handle constness problems. We force everything to the completely-const version: operator<<(escape_type1, const char* const&).

6.1.3.17 template<class T> std::ostream& operator<< (escape_type1 *o*, const T & *in*) `[inline]`

Inserts any type T into a stream that has an operator<< defined for it.

Does not actually escape that data! Use one of the other forms of operator<< for the escape manipulator if you need escaping. This template exists to catch cases like inserting an `int` after the escape manipulator: you don't actually want escaping in this instance.

6.1.3.18 template<> MYSQLPP_EXPORT std::ostream & mysqlpp::operator<< (escape_type1 *o*, const ColData_Tmpl< const_string > & *in*)

Inserts a ColData with const string into a stream, escaping special SQL characters.

Because ColData was designed to contain MySQL type data, we may choose not to escape the data, if it is not needed.

6.1.3.19 template<> MYSQLPP_EXPORT std::ostream & mysqlpp::operator<< (escape_type1 *o*, const ColData_Tmpl< std::string > & *in*)

Inserts a ColData into a stream, escaping special SQL characters.

Because ColData was designed to contain MySQL type data, we may choose not to escape the data, if it is not needed.

6.1.3.20 template<> MYSQLPP_EXPORT std::ostream & mysqlpp::operator<< (escape_type1 *o*, const char *const & *in*)

Inserts a C string into a stream, escaping special SQL characters.

Because C's type system lacks the information we need to second- guess this manipulator, we always run the escaping algorithm on the data, even if it's not needed.

6.1.3.21 template<> MYSQLPP_EXPORT std::ostream & mysqlpp::operator<< (escape_type1 *o*, const std::string & *in*)

Inserts a C++ string into a stream, escaping special SQL characters.

Because std::string lacks the type information we need, the string is always escaped, even if it doesn't need it.

6.1.3.22 MYSQLPP_EXPORT SQLQueryParms & mysqlpp::operator<< (escape_type2 *p*, SQLString & *in*)

Inserts a **SQLString** (p. 154) into a stream, escaping special SQL characters.

We actually only do the escaping if in.is_string is set but in.dont_escape is not. If that is not the case, we insert the string data directly.

6.1.3.23 template<> ostream& operator<< (quote_double_only_type1 *o*, const ColData_Tmpl< const_string > & *in*)

Inserts a ColData with const string into a stream, double-quoted (").

Because ColData was designed to contain MySQL type data, we may choose not to actually quote the data, if it is not needed.

6.1.3.24 template<> ostream& operator<< (quote_double_only_type1 *o*, const ColData_Tmpl< string > & *in*)

Inserts a ColData into a stream, double-quoted (").

Because ColData was designed to contain MySQL type data, we may choose not to actually quote the data, if it is not needed.

6.1.3.25 SQLQueryParms& operator<< (quote_double_only_type2 *p*, SQLString & *in*)

Inserts a **SQLString** (p. 154) into a stream, double-quoting it (") unless it's data that needs no quoting.

We make the decision to quote the data based on the in.is_string flag. You can set it yourself, but **SQLString** (p. 154)'s ctors should set it correctly for you.

6.1.3.26 template<> ostream& operator<< (quote_only_type1 *o*, const ColData_Tmpl< const_string > & *in*)

Inserts a ColData with const string into a stream, quoted.

Because ColData was designed to contain MySQL type data, we may choose not to actually quote the data, if it is not needed.

6.1.3.27 template<> ostream& operator<< (quote_only_type1 *o*, const ColData_Tmpl< string > & *in*)

Inserts a ColData into a stream, quoted.

Because ColData was designed to contain MySQL type data, we may choose not to actually quote the data, if it is not needed.

6.1.3.28 SQLQueryParms& operator<< (quote_only_type2 *p*, SQLString & *in*)

Inserts a **SQLString** (p. 154) into a stream, quoting it unless it's data that needs no quoting.

We make the decision to quote the data based on the in.is_string flag. You can set it yourself, but **SQLString** (p. 154)'s ctors should set it correctly for you.

6.1.3.29 Query& operator<< (Query & *o*, const ColData_Tmpl< const_string > & *in*)

Insert a ColData with const string into a SQLQuery.

This operator appears to be a workaround for a weakness in one compiler's implementation of the C++ type system. See Wishlist for current plan on what to do about this.

6.1.3.30 Query& operator<< (Query & *o*, const ColData_Tmpl< string > & *in*)

Insert a ColData into a SQLQuery.

This operator appears to be a workaround for a weakness in one compiler's implementation of the C++ type system. See Wishlist for current plan on what to do about this.

6.1.3.31 ostream& operator<< (ostream & *o*, const ColData_Tmpl< const_string > & *in*)

Inserts a ColData with const string into a stream.

Because ColData was designed to contain MySQL type data, this operator has the information needed to choose to quote and/or escape the data as it is inserted into the stream, even if you don't use any of the quoting or escaping manipulators.

6.1.3.32 ostream& operator<< (ostream & *o*, const ColData_Tmpl< string > & *in*)

Inserts a ColData into a stream.

Because ColData was designed to contain MySQL type data, this operator has the information needed to choose to quote and/or escape the data as it is inserted into the stream, even if you don't use any of the quoting or escaping manipulators.

6.1.3.33 template<> ostream& operator<< (quote_type1 *o*, const ColData_Tmpl< const_string > & *in*)

Inserts a ColData with const string into a stream, quoted and escaped.

Because ColData was designed to contain MySQL type data, we may choose not to actually quote or escape the data, if it is not needed.

6.1.3.34 template<> ostream& operator<< (quote_type1 *o*, const ColData_Tmpl< string > & *in*)

Inserts a ColData into a stream, quoted and escaped.

Because ColData was designed to contain MySQL type data, we may choose not to actually quote or escape the data, if it is not needed.

6.1.3.35 template<> ostream& operator<< (quote_type1 *o*, const char *const & *in*)

Inserts a C string into a stream, quoted and escaped.

Because C strings lack the type information we need, the string is both quoted and escaped, always.

6.1.3.36 template<> ostream& operator<< (quote_type1 *o*, const string & *in*)

Inserts a C++ string into a stream, quoted and escaped.

Because std::string lacks the type information we need, the string is both quoted and escaped, always.

6.1.3.37 SQLQueryParms& operator<< (quote_type2 *p*, SQLString & *in*)

Inserts a **SQLString** (p. 154) into a stream, quoted and escaped.

If in.is_string is set and in.dont_escape is *not* set, the string is quoted and escaped.

If both in.is_string and in.dont_escape are set, the string is quoted but not escaped.

If in.is_string is not set, the data is inserted as-is. This is the case when you initialize **SQLString** (p. 154) with one of the constructors taking an integral type, for instance.

6.1.3.38 MYSQLPP_EXPORT std::ostream & mysqlpp::operator<< (std::ostream & *os*, const DateTime & *dt*)

Inserts a **DateTime** (p. 76) object into a C++ stream in a MySQL-compatible format.

The date and time are inserted into the stream, in that order, with a space between them.

Parameters:

os stream to insert date and time into

dt date/time object to insert into stream

6.1.3.39 MYSQLPP_EXPORT std::ostream & mysqlpp::operator<< (std::ostream & *os*, const Time & *t*)

Inserts a **Time** (p. 158) object into a C++ stream in a MySQL-compatible format.

The format is HH:MM:SS, zero-padded.

Parameters:

os stream to insert time into

t time to insert into stream

6.1.3.40 MYSQLPP_EXPORT std::ostream & mysqlpp::operator<< (std::ostream & *os*, const Date & *d*)

Inserts a **Date** (p. 73) object into a C++ stream.

The format is YYYY-MM-DD, zero-padded.

Parameters:

os stream to insert date into

d date to insert into stream

6.1.3.41 template<class Strng, class T> Strng stream2string (const T & *object*)

Converts a stream-able object to any type that can be initialized from an `std::string`.

This adapter takes any object that has an `out_stream()` member function and converts it to a string type. An example of such a type within the library is **mysqlpp::Date** (p. 73).

6.1.3.42 template<class Seq> value_list_b<Seq, do_nothing_type0> value_list (const Seq & *s*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false)

Constructs a sparse value list.

Same as value_list(Seq&, const char*, Manip, bool, bool...) but without the Manip or delimiter parameters. We use the do_nothing manipulator, meaning that the value list items are neither escaped nor quoted when being inserted into a stream. The delimiter is a comma. This form is suitable for lists of simple data, such as integers.

6.1.3.43 template<class Seq> value_list_b<Seq, do_nothing_type0> value_list (const Seq & *s*, const char * *d*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false)

Constructs a sparse value list.

Same as value_list(Seq&, const char*, Manip, bool, bool...) but without the Manip parameter. We use the do_nothing manipulator, meaning that the value list items are neither escaped nor quoted when being inserted into a stream.

6.1.3.44 template<class Seq, class Manip> value_list_b<Seq, Manip> value_list (const Seq & *s*, const char * *d*, Manip *m*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false)

Constructs a **value_list_b** (p. 164) (sparse value list).

Same as value_list(Seq&, const char*, Manip, const vector<bool>&), except that it takes the bools as arguments instead of wrapped up in a vector object.

6.1.3.45 template<class Seq, class Manip> value_list_b<Seq, Manip> value_list (const Seq & *s*, const char * *d*, Manip *m*, const std::vector< bool > & *vb*) `[inline]`

Constructs a **value_list_b** (p. 164) (sparse value list).

Parameters:

- ***s*** an STL sequence of items in the value list
- ***d*** delimiter operator<< should place between items
- ***m*** manipulator to use when inserting items into a stream
- ***vb*** for each item in this vector that is true, the corresponding item in the value list is inserted into a stream; the others are suppressed

6.1.3.46 template<class Seq, class Manip> value_list_ba<Seq, Manip> value_list (const Seq & *s*, const char * *d*, Manip *m*)

Constructs a **value_list_ba** (p. 166).

Parameters:

- ***s*** an STL sequence of items in the value list
- ***d*** delimiter operator<< should place between items
- ***m*** manipulator to use when inserting items into a stream

6.1.3.47 template<class Seq> value_list_ba<Seq, do_nothing_type0> value_list (const Seq & *s*, const char ∗ *d* = ",")

Constructs a **value_list_ba** (p. 166).

This function returns a value list that uses the 'do_nothing' manipulator. That is, the items are not quoted or escaped in any way. See value_list(Seq, const char∗, Manip) if you need to specify a manipulator.

Parameters:

s an STL sequence of items in the value list

d delimiter operator<< should place between items

6.1.4 Variable Documentation

6.1.4.1 bool mysqlpp::dont_quote_auto = false

Set (p. 148) to true if you want to suppress automatic quoting.

Works only for ColData inserted into C++ streams.

Chapter 7

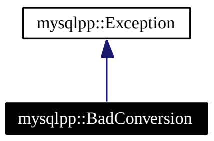
MySQL++ Class Documentation

7.1 mysqlpp::BadConversion Class Reference

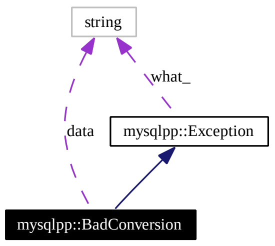
Exception (p. 88) thrown when a bad type conversion is attempted.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::BadConversion:



Collaboration diagram for mysqlpp::BadConversion:



Public Methods

- **BadConversion** (const char ∗tn, const char ∗d, size_t r, size_t a)

  Create exception object, building error string dynamically.

- **BadConversion** (const std::string &w, const char ∗tn, const char ∗d, size_t r, size_t a)

  Create exception object, given completed error string.

- **BadConversion** (const char ∗w="")

  Create exception object, with error string only.

- ∼**BadConversion** () throw ()

  Destroy exception.

Public Attributes

- const char ∗ **type_name**

  name of type we tried to convert to

- std::string **data**

  string form of data we tried to convert

- size_t **retrieved**

  documentation needed!

- size_t **actual_size**

  documentation needed!

7.1.1 Detailed Description

Exception (p. 88) thrown when a bad type conversion is attempted.

7.1.2 Constructor & Destructor Documentation

7.1.2.1 mysqlpp::BadConversion::BadConversion (const char ∗ *tn*, const char ∗ *d*, size_t *r*, size_t *a*) `[inline]`

Create exception object, building error string dynamically.

Parameters:

tn type name we tried to convert to

d string form of data we tried to convert

r ??

a ??

7.1.2.2 mysqlpp::BadConversion::BadConversion (const std::string & *w*, const char ∗ *tn*, const char ∗ *d*, size_t *r*, size_t *a*) `[inline]`

Create exception object, given completed error string.

Parameters:

w the "what" error string

tn type name we tried to convert to

d string form of data we tried to convert

r ??

a ??

7.1.2.3 mysqlpp::BadConversion::BadConversion (const char $*$ *w* = "") `[inline, explicit]`

Create exception object, with error string only.

Parameters:
w the "what" error string

All other data members are initialize to default values

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

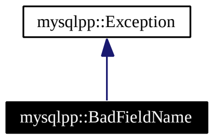
- **exceptions.h**

7.2 mysqlpp::BadFieldName Class Reference

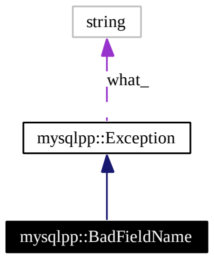
Exception (p. 88) thrown when a requested named field doesn't exist.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::BadFieldName:



Collaboration diagram for mysqlpp::BadFieldName:



Public Methods

- **BadFieldName** (const char ∗bad_field)

  Create exception object.

- ∼**BadFieldName** () throw ()

  Destroy exception.

7.2.1 Detailed Description

Exception (p. 88) thrown when a requested named field doesn't exist.

Thrown by Row::lookup_by_name() when you pass a field name that isn't in the result set.

7.2.2 Constructor & Destructor Documentation

7.2.2.1 mysqlpp::BadFieldName::BadFieldName (const char ∗ *bad_field*) `[inline, explicit]`

Create exception object.

Parameters:

bad_field name of field the MySQL server didn't like

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

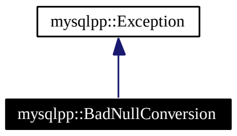
- **exceptions.h**

7.3 mysqlpp::BadNullConversion Class Reference

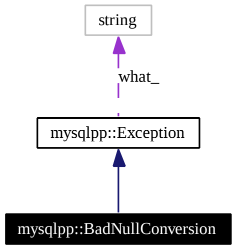
Exception (p. 88) thrown when you attempt to convert a SQL null to an incompatible type.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::BadNullConversion:



Collaboration diagram for mysqlpp::BadNullConversion:



Public Methods

- **BadNullConversion** (const char ∗w="")
  Create exception object.

7.3.1 Detailed Description

Exception (p. 88) thrown when you attempt to convert a SQL null to an incompatible type.

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

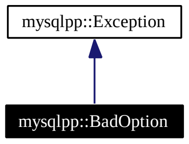
- **exceptions.h**

7.4 mysqlpp::BadOption Class Reference

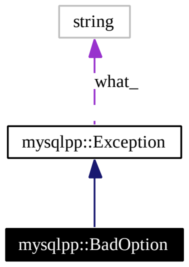
Exception (p. 88) thrown when you pass an unrecognized option to **Connection::set_option()** (p. 58).

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::BadOption:



Collaboration diagram for mysqlpp::BadOption:



Public Methods

- **BadOption** (const char *w, **Connection::Option** o)

  Create exception object, taking C string.

- **BadOption** (const std::string &w, **Connection::Option** o)

  Create exception object, taking C++ string.

- **Connection::Option what_option** () const

  Return the option that failed.

7.4.1 Detailed Description

Exception (p. 88) thrown when you pass an unrecognized option to **Connection::set_option()** (p. 58).

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

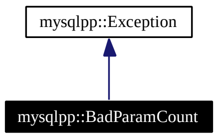
- **exceptions.h**

7.5 mysqlpp::BadParamCount Class Reference

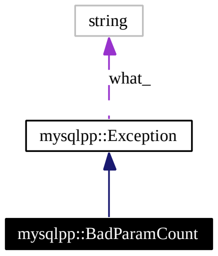
Exception (p. 88) thrown when not enough query parameters are provided.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::BadParamCount:



Collaboration diagram for mysqlpp::BadParamCount:



Public Methods

- **BadParamCount** (const char ∗w="")

  Create exception object.

- ∼**BadParamCount** () throw ()

  Destroy exception.

7.5.1 Detailed Description

Exception (p. 88) thrown when not enough query parameters are provided.

This is used in handling template queries.

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

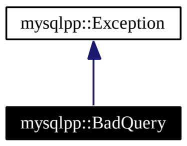
- **exceptions.h**

7.6 mysqlpp::BadQuery Class Reference

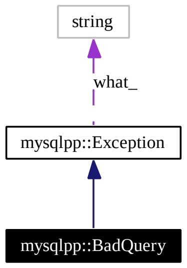
Exception (p. 88) thrown when MySQL encounters a problem while processing your query.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::BadQuery:



Collaboration diagram for mysqlpp::BadQuery:



Public Methods

- **BadQuery** (const char ∗w="")

  Create exception object, taking C string.

- **BadQuery** (const std::string &w)

  Create exception object, taking C++ string.

7.6.1 Detailed Description

Exception (p. 88) thrown when MySQL encounters a problem while processing your query.

This exception is typically only thrown when the server rejects a SQL query. In v1.7, it was used as a more generic exception type, for no particularly good reason.

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

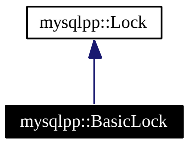
- **exceptions.h**

7.7 mysqlpp::BasicLock Class Reference

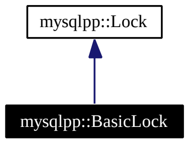
Trivial **Lock** (p. 94) subclass, using a boolean variable as the lock flag.

`#include <lockable.h>`

Inheritance diagram for mysqlpp::BasicLock:



Collaboration diagram for mysqlpp::BasicLock:



Public Methods

- **BasicLock** (bool locked=false)

  Create object.

- ~**BasicLock** ()

  Destroy object.

- bool **lock** ()

  Lock (p. 94) *the object.*

- void **unlock** ()

  Unlock the object.

- bool **locked** () const

  Returns true if object is locked.

- void **set** (bool b)

  Set (p. 148) *the lock state.*

7.7.1 Detailed Description

Trivial **Lock** (p. 94) subclass, using a boolean variable as the lock flag.

This is the only **Lock** (p. 94) implementation available in this version of MySQL++. It will be supplemented with a better implementation for use with threads at a later date.

7.7.2 Member Function Documentation

7.7.2.1 bool mysqlpp::BasicLock::lock () `[inline, virtual]`

Lock (p. 94) the object.

Returns:
true if object was already locked

Implements **mysqlpp::Lock** (p. 94).

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

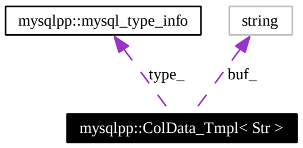
- **lockable.h**

7.8 mysqlpp::ColData_Tmpl< Str > Class Template Reference

Template for string data that can convert itself to any standard C data type.

`#include <coldata.h>`

Collaboration diagram for mysqlpp::ColData_Tmpl< Str >:



Public Methods

- **ColData_Tmpl** ()

  Default constructor.

- **ColData_Tmpl** (bool n, **mysql_type_info** t=**mysql_type_info::string_type**)

  Constructor allowing you to set the null flag and the type data.

- **ColData_Tmpl** (const char *str, **mysql_type_info** t=**mysql_type_info::string_type**, bool n=false)

  Full constructor.

- **mysql_type_info type** () const

  Get this object's current MySQL type.

- bool **quote_q** () const

  Returns true if data of this type should be quoted, false otherwise.

- bool **escape_q** () const

  Returns true if data of this type should be escaped, false otherwise.

- template<class Type> Type **conv** (Type dummy) const

  Template for converting data from one type to another.

- void **it_is_null** ()

  Set (p. 148) *a flag indicating that this object is a SQL null.*

- const bool **is_null** () const

  Returns true if this object is a SQL null.

- const std::string & **get_string** () const

  Returns the string form of this object's data.

- **operator cchar** * () const

  Returns a const char pointer to the string form of this object's data.

- **operator signed char** () const

  Converts this object's string data to a signed char.

- **operator unsigned char** () const

  Converts this object's string data to an unsigned char.

- **operator int** () const

  Converts this object's string data to an int.

- **operator unsigned int** () const

  Converts this object's string data to an unsigned int.

- **operator short int** () const

  Converts this object's string data to a short int.

- **operator unsigned short int** () const

  Converts this object's string data to an unsigned short int.

- **operator long int** () const

  Converts this object's string data to a long int.

- **operator unsigned long int** () const

  Converts this object's string data to an unsigned long int.

- **operator longlong** () const

  Converts this object's string data to the platform- specific 'longlong' type, usually a 64-bit integer.

- **operator ulonglong** () const

  Converts this object's string data to the platform- specific 'ulonglong' type, usually a 64-bit unsigned integer.

- **operator float** () const

  Converts this object's string data to a float.

- **operator double** () const

  Converts this object's string data to a double.

- **operator bool** () const

  Converts this object's string data to a bool.

- template<class T, class B> **operator Null** () const

  Converts this object to a SQL null.

7.8.1 Detailed Description

template<class Str> class mysqlpp::ColData_Tmpl< Str >

Template for string data that can convert itself to any standard C data type.

Do not use this class directly. Use the typedef ColData or MutableColData instead. ColData is a `ColData_Tmpl<const std::string>` and MutableColData is a `ColData_Tmpl<std::string>`.

The ColData types add to the C++ string type the ability to automatically convert the string data to any of the basic C types. This is important with SQL, because all data coming from the database is in string form. MySQL++ uses this class internally to hold the data it receives from the server, so you can use it naturally, because it does the conversions implicitly:

```
ColData("12.86") + 2.0
```

That works fine, but be careful. If you had said this instead:

```
ColData("12.86") + 2
```

the result would be 14 because 2 is an integer, and C++'s type conversion rules put the ColData object in an integer context.

If these automatic conversions scare you, define the micro NO_BINARY_OPERS to disable this behavior.

This class also has some basic information about the type of data stored in it, to allow it to do the conversions more intelligently than a trivial implementation would allow.

7.8.2 Constructor & Destructor Documentation

7.8.2.1 template<class Str> mysqlpp::ColData_Tmpl< Str >::ColData_Tmpl () `[inline]`

Default constructor.

Null (p. 108) flag is set to false, type data is not set, and string data is left empty.

It's probably a bad idea to use this ctor, becuase there's no way to set the type data once the object's constructed.

7.8.2.2 template<class Str> mysqlpp::ColData_Tmpl< Str >::ColData_Tmpl (bool *n*, mysql_type_info *t* = mysql_type_info::string_type) `[inline, explicit]`

Constructor allowing you to set the null flag and the type data.

Parameters:

n if true, data is a SQL null

t MySQL type information for data being stored

7.8.2.3 template<class Str> mysqlpp::ColData_Tmpl< Str >::ColData_Tmpl (const char * *str*, mysql_type_info *t* = mysql_type_info::string_type, bool *n* = false) `[inline, explicit]`

Full constructor.

Parameters:

str the string this object represents

t MySQL type information for data within str

n if true, str is a SQL null

7.8.3 Member Function Documentation

7.8.3.1 template<class Str> template<class T, class B> mysqlpp::ColData_Tmpl< Str >::operator Null< T, B > () const

Converts this object to a SQL null.

Returns null directly if the string data held by the object is exactly equal to "NULL". Else, it data.

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

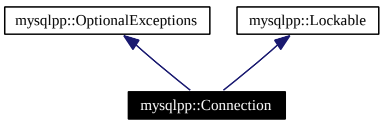
- **coldata.h**

7.9 mysqlpp::Connection Class Reference

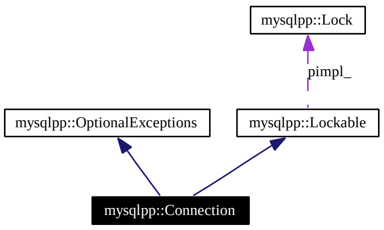
Manages the connection to the MySQL database.

`#include <connection.h>`

Inheritance diagram for mysqlpp::Connection:



Collaboration diagram for mysqlpp::Connection:



Public Types

- enum **OptionArgType**

  Legal types of option arguments.

- enum **Option**

  Per-connection options you can set with **set_option()** (p. 58).

Public Methods

- MYSQLPP_EXPORT **Connection** (bool te=true)

  Create object without connecting it to the MySQL server.

- MYSQLPP_EXPORT **Connection** (const char *db, const char *host="", const char *user="", const char *passwd="", **uint** port=0, my_bool compress=0, unsigned int connect_timeout=60, **cchar** *socket_name=0, unsigned int client_flag=0)

  Create object and connect to database server in one step.

- MYSQLPP_EXPORT ~**Connection** ()

  Destroy connection object.

- MYSQLPP_EXPORT bool **connect** (**cchar** *db="", **cchar** *host="", **cchar** *user="", **cchar** *passwd="", **uint** port=0, my_bool compress=0, unsigned int connect_timeout=60, **cchar** *socket_name=0, unsigned int client_flag=0)

  Connect to database after object is created.

- void **close** ()

  Close connection to MySQL server.

- MYSQLPP_EXPORT std::string **info** ()

  Calls MySQL C API function `mysql_info()` *and returns result as a C++ string.*

- bool **connected** () const

  return true if connection was established successfully

- bool **success** () const

  Return true if the last query was successful.

- void **purge** ()

  Alias for **close()** (p. 55).

- MYSQLPP_EXPORT **Query query** ()

  Return a new query object.

- **operator bool** ()

  Alias for **success()** (p. 51).

- const char * **error** ()

  Return error message for last MySQL error associated with this connection.

- int **errnum** ()

  Return last MySQL error number associated with this connection.

- int **refresh** (unsigned int refresh_options)

  Wraps MySQL C API function `mysql_refresh()`.

- int **ping** ()

  "Pings" the MySQL database

- int **kill** (unsigned long pid)

  Kill a MySQL server thread.

- std::string **client_info** ()

  Get MySQL client library version.

- std::string **host_info** ()

  Get information about the network connection.

- int **proto_info** ()

  Returns version number of MySQL protocol this connection is using.

- std::string **server_info** ()

  Get the MySQL server's version number.

- std::string **stat** ()

Returns information about MySQL server status.

- MYSQLPP_EXPORT bool **create_db** (const std::string &db)

  Create a database.

- MYSQLPP_EXPORT bool **drop_db** (const std::string &db)

  Drop a database.

- bool **select_db** (const std::string &db)

  Change to a different database.

- MYSQLPP_EXPORT bool **select_db** (const char *db)

  Change to a different database.

- MYSQLPP_EXPORT bool **reload** ()

  Ask MySQL server to reload the grant tables.

- MYSQLPP_EXPORT bool **shutdown** ()

  Ask MySQL server to shut down.

- st_mysql_options **get_options** () const

  Return the connection options object.

- MYSQLPP_EXPORT bool **set_option** (**Option** option)

  Sets a connection option, with no argument.

- MYSQLPP_EXPORT bool **set_option** (**Option** option, const char *arg)

  Sets a connection option, with string argument.

- MYSQLPP_EXPORT bool **set_option** (**Option** option, unsigned int arg)

  Sets a connection option, with integer argument.

- MYSQLPP_EXPORT bool **set_option** (**Option** option, bool arg)

  Sets a connection option, with Boolean argument.

- MYSQLPP_EXPORT void **enable_ssl** (const char *key=0, const char *cert=0, const char *ca=0, const char *capath=0, const char *cipher=0)

  Enable SSL-encrypted connection.

- my_ulonglong **affected_rows** ()

  Return the number of rows affected by the last query.

- my_ulonglong **insert_id** ()

  Get ID generated for an AUTO_INCREMENT column in the previous INSERT query.

- std::ostream & **api_version** (std::ostream &os)

  Insert C API version we're linked against into C++ stream.

Protected Methods

- MYSQLPP_EXPORT void **disconnect** ()

  Drop the connection to the database server.

- bool **option_pending** (**Option** option, bool arg) const

  Returns true if the given option is to be set once connection comes up.

- void **apply_pending_options** ()

  For each option in pending option queue, call **set_option()** (p. 58).

- bool **bad_option** (**Option** option, **OptionArgType** type)

  Generic wrapper for bad_option_*().

- bool **bad_option_type** (**Option** option)

  Handles call of incorrect **set_option()** (p. 58) *overload.*

- bool **bad_option_value** (**Option** option)

  Handles bad option values sent to **set_option()** (p. 58).

- **OptionArgType option_arg_type** (**Option** option)

  Given option value, return its proper argument type.

- bool **set_option_impl** (mysql_option moption, const void *arg=0)

  Set (p. 148) *MySQL C API connection option.*

7.9.1 Detailed Description

Manages the connection to the MySQL database.

7.9.2 Member Enumeration Documentation

7.9.2.1 enum mysqlpp::Connection::Option

Per-connection options you can set with **set_option()** (p. 58).

This is currently a combination of the MySQL C API `mysql_option` and `enum_mysql_set_option` enums. It may be extended in the future.

7.9.3 Constructor & Destructor Documentation

7.9.3.1 mysqlpp::Connection::Connection (bool *te* = true)

Create object without connecting it to the MySQL server.

Parameters:

te if true, exceptions are thrown on errors

7.9.3.2 mysqlpp::Connection::Connection (const char ∗ *db*, const char ∗ *host* = "", const char ∗ *user* = "", const char ∗ *passwd* = "", uint *port* = 0, my_bool *compress* = 0, unsigned int *connect_timeout* = 60, cchar ∗ *socket_name* = 0, unsigned int *client_flag* = 0)

Create object and connect to database server in one step.

This constructor allows you to most fully specify the options used when connecting to the MySQL database. It is the thinnest layer in MySQL++ over the MySQL C API function `mysql_real_connect()`. The correspondence isn't exact as we have some additional parameters you'd have to set with `mysql_option()` when using the C API.

Parameters:

db name of database to use

host host name or IP address of MySQL server, or 0 if server is running on the same host as your program

user user name to log in under, or 0 to use the user name this program is running under

passwd password to use when logging in

port TCP port number MySQL server is listening on, or 0 to use default value

compress if true, compress data passing through connection, to save bandwidth at the expense of CPU time

connect_timeout max seconds to wait for server to respond to our connection attempt

socket_name Unix domain socket server is using, if connecting to MySQL server on the same host as this program running on, or 0 to use default name

client_flag special connection flags. See MySQL C API documentation for `mysql_real_connect()` for details.

7.9.4 Member Function Documentation

7.9.4.1 my_ulonglong mysqlpp::Connection::affected_rows () `[inline]`

Return the number of rows affected by the last query.

Simply wraps `mysql_affected_rows()` in the C API.

7.9.4.2 ostream & mysqlpp::Connection::api_version (std::ostream & *os*)

Insert C API version we're linked against into C++ stream.

Version will be of the form X.Y.Z, where X is the major version number, Y the minor version, and Z the bug fix number.

7.9.4.3 void mysqlpp::Connection::apply_pending_options () `[protected]`

For each option in pending option queue, call **set_option()** (p. 58).

Called within **connect()** (p. 55) method after connection is established. Despools options in the order given to **set_option()** (p. 58).

7.9.4.4 std::string mysqlpp::Connection::client_info () `[inline]`

Get MySQL client library version.

Simply wraps `mysql_get_client_info()` in the C API.

7.9.4.5 void mysqlpp::Connection::close () `[inline]`

Close connection to MySQL server.

Closes the connection to the MySQL server.

7.9.4.6 bool mysqlpp::Connection::connect (cchar ∗ *db* = "", cchar ∗ *host* = "", cchar ∗ *user* = "", cchar ∗ *passwd* = "", uint *port* = 0, my_bool *compress* = 0, unsigned int *connect_timeout* = 60, cchar ∗ *socket_name* = 0, unsigned int *client_flag* = 0)

Connect to database after object is created.

It's better to use the connect-on-create constructor if you can. See its documentation for the meaning of these parameters.

If you call this method on an object that is already connected to a database server, the previous connection is dropped and a new connection is established.

7.9.4.7 bool mysqlpp::Connection::connected () const `[inline]`

return true if connection was established successfully

Returns:
true if connection was established successfully

7.9.4.8 bool mysqlpp::Connection::create_db (const std::string & *db*)

Create a database.

Parameters:
db name of database to create

Returns:
true if database was created successfully

7.9.4.9 void mysqlpp::Connection::disconnect () `[protected]`

Drop the connection to the database server.

This method is protected because it should only be used within the library. Unless you use the default constructor, this object should always be connected.

7.9.4.10 bool mysqlpp::Connection::drop_db (const std::string & *db*)

Drop a database.

Parameters:

db name of database to destroy

Returns:

true if database was created successfully

7.9.4.11 void mysqlpp::Connection::enable_ssl (const char ∗ *key* = 0, const char ∗ *cert* = 0, const char ∗ *ca* = 0, const char ∗ *capath* = 0, const char ∗ *cipher* = 0)

Enable SSL-encrypted connection.

Parameters:

key the pathname to the key file

cert the pathname to the certificate file

ca the pathname to the certificate authority file

capath directory that contains trusted SSL CA certificates in pem format.

cipher list of allowable ciphers to use

Must be called before connection is established.

Wraps `mysql_ssl_set()` in MySQL C API.

7.9.4.12 int mysqlpp::Connection::errnum () `[inline]`

Return last MySQL error number associated with this connection.

Simply wraps `mysql_errno()` in the C API.

7.9.4.13 const char∗ mysqlpp::Connection::error () `[inline]`

Return error message for last MySQL error associated with this connection.

Simply wraps `mysql_error()` in the C API.

7.9.4.14 std::string mysqlpp::Connection::host_info () `[inline]`

Get information about the network connection.

String contains info about type of connection and the server hostname.

Simply wraps `mysql_get_host_info()` in the C API.

7.9.4.15 my_ulonglong mysqlpp::Connection::insert_id () `[inline]`

Get ID generated for an AUTO_INCREMENT column in the previous INSERT query.

Return values:

0 if the previous query did not generate an ID. Use the SQL function LAST_INSERT_ID() if you need the last ID generated by any query, not just the previous one.

7.9.4.16 int mysqlpp::Connection::kill (unsigned long *pid*) `[inline]`

Kill a MySQL server thread.

Parameters:

pid ID of thread to kill

Simply wraps `mysql_kill()` in the C API.

7.9.4.17 mysqlpp::Connection::operator bool () `[inline]`

Alias for **success()** (p. 51).

Alias for **success()** (p. 51) member function. Allows you to have code constructs like this:

```
Connection conn;
.... use conn
if (conn) {
    ... last SQL query was successful
}
else {
    ... error occurred in SQL query
}
```

7.9.4.18 bool mysqlpp::Connection::option_pending (Option *option*, bool *arg*) const `[protected]`

Returns true if the given option is to be set once connection comes up.

Parameters:

option option to check for in queue

arg argument to match against

7.9.4.19 int mysqlpp::Connection::ping () `[inline]`

"Pings" the MySQL database

If server doesn't respond, this function tries to reconnect.

Return values:

0 if server is responding, regardless of whether we had to reconnect or not

nonzero if server did not respond to ping and we could not re-establish the connection

Simply wraps `mysql_ping()` in the C API.

7.9.4.20 int mysqlpp::Connection::proto_info () `[inline]`

Returns version number of MySQL protocol this connection is using.

Simply wraps `mysql_get_proto_info()` in the C API.

7.9.4.21 Query mysqlpp::Connection::query ()

Return a new query object.

The returned query object is tied to this MySQL connection, so when you call a method like **execute()** (p. 122) on that object, the query is sent to the server this object is connected to.

7.9.4.22 int mysqlpp::Connection::refresh (unsigned int *refresh_options*) `[inline]`

Wraps MySQL C API function `mysql_refresh()`.

The corresponding C API function is undocumented. All I know is that it's used by `mysqldump` and `mysqladmin`, according to MySQL bug database entry `http://bugs.mysql.com/bug.php?id=9816` If that entry changes to say that the function is now documented, reevaluate whether we need to wrap it. It may be that it's not supposed to be used by regular end-user programs.

7.9.4.23 bool mysqlpp::Connection::reload ()

Ask MySQL server to reload the grant tables.

User must have the "reload" privilege.

Simply wraps `mysql_reload()` in the C API. Since that function is deprecated, this one is, too. The MySQL++ replacement is execute("FLUSH PRIVILEGES").

7.9.4.24 std::string mysqlpp::Connection::server_info () `[inline]`

Get the MySQL server's version number.

Simply wraps `mysql_get_server_info()` in the C API.

7.9.4.25 bool mysqlpp::Connection::set_option (Option *option*)

Sets a connection option, with no argument.

Parameters:
 option any of the Option enum constants

Based on the option you give, this function calls either `mysql_options()` or `mysql_set_server_-option()` in the C API.

There are several overloaded versions of this function. The others take an additional argument for the option and differ only by the type of the option. Unlike with the underlying C API, it does matter which of these overloads you call: if you use the wrong argument type or pass an argument where one is not expected (or vice versa), the call will either throw an exception or return false, depending on the object's "throw exceptions" flag.

This mechanism parallels the underlying C API structure fairly closely, but do not expect this to continue in the future. Its very purpose is to 'paper over' the differences among the C API's option setting mechanisms, so it may become further abstracted from these mechanisms.

Return values:

true if option was successfully set

If exceptions are enabled, a false return means the C API rejected the option, or the connection is not established and so the option was queued for later processing. If exceptions are disabled, false can also mean that the argument was of the wrong type (wrong overload was called), the option value was out of range, or the option is not supported by the C API, most because it isn't a high enough version. These latter cases will cause **BadOption** (p. 41) exceptions otherwise.

7.9.4.26 bool mysqlpp::Connection::set_option_impl (mysql_option *moption*, const void ∗ *arg* = 0) `[protected]`

Set (p. 148) MySQL C API connection option.

Wraps `mysql_options()` in C API. This is an internal implementation detail, to be used only by the public overloads above.

7.9.4.27 bool mysqlpp::Connection::shutdown ()

Ask MySQL server to shut down.

User must have the "shutdown" privilege.

Simply wraps `mysql_shutdown()` in the C API.

7.9.4.28 std::string mysqlpp::Connection::stat () `[inline]`

Returns information about MySQL server status.

String is similar to that returned by the `mysqladmin status` command. Among other things, it contains uptime in seconds, and the number of running threads, questions and open tables.

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

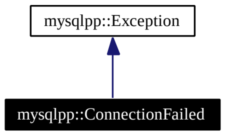
- **connection.h**
- connection.cpp

7.10 mysqlpp::ConnectionFailed Class Reference

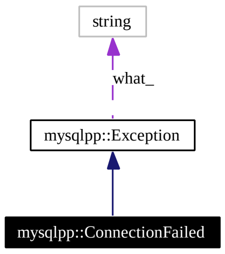
Exception (p. 88) thrown when there is a problem establishing the database server connection. It's also thrown if **Connection::shutdown()** (p. 59) fails.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::ConnectionFailed:



Collaboration diagram for mysqlpp::ConnectionFailed:



Public Methods

- **ConnectionFailed** (const char ∗w="")

  Create exception object.

7.10.1 Detailed Description

Exception (p. 88) thrown when there is a problem establishing the database server connection. It's also thrown if **Connection::shutdown()** (p. 59) fails.

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

- **exceptions.h**

7.11 mysqlpp::const_string Class Reference

Wrapper for `const char*` to make it behave in a way more useful to MySQL++.

`#include <const_string.h>`

Public Types

- typedef const char **value_type**

    Type of the data stored in this object, when it is not equal to SQL null.

- typedef unsigned int **size_type**

    Type of "size" integers.

- typedef const char & **const_reference**

    Type used when returning a reference to a character in the string.

- typedef const char * **const_iterator**

    Type of iterators.

- typedef **const_iterator iterator**

    Same as const_iterator because the data cannot be changed.

Public Methods

- **const_string** ()

    Create empty string.

- **const_string** (const char *str)

    Initialize string from existing C string.

- const_string & **operator=** (const char *str)

    Assignment operator.

- **size_type size** () const

    Return number of characters in string.

- **const_iterator begin** () const

    Return iterator pointing to the first character of the string.

- **const_iterator end** () const

    Return iterator pointing to one past the last character of the string.

- **size_type length** () const

    Return number of characters in the string.

- **size_type max_size** () const

    Return the maximum number of characters in the string.

- **const_reference operator**[] (**size_type** pos) const

  Return a reference to a character within the string.

- **const_reference at** (**size_type** pos) const

  Return a reference to a character within the string.

- const char ∗ **c_str** () const

  Return a const pointer to the string data, null-terminated.

- const char ∗ **data** () const

  Alias for **c_str()** (p. 62).

- int **compare** (const const_string &str) const

  Lexically compare this string to another.

7.11.1 Detailed Description

Wrapper for `const char*` to make it behave in a way more useful to MySQL++.

This class implements a small subset of the standard string class.

Objects are created from an existing `const char*` variable by copying the pointer only. Therefore, the object pointed to by that pointer needs to exist for at least as long as the **const_string** (p. 61) object that wraps it.

7.11.2 Member Function Documentation

7.11.2.1 const_reference mysqlpp::const_string::at (size_type *pos*) const `[inline]`

Return a reference to a character within the string.

Unlike **operator**[]**()** (p. 62), this function throws an `std::out_of_range` exception if the index isn't within range.

7.11.2.2 int mysqlpp::const_string::compare (const const_string & *str*) const `[inline]`

Lexically compare this string to another.

Parameters:

str string to compare against this one

Return values:

$<$***0*** if str1 is lexically "less than" str2

0 if str1 is equal to str2

$>$***0*** if str1 is lexically "greater than" str2

7.11.2.3 size_type mysqlpp::const_string::max_size () const `[inline]`

Return the maximum number of characters in the string.

Because this is a `const` string, this is just an alias for **size()** (p. 61); its size is always equal to the amount of data currently stored.

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

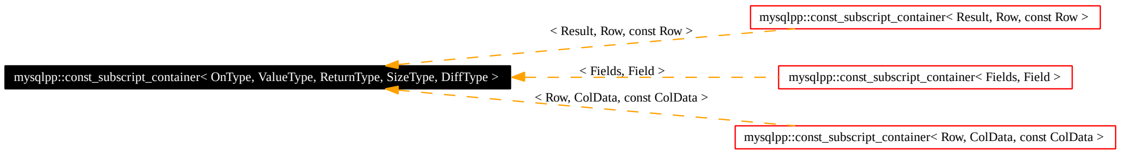
- **const_string.h**

7.12 mysqlpp::const_subscript_container< OnType, ValueType, ReturnType, SizeType, DiffType > Class Template Reference

A base class that one derives from to become a random access container, which can be accessed with subscript notation.

`#include <resiter.h>`

Inheritance diagram for mysqlpp::const_subscript_container< OnType, ValueType, ReturnType, SizeType, DiffType >:


mysqlpp::const_subscript_container< OnType, ValueType, ReturnType, SizeType, DiffType >
< Result, Row, const Row >
mysqlpp::const_subscript_container< Result, Row, const Row >
< Fields, Field >
mysqlpp::const_subscript_container< Fields, Field >
< Row, ColData, const ColData >
mysqlpp::const_subscript_container< Row, ColData, const ColData >

Public Types

- typedef const_subscript_container< OnType, ValueType, ReturnType, SizeType, DiffType > **this_type**

  this object's type

- typedef **subscript_iterator**< const **this_type**, ReturnType, SizeType, DiffType > **iterator**

  mutable iterator type

- typedef **iterator const_iterator**

  constant iterator type

- typedef const std::reverse_iterator< **iterator** > **reverse_iterator**

  mutable reverse iterator type

- typedef const std::reverse_iterator< **const_iterator** > **const_reverse_iterator**

  const reverse iterator type

- typedef ValueType **value_type**

  type of data stored in container

- typedef **value_type** & **reference**

  reference to value_type

- typedef **value_type** & **const_reference**

  const ref to value_type

- typedef **value_type** ∗ **pointer**

  pointer to value_type

- typedef **value_type** ∗ **const_pointer** *const pointer to value_type*

- typedef DiffType **difference_type**

  for index differences

- typedef SizeType **size_type**

  for returned sizes

Public Methods

- virtual ~**const_subscript_container** ()

  Destroy object.

- virtual **size_type size** () const=0

  Return count of elements in container.

- virtual ReturnType **at** (SizeType i) const=0

  Return element at given index in container.

- **size_type max_size** () const

  Return maximum number of elements that can be stored in container without resizing.

- bool **empty** () const

  Returns true if container is empty.

- **iterator begin** () const

  Return iterator pointing to first element in the container.

- **iterator end** () const

  Return iterator pointing to one past the last element in the container.

- **reverse_iterator rbegin** () const

  Return reverse iterator pointing to first element in the container.

- **reverse_iterator rend** () const

  Return reverse iterator pointing to one past the last element in the container.

7.12.1 Detailed Description

template<class OnType, class ValueType, class ReturnType = const ValueType&, class SizeType = unsigned int, class DiffType = int> class mysqlpp::const_subscript_-container< OnType, ValueType, ReturnType, SizeType, DiffType >

A base class that one derives from to become a random access container, which can be accessed with subscript notation.

OnType must have the member functions `operator[](SizeType)` and

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

- **resiter.h**

7.13 mysqlpp::cstr_equal_to Struct Reference

Function object that returns true if one const char* is equal to another.

`#include <compare.h>`

7.13.1 Detailed Description

Function object that returns true if one const char* is equal to another.

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

- **compare.h**

7.14 mysqlpp::cstr_greater Struct Reference

Function object that returns true if one const char∗ is lexically "greater than" another.

`#include <compare.h>`

7.14.1 Detailed Description

Function object that returns true if one const char∗ is lexically "greater than" another.

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

- **compare.h**

7.15 mysqlpp::cstr_greater_equal Struct Reference

Function object that returns true if one const char∗ is lexically "greater than or equal to" another.

`#include <compare.h>`

7.15.1 Detailed Description

Function object that returns true if one const char∗ is lexically "greater than or equal to" another.

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

- **compare.h**

7.16 mysqlpp::cstr_less Struct Reference

Function object that returns true if one const char* is lexically "less than" another.

`#include <compare.h>`

7.16.1 Detailed Description

Function object that returns true if one const char* is lexically "less than" another.

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

- **compare.h**

7.17 mysqlpp::cstr_less_equal Struct Reference

Function object that returns true if one const char* is lexically "less than or equal to" another.

`#include <compare.h>`

7.17.1 Detailed Description

Function object that returns true if one const char* is lexically "less than or equal to" another.

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

- **compare.h**

7.18 mysqlpp::cstr_not_equal_to Struct Reference

Function object that returns true if one const char* is not equal to another.

`#include <compare.h>`

7.18.1 Detailed Description

Function object that returns true if one const char* is not equal to another.

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

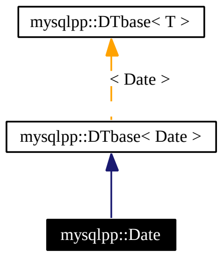
- **compare.h**

7.19 mysqlpp::Date Struct Reference

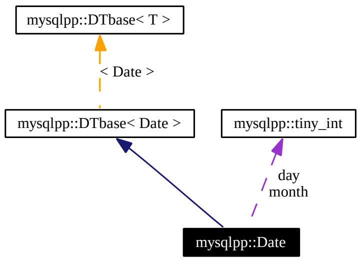
C++ form of MySQL's DATE type.

`#include <datetime.h>`

Inheritance diagram for mysqlpp::Date:



Collaboration diagram for mysqlpp::Date:



Public Methods

- **Date** ()

  Default constructor.

- **Date** (short int y, **tiny_int** m, **tiny_int** d)

  Initialize object.

- **Date** (const Date &other)

  Initialize object as a copy of another **Date** (p. 73).

- **Date** (const **DateTime** &other)

  Initialize object from date part of date/time object.

- **Date** (**cchar** ∗str)

  Initialize object from a MySQL date string.

- **Date** (const **ColData** &str)

  Initialize object from a MySQL date string.

- **Date** (const std::string &str)

  Initialize object from a MySQL date string.

- MYSQLPP_EXPORT short int **compare** (const Date &other) const

  Compare this date to another.

- MYSQLPP_EXPORT **cchar** ∗ **convert** (**cchar** ∗)

  Parse a MySQL date string into this object.

Public Attributes

- short int **year**

  the year

- **tiny_int month**

  the month, 1-12

- **tiny_int day**

  the day, 1-31

7.19.1 Detailed Description

C++ form of MySQL's DATE type.

Objects of this class can be inserted into streams, and initialized from MySQL DATE strings.

7.19.2 Constructor & Destructor Documentation

7.19.2.1 mysqlpp::Date::Date (cchar ∗ *str*) `[inline]`

Initialize object from a MySQL date string.

String must be in the YYYY-MM-DD format. It doesn't have to be zero-padded.

7.19.2.2 mysqlpp::Date::Date (const ColData & *str*) `[inline]`

Initialize object from a MySQL date string.

See also:
Date(cchar∗) (p. 74)

7.19.2.3 mysqlpp::Date::Date (const std::string & *str*) `[inline]`

Initialize object from a MySQL date string.

See also:
Date(cchar∗) (p. 74)

7.19.3 Member Function Documentation

7.19.3.1 short int mysqlpp::Date::compare (const Date & *other*) const `[virtual]`

Compare this date to another.

Returns < 0 if this date is before the other, 0 of they are equal, and > 0 if this date is after the other.

Implements **mysqlpp::DTbase< Date >** (p. 81).

7.19.4 Member Data Documentation

7.19.4.1 short int mysqlpp::Date::year

the year

No surprises; the year 2005 is stored as the integer 2005.

The documentation for this struct was generated from the following files:

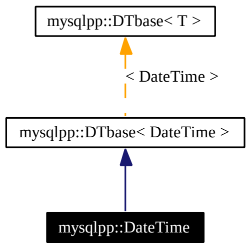
- **datetime.h**
- datetime.cpp

7.20 mysqlpp::DateTime Struct Reference

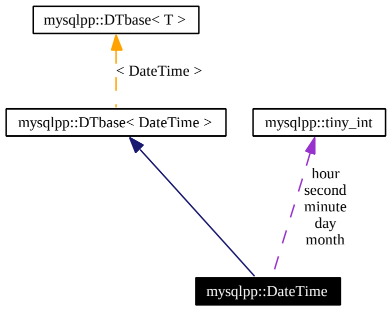
C++ form of MySQL's DATETIME type.

`#include <datetime.h>`

Inheritance diagram for mysqlpp::DateTime:



Collaboration diagram for mysqlpp::DateTime:



Public Methods

- **DateTime** ()

  Default constructor.

- **DateTime** (const DateTime &other)

  Initialize object as a copy of another **Date** (p. 73).

- **DateTime** (**cchar** ∗str)

  Initialize object from a MySQL date-and-time string.

- **DateTime** (const **ColData** &str)

  Initialize object from a MySQL date-and-time string.

- **DateTime** (const std::string &str)

  Initialize object from a MySQL date-and-time string.

- MYSQLPP_EXPORT short **compare** (const DateTime &other) const

  Compare this datetime to another.

- MYSQLPP_EXPORT **cchar** ∗ **convert** (**cchar** ∗)

Parse a MySQL date and time string into this object.

Public Attributes

- short int **year**
  the year
- **tiny_int month**
  the month, 1-12
- **tiny_int day**
  the day, 1-31
- **tiny_int hour**
  hour, 0-23
- **tiny_int minute**
  minute, 0-59
- **tiny_int second**
  second, 0-59

7.20.1 Detailed Description

C++ form of MySQL's DATETIME type.

Objects of this class can be inserted into streams, and initialized from MySQL DATETIME strings.

7.20.2 Constructor & Destructor Documentation

7.20.2.1 mysqlpp::DateTime::DateTime (cchar ∗ *str*) `[inline]`

Initialize object from a MySQL date-and-time string.

String must be in the HH:MM:SS format. It doesn't have to be zero-padded.

7.20.2.2 mysqlpp::DateTime::DateTime (const ColData & *str*) `[inline]`

Initialize object from a MySQL date-and-time string.

See also:
DateTime(cchar∗) (p. 77)

7.20.2.3 mysqlpp::DateTime::DateTime (const std::string & *str*) `[inline]`

Initialize object from a MySQL date-and-time string.

See also:
DateTime(cchar∗) (p. 77)

7.20.3 Member Function Documentation

7.20.3.1 short int mysqlpp::DateTime::compare (const DateTime & *other*) const `[virtual]`

Compare this datetime to another.

Returns < 0 if this datetime is before the other, 0 of they are equal, and > 0 if this datetime is after the other.

This method is protected because it is merely the engine used by the various operators in **DTbase** (p. 80).

Implements **mysqlpp::DTbase< DateTime >** (p. 81).

7.20.4 Member Data Documentation

7.20.4.1 short int mysqlpp::DateTime::year

the year

No surprises; the year 2005 is stored as the integer 2005.

The documentation for this struct was generated from the following files:

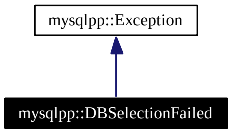
- **datetime.h**
- datetime.cpp

7.21 mysqlpp::DBSelectionFailed Class Reference

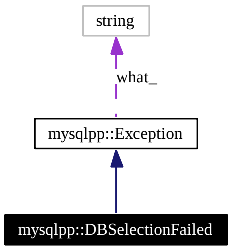
Exception (p. 88) thrown when the program tries to select a new database and the server refuses for some reason.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::DBSelectionFailed:



Collaboration diagram for mysqlpp::DBSelectionFailed:



Public Methods

- **DBSelectionFailed** (const char ∗w="")
  Create exception object.

7.21.1 Detailed Description

Exception (p. 88) thrown when the program tries to select a new database and the server refuses for some reason.

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

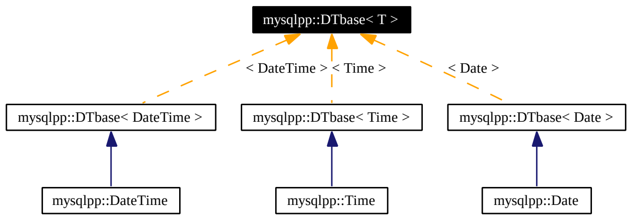
- **exceptions.h**

7.22 mysqlpp::DTbase< T > Struct Template Reference

Base class template for MySQL++ date and time classes.

`#include <datetime.h>`

Inheritance diagram for mysqlpp::DTbase< T >:



Public Methods

- virtual ~**DTbase** ()

  Destroy object.

- **operator std::string** () const

  Return a copy of the item in C++ string form.

- virtual MYSQLPP_EXPORT short **compare** (const T &other) const=0

  Compare this object to another of the same type.

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

  Returns true if "other" is equal to this object.

- bool **operator!=** (const T &other) const

  Returns true if "other" is not equal to this object.

- bool **operator<** (const T &other) const

  Returns true if "other" is less than this object.

- bool **operator<=** (const T &other) const

  Returns true if "other" is less than or equal to this object.

- bool **operator>** (const T &other) const

  Returns true if "other" is greater than this object.

- bool **operator>=** (const T &other) const

  Returns true if "other" is greater than or equal to this object.

7.22.1 Detailed Description

template<class T> struct mysqlpp::DTbase< T >

Base class template for MySQL++ date and time classes.

This template primarily defines the comparison operators, which are all implemented in terms of **compare()** (p. 81). Each subclass implements that as a protected method, because these operators are the only supported comparison method.

This template also defines interfaces for converting the object to a string form, which a subclass must define.

7.22.2 Member Function Documentation

7.22.2.1 template<class T> virtual MYSQLPP_EXPORT short mysqlpp::DTbase< T >::compare (const T & *other*) const `[pure virtual]`

Compare this object to another of the same type.

Returns < 0 if this object is "before" the other, 0 of they are equal, and > 0 if this object is "after" the other.

Implemented in **mysqlpp::DateTime** (p. 78), **mysqlpp::Date** (p. 75), and **mysqlpp::Time** (p. 160).

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

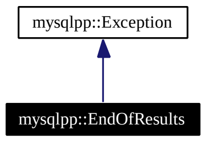
- **datetime.h**

7.23 mysqlpp::EndOfResults Class Reference

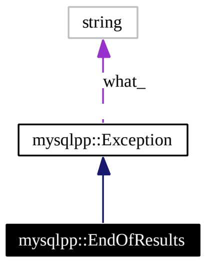
Exception (p. 88) thrown when **ResUse::fetch_row()** (p. 136) walks off the end of a use-query's result set.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::EndOfResults:



Collaboration diagram for mysqlpp::EndOfResults:



Public Methods

- **EndOfResults** (const char ∗w="end of results")
  Create exception object.

7.23.1 Detailed Description

Exception (p. 88) thrown when **ResUse::fetch_row()** (p. 136) walks off the end of a use-query's result set.

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

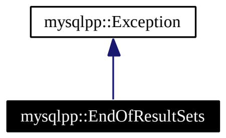
- **exceptions.h**

7.24 mysqlpp::EndOfResultSets Class Reference

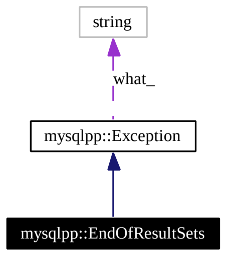
Exception (p. 88) thrown when **Query::store_next()** (p. 125) walks off the end of a use-query's multi result sets.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::EndOfResultSets:



Collaboration diagram for mysqlpp::EndOfResultSets:



Public Methods

- **EndOfResultSets** (const char ∗w="end of result sets")

  Create exception object.

7.24.1 Detailed Description

Exception (p. 88) thrown when **Query::store_next()** (p. 125) walks off the end of a use-query's multi result sets.

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

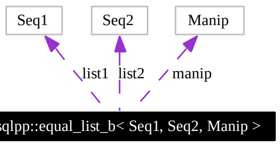
- **exceptions.h**

7.25 mysqlpp::equal_list_b< Seq1, Seq2, Manip > Struct Template Reference

Same as **equal_list_ba** (p. 86), plus the option to have some elements of the equals clause suppressed.

`#include <vallist.h>`

Collaboration diagram for mysqlpp::equal_list_b< Seq1, Seq2, Manip >:



Public Methods

- **equal_list_b** (const Seq1 &s1, const Seq2 &s2, const std::vector< bool > &f, const char ∗d, const char ∗e, Manip m)

  Create object.

Public Attributes

- const Seq1 ∗ **list1**

  the list of objects on the left-hand side of the equals sign

- const Seq2 ∗ **list2**

  the list of objects on the right-hand side of the equals sign

- const std::vector< bool > **fields**

  for each true item in the list, the pair in that position will be inserted into a C++ stream

- const char ∗ **delem**

  delimiter to use between each pair of elements

- const char ∗ **equl**

  "equal" sign to use between each item in each equal pair; doesn't have to actually be " = "

- Manip **manip**

  manipulator to use when inserting the equal_list into a C++ stream

7.25.1 Detailed Description

template<class Seq1, class Seq2, class Manip> struct mysqlpp::equal_list_b< Seq1, Seq2, Manip >

Same as **equal_list_ba** (p. 86), plus the option to have some elements of the equals clause suppressed.

Imagine an object of this type contains the lists (a, b, c) (d, e, f), that the object's 'fields' list is (true, false, true), and that the object's delimiter and equals symbols are set to " AND " and " = " respectively. When you insert that object into a C++ stream, you would get "a = d AND c = f".

See **equal_list_ba** (p. 86)'s documentation for more details.

7.25.2 Constructor & Destructor Documentation

7.25.2.1 template<class Seq1, class Seq2, class Manip> mysqlpp::equal_list_b< Seq1, Seq2, Manip >::equal_list_b (const Seq1 & *s1*, const Seq2 & *s2*, const std::vector< bool > & *f*, const char * *d*, const char * *e*, Manip *m*) `[inline]`

Create object.

Parameters:

- ***s1*** list of objects on left-hand side of equal sign
- ***s2*** list of objects on right-hand side of equal sign
- ***f*** for each true item in the list, the pair of items in that position will be inserted into a C++ stream
- ***d*** what delimiter to use between each group in the list when inserting the list into a C++ stream
- ***e*** the "equals" sign between each pair of items in the equal list; doesn't actually have to be " = "!
- ***m*** manipulator to use when inserting the list into a C++ stream

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

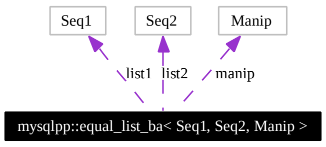
- **vallist.h**

7.26 mysqlpp::equal_list_ba< Seq1, Seq2, Manip > Struct Template Reference

Holds two lists of items, typically used to construct a SQL "equals clause".

`#include <vallist.h>`

Collaboration diagram for mysqlpp::equal_list_ba< Seq1, Seq2, Manip >:



Public Methods

- **equal_list_ba** (const Seq1 &s1, const Seq2 &s2, const char ∗d, const char ∗e, Manip m)

  Create object.

Public Attributes

- const Seq1 ∗ **list1**

  the list of objects on the left-hand side of the equals sign

- const Seq2 ∗ **list2**

  the list of objects on the right-hand side of the equals sign

- const char ∗ **delem**

  delimiter to use between each pair of elements

- const char ∗ **equl**

  "equal" sign to use between each item in each equal pair; doesn't have to actually be " = "

- Manip **manip**

  manipulator to use when inserting the equal_list into a C++ stream

7.26.1 Detailed Description

template<class Seq1, class Seq2, class Manip> struct mysqlpp::equal_list_ba< Seq1, Seq2, Manip >

Holds two lists of items, typically used to construct a SQL "equals clause".

The WHERE clause in a SQL SELECT statment is an example of an equals clause.

Imagine an object of this type contains the lists (a, b) (c, d), and that the object's delimiter and equals symbols are set to ", " and " = " respectively. When you insert that object into a C++ stream, you would get "a = c, b = d".

This class is never instantiated by hand. The **equal_list()** (p. 27) functions build instances of this structure template to do their work. MySQL++'s SSQLS mechanism calls those functions when building SQL queries; you can call them yourself to do similar work. The "Harnessing SSQLS Internals" section of the user manual has some examples of this.

See also:
equal_list_b (p. 84)

7.26.2 Constructor & Destructor Documentation

7.26.2.1 template<class Seq1, class Seq2, class Manip> mysqlpp::equal_list_ba< Seq1, Seq2, Manip >::equal_list_ba (const Seq1 & *s1*, const Seq2 & *s2*, const char * *d*, const char * *e*, Manip *m*) `[inline]`

Create object.

Parameters:

- ***s1*** list of objects on left-hand side of equal sign
- ***s2*** list of objects on right-hand side of equal sign
- ***d*** what delimiter to use between each group in the list when inserting the list into a C++ stream
- ***e*** the "equals" sign between each pair of items in the equal list; doesn't actually have to be " = "!
- ***m*** manipulator to use when inserting the list into a C++ stream

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

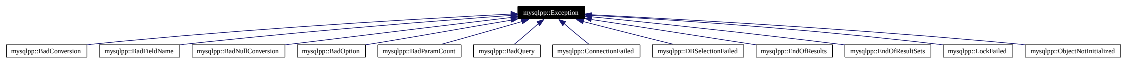
- **vallist.h**

7.27 mysqlpp::Exception Class Reference

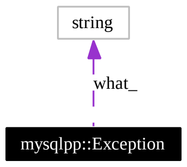
Base class for all MySQL++ custom exceptions.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::Exception:



Collaboration diagram for mysqlpp::Exception:



Public Methods

- **Exception** (const Exception &e) throw ()

  Create exception object as copy of another.

- Exception & **operator=** (const Exception &rhs) throw ()

  Assign another exception object's contents to this one.

- ~**Exception** () throw ()

  Destroy exception object.

- virtual const char ∗ **what** () const throw ()

  Returns explanation of why exception was thrown.

Protected Methods

- **Exception** (const char ∗w="") throw ()

  Create exception object.

- **Exception** (const std::string &w) throw ()

  Create exception object.

Protected Attributes

- std::string **what_**

  explanation of why exception was thrown

7.27.1 Detailed Description

Base class for all MySQL++ custom exceptions.

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

- **exceptions.h**

7.28 mysqlpp::FieldNames Class Reference

Holds a list of SQL field names.

`#include <field_names.h>`

Public Methods

- **FieldNames** ()
  Default constructor.
- **FieldNames** (const **ResUse** *res)
  Create field name list from a result set.
- **FieldNames** (int i)
  Create empty field name list, reserving space for a fixed number of field names.
- FieldNames & **operator=** (const **ResUse** *res)
  Initializes the field list from a result set.
- FieldNames & **operator=** (int i)
  Insert `i` empty field names at beginning of list.
- std::string & **operator**[ ] (int i)
  Get the name of a field given its index.
- const std::string & **operator**[ ] (int i) const
  Get the name of a field given its index, in const context.
- **uint operator**[ ] (std::string i) const
  Get the index number of a field given its name.

7.28.1 Detailed Description

Holds a list of SQL field names.

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

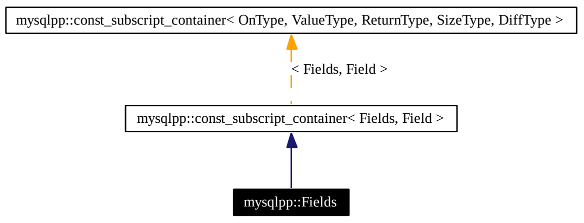
- **field_names.h**
- field_names.cpp

7.29 mysqlpp::Fields Class Reference

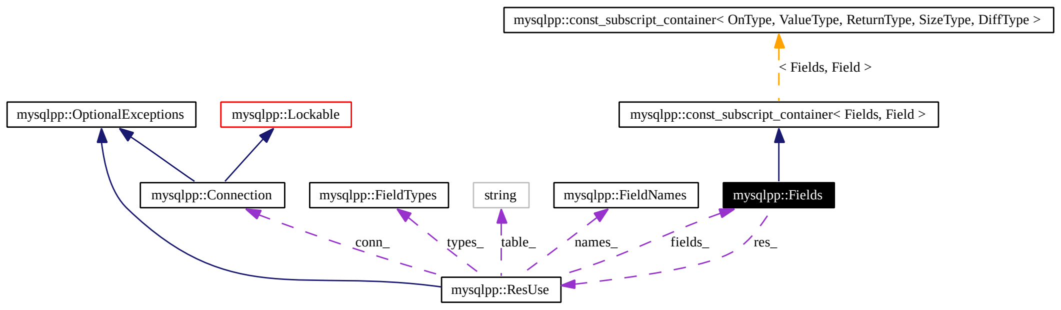
A container similar to `std::vector` for holding **mysqlpp::Field** (p. 17) records.

`#include <fields.h>`

Inheritance diagram for mysqlpp::Fields:


mysqlpp::const_subscript_container< OnType, ValueType, ReturnType, SizeType, DiffType >
< Fields, Field >
mysqlpp::const_subscript_container< Fields, Field >
mysqlpp::Fields

Collaboration diagram for mysqlpp::Fields:


mysqlpp::const_subscript_container< OnType, ValueType, ReturnType, SizeType, DiffType >
< Fields, Field >
mysqlpp::OptionalExceptions
mysqlpp::Lockable
mysqlpp::const_subscript_container< Fields, Field >
mysqlpp::Connection
mysqlpp::FieldTypes
string
mysqlpp::FieldNames
mysqlpp::Fields
conn_
types_
table_
names_
fields_
res_
mysqlpp::ResUse

Public Methods

- **Fields** ()

  Default constructor.

- **Fields** (**ResUse** ∗r)

  Create a field list from a result set.

- MYSQLPP_EXPORT const **Field** & **at** (**size_type** i) const

  Returns a field given its index.

- const **Field** & **at** (int i) const

  Returns a field given its index.

- MYSQLPP_EXPORT **size_type** **size** () const

  get the number of fields

7.29.1 Detailed Description

A container similar to `std::vector` for holding **mysqlpp::Field** (p. 17) records.

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

- **fields.h**
- fields.cpp

7.30 mysqlpp::FieldTypes Class Reference

A vector of SQL field types.

`#include <field_types.h>`

Public Methods

- **FieldTypes** ()

  Default constructor.

- **FieldTypes** (const **ResUse** ∗res)

  Create list of field types from a result set.

- **FieldTypes** (int i)

  Create fixed-size list of uninitialized field types.

- FieldTypes & **operator=** (const **ResUse** ∗res)

  Initialize field list based on a result set.

- FieldTypes & **operator=** (int i)

  Insert a given number of uninitialized field type objects at the beginning of the list.

- **mysql_type_info** & **operator**[ ] (int i)

  Returns a field type within the list given its index.

- const **mysql_type_info** & **operator**[ ] (int i) const

  Returns a field type within the list given its index, in const context.

7.30.1 Detailed Description

A vector of SQL field types.

7.30.2 Member Function Documentation

7.30.2.1 FieldTypes& mysqlpp::FieldTypes::operator= (int *i*) `[inline]`

Insert a given number of uninitialized field type objects at the beginning of the list.

Parameters:

i number of field type objects to insert

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

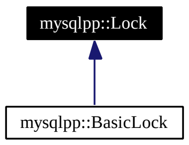
- **field_types.h**
- field_types.cpp

7.31 mysqlpp::Lock Class Reference

Abstract base class for lock implementation, used by **Lockable** (p. 95).

`#include <lockable.h>`

Inheritance diagram for mysqlpp::Lock:



Public Methods

- virtual ~**Lock** ()

  Destroy object.

- virtual bool **lock** ()=0

  Lock (p. 94) *the object.*

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

  Unlock the object.

- virtual bool **locked** () const=0

  Returns true if object is locked.

- virtual void **set** (bool b)=0

  Set (p. 148) *the lock state.*

7.31.1 Detailed Description

Abstract base class for lock implementation, used by **Lockable** (p. 95).

7.31.2 Member Function Documentation

7.31.2.1 virtual bool mysqlpp::Lock::lock () `[pure virtual]`

Lock (p. 94) the object.

Returns:
  true if object was already locked

Implemented in **mysqlpp::BasicLock** (p. 45).

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

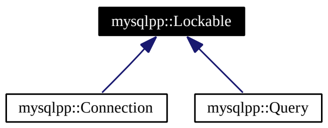
- **lockable.h**

7.32 mysqlpp::Lockable Class Reference

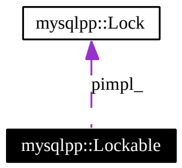
Interface allowing a class to declare itself as "lockable".

`#include <lockable.h>`

Inheritance diagram for mysqlpp::Lockable:



Collaboration diagram for mysqlpp::Lockable:



Protected Methods

- **Lockable** (bool locked)

  Default constructor.

- virtual ~**Lockable** ()

  Destroy object.

- virtual bool **lock** ()

  Lock (p. 94) *the object.*

- virtual void **unlock** ()

  Unlock the object.

- bool **locked** () const

  Returns true if object is locked.

- void **set_lock** (bool b)

  Set (p. 148) *the lock state. Protected, because this method is only for use by subclass assignment operators and the like.*

7.32.1 Detailed Description

Interface allowing a class to declare itself as "lockable".

A class derives from this one to acquire a standard interface for serializing operations that may not be thread-safe.

7.32.2 Member Function Documentation

7.32.2.1 virtual bool mysqlpp::Lockable::lock () `[inline, protected, virtual]`

Lock (p. 94) the object.

Returns:

true if object was already locked

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

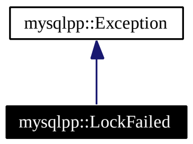
- **lockable.h**

7.33 mysqlpp::LockFailed Class Reference

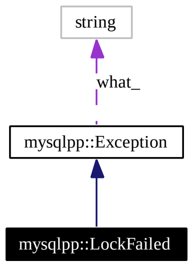
Exception (p. 88) thrown when a **Lockable** (p. 95) object fails.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::LockFailed:



Collaboration diagram for mysqlpp::LockFailed:



Public Methods

- **LockFailed** (const char ∗w="lock failed")

  Create exception object.

7.33.1 Detailed Description

Exception (p. 88) thrown when a **Lockable** (p. 95) object fails.

Currently, "failure" means that the object is already locked when you make a call that tries to lock it again. In the future, that case will probably result in the second thread blocking, but the thread library could assert other errors that would keep this exception relevant.

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

- **exceptions.h**

7.34 mysqlpp::mysql_type_info Class Reference

Holds basic type information for ColData.

`#include <type_info.h>`

Public Methods

- **mysql_type_info** (unsigned char n=static_cast< unsigned char >(-1))

  Create object.

- MYSQLPP_EXPORT **mysql_type_info** (enum_field_types t, bool _unsigned, bool _null)

  Create object from MySQL C API type info.

- MYSQLPP_EXPORT **mysql_type_info** (const MYSQL_FIELD &f)

  Create object from a MySQL C API field.

- **mysql_type_info** (const mysql_type_info &t)

  Create object as a copy of another.

- **mysql_type_info** (const std::type_info &t)

  Create object from a C++ type_info object.

- mysql_type_info & **operator=** (unsigned char n)

  Assign a new internal type value.

- mysql_type_info & **operator=** (const mysql_type_info &t)

  Assign another **mysql_type_info** (p. 98) *object to this object.*

- mysql_type_info & **operator=** (const std::type_info &t)

  Assign a C++ type_info object to this object.

- MYSQLPP_EXPORT const char ∗ **name** () const

  Returns an implementation-defined name of the C++ type.

- MYSQLPP_EXPORT const char ∗ **sql_name** () const

  Returns the name of the SQL type.

- MYSQLPP_EXPORT const std::type_info & **c_type** () const

  Returns the type_info for the C++ type associated with the SQL type.

- MYSQLPP_EXPORT const unsigned int **length** () const

  Return length of data in this field.

- MYSQLPP_EXPORT const unsigned int **max_length** () const

  Return maximum length of data in this field.

- MYSQLPP_EXPORT const mysql_type_info **base_type** () const

  Returns the type_info for the C++ type inside of the **mysqlpp::Null** (p. 108) *type.*

- int **id** () const

  Returns the ID of the SQL type.

- MYSQLPP_EXPORT bool **quote_q** () const

  Returns true if the SQL type is of a type that needs to be quoted.

- MYSQLPP_EXPORT bool **escape_q** () const

  Returns true if the SQL type is of a type that needs to be escaped.

- bool **before** (mysql_type_info &b)

  Provides a way to compare two types for sorting.

Public Attributes

- unsigned int **_length**

  field length, from MYSQL_FIELD

- unsigned int **_max_length**

  max data length, from MYSQL_FIELD

Static Public Attributes

- const unsigned char **string_type** = 20

  The internal constant we use for our string type.

7.34.1 Detailed Description

Holds basic type information for ColData.

Class to hold basic type information for **mysqlpp::ColData** (p. 17).

7.34.2 Constructor & Destructor Documentation

7.34.2.1 mysqlpp::mysql_type_info::mysql_type_info (unsigned char *n* = static_cast<unsigned char>(-1)) `[inline]`

Create object.

Parameters:

n index into the internal type table

Because of the `n` parameter's definition, this constructor shouldn't be used outside the library.

The default is intended to try and crash a program using a default **mysql_type_info** (p. 98) object. This is a very wrong thing to do.

7.34.2.2 mysqlpp::mysql_type_info::mysql_type_info (enum_field_types *t*, bool *_unsigned*, bool *_null*) `[inline]`

Create object from MySQL C API type info.

Parameters:

t the MySQL C API type ID for this type

_unsigned if true, this is the unsigned version of the type

_null if true, this type can hold a SQL null

7.34.2.3 mysqlpp::mysql_type_info::mysql_type_info (const MYSQL_FIELD & *f*) `[inline]`

Create object from a MySQL C API field.

Parameters:

f field from which we extract the type info

7.34.2.4 mysqlpp::mysql_type_info::mysql_type_info (const std::type_info & *t*) `[inline]`

Create object from a C++ type_info object.

This tries to map a C++ type to the closest MySQL data type. It is necessarily somewhat approximate.

7.34.3 Member Function Documentation

7.34.3.1 const mysql_type_info mysqlpp::mysql_type_info::base_type () `[inline]`

Returns the type_info for the C++ type inside of the **mysqlpp::Null** (p. 108) type.

Returns the type_info for the C++ type inside the **mysqlpp::Null** (p. 108) type. If the type is not **Null** (p. 108) then this is the same as **c_type()** (p. 100).

7.34.3.2 bool mysqlpp::mysql_type_info::before (mysql_type_info & *b*) `[inline]`

Provides a way to compare two types for sorting.

Returns true if the SQL ID of this type is lower than that of another. Used by mysqlpp::type_-info_cmp when comparing types.

7.34.3.3 const std::type_info & mysqlpp::mysql_type_info::c_type () `[inline]`

Returns the type_info for the C++ type associated with the SQL type.

Returns the C++ type_info record corresponding to the SQL type.

7.34.3.4 bool mysqlpp::mysql_type_info::escape_q ()

Returns true if the SQL type is of a type that needs to be escaped.

Returns:
true if the type needs to be escaped for syntactically correct SQL.

7.34.3.5 int mysqlpp::mysql_type_info::id () const `[inline]`

Returns the ID of the SQL type.

Returns the ID number MySQL uses for this type. Note: Do not depend on the value of this ID as it may change between MySQL versions.

7.34.3.6 const unsigned int mysqlpp::mysql_type_info::length () `[inline]`

Return length of data in this field.

This only works if you initialized this object from a MYSQL_FIELD object.

7.34.3.7 const unsigned int mysqlpp::mysql_type_info::max_length () `[inline]`

Return maximum length of data in this field.

This only works if you initialized this object from a MYSQL_FIELD object.

7.34.3.8 const char * mysqlpp::mysql_type_info::name () `[inline]`

Returns an implementation-defined name of the C++ type.

Returns the name that would be returned by typeid().**name()** (p. 101) for the C++ type associated with the SQL type.

7.34.3.9 mysql_type_info& mysqlpp::mysql_type_info::operator= (const std::type_info & *t*) `[inline]`

Assign a C++ type_info object to this object.

This tries to map a C++ type to the closest MySQL data type. It is necessarily somewhat approximate.

7.34.3.10 mysql_type_info& mysqlpp::mysql_type_info::operator= (unsigned char *n*) `[inline]`

Assign a new internal type value.

Parameters:
n an index into the internal MySQL++ type table

This function shouldn't be used outside the library.

7.34.3.11 bool mysqlpp::mysql_type_info::quote_q ()

Returns true if the SQL type is of a type that needs to be quoted.

Returns:
true if the type needs to be quoted for syntactically correct SQL.

7.34.3.12 const char * mysqlpp::mysql_type_info::sql_name () `[inline]`

Returns the name of the SQL type.

Returns the SQL name for the type.

7.34.4 Member Data Documentation

7.34.4.1 const unsigned char mysqlpp::mysql_type_info::string_type = 20 `[static]`

The internal constant we use for our string type.

We expose this because other parts of MySQL++ need to know what the string constant is at the moment.

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

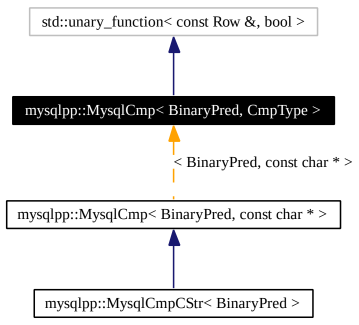
- **type_info.h**
- type_info.cpp

7.35 mysqlpp::MysqlCmp< BinaryPred, CmpType > Class Template Reference

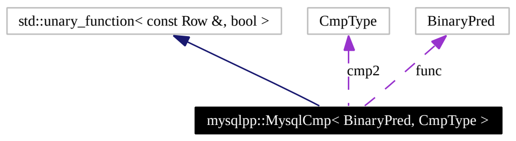
Template for making function objects that can compare something against a **Row** (p. 138) element.

`#include <compare.h>`

Inheritance diagram for mysqlpp::MysqlCmp< BinaryPred, CmpType >:


std::unary_function< const Row &, bool >
mysqlpp::MysqlCmp< BinaryPred, CmpType >
< BinaryPred, const char * >
mysqlpp::MysqlCmp< BinaryPred, const char * >
mysqlpp::MysqlCmpCStr< BinaryPred >

Collaboration diagram for mysqlpp::MysqlCmp< BinaryPred, CmpType >:


std::unary_function< const Row &, bool >
CmpType
BinaryPred
cmp2
func
mysqlpp::MysqlCmp< BinaryPred, CmpType >

Public Methods

- **MysqlCmp** (**uint** i, const BinaryPred &f, const CmpType &c)

  MysqlCmp (p. 103) *constructor.*

- bool **operator()** (const **Row** &cmp1) const

  Run the predicate function on this row and the object's data, and return its value.

Protected Attributes

- unsigned int **index**

  Index of field within **Row** (p. 138) *object to compare against.*

- BinaryPred **func**

  Predicate function to use for the comparison.

- CmpType **cmp2**

  What to compare the **Row** (p. 138) *'s field against.*

7.35.1 Detailed Description

template<class BinaryPred, class CmpType> class mysqlpp::MysqlCmp< BinaryPred, CmpType >

Template for making function objects that can compare something against a **Row** (p. 138) element.

See also:
mysql_cmp (p. 27)

7.35.2 Constructor & Destructor Documentation

7.35.2.1 template<class BinaryPred, class CmpType> mysqlpp::MysqlCmp< BinaryPred, CmpType >::MysqlCmp (uint *i*, const BinaryPred & *f*, const CmpType & *c*) `[inline]`

MysqlCmp (p. 103) constructor.

Parameters:
- ***i*** field number within a row to compare against
- ***f*** predicate function
- ***c*** what to compare row element against

operator() for this object compares **Row** (p. 138)[i] to c using f.

7.35.3 Member Function Documentation

7.35.3.1 template<class BinaryPred, class CmpType> bool mysqlpp::MysqlCmp< BinaryPred, CmpType >::operator() (const Row & *cmp1*) const `[inline]`

Run the predicate function on this row and the object's data, and return its value.

See the constructor's parameters for what we compare against.

Reimplemented in **mysqlpp::MysqlCmpCStr< BinaryPred >** (p. 106).

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

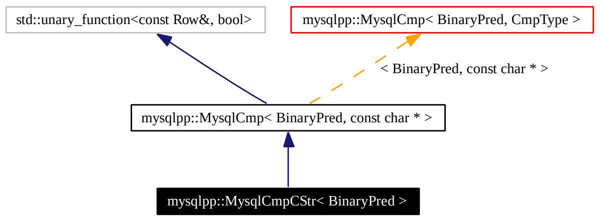
- **compare.h**

7.36 mysqlpp::MysqlCmpCStr< BinaryPred > Class Template Reference

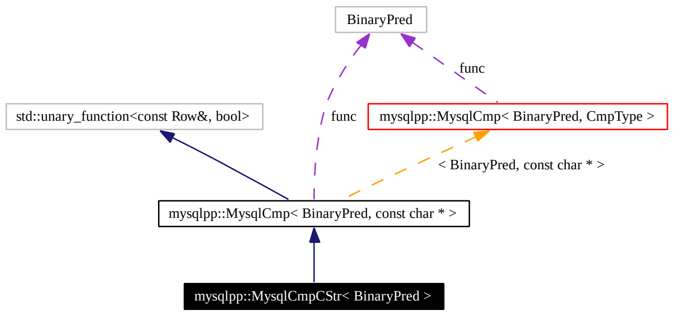
const char∗ specialization of **MysqlCmp** (p. 103)

`#include <compare.h>`

Inheritance diagram for mysqlpp::MysqlCmpCStr< BinaryPred >:


std::unary_function<const Row&, bool>
mysqlpp::MysqlCmp< BinaryPred, CmpType >
< BinaryPred, const char * >
mysqlpp::MysqlCmp< BinaryPred, const char * >
mysqlpp::MysqlCmpCStr< BinaryPred >

Collaboration diagram for mysqlpp::MysqlCmpCStr< BinaryPred >:


BinaryPred
func
std::unary_function<const Row&, bool>
func
mysqlpp::MysqlCmp< BinaryPred, CmpType >
< BinaryPred, const char * >
mysqlpp::MysqlCmp< BinaryPred, const char * >
mysqlpp::MysqlCmpCStr< BinaryPred >

Public Methods

- **MysqlCmpCStr** (**uint** i, const BinaryPred &f, const char ∗c)

  MysqlCmpCStr (p. 105) *constructor.*

- bool **operator()** (const **Row** &cmp1) const

  Run the predicate function on this row and the object's data, and return its value.

7.36.1 Detailed Description

template<class BinaryPred> class mysqlpp::MysqlCmpCStr< BinaryPred >

const char∗ specialization of **MysqlCmp** (p. 103)

See also:
  mysql_cmp_cstr (p. 27)

7.36.2 Constructor & Destructor Documentation

7.36.2.1 template<class BinaryPred> mysqlpp::MysqlCmpCStr< BinaryPred >::MysqlCmpCStr (uint *i*, const BinaryPred & *f*, const char * *c*) `[inline]`

MysqlCmpCStr (p. 105) constructor.

Parameters:

i field number within a row to compare against

f predicate function

c what to compare row element against

operator() for this object compares **Row** (p. 138)[i] to c using f.

7.36.3 Member Function Documentation

7.36.3.1 template<class BinaryPred> bool mysqlpp::MysqlCmpCStr< BinaryPred >::operator() (const Row & *cmp1*) const `[inline]`

Run the predicate function on this row and the object's data, and return its value.

See the constructor's parameters for what we compare against.

Reimplemented from **mysqlpp::MysqlCmp< BinaryPred, const char * >** (p. 104).

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

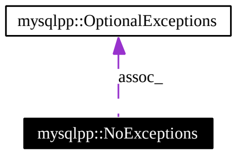
- **compare.h**

7.37 mysqlpp::NoExceptions Class Reference

Disable exceptions in an object derived from **OptionalExceptions** (p. 116).

`#include <noexceptions.h>`

Collaboration diagram for mysqlpp::NoExceptions:



Public Methods

- **NoExceptions** (**OptionalExceptions** &a)

  Constructor.

- ~**NoExceptions** ()

  Destructor.

7.37.1 Detailed Description

Disable exceptions in an object derived from **OptionalExceptions** (p. 116).

This class was designed to be created on the stack, taking a reference to a subclass of **OptionalExceptions** (p. 116). (We call that our "associate" object.) On creation, we save that object's current exception state, and disable exceptions. On destruction, we restore our associate's previous state.

7.37.2 Constructor & Destructor Documentation

7.37.2.1 mysqlpp::NoExceptions::NoExceptions (OptionalExceptions & *a*) `[inline]`

Constructor.

Takes a reference to an **OptionalExceptions** (p. 116) derivative, saves that object's current exception state, and disables exceptions.

7.37.2.2 mysqlpp::NoExceptions::~NoExceptions () `[inline]`

Destructor.

Restores our associate object's previous exception state.

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

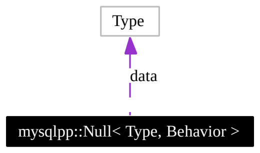
- **noexceptions.h**

7.38 mysqlpp::Null< Type, Behavior > Class Template Reference

Class for holding data from a SQL column with the NULL attribute.

`#include <null.h>`

Collaboration diagram for mysqlpp::Null< Type, Behavior >:



Public Types

- typedef Type **value_type**

  Type of the data stored in this object, when it is not equal to SQL null.

Public Methods

- **Null** ()

  Default constructor.

- **Null** (const Type &x)

  Initialize the object with a particular value.

- **Null** (const **null_type** &n)

  Construct a **Null** (p. 108) *equal to SQL null.*

- **operator Type &** ()

  Converts this object to Type.

- Null & **operator=** (const Type &x)

  Assign a value to the object.

- Null & **operator=** (const **null_type** &n)

  Assign SQL null to this object.

Public Attributes

- Type **data**

  The object's value, when it is not SQL null.

- bool **is_null**

  If set, this object is considered equal to SQL null.

7.38.1 Detailed Description

template<class Type, class Behavior = NullisNull> class mysqlpp::Null< Type, Behavior >

Class for holding data from a SQL column with the NULL attribute.

This template is necessary because there is nothing in the C++ type system with the same semantics as SQL's null. In SQL, a column can have the optional 'NULL' attribute, so there is a difference in type between, say an `int` column that can be null and one that cannot be. C++'s NULL constant does not have these features.

It's important to realize that this class doesn't hold nulls, it holds data that *can be* null. It can hold a non-null value, you can then assign null to it (using MySQL++'s global **null** object), and then assign a regular value to it again; the object will behave as you expect throughout this process.

Because one of the template parameters is a C++ type, the typeid() for a null `int` is different than for a null `string`, to pick two random examples. See type_info.cpp for the table SQL types that can be null.

7.38.2 Constructor & Destructor Documentation

7.38.2.1 template<class Type, class Behavior = NullisNull> mysqlpp::Null< Type, Behavior >::Null () `[inline]`

Default constructor.

"data" member is left uninitialized by this ctor, because we don't know what to initialize it to.

7.38.2.2 template<class Type, class Behavior = NullisNull> mysqlpp::Null< Type, Behavior >::Null (const Type & *x*) `[inline]`

Initialize the object with a particular value.

The object is marked as "not null" if you use this ctor. This behavior exists because the class doesn't encode nulls, but rather data which *can be* null. The distinction is necessary because 'NULL' is an optional attribute of SQL columns.

7.38.2.3 template<class Type, class Behavior = NullisNull> mysqlpp::Null< Type, Behavior >::Null (const null_type & *n*) `[inline]`

Construct a **Null** (p. 108) equal to SQL null.

This is typically used with the global **null** object. (Not to be confused with C's NULL type.) You can say something like...

```
Null<int> foo = null;
```

...to get a null `int`.

7.38.3 Member Function Documentation

7.38.3.1 template<class Type, class Behavior = NullisNull> mysqlpp::Null< Type, Behavior >::operator Type & () [inline]

Converts this object to Type.

If is_null is set, returns whatever we consider that null "is", according to the Behavior parameter you used when instantiating this template. See **NullisNull** (p. 113), **NullisZero** (p. 114) and **NullisBlank** (p. 112).

Otherwise, just returns the 'data' member.

7.38.3.2 template<class Type, class Behavior = NullisNull> Null& mysqlpp::Null< Type, Behavior >::operator= (const null_type & *n*) [inline]

Assign SQL null to this object.

This just sets the is_null flag; the data member is not affected until you call the Type() operator on it.

7.38.3.3 template<class Type, class Behavior = NullisNull> Null& mysqlpp::Null< Type, Behavior >::operator= (const Type & *x*) [inline]

Assign a value to the object.

This marks the object as "not null" as a side effect.

7.38.4 Member Data Documentation

7.38.4.1 template<class Type, class Behavior = NullisNull> bool mysqlpp::Null< Type, Behavior >::is_null

If set, this object is considered equal to SQL null.

This flag affects how the Type() and << operators work.

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

- **null.h**

7.39 mysqlpp::null_type Class Reference

The type of the global **mysqlpp::null** (p. 23) object.

`#include <null.h>`

7.39.1 Detailed Description

The type of the global **mysqlpp::null** (p. 23) object.

This class is for internal use only. Normal code should use **Null** (p. 108) instead.

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

- **null.h**

7.40 mysqlpp::NullisBlank Struct Reference

Class for objects that define SQL null as a blank C string.

`#include <null.h>`

7.40.1 Detailed Description

Class for objects that define SQL null as a blank C string.

Returns "" when you ask what null is, and is empty when you insert it into a C++ stream.

Used for the behavior parameter for template **Null** (p. 108)

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

- **null.h**

7.41 mysqlpp::NullisNull Struct Reference

Class for objects that define SQL null in terms of MySQL++'s **null_type** (p. 111).

`#include <null.h>`

7.41.1 Detailed Description

Class for objects that define SQL null in terms of MySQL++'s **null_type** (p. 111).

Returns a **null_type** (p. 111) instance when you ask what null is, and is "(NULL)" when you insert it into a C++ stream.

Used for the behavior parameter for template **Null** (p. 108)

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

- **null.h**

7.42 mysqlpp::NullisZero Struct Reference

Class for objects that define SQL null as 0.

`#include <null.h>`

7.42.1 Detailed Description

Class for objects that define SQL null as 0.

Returns 0 when you ask what null is, and is zero when you insert it into a C++ stream.

Used for the behavior parameter for template **Null** (p. 108)

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

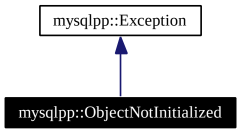
- **null.h**

7.43 mysqlpp::ObjectNotInitialized Class Reference

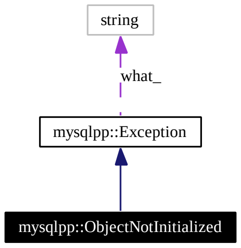
Exception (p. 88) thrown when you try to use an object that isn't completely initialized.

`#include <exceptions.h>`

Inheritance diagram for mysqlpp::ObjectNotInitialized:



Collaboration diagram for mysqlpp::ObjectNotInitialized:



Public Methods

- **ObjectNotInitialized** (const char ∗w="")

  Create exception object.

7.43.1 Detailed Description

Exception (p. 88) thrown when you try to use an object that isn't completely initialized.

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

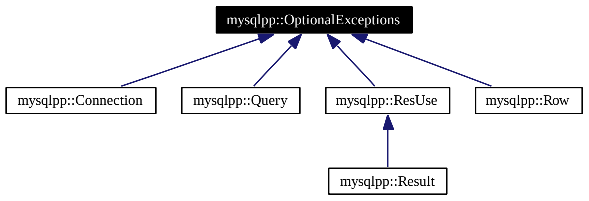
- **exceptions.h**

7.44 mysqlpp::OptionalExceptions Class Reference

Interface allowing a class to have optional exceptions.

`#include <noexceptions.h>`

Inheritance diagram for mysqlpp::OptionalExceptions:



Public Methods

- **OptionalExceptions** (bool e=true)

  Default constructor.

- virtual ~**OptionalExceptions** ()

  Destroy object.

- void **enable_exceptions** ()

  Enable exceptions from the object.

- void **disable_exceptions** ()

  Disable exceptions from the object.

- bool **throw_exceptions** () const

  Returns true if exceptions are enabled.

Protected Methods

- void **set_exceptions** (bool e)

  Sets the exception state to a particular value.

Friends

- class **NoExceptions**

  Declare **NoExceptions** (p. 107) *to be our friend so it can access our protected functions.*

7.44.1 Detailed Description

Interface allowing a class to have optional exceptions.

A class derives from this one to acquire a standard interface for disabling exceptions, possibly only temporarily. By default, exceptions are enabled.

7.44.2 Constructor & Destructor Documentation

7.44.2.1 mysqlpp::OptionalExceptions::OptionalExceptions (bool *e* = true) `[inline]`

Default constructor.

Parameters:

e if true, exceptions are enabled (this is the default)

7.44.3 Member Function Documentation

7.44.3.1 void mysqlpp::OptionalExceptions::set_exceptions (bool *e*) `[inline, protected]`

Sets the exception state to a particular value.

This method is protected because it is only intended for use by subclasses' copy constructors and the like.

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

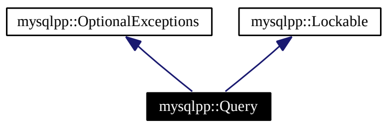
- **noexceptions.h**

7.45 mysqlpp::Query Class Reference

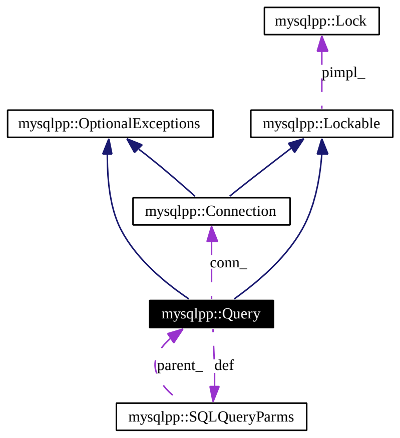
A class for building and executing SQL queries.

`#include <query.h>`

Inheritance diagram for mysqlpp::Query:



Collaboration diagram for mysqlpp::Query:



Public Types

- typedef const **SQLString** & **ss**

  to keep parameter lists short

- typedef **SQLQueryParms parms**

  shortens def'ns of above macros

Public Methods

- **Query** (**Connection** ∗c, bool te=true)

  Create a new query object attached to a connection.

- MYSQLPP_EXPORT **Query** (const Query &q)

  Create a new query object as a copy of another.

- MYSQLPP_EXPORT Query & **operator=** (const Query &rhs)

  Assign another query's state to this object.

- MYSQLPP_EXPORT std::string **error** ()

  Get the last error message that was set.

- MYSQLPP_EXPORT bool **success** ()

  Returns true if the last operation succeeded.

- MYSQLPP_EXPORT void **parse** ()

  Treat the contents of the query string as a template query.

- MYSQLPP_EXPORT void **reset** ()

  Reset the query object so that it can be reused.

- std::string **preview** ()

  Return the query string currently in the buffer.

- std::string **preview** (**SQLQueryParms** &p)

  Return the query string currently in the buffer.

- std::string **str** ()

  Get built query as a null-terminated C++ string.

- std::string **str** (**query_reset** r)

  Get built query as a null-terminated C++ string.

- MYSQLPP_EXPORT std::string **str** (**SQLQueryParms** &p)

  Get built query as a null-terminated C++ string.

- MYSQLPP_EXPORT std::string **str** (**SQLQueryParms** &p, **query_reset** r)

  Get built query as a null-terminated C++ string.

- MYSQLPP_EXPORT bool **exec** (const std::string &str)

  Execute a query.

- **ResNSel execute** ()

  Execute built-up query.

- MYSQLPP_EXPORT **ResNSel execute** (const char *str)

  Execute query in a C++ string.

- **ResUse use** ()

  Execute a query that can return a result set.

- MYSQLPP_EXPORT **ResUse use** (const char *str)

  Execute query in a C++ string.

- **Result store** ()

  Execute a query that can return a result set.

- MYSQLPP_EXPORT **Result store** (const char *str)

  Execute query in a C++ string.

- MYSQLPP_EXPORT **Result store_next** ()

  Return next result set, when processing a multi-query.

- MYSQLPP_EXPORT bool **more_results** ()

  Return whether more results are waiting for a multi-query or stored procedure response.

- template<class Sequence> void **storein_sequence** (Sequence &con, **query_reset** r=RESET_QUERY)

  Execute a query, storing the result set in an STL sequence container.

- template<class Set> void **storein_set** (**Set** &con, **query_reset** r=RESET_QUERY)

  Execute a query, storing the result set in an STL associative container.

- template<class Container> void **storein** (Container &con, **query_reset** r=RESET_-QUERY)

  Execute a query, and store the entire result set in an STL container.

- template<class T> void **storein** (std::vector< T > &con, const char *s)

  Specialization of **storein_sequence()** (p. 125) *for* `std::vector`.

- template<class T> void **storein** (std::deque< T > &con, const char *s)

  Specialization of **storein_sequence()** (p. 125) *for* `std::deque`.

- template<class T> void **storein** (std::list< T > &con, const char *s)

  Specialization of **storein_sequence()** (p. 125) *for* `std::list`.

- template<class T> void **storein** (std::set< T > &con, const char *s)

  Specialization of **storein_set()** (p. 126) *for* `std::set`.

- template<class T> void **storein** (std::multiset< T > &con, const char *s)

  Specialization of **storein_set()** (p. 126) *for* `std::multiset`.

- template<class T> Query & **update** (const T &o, const T &n)

  Replace an existing row's data with new data.

- template<class T> Query & **insert** (const T &v)

  Insert a new row.

- template<class Iter> Query & **insert** (Iter first, Iter last)

  Insert multiple new rows.

- template<class T> Query & **replace** (const T &v)

  Insert new row unless there is an existing row that matches on a unique index, in which case we replace it.

- **operator bool** ()

  Return true if the last query was successful.

- bool **operator!** ()

  Return true if the last query failed.

Public Attributes

- **SQLQueryParms def**

  The default template parameters.

7.45.1 Detailed Description

A class for building and executing SQL queries.

This class is derived from SQLQuery. It adds to that a tie between the query object and a MySQL++ **Connection** (p. 50) object, so that the query can be sent to the MySQL server we're connected to.

One does not generally create **Query** (p. 118) objects directly. Instead, call **mysqlpp::Connection::query()** (p. 58) to get one tied to that connection.

There are several ways to build and execute SQL queries with this class.

The way most like other database libraries is to pass a SQL statement to one of the **exec*(),** (p. 122) **store*(),** (p. 124) or **use()** (p. 127) methods taking a C or C++ string. The query is executed immediately, and any results returned.

For more complicated queries, you can use **Query** (p. 118)'s stream interface. You simply build up a query using the **Query** (p. 118) instance as you would any other C++ stream object. When the query string is complete, you call the overloaded version of `exec*()`, `store*()` or **use()** (p. 127) that takes no parameters, which executes the built query and returns any results.

If you are using the library's Specialized SQL Structures feature, **Query** (p. 118) has several special functions for generating common SQL queries from those structures. For instance, it offers the **insert()** (p. 123) method, which builds an INSERT query to add the contents of the SSQLS to the database. As with the stream interface, these methods only build the query string; call one of the parameterless methods mentioned previously to actually execute the query.

Finally, you can build "template queries". This is something like C's `printf()` function, in that you insert a specially-formatted query string into the object which contains placeholders for data. You call the **parse()** (p. 124) method to tell the **Query** (p. 118) object that the query string contains placeholders. Once that's done, you can call any of the many overloaded methods that take a number of SQLStrings (up to 12 at the moment) or any type that can be converted to **SQLString** (p. 154), and those parameters will be inserted into the placeholders. When you call one of the parameterless functions the execute the query, the final query string is assembled and sent to the server.

See the user manual for more details about these options.

7.45.2 Constructor & Destructor Documentation

7.45.2.1 mysqlpp::Query::Query (Connection * *c*, bool *te* = true) `[inline]`

Create a new query object attached to a connection.

This is the constructor used by **mysqlpp::Connection::query()** (p. 58).

Parameters:

c connection the finished query should be sent out on

te if true, throw exceptions on errors

7.45.2.2 mysqlpp::Query::Query (const Query & *q*)

Create a new query object as a copy of another.

This is **not** a traditional copy ctor! Its only purpose is to make it possible to assign the return of **Connection::query()** (p. 58) to an empty **Query** (p. 118) object. In particular, the stream buffer and template query stuff will be empty in the copy, regardless of what values they have in the original.

7.45.3 Member Function Documentation

7.45.3.1 std::string mysqlpp::Query::error ()

Get the last error message that was set.

This class has an internal error message string, but if it isn't set, we return the last error message that happened on the connection we're bound to instead.

7.45.3.2 bool mysqlpp::Query::exec (const std::string & *str*)

Execute a query.

Same as **execute()** (p. 122), except that it only returns a flag indicating whether the query succeeded or not. It is basically a thin wrapper around the C API function `mysql_real_query()`.

Parameters:
str the query to execute

Returns:
true if query was executed successfully

See also:
execute() (p. 122), **store()** (p. 124), **storein()** (p. 125), and **use()** (p. 127)

7.45.3.3 ResNSel mysqlpp::Query::execute (const char * *str*)

Execute query in a C++ string.

Executes the query immediately, and returns the results.

7.45.3.4 ResNSel mysqlpp::Query::execute () `[inline]`

Execute built-up query.

Use one of the **execute()** (p. 122) overloads if you don't expect the server to return a result set. For instance, a DELETE query. The returned **ResNSel** (p. 129) object contains status information from the server, such as whether the query succeeded, and if so how many rows were affected.

This overloaded version of **execute()** (p. 122) simply executes the query that you have built up in the object in some way. (For instance, via the **insert()** (p. 123) method, or by using the object's stream interface.)

Returns:
ResNSel (p. 129) status information about the query

See also:

exec() (p. 122), **store()** (p. 124), **storein()** (p. 125), and **use()** (p. 127)

7.45.3.5 template<class Iter> Query& mysqlpp::Query::insert (Iter *first*, Iter *last*) [inline]

Insert multiple new rows.

Builds an INSERT SQL query using items from a range within an STL container. Insert the entire contents of the container by using the begin() and end() iterators of the container as parameters to this function.

Parameters:

first iterator pointing to first element in range to insert

last iterator pointing to one past the last element to insert

See also:

replace() (p. 124), **update()** (p. 127)

7.45.3.6 template<class T> Query& mysqlpp::Query::insert (const T & *v*) [inline]

Insert a new row.

This function builds an INSERT SQL query. One uses it with MySQL++'s Specialized SQL Structures mechanism.

Parameters:

v new row

See also:

replace() (p. 124), **update()** (p. 127)

7.45.3.7 bool mysqlpp::Query::more_results ()

Return whether more results are waiting for a multi-query or stored procedure response.

If this function returns true, you must call **store_next()** (p. 125) to fetch the next result set before you can execute more queries.

Wraps mysql_more_results() in the MySQL C API. That function only exists in MySQL v4.1 and higher. Therefore, this function always returns false when built against older API libraries.

Returns:

true if another result set exists

7.45.3.8 Query & mysqlpp::Query::operator= (const Query & *rhs*)

Assign another query's state to this object.

The same caveats apply to this operator as apply to the copy ctor.

7.45.3.9 void mysqlpp::Query::parse ()

Treat the contents of the query string as a template query.

This method sets up the internal structures used by all of the other members that accept template query parameters. See the "Template Queries" chapter in the user manual for more information.

7.45.3.10 template<class T> Query& mysqlpp::Query::replace (const T & *v*) `[inline]`

Insert new row unless there is an existing row that matches on a unique index, in which case we replace it.

This function builds a REPLACE SQL query. One uses it with MySQL++'s Specialized SQL Structures mechanism.

Parameters:
v new row

See also:
insert() (p. 123), **update()** (p. 127)

7.45.3.11 void mysqlpp::Query::reset ()

Reset the query object so that it can be reused.

This erases the query string and the contents of the parameterized query element list.

7.45.3.12 Result mysqlpp::Query::store (const char * *str*)

Execute query in a C++ string.

Executes the query immediately, and returns an object that contains the entire result set. This is less memory-efficient than **use()** (p. 127), but it lets you have random access to the results.

7.45.3.13 Result mysqlpp::Query::store () `[inline]`

Execute a query that can return a result set.

Use one of the **store()** (p. 124) overloads to execute a query and retrieve the entire result set into memory. This is useful if you actually need all of the records at once, but if not, consider using one of the **use()** (p. 127) methods instead, which returns the results one at a time, so they don't allocate as much memory as **store()** (p. 124).

You must use **store()** (p. 124), **storein()** (p. 125) or **use()** (p. 127) for `SELECT`, `SHOW`, `DESCRIBE` and `EXPLAIN` queries. You can use these functions with other query types, but since they don't return a result set, **exec()** (p. 122) and **execute()** (p. 122) are more efficient.

The name of this method comes from the MySQL C API function it is implemented in terms of, `mysql_store_result()`.

This function has the same set of overloads as **execute()** (p. 122).

Returns:
Result (p. 130) object containing entire result set

See also:

exec() (p. 122), **execute()** (p. 122), **storein()** (p. 125), and **use()** (p. 127)

7.45.3.14 Result mysqlpp::Query::store_next ()

Return next result set, when processing a multi-query.

There are two cases where you'd use this function instead of the regular **store()** (p. 124) functions.

First, when handling the result of executing multiple queries at once. (See `this page` in the MySQL documentation for details.)

Second, when calling a stored procedure, MySQL can return the result as a set of results.

In either case, you must consume all results before making another MySQL query, even if you don't care about the remaining results or result sets.

As the MySQL documentation points out, you must set the MYSQL_OPTION_MULTI_STATEMENTS_ON flag on the connection in order to use this feature. See **Connection::set_option()** (p. 58).

Multi-queries only exist in MySQL v4.1 and higher. Therefore, this function just wraps **store()** (p. 124) when built against older API libraries.

Returns:

Result (p. 130) object containing the next result set.

7.45.3.15 template<class Container> void mysqlpp::Query::storein (Container & *con*, query_reset *r* = RESET_QUERY) `[inline]`

Execute a query, and store the entire result set in an STL container.

This is a set of specialized template functions that call either **storein_sequence()** (p. 125) or **storein_set()** (p. 126), depending on the type of container you pass it. It understands `std::vector`, `deque`, `list`, `slist` (a common C++ library extension), `set`, and `multiset`.

Like the functions it wraps, this is actually an overloaded set of functions. See the other functions' documentation for details.

Use this function if you think you might someday switch your program from using a set-associative container to a sequence container for storing result sets, or vice versa.

See **exec()** (p. 122), **execute()** (p. 122), **store()** (p. 124), and **use()** (p. 127) for alternative query execution mechanisms.

7.45.3.16 template<class Sequence> void mysqlpp::Query::storein_sequence (Sequence & *con*, query_reset *r* = RESET_QUERY) `[inline]`

Execute a query, storing the result set in an STL sequence container.

This function works much like **store()** (p. 124) from the caller's perspective, because it returns the entire result set at once. It's actually implemented in terms of **use()** (p. 127), however, so that memory for the result set doesn't need to be allocated twice.

There are many overloads for this function, pretty much the same as for **execute()** (p. 122), except that there is a Container parameter at the front of the list. So, you can pass a container and a query string, or a container and template query parameters.

Parameters:

con any STL sequence container, such as `std::vector`

r whether the query automatically resets after being used

See also:

exec() (p. 122), **execute()** (p. 122), **store()** (p. 124), and **use()** (p. 127)

7.45.3.17 template<class Set> void mysqlpp::Query::storein_set (Set & *con*, query_reset *r* = RESET_QUERY) `[inline]`

Execute a query, storing the result set in an STL associative container.

The same thing as **storein_sequence()** (p. 125), except that it's used with associative STL containers, such as `std::set`. Other than that detail, that method's comments apply equally well to this one.

7.45.3.18 std::string mysqlpp::Query::str (SQLQueryParms & *p*, query_reset *r*)

Get built query as a null-terminated C++ string.

Parameters:

p template query parameters to use, overriding the ones this object holds, if any

r if equal to `RESET_QUERY`, query object is cleared after this call

7.45.3.19 std::string mysqlpp::Query::str (SQLQueryParms & *p*)

Get built query as a null-terminated C++ string.

Parameters:

p template query parameters to use, overriding the ones this object holds, if any

7.45.3.20 std::string mysqlpp::Query::str (query_reset *r*) `[inline]`

Get built query as a null-terminated C++ string.

Parameters:

r if equal to `RESET_QUERY`, query object is cleared after this call

7.45.3.21 bool mysqlpp::Query::success ()

Returns true if the last operation succeeded.

Returns true if the last query succeeded, and the associated **Connection** (p. 50) object's **success()** (p. 126) method also returns true. If either object is unhappy, this method returns false.

7.45.3.22 template<class T> Query& mysqlpp::Query::update (const T & *o*, const T & *n*) `[inline]`

Replace an existing row's data with new data.

This function builds an UPDATE SQL query using the new row data for the SET clause, and the old row data for the WHERE clause. One uses it with MySQL++'s Specialized SQL Structures mechanism.

Parameters:

o old row

n new row

See also:

insert() (p. 123), **replace()** (p. 124)

7.45.3.23 ResUse mysqlpp::Query::use (const char * *str*)

Execute query in a C++ string.

Executes the query immediately, and returns an object that lets you walk through the result set one row at a time, in sequence. This is more memory-efficient than **store()** (p. 124).

7.45.3.24 ResUse mysqlpp::Query::use () `[inline]`

Execute a query that can return a result set.

Use one of the **use()** (p. 127) overloads if memory efficiency is important. They return an object that can walk through the result records one by one, without fetching the entire result set from the server. This is superior to **store()** (p. 124) when there are a large number of results; **store()** (p. 124) would have to allocate a large block of memory to hold all those records, which could cause problems.

A potential downside of this method is that MySQL database resources are tied up until the result set is completely consumed. Do your best to walk through the result set as expeditiously as possible.

The name of this method comes from the MySQL C API function that initiates the retrieval process, `mysql_use_result()`. This method is implemented in terms of that function.

This function has the same set of overloads as **execute()** (p. 122).

Returns:

ResUse (p. 132) object that can walk through result set serially

See also:

exec() (p. 122), **execute()** (p. 122), **store()** (p. 124) and **storein()** (p. 125)

7.45.4 Member Data Documentation

7.45.4.1 SQLQueryParms mysqlpp::Query::def

The default template parameters.

Used for filling in parameterized queries.

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

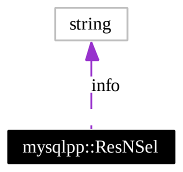
- **query.h**
- query.cpp

7.46 mysqlpp::ResNSel Class Reference

Holds the information on the success of queries that don't return any results.

`#include <result.h>`

Collaboration diagram for mysqlpp::ResNSel:



Public Methods

- MYSQLPP_EXPORT **ResNSel** (**Connection** ∗q)

  Initialize object.

- **operator bool** ()

  Returns true if the query was successful.

Public Attributes

- bool **success**

  if true, query was successful

- my_ulonglong **insert_id**

  last value used for AUTO_INCREMENT field

- my_ulonglong **rows**

  number of rows affected

- std::string **info**

  additional info about query result

7.46.1 Detailed Description

Holds the information on the success of queries that don't return any results.

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

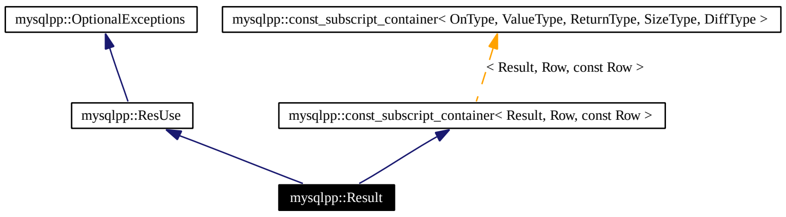
- **result.h**
- result.cpp

7.47 mysqlpp::Result Class Reference

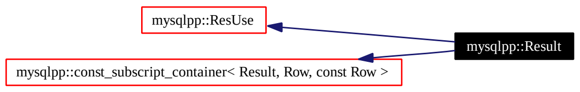
This class manages SQL result sets.

`#include <result.h>`

Inheritance diagram for mysqlpp::Result:


mysqlpp::OptionalExceptions
mysqlpp::const_subscript_container< OnType, ValueType, ReturnType, SizeType, DiffType >
< Result, Row, const Row >
mysqlpp::ResUse
mysqlpp::const_subscript_container< Result, Row, const Row >
mysqlpp::Result

Collaboration diagram for mysqlpp::Result:


mysqlpp::ResUse
mysqlpp::Result
mysqlpp::const_subscript_container< Result, Row, const Row >

Public Methods

- **Result** ()

  Default constructor.

- **Result** (MYSQL_RES ∗result, bool te=true)

  Fully initialize object.

- **Result** (const Result &other)

  Initialize object as a copy of another **Result** (p. 130) *object.*

- virtual ∼**Result** ()

  Destroy result set.

- const **Row fetch_row** () const

  Wraps mysql_fetch_row() in MySQL C API.

- my_ulonglong **num_rows** () const

  Wraps mysql_num_rows() in MySQL C API.

- void **data_seek** (**uint** offset) const

  Wraps mysql_data_seek() in MySQL C API.

- **size_type size** () const

  Alias for **num_rows()** (p. 130)*, only with different return type.*

- **size_type rows** () const

  Alias for **num_rows()** (p. 130)*, only with different return type.*

- const **Row at** (**size_type** i) const

  Get the row with an offset of i.

7.47.1 Detailed Description

This class manages SQL result sets.

Objects of this class are created to manage the result of "store" queries, where the result set is handed to the program as single block of row data. (The name comes from the MySQL C API function `mysql_store_result()` which creates these blocks of row data.)

This class is a random access container (in the STL sense) which is neither less-than comparable nor assignable. This container provides a reverse random-access iterator in addition to the normal forward one.

7.47.2 Member Function Documentation

7.47.2.1 const Row mysqlpp::Result::fetch_row () const `[inline]`

Wraps mysql_fetch_row() in MySQL C API.

This is simply the const version of the same function in our **parent class** (p. 132) . Why this cannot actually *be* in our parent class is beyond me.

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

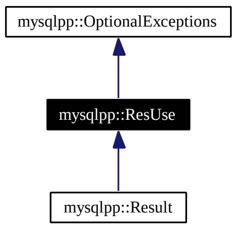
- **result.h**

7.48 mysqlpp::ResUse Class Reference

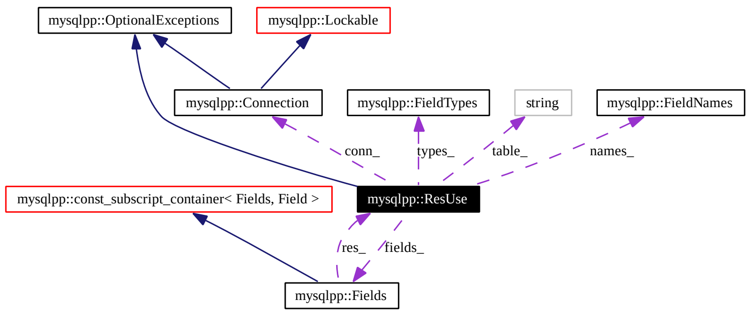
A basic result set class, for use with "use" queries.

`#include <result.h>`

Inheritance diagram for mysqlpp::ResUse:



Collaboration diagram for mysqlpp::ResUse:



Public Methods

- **ResUse** ()

  Default constructor.

- MYSQLPP_EXPORT **ResUse** (MYSQL_RES *result, **Connection** *c=0, bool te=true)

  Create the object, fully initialized.

- **ResUse** (const ResUse &other)

  Create a copy of another **ResUse** (p. 132) *object.*

- virtual MYSQLPP_EXPORT ~**ResUse** ()

  Destroy object.

- ResUse & **operator=** (const ResUse &other)

  Copy another **ResUse** (p. 132) *object's data into this object.*

- MYSQL_RES * **raw_result** ()

  Return raw MySQL C API result set.

- **Row fetch_row** ()

Wraps mysql_fetch_row() in MySQL C API.

- unsigned long ∗ **fetch_lengths** () const

  Wraps mysql_fetch_lengths() in MySQL C API.

- **Field** & **fetch_field** () const

  Wraps mysql_fetch_field() in MySQL C API.

- void **field_seek** (int field)

  Wraps mysql_field_seek() in MySQL C API.

- int **num_fields** () const

  Wraps mysql_num_fields() in MySQL C API.

- void **parent_leaving** ()

  Documentation needed!

- void **purge** ()

  Free all resources held by the object.

- **operator bool** () const

  Return true if we have a valid result set.

- unsigned int **columns** () const

  Return the number of columns in the result set.

- std::string & **table** ()

  Get the name of table that the result set comes from.

- const std::string & **table** () const

  Return the name of the table.

- MYSQLPP_EXPORT int **field_num** (const std::string &) const

  Get the index of the named field.

- MYSQLPP_EXPORT std::string & **field_name** (int)

  Get the name of the field at the given index.

- MYSQLPP_EXPORT const std::string & **field_name** (int) const

  Get the name of the field at the given index.

- MYSQLPP_EXPORT **FieldNames** & **field_names** ()

  Get the names of the fields within this result set.

- MYSQLPP_EXPORT const **FieldNames** & **field_names** () const

  Get the names of the fields within this result set.

- MYSQLPP_EXPORT void **reset_field_names** ()

  Reset the names in the field list to their original values.

- MYSQLPP_EXPORT **mysql_type_info** & **field_type** (int i)
  Get the MySQL type for a field given its index.
- MYSQLPP_EXPORT const **mysql_type_info** & **field_type** (int) const
  Get the MySQL type for a field given its index.
- MYSQLPP_EXPORT **FieldTypes** & **field_types** ()
  Get a list of the types of the fields within this result set.
- MYSQLPP_EXPORT const **FieldTypes** & **field_types** () const
  Get a list of the types of the fields within this result set.
- MYSQLPP_EXPORT void **reset_field_types** ()
  Reset the field types to their original values.
- MYSQLPP_EXPORT int **names** (const std::string &s) const
  Alias for **field_num()** (p. 136).
- MYSQLPP_EXPORT std::string & **names** (int i)
  Alias for **field_name()** (p. 136).
- MYSQLPP_EXPORT const std::string & **names** (int i) const
  Alias for **field_name()** (p. 136).
- MYSQLPP_EXPORT **FieldNames** & **names** ()
  Alias for **field_names()** (p. 133).
- MYSQLPP_EXPORT const **FieldNames** & **names** () const
  Alias for **field_names()** (p. 133).
- MYSQLPP_EXPORT void **reset_names** ()
  Alias for **reset_field_names()** (p. 133).
- MYSQLPP_EXPORT **mysql_type_info** & **types** (int i)
  Alias for **field_type()** (p. 134).
- MYSQLPP_EXPORT const **mysql_type_info** & **types** (int i) const
  Alias for **field_type()** (p. 134).
- MYSQLPP_EXPORT **FieldTypes** & **types** ()
  Alias for **field_types()** (p. 134).
- MYSQLPP_EXPORT const **FieldTypes** & **types** () const
  Alias for **field_types()** (p. 134).
- MYSQLPP_EXPORT void **reset_types** ()
  Alias for **reset_field_types()** (p. 134).
- const **Fields** & **fields** () const
  Get the underlying **Fields** (p. 91) *structure.*

- const **Field** & **fields** (unsigned int i) const

  Get the underlying Field structure given its index.

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

  Returns true if the other **ResUse** (p. 132) *object shares the same underlying C API result set as this one.*

- bool **operator!=** (const ResUse &other) const

  Returns true if the other **ResUse** (p. 132) *object has a different underlying C API result set from this one.*

Protected Methods

- MYSQLPP_EXPORT void **copy** (const ResUse &other)

  Copy another **ResUse** (p. 132) *object's contents into this one.*

Protected Attributes

- **Connection** ∗ **conn_**

  server result set comes from

- MYSQL_RES ∗ **result_**

  underlying C API result set

- bool **initialized_**

  if true, object is fully initted

- **FieldNames** ∗ **names_**

  list of field names in result

- **FieldTypes** ∗ **types_**

  list of field types in result

- **Fields fields_**

  list of fields in result

- std::string **table_**

  table result set comes from

7.48.1 Detailed Description

A basic result set class, for use with "use" queries.

A "use" query is one where you make the query and then process just one row at a time in the result instead of dealing with them all as a single large chunk. (The name comes from the MySQL C API function that initiates this action, `mysql_use_result()`.) By calling **fetch_row()**

(p. 136) until it throws a **mysqlpp::BadQuery** (p. 43) exception (or an empty row if exceptions are disabled), you can process the result set one row at a time.

7.48.2 Member Function Documentation

7.48.2.1 void mysqlpp::ResUse::copy (const ResUse & *other*) [protected]

Copy another **ResUse** (p. 132) object's contents into this one.

Self-copy is not allowed.

7.48.2.2 Row mysqlpp::ResUse::fetch_row () [inline]

Wraps mysql_fetch_row() in MySQL C API.

This is not a thin wrapper. It does a lot of error checking before returning the **mysqlpp::Row** (p. 138) object containing the row data.

7.48.2.3 std::string & mysqlpp::ResUse::field_name (int) [inline]

Get the name of the field at the given index.

This is the inverse of **field_num()** (p. 136).

7.48.2.4 int mysqlpp::ResUse::field_num (const std::string &) const [inline]

Get the index of the named field.

This is the inverse of **field_name()** (p. 136).

7.48.2.5 mysqlpp::ResUse::operator bool () const [inline]

Return true if we have a valid result set.

This operator is primarily used to determine if a query was successful:

```
Query q("....");
if (q.use()) {
    ...
```

Query::use() (p. 127) returns a **ResUse** (p. 132) object, and it won't contain a valid result set if the query failed.

7.48.2.6 bool mysqlpp::ResUse::operator== (const ResUse & *other*) const [inline]

Returns true if the other **ResUse** (p. 132) object shares the same underlying C API result set as this one.

This works because the underlying result set is stored as a pointer, and thus can be copied and then compared.

7.48.2.7 void mysqlpp::ResUse::purge () `[inline]`

Free all resources held by the object.

This class's destructor is little more than a call to **purge()** (p. 137), so you can think of this as a way to re-use a **ResUse** (p. 132) object, to avoid having to completely re-create it.

7.48.2.8 const std::string& mysqlpp::ResUse::table () const `[inline]`

Return the name of the table.

This is only valid

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

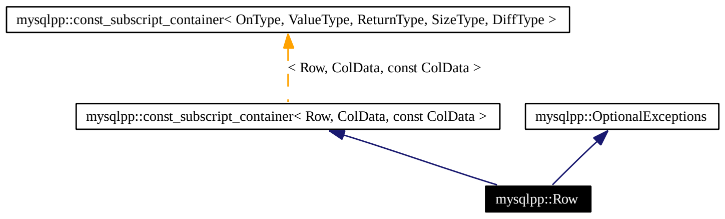
- **result.h**
- result.cpp

7.49 mysqlpp::Row Class Reference

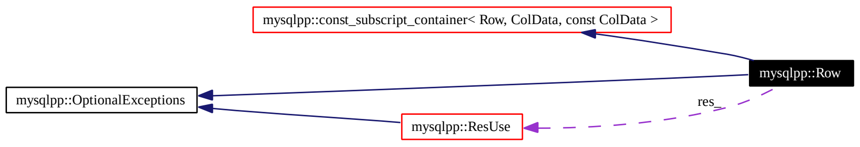
Manages rows from a result set.

`#include <row.h>`

Inheritance diagram for mysqlpp::Row:


mysqlpp::const_subscript_container< OnType, ValueType, ReturnType, SizeType, DiffType >
< Row, ColData, const ColData >
mysqlpp::const_subscript_container< Row, ColData, const ColData >
mysqlpp::OptionalExceptions
mysqlpp::Row

Collaboration diagram for mysqlpp::Row:


mysqlpp::const_subscript_container< Row, ColData, const ColData >
mysqlpp::Row
mysqlpp::OptionalExceptions
res_
mysqlpp::ResUse

Public Methods

- **Row** ()

  Default constructor.

- MYSQLPP_EXPORT **Row** (const MYSQL_ROW &d, const **ResUse** ∗r, unsigned long ∗jj, bool te=true)

  Create a row object.

- MYSQLPP_EXPORT ∼**Row** ()

  Destroy object.

- const **ResUse** & **parent** () const

  Get a reference to our parent class.

- MYSQLPP_EXPORT **size_type size** () const

  Get the number of fields in the row.

- MYSQLPP_EXPORT const **ColData operator**[ ] (const char ∗field) const

  Get the value of a field given its name.

- const **ColData operator**[ ] (**size_type** i) const

  Get the value of a field given its index.

- MYSQLPP_EXPORT const **ColData at** (**size_type** i) const

  Get the value of a field given its index.

- const char ∗ **raw_data** (int i) const

  Return the value of a field given its index, in raw form.

- **operator bool** () const

  Returns true if there is data in the row.

- template<class Manip> **value_list_ba**< Row, Manip > **value_list** (const char ∗d=",", Manip m=quote) const

  Get a list of the values in this row.

- template<class Manip> **value_list_b**< Row, Manip > **value_list** (const char ∗d, const std::vector< bool > &vb, Manip m=quote) const

  Get a list of the values in this row.

- **value_list_b**< Row, **quote_type0** > **value_list** (const std::vector< bool > &vb) const

  Get a list of the values in this row.

- template<class Manip> **value_list_b**< Row, Manip > **value_list** (const char ∗d, Manip m, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false) const

  Get a list of the values in this row.

- **value_list_b**< Row, **quote_type0** > **value_list** (const char ∗d, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false) const

  Get a list of the values in this row.

- **value_list_b**< Row, **quote_type0** > **value_list** (bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false) const

  Get a list of the values in this row.

- template<class Manip> **value_list_b**< Row, Manip > **value_list** (const char ∗d, Manip m, std::string s0, std::string s1="", std::string s2="", std::string s3="", std::string s4="", std::string s5="", std::string s6="", std::string s7="", std::string s8="", std::string s9="", std::string sa="", std::string sb="", std::string sc="") const

  Get a list of the values in this row.

- **value_list_b**< Row, **quote_type0** > **value_list** (const char ∗d, std::string s0, std::string s1="", std::string s2="", std::string s3="", std::string s4="", std::string s5="", std::string s6="", std::string s7="", std::string s8="", std::string s9="", std::string sa="", std::string sb="", std::string sc="") const

  Get a list of the values in this row.

- **value_list_b**< Row, **quote_type0** > **value_list** (std::string s0, std::string s1="", std::string s2="", std::string s3="", std::string s4="", std::string s5="", std::string s6="", std::string s7="", std::string s8="", std::string s9="", std::string sa="", std::string sb="", std::string sc="") const

  Get a list of the values in this row.

- MYSQLPP_EXPORT **value_list_ba**< **FieldNames**, **do_nothing_type0** > **field_list** (const char *d=",") const

  Get a list of the field names in this row.

- template<class Manip> **value_list_ba**< **FieldNames**, Manip > **field_list** (const char *d, Manip m) const

  Get a list of the field names in this row.

- template<class Manip> **value_list_b**< **FieldNames**, Manip > **field_list** (const char *d, Manip m, const std::vector< bool > &vb) const

  Get a list of the field names in this row.

- MYSQLPP_EXPORT **value_list_b**< **FieldNames**, **quote_type0** > **field_list** (const char *d, const std::vector< bool > &vb) const

  Get a list of the field names in this row.

- MYSQLPP_EXPORT **value_list_b**< **FieldNames**, **quote_type0** > **field_list** (const std::vector< bool > &vb) const

  Get a list of the field names in this row.

- template<class Manip> **value_list_b**< **FieldNames**, Manip > **field_list** (const char *d, Manip m, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false) const

  Get a list of the field names in this row.

- MYSQLPP_EXPORT **value_list_b**< **FieldNames**, **quote_type0** > **field_list** (const char *d, bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false) const

  Get a list of the field names in this row.

- MYSQLPP_EXPORT **value_list_b**< **FieldNames**, **quote_type0** > **field_list** (bool t0, bool t1=false, bool t2=false, bool t3=false, bool t4=false, bool t5=false, bool t6=false, bool t7=false, bool t8=false, bool t9=false, bool ta=false, bool tb=false, bool tc=false) const

  Get a list of the field names in this row.

- MYSQLPP_EXPORT **equal_list_ba**< **FieldNames**, Row, **quote_type0** > **equal_list** (const char *d=",", const char *e="=") const

  Get an "equal list" of the fields and values in this row.

- template<class Manip> **equal_list_ba**< **FieldNames**, Row, Manip > **equal_list** (const char *d, const char *e, Manip m) const

  Get an "equal list" of the fields and values in this row.

7.49.1 Detailed Description

Manages rows from a result set.

7.49.2 Constructor & Destructor Documentation

7.49.2.1 mysqlpp::Row::Row (const MYSQL_ROW & *d*, const ResUse * *r*, unsigned long * *jj*, bool *te* = true)

Create a row object.

Parameters:

d MySQL C API row data

r result set that the row comes from

jj length of each item in d

te if true, throw exceptions on errors

7.49.3 Member Function Documentation

7.49.3.1 const ColData mysqlpp::Row::at (size_type *i*) const

Get the value of a field given its index.

If the index is out-of-bounds, the underlying vector is supposed to throw an exception according to the C++ Standard. Whether it actually does this is implementation-dependent.

See also:

operator[ ]() (p. 143) for caveats about using this function.

7.49.3.2 template<class Manip> equal_list_ba< FieldNames, Row, Manip > mysqlpp::Row::equal_list (const char * *d*, const char * *e*, Manip *m*) const

Get an "equal list" of the fields and values in this row.

This method's parameters govern how the returned list will behave when you insert it into a C++ stream:

Parameters:

d delimiter to use between items

e the operator to use between elements

m the manipulator to use for each element

For example, if d is ",", e is " = ", and m is the quote manipulator, then the field and value lists (a, b) (c, d'e) will yield an equal list that gives the following when inserted into a C++ stream:

```
'a' = 'c', 'b' = 'd''e'
```

Notice how the single quote was 'escaped' in the SQL way to avoid a syntax error.

7.49.3.3 equal_list_ba< FieldNames, Row, quote_type0 > mysqlpp::Row::equal_list (const char * *d* = ",", const char * *e* = "=") const

Get an "equal list" of the fields and values in this row.

When inserted into a C++ stream, the delimiter 'd' will be used between the items, " = " is the relationship operator, and items will be quoted and escaped.

7.49.3.4 value_list_b< FieldNames, quote_type0 > mysqlpp::Row::field_list (bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false) const

Get a list of the field names in this row.

For each true parameter, the field name in that position within the row is added to the returned list. When the list is inserted into a C++ stream, a comma will be placed between the items as a delimiter, and the items will be quoted and escaped.

7.49.3.5 value_list_b< FieldNames, quote_type0 > mysqlpp::Row::field_list (const char ∗ *d*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false) const

Get a list of the field names in this row.

For each true parameter, the field name in that position within the row is added to the returned list. When the list is inserted into a C++ stream, the delimiter 'd' will be placed between the items as a delimiter, and the items will be quoted and escaped.

7.49.3.6 template<class Manip> value_list_b< FieldNames, Manip > mysqlpp::Row::field_list (const char ∗ *d*, Manip *m*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false) const

Get a list of the field names in this row.

For each true parameter, the field name in that position within the row is added to the returned list. When the list is inserted into a C++ stream, the delimiter 'd' will be placed between the items as a delimiter, and the manipulator 'm' used before each item.

7.49.3.7 value_list_b< FieldNames, quote_type0 > mysqlpp::Row::field_list (const std::vector< bool > & *vb*) const

Get a list of the field names in this row.

Parameters:

vb for each true item in this list, add that field name to the returned list; ignore the others

Field names will be quoted and escaped when inserted into a C++ stream, and a comma will be placed between them as a delimiter.

7.49.3.8 value_list_b< FieldNames, quote_type0 > mysqlpp::Row::field_list (const char ∗ *d*, const std::vector< bool > & *vb*) const

Get a list of the field names in this row.

Parameters:

d delimiter to place between the items when the list is inserted into a C++ stream

vb for each true item in this list, add that field name to the returned list; ignore the others

Field names will be quoted and escaped when inserted into a C++ stream.

7.49.3.9 template<class Manip> value_list_b< FieldNames, Manip > mysqlpp::Row::field_list (const char * *d*, Manip *m*, const std::vector< bool > & *vb*) const

Get a list of the field names in this row.

Parameters:

d delimiter to place between the items when the list is inserted into a C++ stream

m manipulator to use before each item when the list is inserted into a C++ stream

vb for each true item in this list, add that field name to the returned list; ignore the others

7.49.3.10 template<class Manip> value_list_ba< FieldNames, Manip > mysqlpp::Row::field_list (const char * *d*, Manip *m*) const

Get a list of the field names in this row.

Parameters:

d delimiter to place between the items when the list is inserted into a C++ stream

m manipulator to use before each item when the list is inserted into a C++ stream

7.49.3.11 value_list_ba< FieldNames, do_nothing_type0 > mysqlpp::Row::field_list (const char * *d* = ",") const

Get a list of the field names in this row.

When inserted into a C++ stream, the delimiter 'd' will be used between the items, and no manipulator will be used on the items.

7.49.3.12 const ColData mysqlpp::Row::operator[] (size_type *i*) const `[inline]`

Get the value of a field given its index.

If the index value is bad, the underlying std::vector is supposed to throw an exception, according to the Standard.

This function is just syntactic sugar, wrapping the **at()** (p. 141) method. The **at()** (p. 141) method is the only way to get at the first field by index, as row[0] is ambiguous: it could call either overload.

See operator[](const char *) for more caveats.

7.49.3.13 const ColData mysqlpp::Row::operator[] (const char * *field*) const

Get the value of a field given its name.

If the field does not exist in this row, we throw a **BadFieldName** (p. 38) exception.

Note that we return the **ColData** (p. 46) object by value. The purpose of ColData is to make it easy to convert the string data returned by the MySQL server to some more appropriate type, so you're almost certain to use this operator in a construct like this:

```
string s = row["myfield"];
```

That accesses myfield within the row, returns a temporary ColData object, which is then automatically converted to a `std::string` and copied into `s`. That works fine, but beware of this similar but incorrect construct:

```
const char* pc = row["myfield"];
```

This one line of code does what you expect, but `pc` is then a dangling pointer: it points to memory owned by the temporary ColData object, which will have been destroyed by the time you get around to actually *using* the pointer.

This function is rather inefficient. If that is a concern for you, use **at()** (p. 141), operator[](size_type) or the SSQLS mechanism instead.

7.49.3.14 const char* mysqlpp::Row::raw_data (int *i*) const `[inline]`

Return the value of a field given its index, in raw form.

This is the same thing as operator[], except that the data isn't converted to a ColData object first. Also, this method does not check for out-of-bounds array indices.

7.49.3.15 value_list_b<Row, quote_type0> mysqlpp::Row::value_list (std::string *s0*, std::string *s1* = "", std::string *s2* = "", std::string *s3* = "", std::string *s4* = "", std::string *s5* = "", std::string *s6* = "", std::string *s7* = "", std::string *s8* = "", std::string *s9* = "", std::string *sa* = "", std::string *sb* = "", std::string *sc* = "") const `[inline]`

Get a list of the values in this row.

The 's' parameters name the fields that will be added to the returned list. When inserted into a C++ stream, a comma will be placed between the items as a delimiter, and items will be quoted and escaped.

7.49.3.16 value_list_b<Row, quote_type0> mysqlpp::Row::value_list (const char * *d*, std::string *s0*, std::string *s1* = "", std::string *s2* = "", std::string *s3* = "", std::string *s4* = "", std::string *s5* = "", std::string *s6* = "", std::string *s7* = "", std::string *s8* = "", std::string *s9* = "", std::string *sa* = "", std::string *sb* = "", std::string *sc* = "") const `[inline]`

Get a list of the values in this row.

The 's' parameters name the fields that will be added to the returned list. When inserted into a C++ stream, the delimiter 'd' will be placed between the items, and items will be quoted and escaped.

7.49.3.17 template<class Manip> value_list_b<Row, Manip> mysqlpp::Row::value_list (const char * *d*, Manip *m*, std::string *s0*, std::string *s1* = "", std::string *s2* = "", std::string *s3* = "", std::string *s4* = "", std::string *s5* = "", std::string *s6* = "", std::string *s7* = "", std::string *s8* = "", std::string *s9* = "", std::string *sa* = "", std::string *sb* = "", std::string *sc* = "") const `[inline]`

Get a list of the values in this row.

The 's' parameters name the fields that will be added to the returned list. When inserted into a C++ stream, the delimiter 'd' will be placed between the items, and the manipulator 'm' will be inserted before each item.

7.49.3.18 value_list_b<Row, quote_type0> mysqlpp::Row::value_list (bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false) const `[inline]`

Get a list of the values in this row.

For each true parameter, the value in that position within the row is added to the returned list. When the list is inserted into a C++ stream, the a comma will be placed between the items, as a delimiter, and items will be quoted and escaped.

7.49.3.19 value_list_b<Row, quote_type0> mysqlpp::Row::value_list (const char * *d*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false) const `[inline]`

Get a list of the values in this row.

For each true parameter, the value in that position within the row is added to the returned list. When the list is inserted into a C++ stream, the delimiter 'd' will be placed between the items, and items will be quoted and escaped.

7.49.3.20 template<class Manip> value_list_b<Row, Manip> mysqlpp::Row::value_- list (const char * *d*, Manip *m*, bool *t0*, bool *t1* = false, bool *t2* = false, bool *t3* = false, bool *t4* = false, bool *t5* = false, bool *t6* = false, bool *t7* = false, bool *t8* = false, bool *t9* = false, bool *ta* = false, bool *tb* = false, bool *tc* = false) const `[inline]`

Get a list of the values in this row.

For each true parameter, the value in that position within the row is added to the returned list. When the list is inserted into a C++ stream, the delimiter 'd' will be placed between the items, and the manipulator 'm' used before each item.

7.49.3.21 value_list_b<Row, quote_type0> mysqlpp::Row::value_list (const std::vector< bool > & *vb*) const `[inline]`

Get a list of the values in this row.

Parameters:

vb for each true item in this list, add that value to the returned list; ignore the others

Items will be quoted and escaped when inserted into a C++ stream, and a comma will be used as a delimiter between the items.

7.49.3.22 template<class Manip> value_list_b<Row, Manip> mysqlpp::Row::value_list (const char * *d*, const std::vector< bool > & *vb*, Manip *m* = quote) const `[inline]`

Get a list of the values in this row.

Parameters:

d delimiter to use between values

vb for each true item in this list, add that value to the returned list; ignore the others

m manipulator to use when inserting values into a stream

7.49.3.23 template<class Manip> value_list_ba<Row, Manip> mysqlpp::Row::value_list (const char * *d* = ",", Manip *m* = quote) const `[inline]`

Get a list of the values in this row.

When inserted into a C++ stream, the delimiter 'd' will be used between the items, and the quoting and escaping rules will be set by the manipulator 'm' you choose.

Parameters:

d delimiter to use between values

m manipulator to use when inserting values into a stream

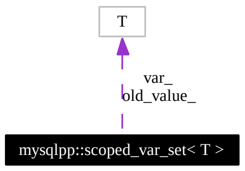
The documentation for this class was generated from the following files:

- **row.h**
- row.cpp

7.50 mysqlpp::scoped_var_set< T > Class Template Reference

Sets a variable to a given value temporarily.

Collaboration diagram for mysqlpp::scoped_var_set< T >:



Public Methods

- **scoped_var_set** (T &var, T new_value)

  Create object, saving old value, setting new value.

- **~scoped_var_set** ()

  Destroy object, restoring old value.

7.50.1 Detailed Description

template<class T> class mysqlpp::scoped_var_set< T >

Sets a variable to a given value temporarily.

Saves existing value, sets new value, and restores old value when the object is destroyed. Used to set a flag in an exception-safe manner.

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

- connection.cpp

7.51 mysqlpp::Set< Container > Class Template Reference

A special std::set derivative for holding MySQL data sets.

`#include <myset.h>`

Public Methods

- **Set** (const char *str)

  Create object from a comma-separated list of values.

- **Set** (const std::string &str)

  Create object from a comma-separated list of values.

- **Set** (const **ColData** &str)

  Create object from a comma-separated list of values.

- std::ostream & **out_stream** (std::ostream &s) const

  Insert this set's data into a C++ stream in comma-separated format.

- **operator std::string** ()

  Convert this set's data to a string containing comma-separated items.

7.51.1 Detailed Description

template<class Container = std::set< std::string>> class mysqlpp::Set< Container >

A special std::set derivative for holding MySQL data sets.

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

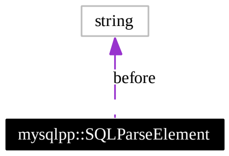
- **myset.h**

7.52 mysqlpp::SQLParseElement Struct Reference

Used within **Query** (p. 118) to hold elements for parameterized queries.

`#include <qparms.h>`

Collaboration diagram for mysqlpp::SQLParseElement:



Public Methods

- **SQLParseElement** (std::string b, char o, char n)

  Create object.

Public Attributes

- std::string **before**

  string inserted before the parameter

- char **option**

  the parameter option, or blank if none

- char **num**

  the parameter position to use

7.52.1 Detailed Description

Used within **Query** (p. 118) to hold elements for parameterized queries.

Each element has three parts:

The concept behind the **before** variable needs a little explaining. When a template query is parsed, each parameter is parsed into one of these **SQLParseElement** (p. 149) objects, but the non-parameter parts of the template also have to be stored somewhere. MySQL++ chooses to attach the text leading up to a parameter to that parameter. So, the **before** string is simply the text copied literally into the finished query before we insert a value for the parameter.

The **option** character is currently one of 'q', 'Q', 'r', 'R' or ' '. See the "Template Queries" chapter in the user manual for details.

The position value (**num**) allows a template query to have its parameters in a different order than in the **Query** (p. 118) method call. An example of how this can be helpful is in the "Template Queries" chapter of the user manual.

7.52.2 Constructor & Destructor Documentation

7.52.2.1 mysqlpp::SQLParseElement::SQLParseElement (std::string *b*, char *o*, char *n*) `[inline]`

Create object.

Parameters:

b the 'before' value

o the 'option' value

n the 'num' value

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

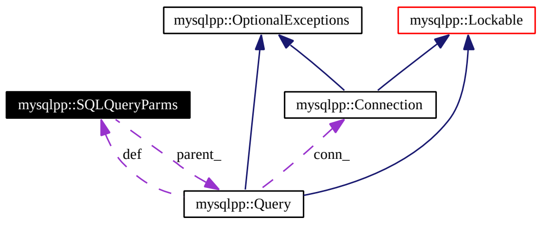
- **qparms.h**

7.53 mysqlpp::SQLQueryParms Class Reference

This class holds the parameter values for filling template queries.

`#include <qparms.h>`

Collaboration diagram for mysqlpp::SQLQueryParms:



Public Types

- typedef const **SQLString** & **ss**

  Abbreviation so some of the declarations below don't span many lines.

Public Methods

- **SQLQueryParms** ()

  Default constructor.

- **SQLQueryParms** (**Query** ∗p)

  Create object.

- bool **bound** ()

  Returns true if we are bound to a query object.

- void **clear** ()

  Clears the list.

- **SQLString** & **operator**[ ] (size_type n)

  Access element number n.

- const **SQLString** & **operator**[ ] (size_type n) const

  Access element number n.

- MYSQLPP_EXPORT **SQLString** & **operator**[ ] (const char ∗str)

  Access the value of the element with a key of str.

- MYSQLPP_EXPORT const **SQLString** & **operator**[ ] (const char ∗str) const

  Access the value of the element with a key of str.

- SQLQueryParms & **operator**<< (const **SQLString** &str)

  Adds an element to the list.

- SQLQueryParms & **operator+=** (const **SQLString** &str)

  Adds an element to the list.

- MYSQLPP_EXPORT SQLQueryParms **operator+** (const SQLQueryParms &other) const

  Build a composite of two parameter lists.

- void **set** (**ss** a, **ss** b, **ss** c, **ss** d, **ss** e, **ss** f, **ss** g, **ss** h, **ss** i, **ss** j, **ss** k, **ss** l)

  Set (p. 148) *the template query parameters.*

7.53.1 Detailed Description

This class holds the parameter values for filling template queries.

7.53.2 Constructor & Destructor Documentation

7.53.2.1 mysqlpp::SQLQueryParms::SQLQueryParms (Query * *p*) `[inline]`

Create object.

Parameters:

p pointer to the query object these parameters are tied to

7.53.3 Member Function Documentation

7.53.3.1 bool mysqlpp::SQLQueryParms::bound () `[inline]`

Returns true if we are bound to a query object.

Basically, this tells you which of the two ctors were called.

7.53.3.2 SQLQueryParms mysqlpp::SQLQueryParms::operator+ (const SQLQueryParms & *other*) const

Build a composite of two parameter lists.

If this list is (a, b) and `other` is (c, d, e, f, g), then the returned list will be (a, b, e, f, g). That is, all of this list's parameters are in the returned list, plus any from the other list that are in positions beyond what exist in this list.

If the two lists are the same length or this list is longer than the `other` list, a copy of this list is returned.

7.53.3.3 void mysqlpp::SQLQueryParms::set (ss *a*, ss *b*, ss *c*, ss *d*, ss *e*, ss *f*, ss *g*, ss *h*, ss *i*, ss *j*, ss *k*, ss *l*) `[inline]`

Set (p. 148) the template query parameters.

Sets parameter 0 to a, parameter 1 to b, etc. There are overloaded versions of this function that take anywhere from one to a dozen parameters.

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

- **qparms.h**
- qparms.cpp

7.54 mysqlpp::SQLString Class Reference

A specialized `std::string` that will convert from any valid MySQL type.

`#include <sql_string.h>`

Public Methods

- MYSQLPP_EXPORT **SQLString** ()
  Default constructor; empty string.
- MYSQLPP_EXPORT **SQLString** (const std::string &str)
  Create object as a copy of a C++ string.
- MYSQLPP_EXPORT **SQLString** (const char *str)
  Create object as a copy of a C string.
- MYSQLPP_EXPORT **SQLString** (char i)
  Create object as the string form of a `char` *value.*
- MYSQLPP_EXPORT **SQLString** (unsigned char i)
  Create object as the string form of an `unsigned char` *value.*
- MYSQLPP_EXPORT **SQLString** (short int i)
  Create object as the string form of a `short int` *value.*
- MYSQLPP_EXPORT **SQLString** (unsigned short int i)
  Create object as the string form of an `unsigned short int` *value.*
- MYSQLPP_EXPORT **SQLString** (int i)
  Create object as the string form of an `int` *value.*
- MYSQLPP_EXPORT **SQLString** (unsigned int i)
  Create object as the string form of an `unsigned int` *value.*
- MYSQLPP_EXPORT **SQLString** (longlong i)
  Create object as the string form of a `longlong` *value.*
- MYSQLPP_EXPORT **SQLString** (ulonglong i)
  Create object as the string form of an `unsigned longlong` *value.*
- MYSQLPP_EXPORT **SQLString** (float i)
  Create object as the string form of a `float` *value.*
- MYSQLPP_EXPORT **SQLString** (double i)
  Create object as the string form of a `double` *value.*
- SQLString & **operator=** (const char *str)
  Copy a C string into this object.

- SQLString & **operator=** (const std::string &str)

  Copy a C++ `string` *into this object.*

Public Attributes

- bool **is_string**

  If true, the object's string data is a copy of another string. Otherwise, it's the string form of an integral type.

- bool **dont_escape**

  If true, the string data doesn't need to be SQL-escaped when building a query.

- bool **processed**

  If true, one of the MySQL++ manipulators has processed the string data.

7.54.1 Detailed Description

A specialized `std::string` that will convert from any valid MySQL type.

7.54.2 Member Data Documentation

7.54.2.1 bool mysqlpp::SQLString::processed

If true, one of the MySQL++ manipulators has processed the string data.

"Processing" is escaping special SQL characters, and/or adding quotes. See the documentation for **manip.h** for details.

This flag is used by the template query mechanism, to prevent a string from being re-escaped or re-quoted each time that query is reused. The flag is reset by operator=, to force the new parameter value to be re-processed.

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

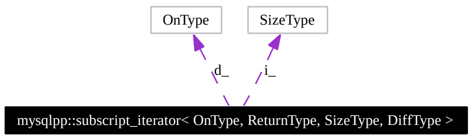
- **sql_string.h**
- sql_string.cpp

7.55 mysqlpp::subscript_iterator< OnType, ReturnType, SizeType, DiffType > Class Template Reference

Iterator that can be subscripted.

`#include <resiter.h>`

Collaboration diagram for mysqlpp::subscript_iterator< OnType, ReturnType, SizeType, DiffType >:


OnType
SizeType
d_
i_
mysqlpp::subscript_iterator< OnType, ReturnType, SizeType, DiffType >

Public Methods

- **subscript_iterator** ()

  Default constructor.

- **subscript_iterator** (OnType ∗what, SizeType pos)

  Create iterator given the container and a position within it.

- bool **operator==** (const subscript_iterator &j) const

  Return true if given iterator points to the same container and the same position within the container.

- bool **operator!=** (const subscript_iterator &j) const

  Return true if given iterator is different from this one, but points to the same container.

- bool **operator<** (const subscript_iterator &j) const

  Return true if the given iterator points to the same container as this one, and that this iterator's position is less than the given iterator's.

- bool **operator>** (const subscript_iterator &j) const

  Return true if the given iterator points to the same container as this one, and that this iterator's position is greater than the given iterator's.

- bool **operator<=** (const subscript_iterator &j) const

  Return true if the given iterator points to the same container as this one, and that this iterator's position is less than or equal to the given iterator's.

- bool **operator>=** (const subscript_iterator &j) const

  Return true if the given iterator points to the same container as this one, and that this iterator's position is greater than or equal to the given iterator's.

- ReturnType **operator** ∗ () const

  Dereference the iterator, returning a copy of the pointed-to element within the container.

- ReturnType **operator**[ ] (SizeType n) const

Return a copy of the element at the given position within the container.

- subscript_iterator & **operator++** ()

  Move the iterator to the next element, returning an iterator to that element.

- subscript_iterator **operator++** (int)

  Move the iterator to the next element, returning an iterator to the element we were pointing at before the change.

- subscript_iterator & **operator--** ()

  Move the iterator to the previous element, returning an iterator to that element.

- subscript_iterator **operator--** (int)

  Move the iterator to the previous element, returning an iterator to the element we were pointing at before the change.

- subscript_iterator & **operator+=** (SizeType n)

  Advance iterator position by `n`*.*

- subscript_iterator **operator+** (SizeType n) const

  Return an iterator `n` *positions beyond this one.*

- subscript_iterator & **operator-=** (SizeType n)

  Move iterator position back by `n`*.*

- subscript_iterator **operator-** (SizeType n) const

  Return an iterator `n` *positions before this one.*

- DiffType **operator-** (const subscript_iterator &j) const

  Return an iterator `n` *positions before this one.*

7.55.1 Detailed Description

template<class OnType, class ReturnType, class SizeType, class DiffType> class mysqlpp::subscript_iterator< OnType, ReturnType, SizeType, DiffType >

Iterator that can be subscripted.

This is the type of iterator used by the **const_subscript_container** (p. 64) template.

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

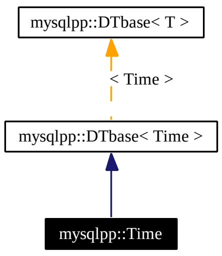
- **resiter.h**

7.56 mysqlpp::Time Struct Reference

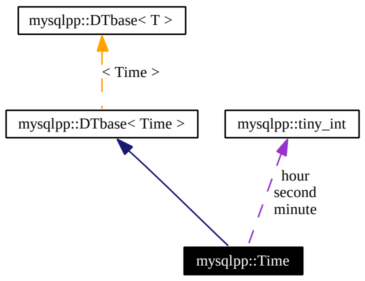
C++ form of MySQL's TIME type.

`#include <datetime.h>`

Inheritance diagram for mysqlpp::Time:



Collaboration diagram for mysqlpp::Time:



Public Methods

- **Time** ()

  Default constructor.

- **Time** (**tiny_int** h, **tiny_int** m, **tiny_int** s)

  Initialize object.

- **Time** (const Time &other)

  Initialize object as a copy of another **Time** (p. 158).

- **Time** (const **DateTime** &other)

  Initialize object from time part of date/time object.

- **Time** (**cchar** ∗str)

  Initialize object from a MySQL time string.

- **Time** (const **ColData** &str)

  Initialize object from a MySQL time string.

- **Time** (const std::string &str)

Initialize object from a MySQL time string.

- MYSQLPP_EXPORT **cchar** ∗ **convert** (**cchar** ∗)

  Parse a MySQL time string into this object.

- MYSQLPP_EXPORT short int **compare** (const Time &other) const

  Compare this time to another.

Public Attributes

- **tiny_int hour**

  hour, 0-23

- **tiny_int minute**

  minute, 0-59

- **tiny_int second**

  second, 0-59

7.56.1 Detailed Description

C++ form of MySQL's TIME type.

Objects of this class can be inserted into streams, and initialized from MySQL TIME strings.

7.56.2 Constructor & Destructor Documentation

7.56.2.1 mysqlpp::Time::Time (cchar ∗ *str*) `[inline]`

Initialize object from a MySQL time string.

String must be in the HH:MM:SS format. It doesn't have to be zero-padded.

7.56.2.2 mysqlpp::Time::Time (const ColData & *str*) `[inline]`

Initialize object from a MySQL time string.

See also:
Time(cchar∗) (p. 159)

7.56.2.3 mysqlpp::Time::Time (const std::string & *str*) `[inline]`

Initialize object from a MySQL time string.

See also:
Time(cchar∗) (p. 159)

7.56.3 Member Function Documentation

7.56.3.1 short int mysqlpp::Time::compare (const Time & *other*) const `[virtual]`

Compare this time to another.

Returns < 0 if this time is before the other, 0 of they are equal, and > 0 if this time is after the other.

Implements **mysqlpp::DTbase< Time >** (p. 81).

The documentation for this struct was generated from the following files:

- **datetime.h**
- datetime.cpp

7.57 mysqlpp::tiny_int Class Reference

Class for holding an SQL `tiny_int` object.

`#include <tiny_int.h>`

Public Methods

- **tiny_int** ()

  Default constructor.

- **tiny_int** (short int v)

  Create object from any integral type that can be converted to a `short int`*.*

- **operator short int** () const

  Return value as a `short int`*.*

- tiny_int & **operator=** (short int v)

  Assign a `short int` *to the object.*

- tiny_int & **operator+=** (short int v)

  Add another value to this object.

- tiny_int & **operator-=** (short int v)

  Subtract another value to this object.

- tiny_int & **operator *=** (short int v)

  Multiply this value by another object.

- tiny_int & **operator/=** (short int v)

  Divide this value by another object.

- tiny_int & **operator%=** (short int v)

  Divide this value by another object and store the remainder.

- tiny_int & **operator &=** (short int v)

  Bitwise AND this value by another value.

- tiny_int & **operator**|= (short int v)

  Bitwise OR this value by another value.

- tiny_int & **operator**^= (short int v)

  Bitwise XOR this value by another value.

- tiny_int & **operator**<<= (short int v)

  Shift this value left by `v` *positions.*

- tiny_int & **operator**>>= (short int v)

  Shift this value right by `v` *positions.*

- tiny_int & **operator++** ()

  Add one to this value and return that value.

- tiny_int & **operator--** ()

  Subtract one from this value and return that value.

- tiny_int **operator++** (int)

  Add one to this value and return the previous value.

- tiny_int **operator--** (int)

  Subtract one from this value and return the previous value.

- tiny_int **operator-** (const tiny_int &i) const

  Return this value minus `i`*.*

- tiny_int **operator+** (const tiny_int &i) const

  Return this value plus `i`*.*

- tiny_int **operator *** (const tiny_int &i) const

  Return this value multiplied by `i`*.*

- tiny_int **operator/** (const tiny_int &i) const

  Return this value divided by `i`*.*

- tiny_int **operator%** (const tiny_int &i) const

  Return the modulus of this value divided by `i`*.*

- tiny_int **operator|** (const tiny_int &i) const

  Return this value bitwise OR'd by `i`*.*

- tiny_int **operator &** (const tiny_int &i) const

  Return this value bitwise AND'd by `i`*.*

- tiny_int **operator^** (const tiny_int &i) const

  Return this value bitwise XOR'd by `i`*.*

- tiny_int **operator<<** (const tiny_int &i) const

  Return this value bitwise shifted left by `i`*.*

- tiny_int **operator>>** (const tiny_int &i) const

  Return this value bitwise shifted right by `i`*.*

7.57.1 Detailed Description

Class for holding an SQL `tiny_int` object.

This is required because the closest C++ type, `char`, doesn't have all the right semantics. For one, inserting a `char` into a stream won't give you a number.

Several of the functions below accept a `short int` argument, but internally we store the data as a `char`. Beware of integer overflows!

7.57.2 Constructor & Destructor Documentation

7.57.2.1 mysqlpp::tiny_int::tiny_int () `[inline]`

Default constructor.

Value is uninitialized

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

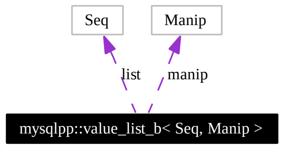
- **tiny_int.h**

7.58 mysqlpp::value_list_b< Seq, Manip > Struct Template Reference

Same as **value_list_ba** (p. 166), plus the option to have some elements of the list suppressed.

`#include <vallist.h>`

Collaboration diagram for mysqlpp::value_list_b< Seq, Manip >:



Public Methods

- **value_list_b** (const Seq &s, const std::vector< bool > &f, const char ∗d, Manip m)

  Create object.

Public Attributes

- const Seq ∗ **list**

  set of objects in the value list

- const std::vector< bool > **fields**

  delimiter to use between each value in the list when inserting it into a C++ stream

- const char ∗ **delem**

  delimiter to use between each value in the list when inserting it into a C++ stream

- Manip **manip**

  manipulator to use when inserting the list into a C++ stream

7.58.1 Detailed Description

template<class Seq, class Manip> struct mysqlpp::value_list_b< Seq, Manip >

Same as **value_list_ba** (p. 166), plus the option to have some elements of the list suppressed.

Imagine an object of this type contains the list (a, b, c), that the object's 'fields' list is (true, false, true), and that the object's delimiter is set to ":". When you insert that object into a C++ stream, you would get "a:c".

See **value_list_ba** (p. 166)'s documentation for more details.

7.58.2 Constructor & Destructor Documentation

7.58.2.1 template<class Seq, class Manip> mysqlpp::value_list_b< Seq, Manip >::value_list_b (const Seq & *s*, const std::vector< bool > & *f*, const char * *d*, Manip *m*) `[inline]`

Create object.

Parameters:

s set of objects in the value list

f for each true item in the list, the list item in that position will be inserted into a C++ stream

d what delimiter to use between each value in the list when inserting the list into a C++ stream

m manipulator to use when inserting the list into a C++ stream

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

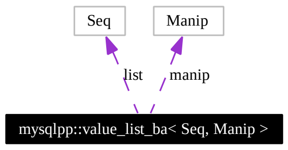
- **vallist.h**

7.59 mysqlpp::value_list_ba< Seq, Manip > Struct Template Reference

Holds a list of items, typically used to construct a SQL "value list".

`#include <vallist.h>`

Collaboration diagram for mysqlpp::value_list_ba< Seq, Manip >:



Public Methods

- **value_list_ba** (const Seq &s, const char *d, Manip m)

  Create object.

Public Attributes

- const Seq * **list**

  set of objects in the value list

- const char * **delem**

  delimiter to use between each value in the list when inserting it into a C++ stream

- Manip **manip**

  manipulator to use when inserting the list into a C++ stream

7.59.1 Detailed Description

template<class Seq, class Manip> struct mysqlpp::value_list_ba< Seq, Manip >

Holds a list of items, typically used to construct a SQL "value list".

The SQL INSERT statement has a VALUES clause; this class can be used to construct the list of items for that clause.

Imagine an object of this type contains the list (a, b, c), and that the object's delimiter symbol is set to ", ". When you insert that object into a C++ stream, you would get "a, b, c".

This class is never instantiated by hand. The **value_list()** (p. 34) functions build instances of this structure template to do their work. MySQL++'s SSQLS mechanism calls those functions when building SQL queries; you can call them yourself to do similar work. The "Harnessing SSQLS Internals" section of the user manual has some examples of this.

See also:

value_list_b (p. 164)

7.59.2 Constructor & Destructor Documentation

7.59.2.1 template<class Seq, class Manip> mysqlpp::value_list_ba< Seq, Manip >::value_list_ba (const Seq & *s*, const char * *d*, Manip *m*) `[inline]`

Create object.

Parameters:

s set of objects in the value list

d what delimiter to use between each value in the list when inserting the list into a C++ stream

m manipulator to use when inserting the list into a C++ stream

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

- **vallist.h**

Chapter 8

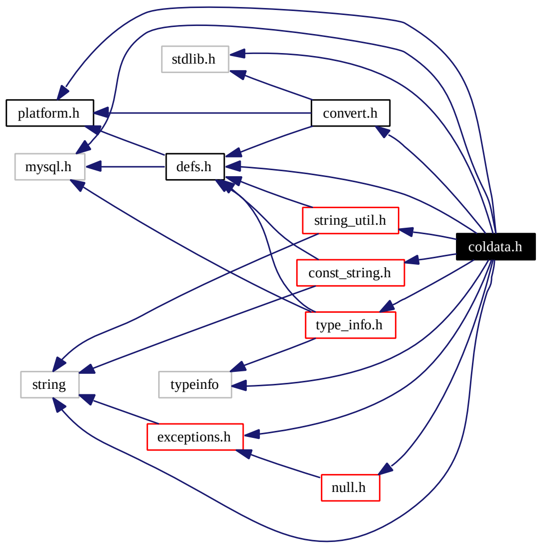
MySQL++ File Documentation

8.1 coldata.h File Reference

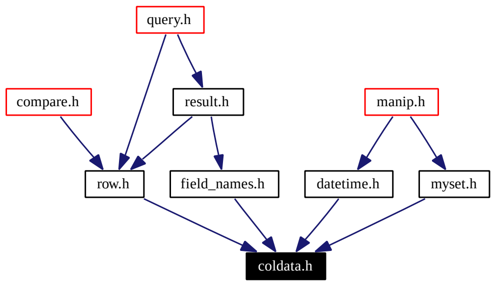
Declares classes for converting string data to any of the basic C types.

```
#include "platform.h"
#include "const_string.h"
#include "convert.h"
#include "defs.h"
#include "exceptions.h"
#include "null.h"
#include "string_util.h"
#include "type_info.h"
#include <mysql.h>
#include <typeinfo>
#include <string>
#include <stdlib.h>
```

Include dependency graph for coldata.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.1.1 Detailed Description

Declares classes for converting string data to any of the basic C types.

Roughly speaking, this defines classes that are the inverse of **mysqlpp::SQLString** (p. 154).

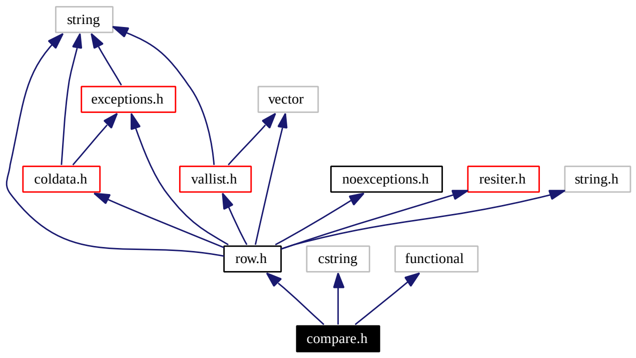
8.2 compare.h File Reference

`#include "row.h"`

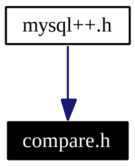
`#include <cstring>`

`#include <functional>`

Include dependency graph for compare.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.2.1 Detailed Description

Declares several function objects and templates for creating function objects for comparing various things. These are useful when using STL algorithms like std::find_if() on containers of data retreived from a database with MySQL++.

8.3 connection.h File Reference

Declares the Connection class.

`#include "platform.h"`

`#include "defs.h"`

`#include "lockable.h"`

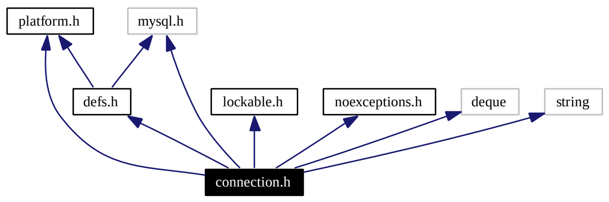
`#include "noexceptions.h"`

`#include <mysql.h>`

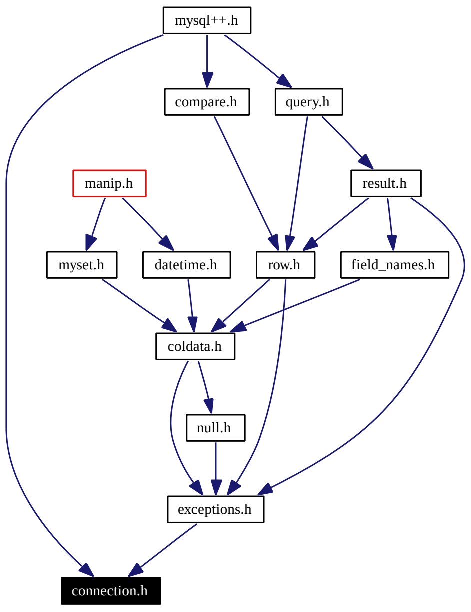
`#include <deque>`

`#include <string>`

Include dependency graph for connection.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.3.1 Detailed Description

Declares the Connection class.

Every program using MySQL++ must create a Connection object, which manages information about the connection to the MySQL database, and performs connection-related operations once the connection is up. Subordinate classes, such as Query and Row take their defaults as to whether exceptions are thrown when errors are encountered from the Connection object that created them, directly or indirectly.

8.4 const_string.h File Reference

Declares a wrapper for `const char*` which behaves in a way more useful to MySQL++.

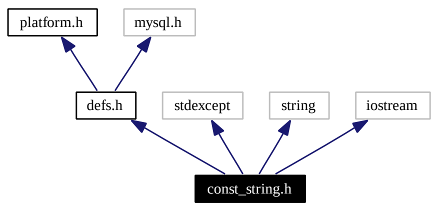
`#include "defs.h"`

`#include <stdexcept>`

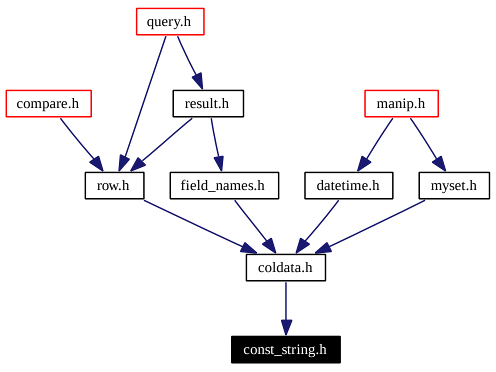
`#include <string>`

`#include <iostream>`

Include dependency graph for const_string.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.4.1 Detailed Description

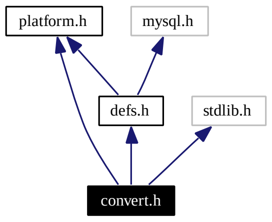
Declares a wrapper for `const char*` which behaves in a way more useful to MySQL++.

8.5 convert.h File Reference

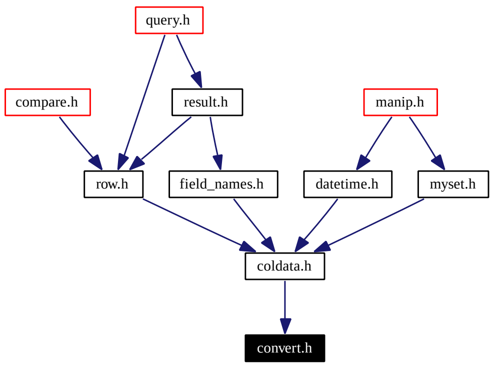
Declares various string-to-integer type conversion templates.

```
#include "platform.h"
#include "defs.h"
#include <stdlib.h>
```

Include dependency graph for convert.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.5.1 Detailed Description

Declares various string-to-integer type conversion templates.

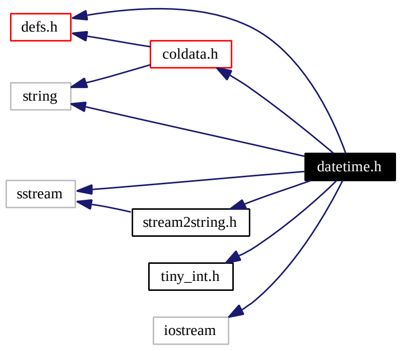
These templates are the mechanism used within **mysqlpp::ColData_Tmpl** (p. 46) for its string-to-*something* conversions.

8.6 datetime.h File Reference

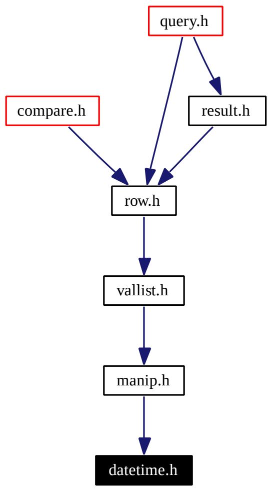
Declares classes to add MySQL-compatible date and time types to C++'s type system.

```
#include "defs.h"
#include "coldata.h"
#include "stream2string.h"
#include "tiny_int.h"
#include <string>
#include <sstream>
#include <iostream>
```

Include dependency graph for datetime.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.6.1 Detailed Description

Declares classes to add MySQL-compatible date and time types to C++'s type system.

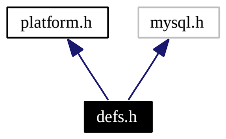
8.7 defs.h File Reference

Standard definitions used all across the library, particularly things that don't fit well anywhere else.

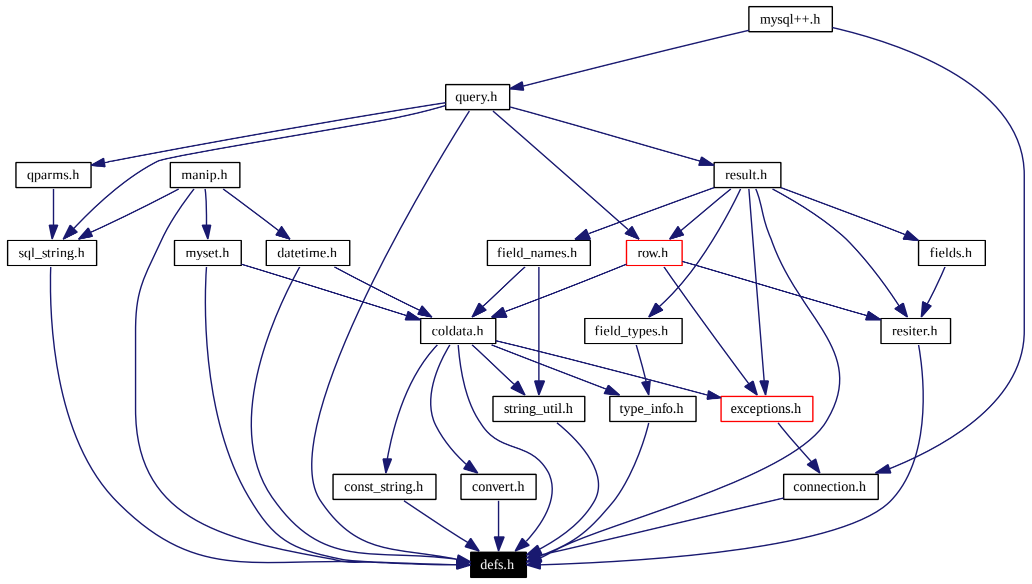
`#include "platform.h"`

`#include <mysql.h>`

Include dependency graph for defs.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.7.1 Detailed Description

Standard definitions used all across the library, particularly things that don't fit well anywhere else.

8.8 exceptions.h File Reference

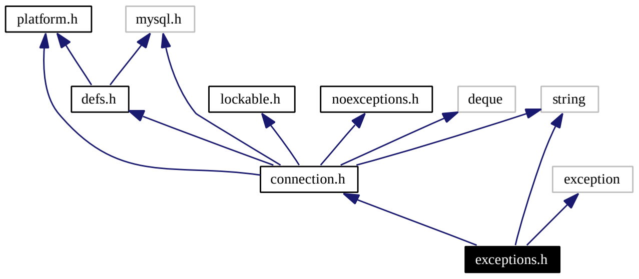
Declares the MySQL++-specific exception classes.

`#include "connection.h"`

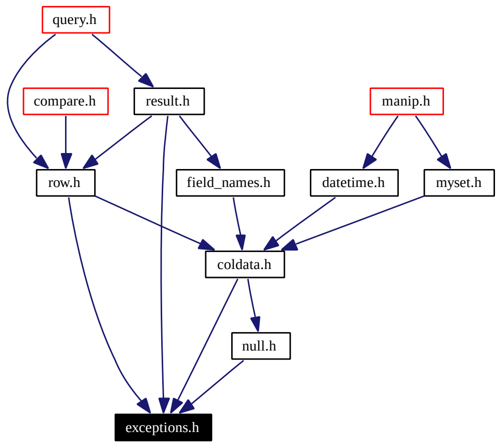
`#include <exception>`

`#include <string>`

Include dependency graph for exceptions.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.8.1 Detailed Description

Declares the MySQL++-specific exception classes.

When exceptions are enabled for a given **mysqlpp::OptionalExceptions** (p. 116) derivative, any of these exceptions can be thrown on error.

8.9 field_names.h File Reference

Declares a class to hold a list of field names.

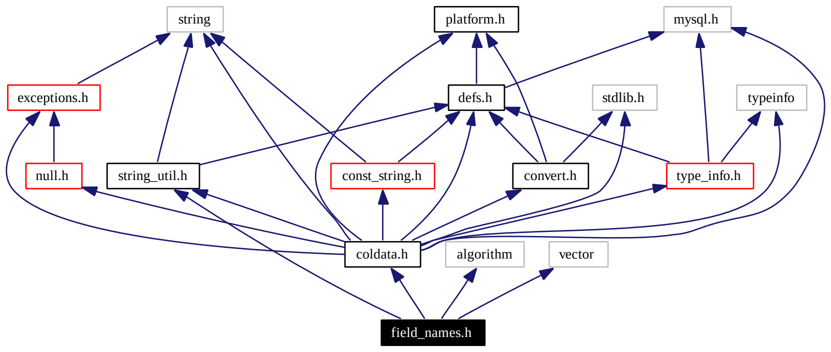
`#include "coldata.h"`

`#include "string_util.h"`

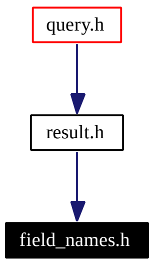
`#include <algorithm>`

`#include <vector>`

Include dependency graph for field_names.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.9.1 Detailed Description

Declares a class to hold a list of field names.

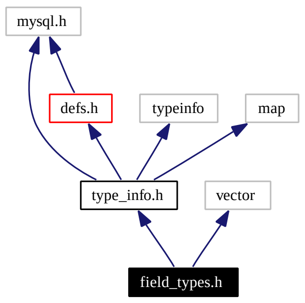
8.10 field_types.h File Reference

Declares a class to hold a list of SQL field type info.

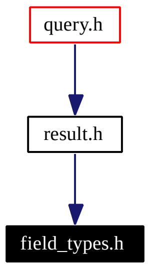
`#include "type_info.h"`

`#include <vector>`

Include dependency graph for field_types.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.10.1 Detailed Description

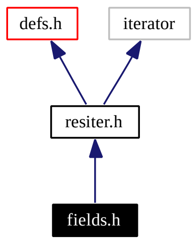
Declares a class to hold a list of SQL field type info.

8.11 fields.h File Reference

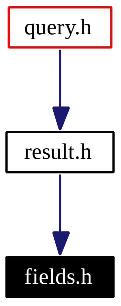
Declares a class for holding information about a set of fields.

`#include "resiter.h"`

Include dependency graph for fields.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

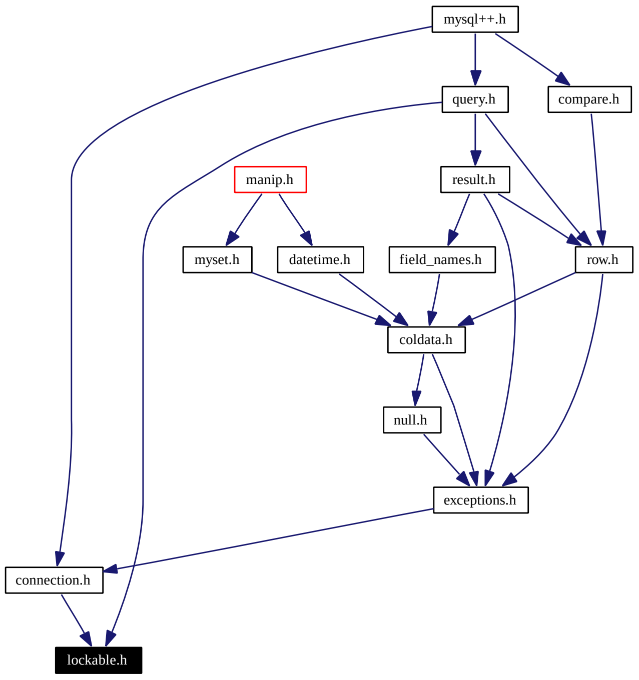
8.11.1 Detailed Description

Declares a class for holding information about a set of fields.

8.12 lockable.h File Reference

Declares interface that allows a class to declare itself as "lockable".

This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.12.1 Detailed Description

Declares interface that allows a class to declare itself as "lockable".

The meaning of a class being lockable is very much per-class specific in this version of MySQL++. In a future version, it will imply that operations that aren't normally thread-safe will use platform mutexes if MySQL++ is configured to support them. This is planned for a version beyond v2.0. (See the Wishlist for the plan.) In the meantime, do not depend on this mechanism for thread safety; you will have to serialize access to some resources yourself.

To effect this variability in what it means for an object to be "locked", Lockable is only an interface. It delegates the actual implementation to a subclass of the Lock interface, using the Bridge pattern. (See Gamma et al.)

8.13 manip.h File Reference

Declares `std::ostream` manipulators useful with SQL syntax.

`#include "defs.h"`

`#include "datetime.h"`

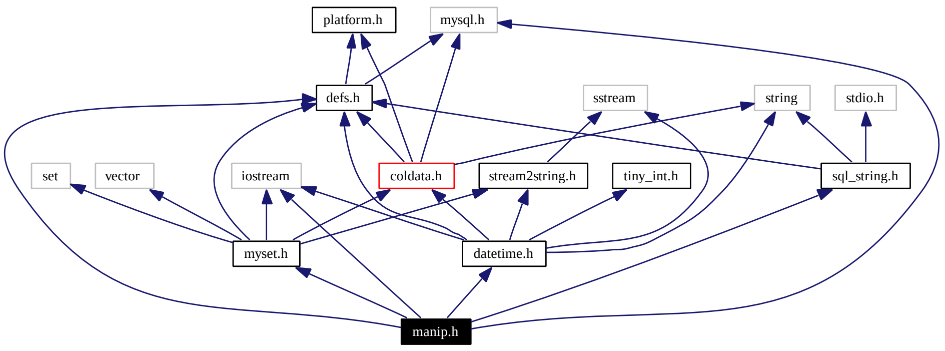
`#include "myset.h"`

`#include "sql_string.h"`

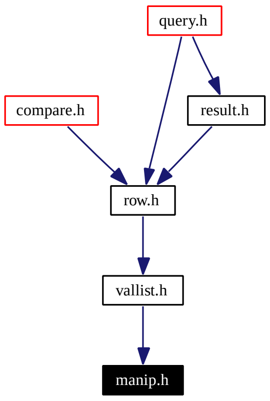
`#include <mysql.h>`

`#include <iostream>`

Include dependency graph for manip.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.13.1 Detailed Description

Declares `std::ostream` manipulators useful with SQL syntax.

These manipulators let you automatically quote elements or escape characters that are special in SQL when inserting them into an `std::ostream`. Since **mysqlpp::Query** (p. 118) is an ostream, these manipulators make it easier to build syntactically-correct SQL queries.

This file also includes `operator<<` definitions for ColData_Tmpl, one of the MySQL++ string-like classes. When inserting such items into a stream, they are automatically quoted and escaped as necessary unless the global variable dont_quote_auto is set to true. These operators are smart enough to turn this behavior off when the stream is `cout` or `cerr`, however, since quoting and escaping are surely not required in that instance.

8.14 myset.h File Reference

Declares templates for generating custom containers used elsewhere in the library.

`#include "defs.h"`

`#include "coldata.h"`

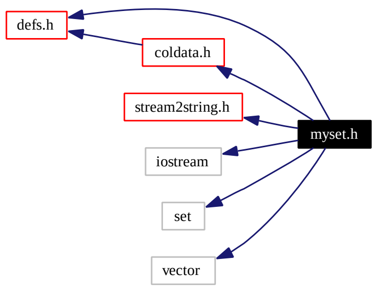
`#include "stream2string.h"`

`#include <iostream>`

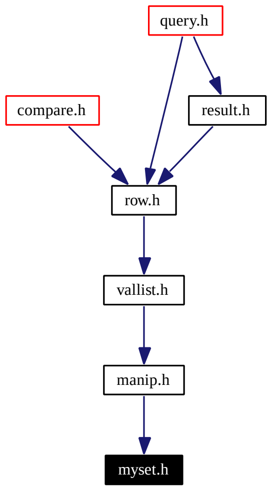
`#include <set>`

`#include <vector>`

Include dependency graph for myset.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.14.1 Detailed Description

Declares templates for generating custom containers used elsewhere in the library.

8.15 mysql++.h File Reference

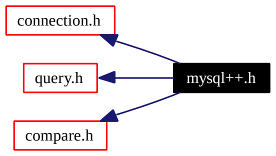
The main MySQL++ header file.

`#include "connection.h"`

`#include "query.h"`

`#include "compare.h"`

Include dependency graph for mysql++.h:



8.15.1 Detailed Description

The main MySQL++ header file.

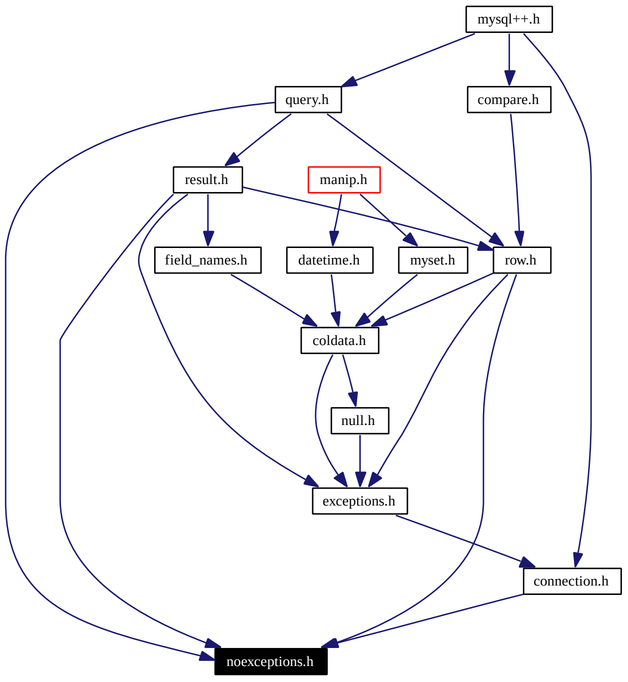
This file brings in all MySQL++ headers except for custom∗.h, which is a strictly optional feature of MySQL++.

There is no point in trying to optimize which headers you include, because every MySQL++ program needs **query.h**, and that includes all the other headers indirectly, except for custom∗.h and **compare.h**. (**query.h** doesn't bring in **compare.h** because it's not used within the library anywhere; its facilities are only for end-user programs.) The only possible optimization is to include **query.h** instead of **mysql++.h**, and this results only in trivial compile time reductions at the expense of code clarity.

8.16 noexceptions.h File Reference

Declares interface that allows exceptions to be optional.

This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.16.1 Detailed Description

Declares interface that allows exceptions to be optional.

A class may inherit from OptionalExceptions, which will add to it a mechanism by which a user can tell objects of that class to suppress exceptions. (They are enabled by default.) This module also declares a NoExceptions class, objects of which take a reference to any class derived from OptionalExceptions. The NoExceptions constructor calls the method that disables exceptions, and the destructor reverts them to the previous state. One uses the NoExceptions object within a scope to suppress exceptions in that block, without having to worry about reverting the setting when the block exits.

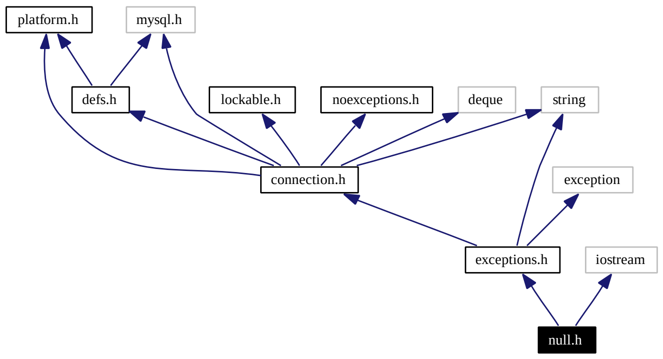
8.17 null.h File Reference

Declares classes that implement SQL "null" semantics within C++'s type system.

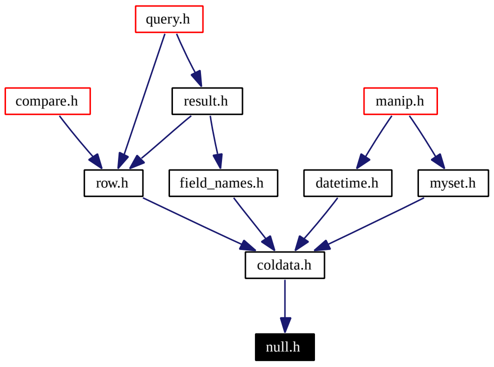
`#include "exceptions.h"`

`#include <iostream>`

Include dependency graph for null.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.17.1 Detailed Description

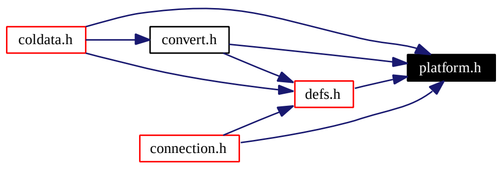
Declares classes that implement SQL "null" semantics within C++'s type system.

This is required because C++'s own NULL type is not semantically the same as SQL nulls.

8.18 platform.h File Reference

This file includes things that help the rest of MySQL++.

This graph shows which files directly or indirectly include this file:



8.18.1 Detailed Description

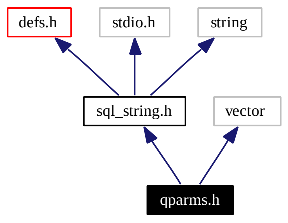
This file includes things that help the rest of MySQL++.

8.19 qparms.h File Reference

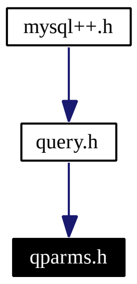
Declares the template query parameter-related stuff.

```
#include "sql_string.h"
#include <vector>
```

Include dependency graph for qparms.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.19.1 Detailed Description

Declares the template query parameter-related stuff.

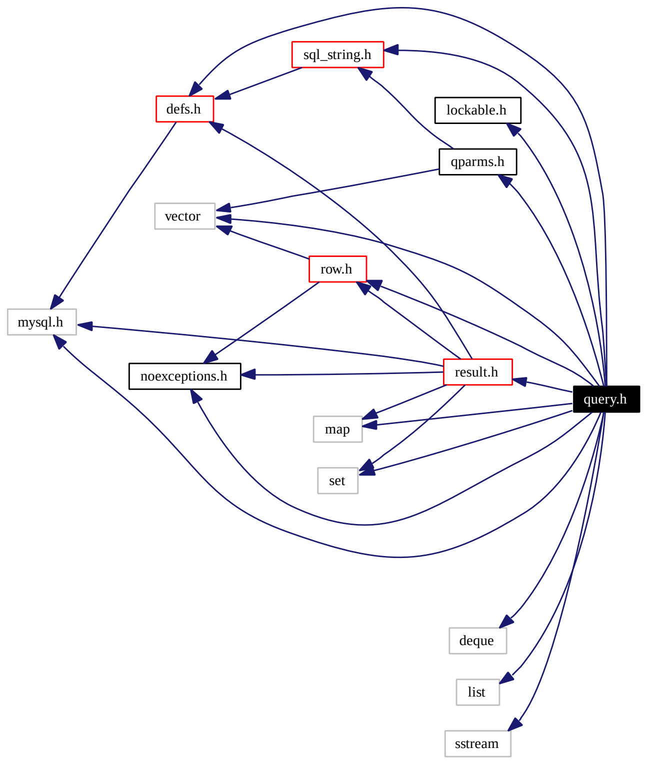
The classes defined in this file are used by class Query when it parses a template query: they hold information that it finds in the template, so it can assemble a SQL statement later on demand.

8.20 query.h File Reference

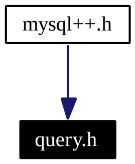
Defines a class for building and executing SQL queries.

```
#include "defs.h"
#include "lockable.h"
#include "noexceptions.h"
#include "qparms.h"
#include "result.h"
#include "row.h"
#include "sql_string.h"
#include <mysql.h>
#include <deque>
#include <list>
#include <map>
#include <set>
#include <sstream>
#include <vector>
```

Include dependency graph for query.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

Defines

- #define **mysql_query_define0**(RETURN, FUNC)

  Used to define many similar functions in class Query.

- #define **mysql_query_define1**(RETURN, FUNC)

  Used to define many similar member functions in class Query.

- #define **mysql_query_define2**(FUNC)

  Used to define many similar member functions in class Query.

8.20.1 Detailed Description

Defines a class for building and executing SQL queries.

8.20.2 Define Documentation

8.20.2.1 #define mysql_query_define0(RETURN, FUNC)

Value:

```
RETURN FUNC (ss a)\
    {return FUNC (parms() << a);}\
  RETURN FUNC (ss a, ss b)\
    {return FUNC (parms() << a << b);}\
  RETURN FUNC (ss a, ss b, ss c)\
    {return FUNC (parms() << a << b << c);}\
  RETURN FUNC (ss a, ss b, ss c, ss d)\
    {return FUNC (parms() << a << b << c << d);}\
  RETURN FUNC (ss a, ss b, ss c, ss d, ss e)\
    {return FUNC (parms() << a << b << c << d << e);} \
  RETURN FUNC (ss a, ss b, ss c, ss d, ss e, ss f)\
    {return FUNC (parms() << a << b << c << d << e << f);}\
  RETURN FUNC (ss a, ss b, ss c, ss d, ss e, ss f, ss g)\
    {return FUNC (parms() << a << b << c << d << e << f << g);}\
  RETURN FUNC (ss a, ss b, ss c, ss d, ss e, ss f, ss g, ss h)\
    {return FUNC (parms() << a << b << c << d << e << f << g << h);}\
  RETURN FUNC (ss a, ss b, ss c, ss d, ss e, ss f, ss g, ss h, ss i)\
    {return FUNC (parms() << a << b << c << d << e << f << g << h << i);}\
  RETURN FUNC (ss a,ss b,ss c,ss d,ss e,ss f,ss g,ss h,ss i,ss j)\
    {return FUNC (parms() <<a <<b <<c <<d <<e <<f <<g <<h <<i <<j);}\
  RETURN FUNC (ss a,ss b,ss c,ss d,ss e,ss f,ss g,ss h,ss i,ss j,ss k)\
    {return FUNC (parms() <<a <<b <<c <<d <<e <<f <<g <<h <<i <<j <<k);}\
  RETURN FUNC (ss a,ss b,ss c,ss d,ss e,ss f,ss g,ss h,ss i,ss j,ss k,ss l)\
    {return FUNC (parms() <<a <<b <<c <<d <<e <<f <<g <<h <<i <<j <<k <<l);}\
```

Used to define many similar functions in class Query.

8.20.2.2 #define mysql_query_define1(RETURN, FUNC)

Value:

```
MYSQLPP_EXPORT RETURN FUNC (parms &p);\
  mysql_query_define0(RETURN,FUNC) \
```

Used to define many similar member functions in class Query.

8.20.2.3 #define mysql_query_define2(FUNC)

Value:

```
template <class T1> void FUNC (T1 &con, const char* str); \
  template <class T1> void FUNC (T1 &con, parms &p, query_reset r = RESET_QUERY);\
  template <class T1> void FUNC (T1 &con, ss a)\
        {FUNC (con, parms() << a);}\
  template <class T1> void FUNC (T1 &con, ss a, ss b)\
        {FUNC (con, parms() << a << b);}\
  template <class T1> void FUNC (T1 &con, ss a, ss b, ss c)\
        {FUNC (con, parms() << a << b << c);}\
  template <class T1> void FUNC (T1 &con, ss a, ss b, ss c, ss d)\
        {FUNC (con, parms() << a << b << c << d);}\
  template <class T1> void FUNC (T1 &con, ss a, ss b, ss c, ss d, ss e)\
        {FUNC (con, parms() << a << b << c << d << e);} \
  template <class T1> void FUNC (T1 &con, ss a, ss b, ss c, ss d, ss e, ss f)\
        {FUNC (con, parms() << a << b << c << d << e << f);}\
  template <class T1> void FUNC (T1 &con,ss a,ss b,ss c,ss d,ss e,ss f,ss g)\
        {FUNC (con, parms() << a << b << c << d << e << f << g);}\
  template <class T1> void FUNC (T1 &con,ss a,ss b,ss c,ss d,ss e,ss f,ss g,ss h)\
        {FUNC (con, parms() << a << b << c << d << e << f << g << h);}\
  template <class T1> void FUNC (T1 &con, ss a, ss b, ss c, ss d, ss e, ss f, ss g, ss h, ss i)\
        {FUNC (con, parms() << a << b << c << d << e << f << g << h << i);}\
  template <class T1> void FUNC (T1 &con, ss a,ss b,ss c,ss d,ss e,ss f,ss g,ss h,ss i,ss j)\
        {FUNC (con, parms() <<a <<b <<c <<d <<e <<f <<g <<h <<i <<j);}\
  template <class T1> void FUNC (T1 &con, ss a,ss b,ss c,ss d,ss e,ss f,ss g,ss h,ss i,ss j,ss k)\
        {FUNC (con, parms() <<a <<b <<c <<d <<e <<f <<g <<h <<i <<j <<k);}\
  template <class T1> void FUNC (T1 &con, ss a,ss b,ss c,ss d,ss e,ss f,ss g,ss h,ss i,ss j,ss k,ss l)\
        {FUNC (con, parms() <<a <<b <<c <<d <<e <<f <<g <<h <<i <<j <<k <<l);}\
```

Used to define many similar member functions in class Query.

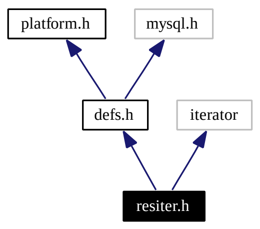
8.21 resiter.h File Reference

Declares templates for adapting existing classes to be iteratable random-access containers.

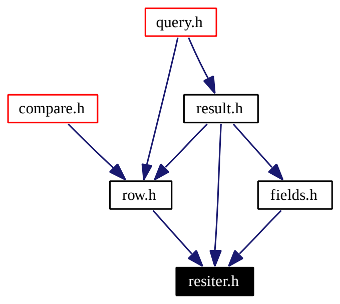
`#include "defs.h"`

`#include <iterator>`

Include dependency graph for resiter.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.21.1 Detailed Description

Declares templates for adapting existing classes to be iteratable random-access containers.

The file name seems to tie it to the **mysqlpp::Result** (p. 130) class, which is so adapted, but these templates are also used to adapt the **mysqlpp::Fields** (p. 91) and **mysqlpp::Row** (p. 138) classes.

8.22 result.h File Reference

Declares classes for holding SQL query result sets.

`#include "defs.h"`

`#include "exceptions.h"`

`#include "fields.h"`

`#include "field_names.h"`

`#include "field_types.h"`

`#include "noexceptions.h"`

`#include "resiter.h"`

`#include "row.h"`

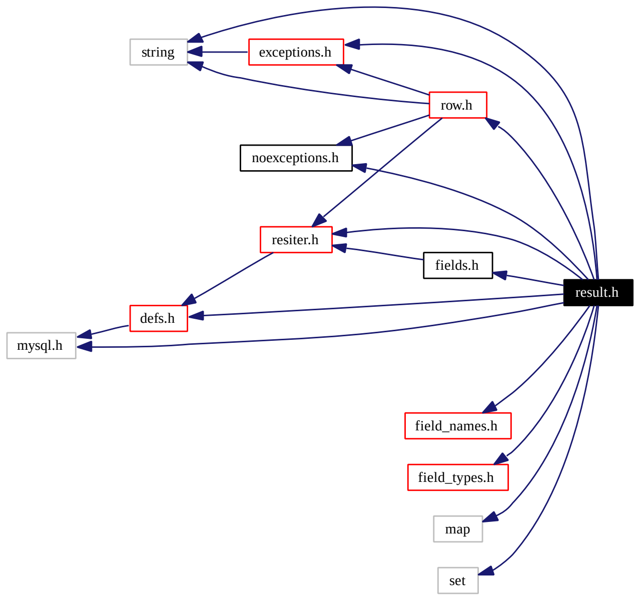
`#include <mysql.h>`

`#include <map>`

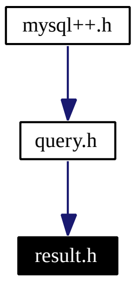
`#include <set>`

`#include <string>`

Include dependency graph for result.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.22.1 Detailed Description

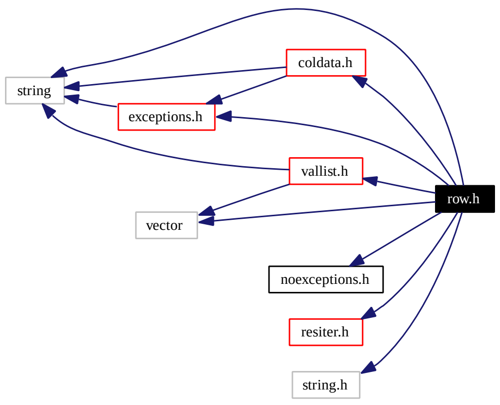
Declares classes for holding SQL query result sets.

8.23 row.h File Reference

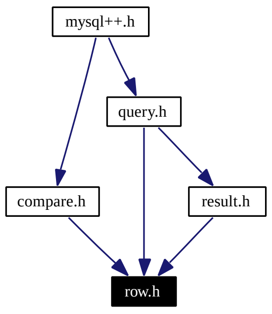
Declares the classes for holding row data from a result set.

```
#include "coldata.h"
#include "exceptions.h"
#include "noexceptions.h"
#include "resiter.h"
#include "vallist.h"
#include <vector>
#include <string>
#include <string.h>
```

Include dependency graph for row.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.23.1 Detailed Description

Declares the classes for holding row data from a result set.

8.24 sql_string.h File Reference

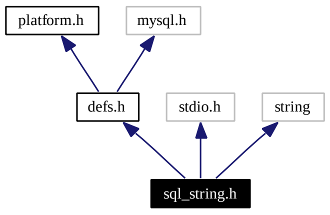
Declares an `std::string` derivative that adds some things needed within the library.

`#include "defs.h"`

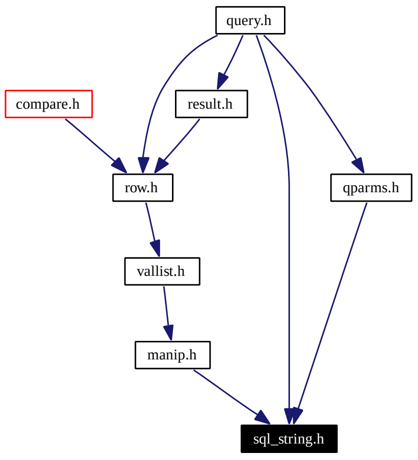
`#include <stdio.h>`

`#include <string>`

Include dependency graph for sql_string.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.24.1 Detailed Description

Declares an `std::string` derivative that adds some things needed within the library.

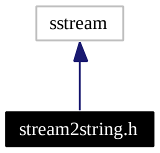
This class adds some flags needed by other parts of MySQL++, and it adds conversion functions from any primitive type. This helps in inserting these primitive types into the database, because we need everything in string form to build SQL queries.

8.25 stream2string.h File Reference

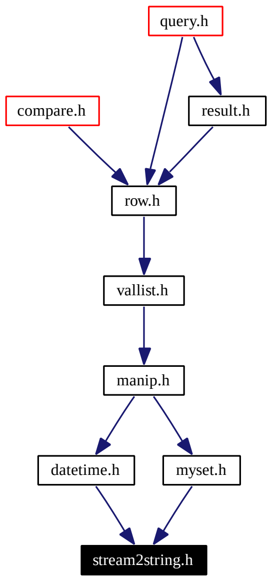
Declares an adapter that converts something that can be inserted into a C++ stream into a string type.

`#include <sstream>`

Include dependency graph for stream2string.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.25.1 Detailed Description

Declares an adapter that converts something that can be inserted into a C++ stream into a string type.

8.26 string_util.h File Reference

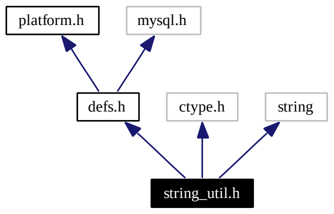
Declares string-handling utility functions used within the library.

`#include "defs.h"`

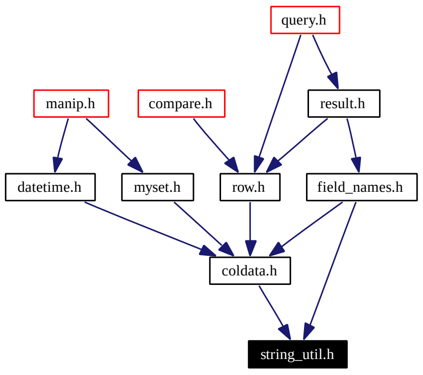
`#include <ctype.h>`

`#include <string>`

Include dependency graph for string_util.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

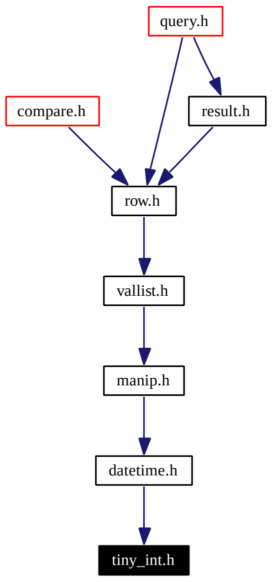
8.26.1 Detailed Description

Declares string-handling utility functions used within the library.

8.27 tiny_int.h File Reference

Declares class for holding a SQL tiny_int.

This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.27.1 Detailed Description

Declares class for holding a SQL tiny_int.

8.28 type_info.h File Reference

Declares classes that provide an interface between the SQL and C++ type systems.

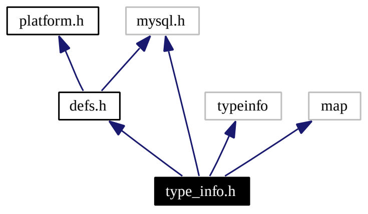
`#include "defs.h"`

`#include <mysql.h>`

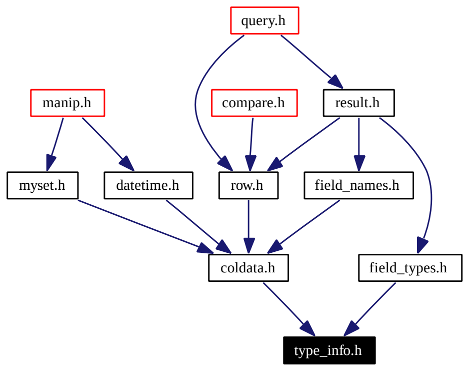
`#include <typeinfo>`

`#include <map>`

Include dependency graph for type_info.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.28.1 Detailed Description

Declares classes that provide an interface between the SQL and C++ type systems.

These classes are mostly used internal to the library.

8.29 vallist.h File Reference

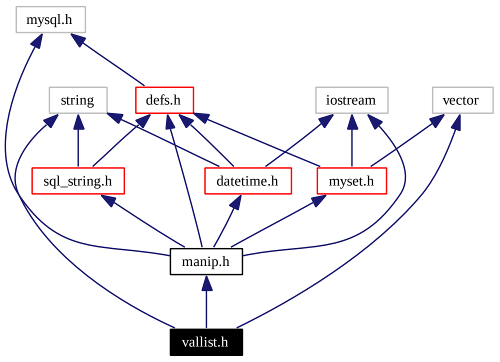
Declares templates for holding lists of values.

`#include "manip.h"`

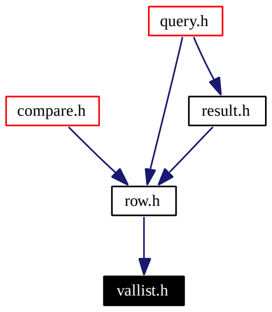
`#include <string>`

`#include <vector>`

Include dependency graph for vallist.h:



This graph shows which files directly or indirectly include this file:



Namespaces

- namespace **mysqlpp**

8.29.1 Detailed Description

Declares templates for holding lists of values.

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