general_ledger

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General Ledger.

General Ledger will be a fully-featured, multi-user, open-source general ledger system. The project is in the early stages of development.

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3.1 Class Hierarchy

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4.1 Class List

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

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Module Documentation

6.1 Database interaction module

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- class gldb::DBConnMySQL

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Functions

- DBConnImp ∗ gldb::get_connection (const std::string database, const std::string hostname, const std::string username, const std::string password)

  Creates and returns a pointer to a database implementation.
- std::string gldb::get_database_type ()

  Returns the name of the compiled-in database type.

6.1.1 Detailed Description

Module for interacting with the database.

6.1.2 Function Documentation

6.1.2.1 DBConnImp ∗ gldb::get_connection (const std::string *database*, const std::string *hostname*, const std::string *username*, const std::string *password*)

Creates and returns a pointer to a database implementation.

The implementation of this function is provided by the individual database implementations. One database implementation is compiled into the program at any one time. Multiple database systems are, or will be, supported, and not every system will possess the libraries and headers to compile every implementation. Therefore, only only implementation is compiled in at a time. The fact that each database implementation will implement this function to return the correct derived class prevents any attempt to compile unsupported library code. This would not be feasible if we were to simply provide each implementation as a subclass.

Parameters

database	The name of the database to which to connect.
hostname	The hostname of the computer running the database.
username	The username with which to log into the database.
password	The password with which to log into the database.

Returns

A pointer to the database implementation.

6.1.2.2 std::string gldb::get_database_type ( )

Returns the name of the compiled-in database type.

Returns

The name of the compiled-in database type.

6.2 Program configuration module

Classes

- class genleg::ConfigException

  Configuration module exception base class.
- class genleg::ConfigOptionNotSet

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- class genleg::ConfigCouldNotOpenFile

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- class genleg::ConfigBadConfigFile

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- class genleg::Config

  Configuration options class.

6.2.1 Detailed Description

Module for getting options from the command line and configuration files.

6.3 General purpose helpers.

Functions

- std::string & pgstring::trim_front (std::string &s)

  Trims leading whitespace from a string.
- std::string & pgstring::trim_back (std::string &s)

  Trims trailing whitespace from a string.
- std::string & pgstring::trim (std::string &s)

  Trims leading and trailing whitespace from a string.
- std::vector< std::string > pgstring::split (const std::string &s, const char delim)

  Splits a delimited string into tokens.

6.3.1 Detailed Description

General purpose helper classes and functions.

6.3.2 Function Documentation

6.3.2.1 std::vector< std::string > pgstring::split (const std::string & *s*, const char *delim*)

Splits a delimited string into tokens.

Parameters

s	The string to split.
delim	The delimiter character on which to split.

Returns

A vector of tokens.

6.3.2.2 std::string & pgstring::trim (std::string & *s*)

Trims leading and trailing whitespace from a string.

Parameters

s	The string to trim.

Returns

The trimmed string.

6.3.2.3 std::string & pgstring::trim_back (std::string & *s*)

Trims trailing whitespace from a string.

Parameters

s	The string to trim.

Returns

The trimmed string.

6.3.2.4 std::string & pgstring::trim_front (std::string & *s*)

Trims leading whitespace from a string.

Parameters

s	The string to trim.

Returns

The trimmed string.

6.4 Reporting program.

Functions

- static void set_configuration (genleg::Config &config, int argc, char ∗argv[])

  Sets program configuration options.
- static void print_usage_message ()

  Prints a program usage message.
- static void print_version_message ()

  Prints a program version message.
- static void print_help_message ()

  Prints a program help message.
- static std::string login (void)

  Gets a password from the terminal.
- int main (int argc, char ∗argv[])

  Main function.

Variables

- static const char ∗ progname = "gl_report"

  Static variable for program name.

6.4.1 Detailed Description

Administrative reporting program.

6.4.2 Function Documentation

6.4.2.1 static std::string login (void) [static]

Gets a password from the terminal.

Returns

The password.

6.4.2.2 int main (int *argc,* char ∗ *argv[]*)

Main function.

Parameters

argc	Number of command line arguments.
argv	Command line arguments.

Returns

Exit status code.

6.4.2.3 static void set_configuration (genleg::Config & *config,* int *argc,* char * *argv[]*) [static]

Sets program configuration options.

Parameters

config	Reference to a Config object.
argc	`argc` passed to `main()`.
argv	`argv` passed to `main()`.

Chapter 7

Class Documentation

7.1 genleg::Config Class Reference

Configuration options class.

```
#include <config.h>
```

Public Member Functions

- Config ()
- ∼Config ()
- void add_cmdline_option (const std::string option, const enum Argument arg)

  Adds a supported command line option.
- void populate_from_cmdline (const int argc, char ∗const ∗argv)

  Populates options from the command line.
- void populate_from_file (const std::string filename)

  Populates options from a configuration file.
- bool is_set (const std::string option) const

  Checks is an option is set.
- const std::string & operator[] (const std::string &option) const

  operator[] overload.

Private Attributes

- std::map< std::string,
  std::string > m_opts_set
- std::list< std::pair
  < std::string, enum Argument > > m_opts_supp

7.1.1 Detailed Description

Configuration options class.

7.1.2 Constructor & Destructor Documentation

7.1.2.1 Config::Config ( )

Constructor

7.1.2.2 Config::∼Config ( )

Destructor

7.1.3 Member Function Documentation

7.1.3.1 void Config::add_cmdline_option (const std::string *option*, const enum Argument *arg*)

Adds a supported command line option.

Parameters

option	The name of the option.
arg	The argument specification for the option.

7.1.3.2 bool Config::is_set (const std::string *option*) const

Checks is an option is set.

Parameters

option	The name of the option to check.

Returns

`true` if the option has been set, `false` if it has not.

7.1.3.3 const std::string & Config::operator[] (const std::string & *option*) const

operator[] overload.

Retrieves the value of a set option.

Parameters

option	The name of the option.

Returns

The value of the option.

Exceptions

ConfigOptionNotSet	If the named option has not been set.

7.1.3.4 void Config::populate_from_cmdline (const int *argc*, char ∗const ∗ *argv*)

Populates options from the command line.

Parameters

argc	`argc` supplied to `main()`.
argv	`argv` supplied to `main()`.

Exceptions

ConfigBadOption	If an unsupported option is specified, or if a required argument is missing, or if an unexpected argument is found.

7.1.3.5 void Config::populate_from_file (const std::string *filename*)

Populates options from a configuration file.

Parameters

filename	The name of the configuration file.

Exceptions

ConfigCouldNotOpenFile	If the configuration file cannot be opened.
ConfigBadConfigFile	If the configuration file is badly formed.

7.1.4 Member Data Documentation

7.1.4.1 std::map<std::string, std::string> genleg::Config::m_opts_set [private]

Map of options which have been set

7.1.4.2 std::list<std::pair<std::string, enum Argument> > genleg::Config::m_opts_supp [private]

List of options which are supported

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

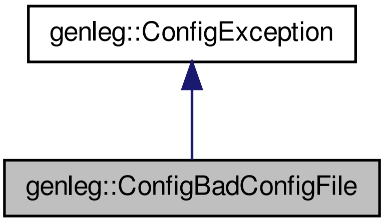
- lib/config/config.h
- lib/config/config.cpp
- lib/config/config_getopt.cpp

7.2 genleg::ConfigBadConfigFile Class Reference

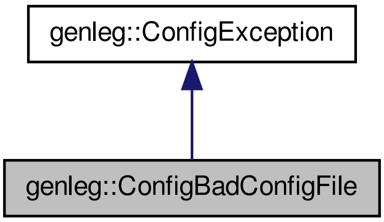
Exception class for badly formed configuration file.

```
#include <config.h>
```

Inheritance diagram for genleg::ConfigBadConfigFile:



Collaboration diagram for genleg::ConfigBadConfigFile:



7.2.1 Detailed Description

Exception class for badly formed configuration file.

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

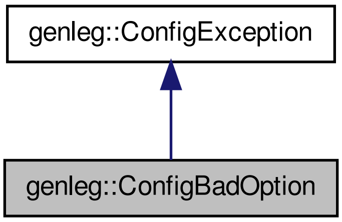
- lib/config/config.h

7.3 genleg::ConfigBadOption Class Reference

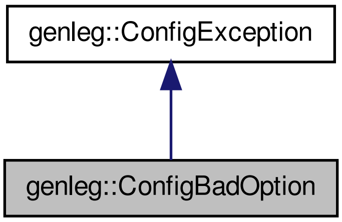
Exception class for bad provided option.

```
#include <config.h>
```

Inheritance diagram for genleg::ConfigBadOption:



Collaboration diagram for genleg::ConfigBadOption:



7.3.1 Detailed Description

Exception class for bad provided option.

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

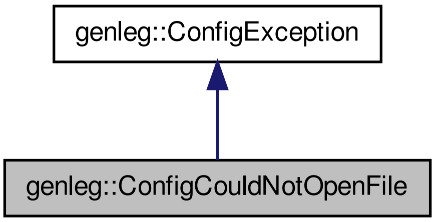
- lib/config/config.h

7.4 genleg::ConfigCouldNotOpenFile Class Reference

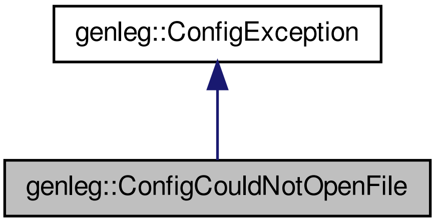
Exception class for when conf file cannot be opened.

```
#include <config.h>
```

Inheritance diagram for genleg::ConfigCouldNotOpenFile:



Collaboration diagram for genleg::ConfigCouldNotOpenFile:



7.4.1 Detailed Description

Exception class for when conf file cannot be opened.

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

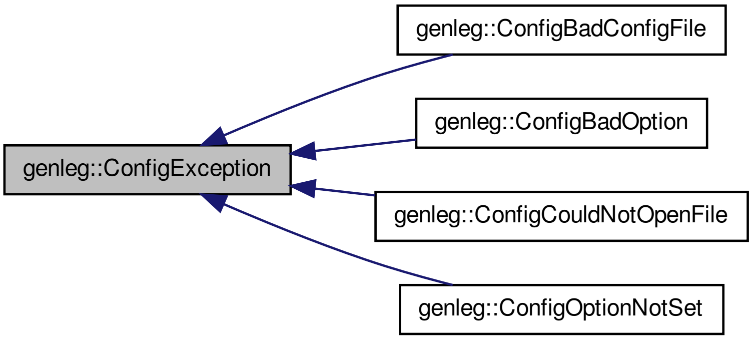
- lib/config/config.h

7.5 genleg::ConfigException Class Reference

Configuration module exception base class.

```
#include <config.h>
```

Inheritance diagram for genleg::ConfigException:


genleg::ConfigBadConfigFile
genleg::ConfigBadOption
genleg::ConfigException
genleg::ConfigCouldNotOpenFile
genleg::ConfigOptionNotSet

7.5.1 Detailed Description

Configuration module exception base class.

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

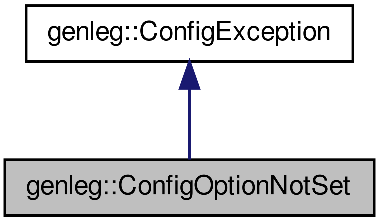
- lib/config/config.h

7.6 genleg::ConfigOptionNotSet Class Reference

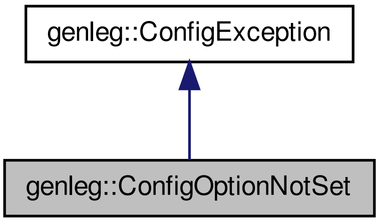
Exception class for option not set.

`#include <config.h>`

Inheritance diagram for genleg::ConfigOptionNotSet:



Collaboration diagram for genleg::ConfigOptionNotSet:



7.6.1 Detailed Description

Exception class for option not set.

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

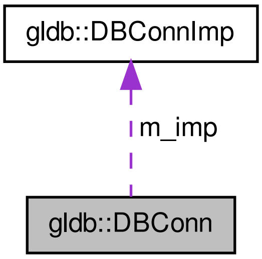
- lib/config/config.h

7.7 gldb::DBConn Class Reference

Database connection class.

`#include <dbconn.h>`

Collaboration diagram for gldb::DBConn:



Public Member Functions

- DBConn (DBConnImp ∗imp)

  Constructor.
- ∼DBConn ()

  Destructor..

- Table select (std::string query)

  Runs an SQL SELECT query.
- DBConn (const DBConn &)
- DBConn & operator= (const DBConn &)

Private Attributes

- DBConnImp ∗ m_imp

7.7.1 Detailed Description

Database connection class.

7.7.2 Constructor & Destructor Documentation

7.7.2.1 DBConn::DBConn (**DBConnImp** ∗ *imp*) [explicit]

Constructor.

Parameters

imp	Pointer to database implementation object.

7.7.2.2 gldb::DBConn::DBConn (const **DBConn** &)

Deleted copy constructor

7.7.3 Member Function Documentation

7.7.3.1 **DBConn**& gldb::DBConn::operator= (const **DBConn** &)

Deleted assignment operator

7.7.3.2 **Table** DBConn::select (std::string *query*)

Runs an SQL SELECT query.

Parameters

query	The query.

Returns

A Table object containing the results.

7.7.4 Member Data Documentation

7.7.4.1 **DBConnImp**∗ gldb::DBConn::m_imp [private]

Pointer to database implementation object.

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

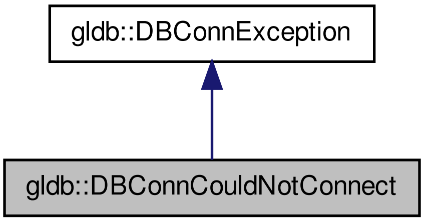
- lib/database/dbconn.h
- lib/database/dbconn.cpp

7.8 gldb::DBConnCouldNotConnect Class Reference

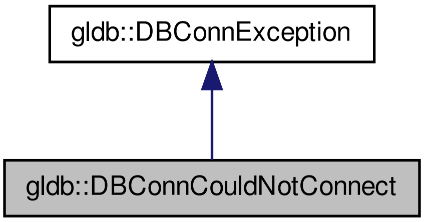
Could not connect to database exception class.

`#include <dbconn.h>`

Inheritance diagram for gldb::DBConnCouldNotConnect:



Collaboration diagram for gldb::DBConnCouldNotConnect:



Public Member Functions

- DBConnCouldNotConnect (const std::string &msg)

    Constructor.

7.8.1 Detailed Description

Could not connect to database exception class.

7.8.2 Constructor & Destructor Documentation

7.8.2.1 gldb::DBConnCouldNotConnect::DBConnCouldNotConnect (const std::string & *msg*) [inline], [explicit]

Constructor.

Parameters

msg	Database error message

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

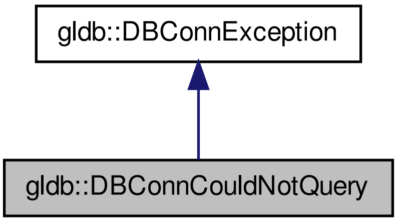
- lib/database/dbconn.h

7.9 gldb::DBConnCouldNotQuery Class Reference

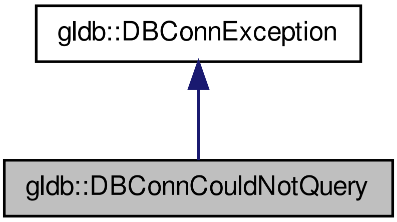
Could not execute database query exception class.

`#include <dbconn.h>`

Inheritance diagram for gldb::DBConnCouldNotQuery:



Collaboration diagram for gldb::DBConnCouldNotQuery:



Public Member Functions

- DBConnCouldNotQuery (const std::string &msg)
  Constructor.

7.9.1 Detailed Description

Could not execute database query exception class.

7.9.2 Constructor & Destructor Documentation

7.9.2.1 gldb::DBConnCouldNotQuery::DBConnCouldNotQuery (const std::string & *msg*) [inline], [explicit]

Constructor.

Parameters

msg	Database error message

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

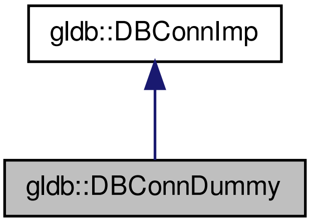
- lib/database/dbconn.h

7.10 gldb::DBConnDummy Class Reference

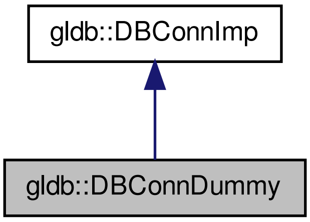
Dummy database implementation class.

`#include <dbconn_dummy_imp.h>`

Inheritance diagram for gldb::DBConnDummy:



Collaboration diagram for gldb::DBConnDummy:



Public Member Functions

- DBConnDummy (const std::string database, const std::string hostname, const std::string username, const std::string password)

  Constructor.
- DBConnDummy (const DBConnDummy &)
- virtual ∼DBConnDummy ()
- DBConnDummy & operator= (const DBConnDummy &)
- Table select (std::string query)

  Fakes running of an SQL SELECT query.

7.10.1 Detailed Description

Dummy database implementation class.

7.10.2 Constructor & Destructor Documentation

7.10.2.1 DBConnDummy::DBConnDummy (const std::string *database,* const std::string *hostname,* const std::string *username,* const std::string *password*)

Constructor.

Parameters

database	The name of the Dummy database.
hostname	The hostname of the server.
username	The username to log into the database.
password	The password to log into the database.

7.10.2.2 gldb::DBConnDummy::DBConnDummy (const DBConnDummy &)

Deleted copy constructor

7.10.2.3 DBConnDummy::∼DBConnDummy ( ) [virtual]

Destructor

7.10.3 Member Function Documentation

7.10.3.1 DBConnDummy& gldb::DBConnDummy::operator= (const DBConnDummy &)

Deleted assignment operator

7.10.3.2 Table DBConnDummy::select (std::string *query*) [virtual]

Fakes running of an SQL SELECT query.

Parameters

query	Any query.

Returns

A Table object containing dummy results.

Implements gldb::DBConnImp.

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

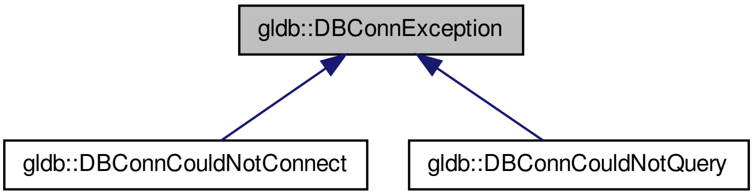
- lib/database_imp/dummy/dbconn_dummy_imp.h
- lib/database_imp/dummy/dbconn_dummy_imp.cpp

7.11 gldb::DBConnException Class Reference

Base database connection exception class.

```
#include <dbconn.h>
```

Inheritance diagram for gldb::DBConnException:



Public Member Functions

- DBConnException (const std::string &msg)
  Constructor.

7.11.1 Detailed Description

Base database connection exception class.

7.11.2 Constructor & Destructor Documentation

7.11.2.1 gldb::DBConnException::DBConnException (const std::string & *msg*) `[inline], [explicit]`

Constructor.

Parameters

msg	Database error message

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

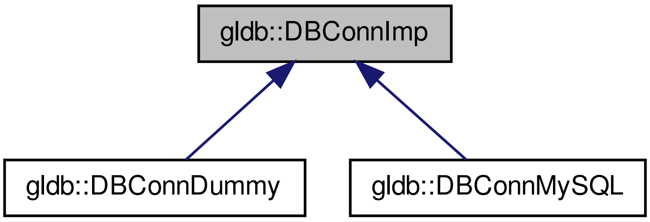
- lib/database/dbconn.h

7.12 gldb::DBConnImp Class Reference

Abstract database implementation base class.

`#include <dbconnimp.h>`

Inheritance diagram for gldb::DBConnImp:



Public Member Functions

- DBConnImp ()
- virtual ∼DBConnImp ()
- virtual Table select (std::string query)=0

  Runs an SQL SELECT query.

7.12.1 Detailed Description

Abstract database implementation base class.

7.12.2 Constructor & Destructor Documentation

7.12.2.1 gldb::DBConnImp::DBConnImp ( ) `[inline]`

Constructor

7.12.2.2 virtual gldb::DBConnImp::∼DBConnImp ( ) `[inline]`, `[virtual]`

Destructor

7.12.3 Member Function Documentation

7.12.3.1 virtual Table gldb::DBConnImp::select (std::string *query*) `[pure virtual]`

Runs an SQL SELECT query.

Parameters

query	The query.

Returns

A Table object containing the results.

Implemented in gldb::DBConnMySQL, and gldb::DBConnDummy.

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

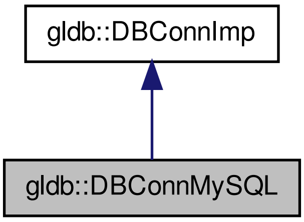
- lib/database/dbconnimp.h

7.13 gldb::DBConnMySQL Class Reference

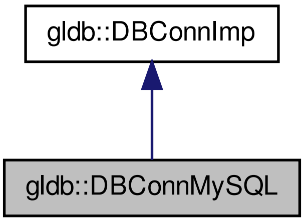
MySQL database implementation class.

```
#include <dbconn_mysql_imp.h>
```

Inheritance diagram for gldb::DBConnMySQL:



Collaboration diagram for gldb::DBConnMySQL:



Public Member Functions

- DBConnMySQL (const std::string database, const std::string hostname, const std::string username, const std::string password)

  Constructor.
- DBConnMySQL (const DBConnMySQL &)

- virtual ∼DBConnMySQL ()
- DBConnMySQL & operator= (const DBConnMySQL &)
- Table select (std::string query)

  Runs an SQL SELECT query.

Private Attributes

- MYSQL ∗ m_conn

7.13.1 Detailed Description

MySQL database implementation class.

7.13.2 Constructor & Destructor Documentation

7.13.2.1 DBConnMySQL::DBConnMySQL (const std::string *database*, const std::string *hostname*, const std::string *username*, const std::string *password*)

Constructor.

Parameters

database	The name of the MySQL database.
hostname	The hostname of the server.
username	The username to log into the database.
password	The password to log into the database.

Exceptions

DBConnCouldNotConnect	If could not connect to database.

7.13.2.2 gldb::DBConnMySQL::DBConnMySQL (const DBConnMySQL &)

Deleted copy constructor

7.13.2.3 DBConnMySQL::∼DBConnMySQL ( ) [virtual]

Destructor

7.13.3 Member Function Documentation

7.13.3.1 DBConnMySQL& gldb::DBConnMySQL::operator= (const DBConnMySQL &)

Deleted assignment operator

7.13.3.2 Table DBConnMySQL::select (std::string *query*) [virtual]

Runs an SQL SELECT query.

Parameters

query	The query.

Returns

A Table object containing the results.

Exceptions

DBConnCouldNotQuery	If could not successfully execute query.

Implements gldb::DBConnImp.

7.13.4 Member Data Documentation

7.13.4.1 MYSQL∗ gldb::DBConnMySQL::m_conn [private]

The initialized MySQL handle.

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

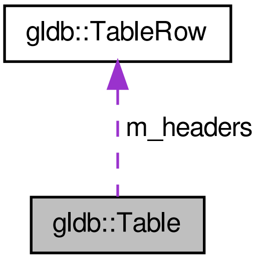
- lib/database_imp/mysql/dbconn_mysql_imp.h
- lib/database_imp/mysql/dbconn_mysql_imp.cpp

7.14 gldb::Table Class Reference

Database table class.

`#include <table.h>`

Collaboration diagram for gldb::Table:



Public Member Functions

- Table (const TableRow &headers)

  Constructor.
- ∼Table ()
- size_t num_fields () const

Returns the number of fields in each row.
- size_t num_records () const

    Returns the number of record in the table.
- const TableRow & get_headers () const

    Returns the field names.
- const TableRow & operator[] (const size_t idx) const

    Overloaded index operator.
- void append_record (const TableRow &new_record)

    Appends a record to the table.

Private Attributes

- TableRow m_headers
- std::vector< TableRow > m_records

7.14.1 Detailed Description

Database table class.

7.14.2 Constructor & Destructor Documentation

7.14.2.1 Table::Table (const TableRow & *headers*) [explicit]

Constructor.

Parameters

headers	Table row containing field names.

7.14.2.2 Table::∼Table ( )

Destructor

7.14.3 Member Function Documentation

7.14.3.1 void Table::append_record (const TableRow & *new_record*)

Appends a record to the table.

Parameters

new_record	The record to append.

7.14.3.2 const TableRow & Table::get_headers ( ) const

Returns the field names.

Returns

The field names.

7.14.3.3 size_t Table::num_fields ( ) const

Returns the number of fields in each row.

Returns

The number of fields in each row.

7.14.3.4 size_t Table::num_records ( ) const

Returns the number of record in the table.

Returns

The number of records in the table.

7.14.3.5 const **TableRow** & Table::operator[] (const size_t *idx*) const

Overloaded index operator.

Parameters

idx	The zero-based index of the record.

Returns

The selected record.

7.14.4 Member Data Documentation

7.14.4.1 **TableRow** gldb::Table::m_headers [private]

The names of the fields

7.14.4.2 std::vector<**TableRow**> gldb::Table::m_records [private]

A vector of the records

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

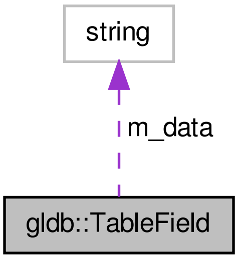
- lib/database/table.h
- lib/database/table.cpp

7.15 gldb::TableField Class Reference

Database table field class.

`#include <tablefield.h>`

Collaboration diagram for gldb::TableField:



Public Member Functions

- TableField (const char ∗data)

    Constructor accepting `const char *` *data.*
- TableField (const std::string &data)

    Constructor accepting `std:string` *data.*
- ∼TableField ()
- size_t length () const

    Returns the length of the field.
- operator std::string () const

    Overridden conversion operator.
- TableField & operator= (const char ∗data)

    Overridden assignment operator for `const char *`*.*
- TableField & operator= (const std::string &data)

    Overridden assignment operator for `std::string`*.*
- char & operator[] (const size_t idx)

    Overridden index operator.
- const char & operator[] (const size_t idx) const

    Overridden index operator.
- TableField & operator+= (const char &c)

    Overridden compound assignment operator.
- TableField & operator+= (const std::string &data)

    Overridden compound assignment operator.

Private Attributes

- std::string m_data

Friends

- std::ostream & operator<< (std::ostream &out, const TableField &field)

    Overridden << operator for printing a field.

7.15.1 Detailed Description

Database table field class.

7.15.2 Constructor & Destructor Documentation

7.15.2.1 TableField::TableField (const char ∗ *data*) [explicit]

Constructor accepting `const char *` data.

Parameters

data	The initial contents of the field.

7.15.2.2 TableField::TableField (const std::string & *data*) [explicit]

Constructor accepting `std:string` data.

Parameters

data	The initial contents of the field.

7.15.2.3 TableField::∼TableField ( )

Destructor

7.15.3 Member Function Documentation

7.15.3.1 size_t TableField::length ( ) const

Returns the length of the field.

Returns

The length of the field.

7.15.3.2 TableField::operator std::string ( ) const

Overridden conversion operator.

Returns the field contents as a string.

7.15.3.3 TableField & TableField::operator+= (const char & *c*)

Overridden compound assignment operator.

Parameters

c	The character to append to the field.

Returns

A reference to the same field.

7.15.3.4 TableField & TableField::operator+= (const std::string & *data*)

Overridden compound assignment operator.

Parameters

data	The string to append to the field.

Returns

A reference to the same field.

7.15.3.5 TableField & TableField::operator= (const char ∗ *data*)

Overridden assignment operator for `const char *`.

Parameters

data	The new contents of the field.

Returns

A reference to the same field.

7.15.3.6 TableField & TableField::operator= (const std::string & *data*)

Overridden assignment operator for `std::string`.

Parameters

data	The new contents of the field.

Returns

A reference to the same field.

7.15.3.7 char & TableField::operator[] (const size_t *idx*)

Overridden index operator.

Parameters

idx	The desired index.

Returns

A reference to the character at the specified index.

7.15.3.8 const char & TableField::operator[] (const size_t *idx*) const

Overridden index operator.

Parameters

idx	The desired index.

Returns

A const reference to the character at the specified index.

7.15.4 Friends And Related Function Documentation

7.15.4.1 std::ostream& operator<< (std::ostream & *out*, const **TableField** & *field*) `[friend]`

Overridden << operator for printing a field.

Parameters

out	The ostream to which to print.
field	A reference to the field.

Returns

A reference to `out`.

7.15.5 Member Data Documentation

7.15.5.1 std::string gldb::TableField::m_data `[private]`

The field contents

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

- lib/database/tablefield.h
- lib/database/tablefield.cpp

7.16 gldb::TableRow Class Reference

Database table row class.

`#include <tablerow.h>`

Public Member Functions

- TableRow ()
- TableRow (const size_t size)

  Constructor with initial number of fields.
- ~TableRow ()
- size_t size () const

  Returns the number of fields.
- TableField & operator[] (const size_t idx)

  Overridden index operator.

- const TableField & operator[] (const size_t idx) const

  Overridden index operator.
- void append_field (const char ∗new_field)

  Appends a field to the row.
- void append_field (const std::string &new_field)

  Appends a field to the row.
- void append_field (const TableField &new_field)

  Appends a field to the row.
- void print (std::ostream &stream) const

  Prints a row.

Private Attributes

- std::vector< TableField > m_fields

7.16.1 Detailed Description

Database table row class.

7.16.2 Constructor & Destructor Documentation

7.16.2.1 TableRow::TableRow ( )

Default constructor

7.16.2.2 TableRow::TableRow (const size_t *size*) [explicit]

Constructor with initial number of fields.

Parameters

size	The initial number of fields.

7.16.2.3 TableRow::∼TableRow ( )

Destructor

7.16.3 Member Function Documentation

7.16.3.1 void TableRow::append_field (const char ∗ *new_field*)

Appends a field to the row.

Parameters

new_field	The contents of the new field.

7.16.3.2 void TableRow::append_field (const std::string & *new_field*)

Appends a field to the row.

Parameters

new_field	The contents of the new field.

7.16.3.3 void TableRow::append_field (const TableField & *new_field*)

Appends a field to the row.

Parameters

new_field	A field from which to copy.

7.16.3.4 TableField & TableRow::operator[] (const size_t *idx*)

Overridden index operator.

Parameters

idx	The zero-based index of the field.

Returns

A reference to the field at the specified index.

7.16.3.5 const TableField & TableRow::operator[] (const size_t *idx*) const

Overridden index operator.

Parameters

idx	The zero-based index of the field.

Returns

A const reference to the field at the specified index.

7.16.3.6 void TableRow::print (std::ostream & *stream*) const

Prints a row.

Parameters

stream	The ostream to which to print.

7.16.3.7 size_t TableRow::size ( ) const

Returns the number of fields.

Returns

The number of fields.

7.16.4 Member Data Documentation

7.16.4.1 std::vector<TableField> gldb::TableRow::m_fields [private]

A vector of fields

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

- lib/database/tablerow.h
- lib/database/tablerow.cpp

Chapter 8

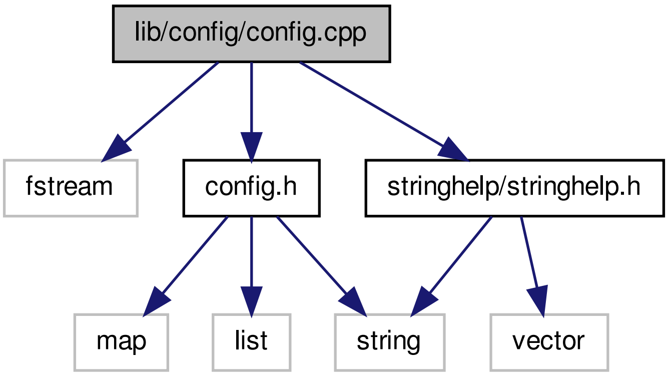
File Documentation

8.1 lib/config/config.cpp File Reference

Implementation of program configurations class.

```
#include <fstream>
#include "config.h"
#include "stringhelp/stringhelp.h"
```

Include dependency graph for config.cpp:



8.1.1 Detailed Description

Implementation of program configurations class.

Author

Paul Griffiths

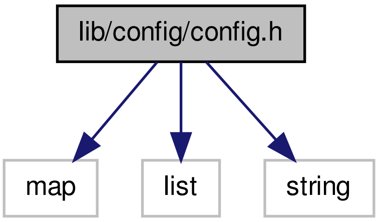
Copyright

8.2 lib/config/config.h File Reference

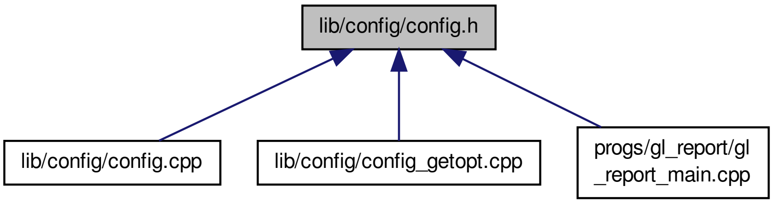
Interface to program configurations class.

```
#include <map>
#include <list>
#include <string>
```

Include dependency graph for config.h:



This graph shows which files directly or indirectly include this file:


lib/config/config.h
lib/config/config.cpp
lib/config/config_getopt.cpp
progs/gl_report/gl_report_main.cpp

Classes

- class genleg::ConfigException

  Configuration module exception base class.
- class genleg::ConfigOptionNotSet

  Exception class for option not set.
- class genleg::ConfigBadOption

  Exception class for bad provided option.
- class genleg::ConfigCouldNotOpenFile

  Exception class for when conf file cannot be opened.
- class genleg::ConfigBadConfigFile

  Exception class for badly formed configuration file.
- class genleg::Config

  Configuration options class.

Enumerations

- enum **Argument**

8.2.1 Detailed Description

Interface to program configurations class.

Author

Paul Griffiths

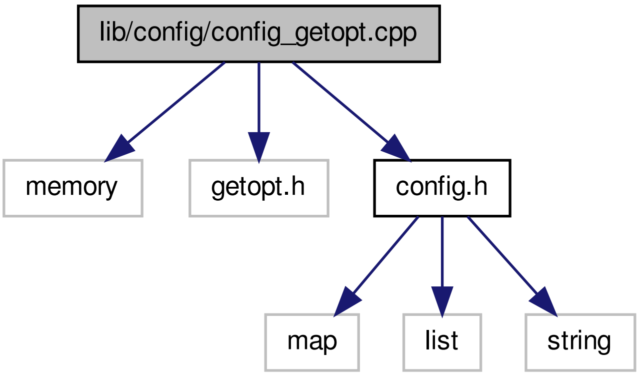
Copyright

8.3 lib/config/config_getopt.cpp File Reference

Implementation of command line functionality.

```
#include <memory>
#include <getopt.h>
#include "config.h"
```

Include dependency graph for config_getopt.cpp:



Macros

- #define _XOPEN_SOURCE 600

8.3.1 Detailed Description

Implementation of command line functionality. Included in separate file to isolate usage of non-standard getopt library.

Author

Paul Griffiths

Copyright

8.3.2 Macro Definition Documentation

8.3.2.1 #define _XOPEN_SOURCE 600

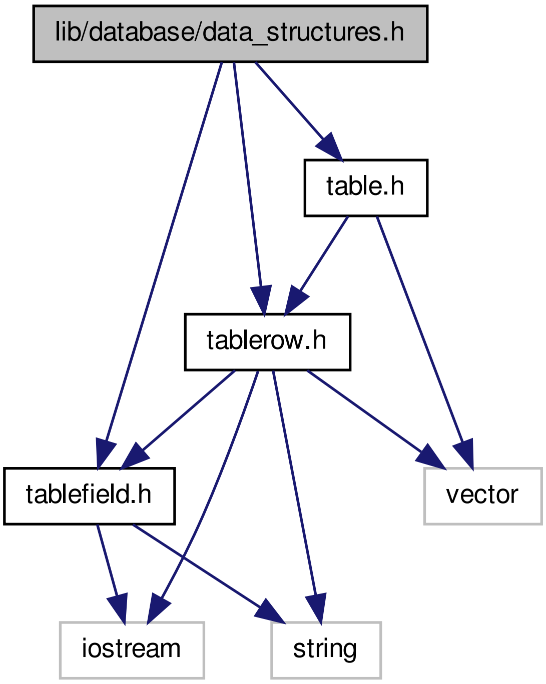
UNIX feature test macro for getopt library

8.4 lib/database/data_structures.h File Reference

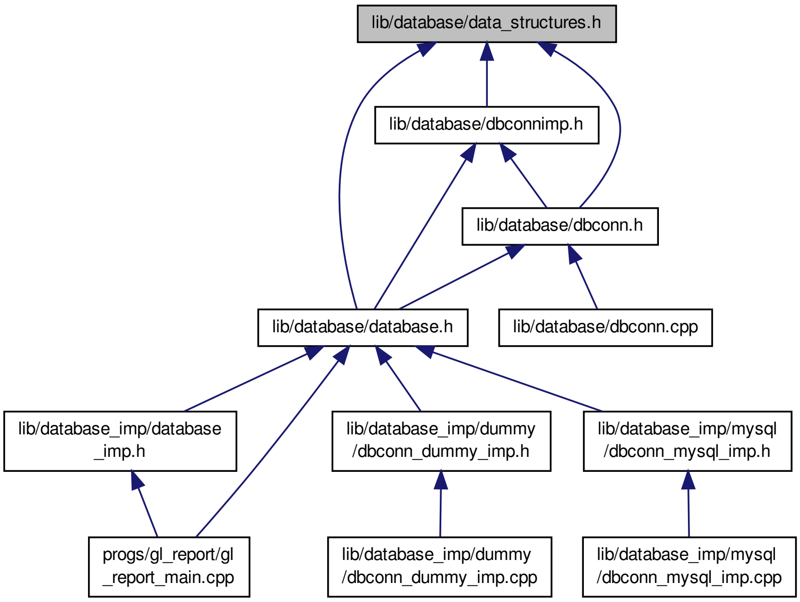
Main interface to database data structures.

```
#include "tablefield.h"
#include "tablerow.h"
#include "table.h"
```

Include dependency graph for data_structures.h:



This graph shows which files directly or indirectly include this file:


lib/database/data_structures.h
lib/database/dbconnimp.h
lib/database/dbconn.h
lib/database/database.h
lib/database/dbconn.cpp
lib/database_imp/database _imp.h
lib/database_imp/dummy /dbconn_dummy_imp.h
lib/database_imp/mysql /dbconn_mysql_imp.h
progs/gl_report/gl _report_main.cpp
lib/database_imp/dummy /dbconn_dummy_imp.cpp
lib/database_imp/mysql /dbconn_mysql_imp.cpp

8.4.1 Detailed Description

Main interface to database data structures.

Author

Paul Griffiths

Copyright

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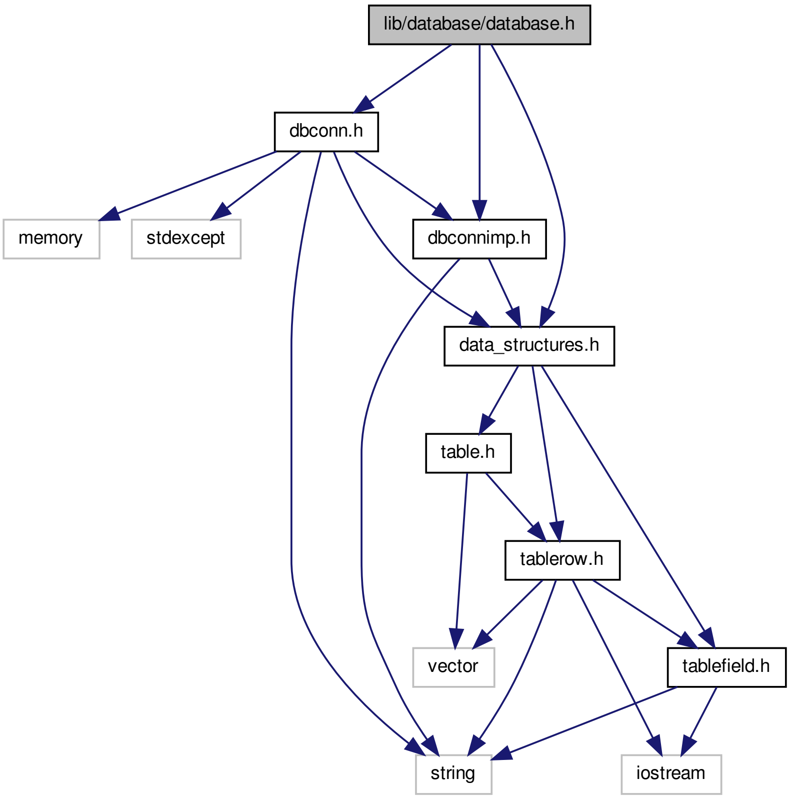
8.5 lib/database/database.h File Reference

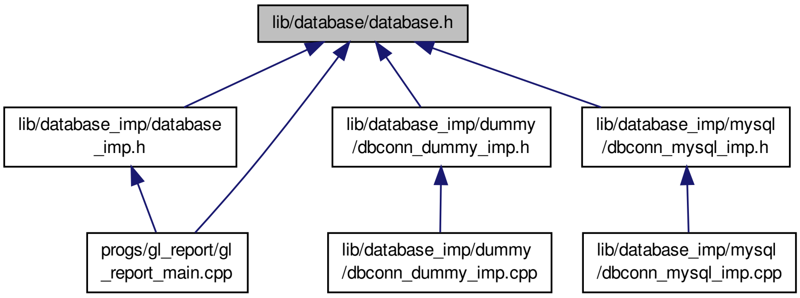
User interface to database functionality.

```
#include "data_structures.h"
#include "dbconnimp.h"
#include "dbconn.h"
```

Include dependency graph for database.h:



This graph shows which files directly or indirectly include this file:


lib/database/database.h
lib/database_imp/database _imp.h
lib/database_imp/dummy /dbconn_dummy_imp.h
lib/database_imp/mysql /dbconn_mysql_imp.h
progs/gl_report/gl _report_main.cpp
lib/database_imp/dummy /dbconn_dummy_imp.cpp
lib/database_imp/mysql /dbconn_mysql_imp.cpp

8.5.1 Detailed Description

User interface to database functionality.

Author

Paul Griffiths

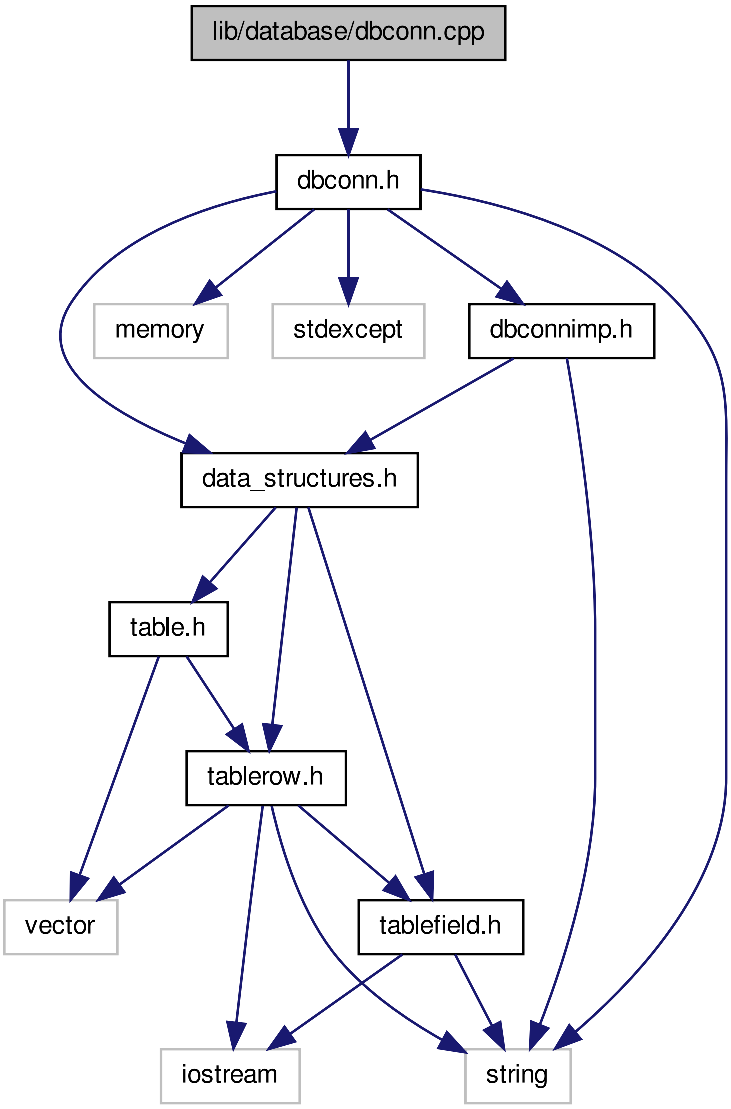
Copyright

8.6 lib/database/dbconn.cpp File Reference

Implementation of database connection class.

```
#include "dbconn.h"
```

Include dependency graph for dbconn.cpp:



8.6.1 Detailed Description

Implementation of database connection class.

Author

Paul Griffiths

Copyright

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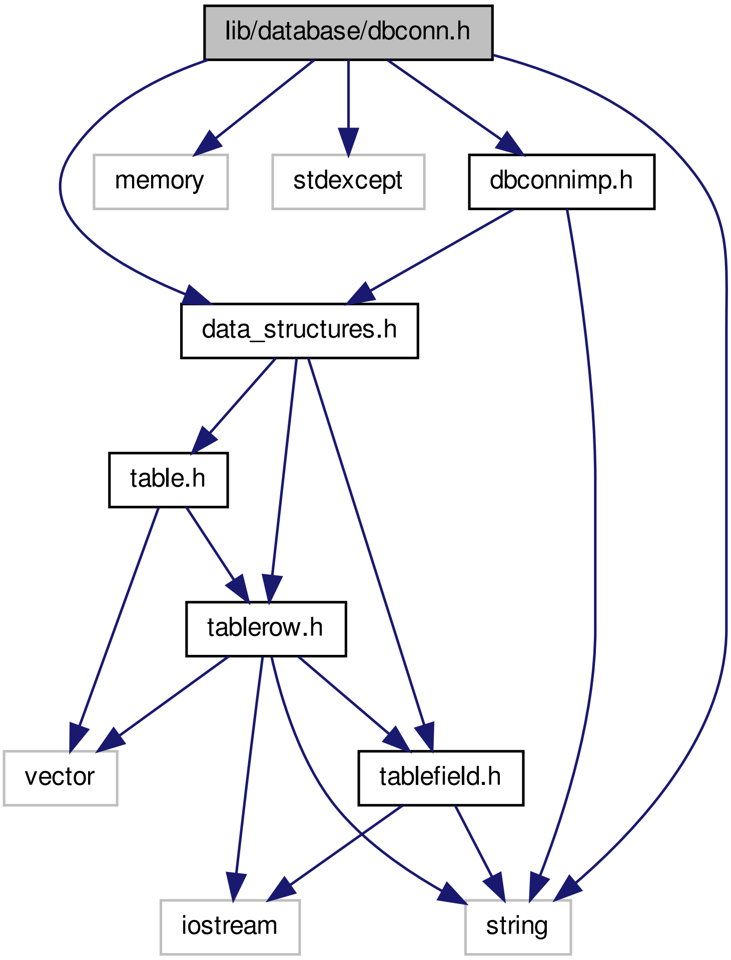
8.7 lib/database/dbconn.h File Reference

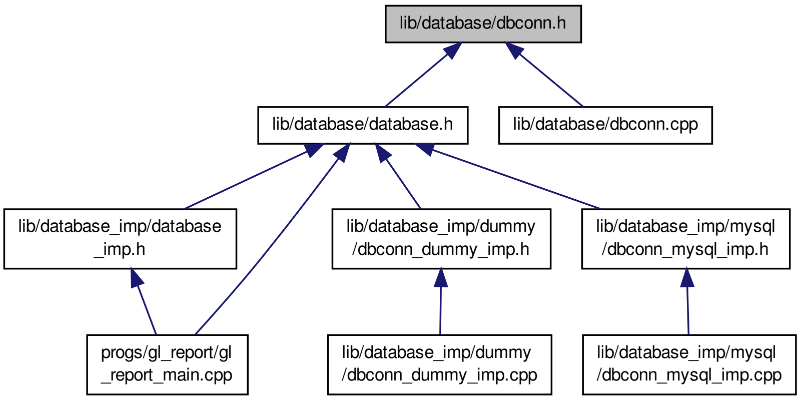
Interface to database connection base class.

```
#include <string>
#include <memory>
#include <stdexcept>
#include "data_structures.h"
#include "dbconnimp.h"
```

Include dependency graph for dbconn.h:



This graph shows which files directly or indirectly include this file:


lib/database/dbconn.h
lib/database/database.h
lib/database/dbconn.cpp
lib/database_imp/database_imp.h
lib/database_imp/dummy/dbconn_dummy_imp.h
lib/database_imp/mysql/dbconn_mysql_imp.h
progs/gl_report/gl_report_main.cpp
lib/database_imp/dummy/dbconn_dummy_imp.cpp
lib/database_imp/mysql/dbconn_mysql_imp.cpp

Classes

- class gldb::DBConnException

  Base database connection exception class.
- class gldb::DBConnCouldNotConnect

  Could not connect to database exception class.
- class gldb::DBConnCouldNotQuery

  Could not execute database query exception class.
- class gldb::DBConn

  Database connection class.

8.7.1 Detailed Description

Interface to database connection base class.

Author

Paul Griffiths

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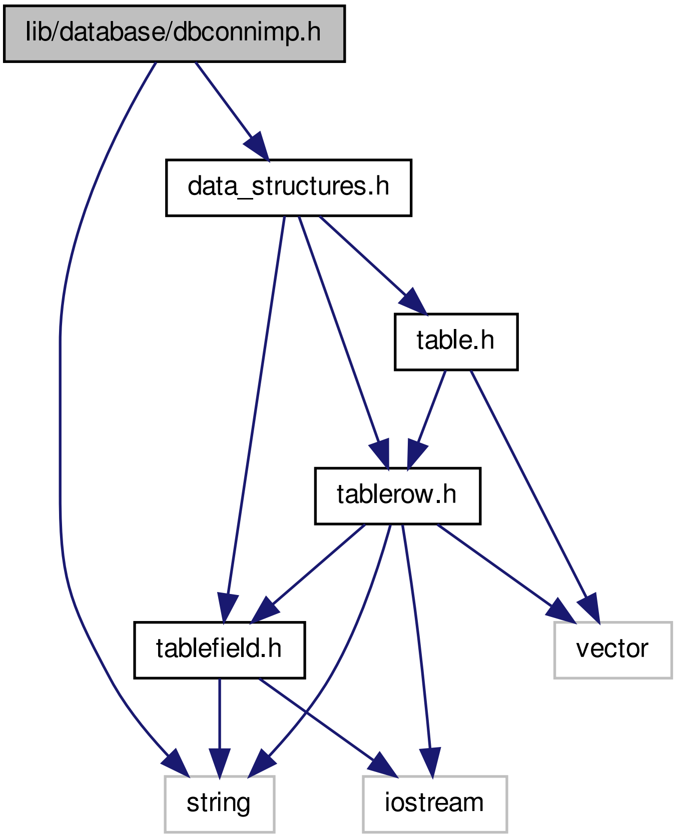
8.8 lib/database/dbconnimp.h File Reference

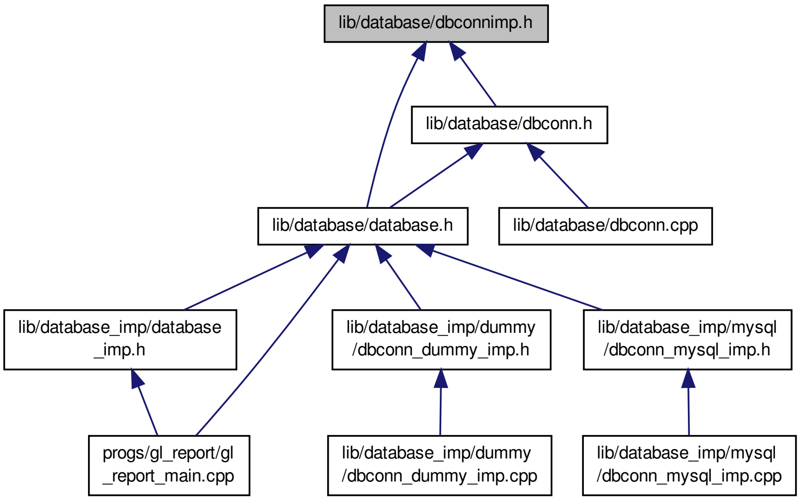
Interface to abstract database implementation base class.

```
#include <string>
#include "data_structures.h"
```

Include dependency graph for dbconnimp.h:



This graph shows which files directly or indirectly include this file:



Classes

- class gldb::DBConnImp

  Abstract database implementation base class.

8.8.1 Detailed Description

Interface to abstract database implementation base class.

Author

Paul Griffiths

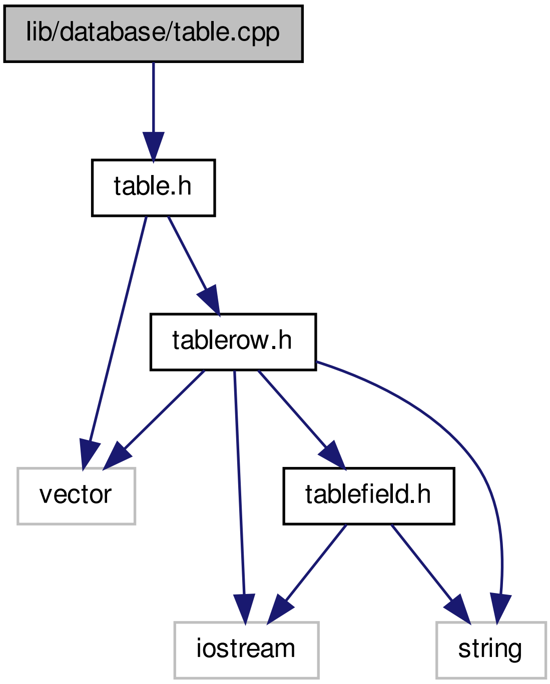
Copyright

8.9 lib/database/table.cpp File Reference

Implementation of database table data structure.

```
#include "table.h"
```

Include dependency graph for table.cpp:



8.9.1 Detailed Description

Implementation of database table data structure.

Author

Paul Griffiths

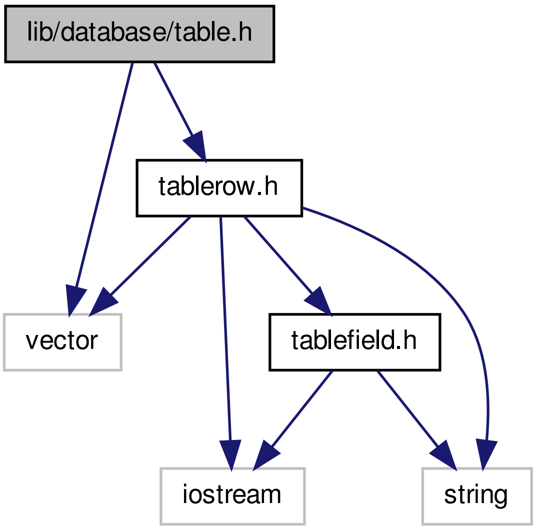
Copyright

8.10 lib/database/table.h File Reference

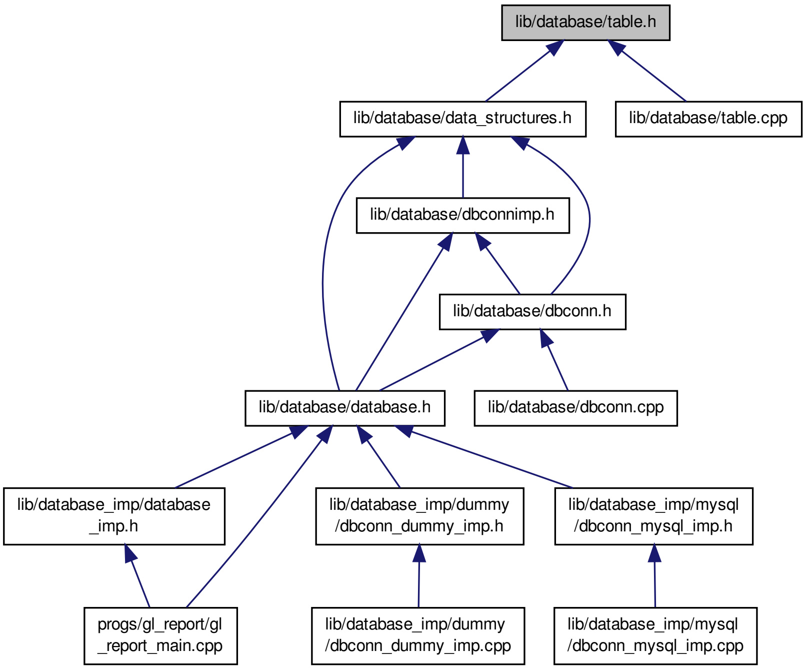
Interface to database table data structure.

```
#include <vector>
#include "tablerow.h"
```

Include dependency graph for table.h:



This graph shows which files directly or indirectly include this file:


lib/database/table.h
lib/database/data_structures.h
lib/database/table.cpp
lib/database/dbconnimp.h
lib/database/dbconn.h
lib/database/database.h
lib/database/dbconn.cpp
lib/database_imp/database _imp.h
lib/database_imp/dummy /dbconn_dummy_imp.h
lib/database_imp/mysql /dbconn_mysql_imp.h
progs/gl_report/gl _report_main.cpp
lib/database_imp/dummy /dbconn_dummy_imp.cpp
lib/database_imp/mysql /dbconn_mysql_imp.cpp

Classes

- class gldb::Table

    Database table class.

8.10.1 Detailed Description

Interface to database table data structure.

Author

Paul Griffiths

Copyright

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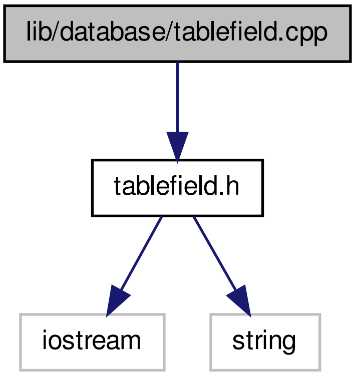
8.11 lib/database/tablefield.cpp File Reference

Implementation of database table field class.

```
#include "tablefield.h"
```

Include dependency graph for tablefield.cpp:



8.11.1 Detailed Description

Implementation of database table field class.

Author

Paul Griffiths

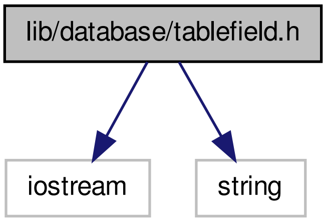
Copyright

8.12 lib/database/tablefield.h File Reference

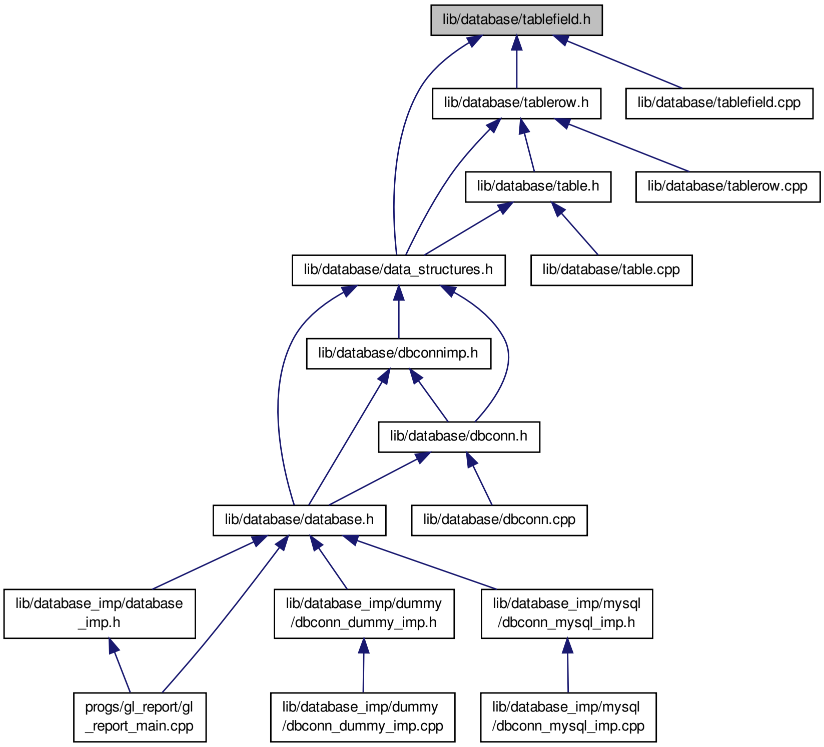
Interface to database table field class.

```
#include <iostream>
#include <string>
```

Include dependency graph for tablefield.h:



This graph shows which files directly or indirectly include this file:


lib/database/tablefield.h
lib/database/tablerow.h
lib/database/tablefield.cpp
lib/database/table.h
lib/database/tablerow.cpp
lib/database/data_structures.h
lib/database/table.cpp
lib/database/dbconnimp.h
lib/database/dbconn.h
lib/database/database.h
lib/database/dbconn.cpp
lib/database_imp/database_imp.h
lib/database_imp/dummy/dbconn_dummy_imp.h
lib/database_imp/mysql/dbconn_mysql_imp.h
progs/gl_report/gl_report_main.cpp
lib/database_imp/dummy/dbconn_dummy_imp.cpp
lib/database_imp/mysql/dbconn_mysql_imp.cpp

Classes

- class gldb::TableField

  Database table field class.

Functions

- std::ostream & **gldb::operator**<< (std::ostream &out, const TableField &field)

Overridden << operator for printing a field.

8.12.1 Detailed Description

Interface to database table field class.

Author

Paul Griffiths

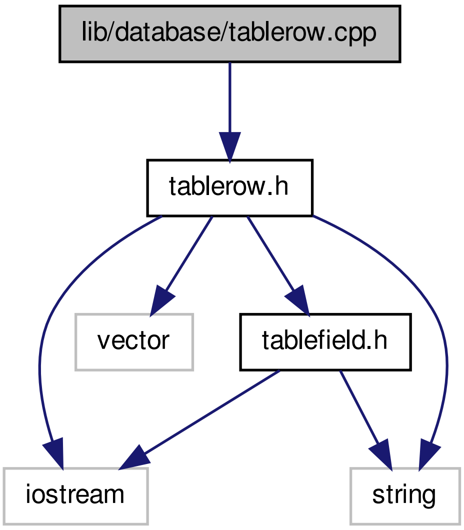
Copyright

8.13 lib/database/tablerow.cpp File Reference

Implementation of database table row data structure.

`#include "tablerow.h"`

Include dependency graph for tablerow.cpp:



8.13.1 Detailed Description

Implementation of database table row data structure.

Author

Paul Griffiths

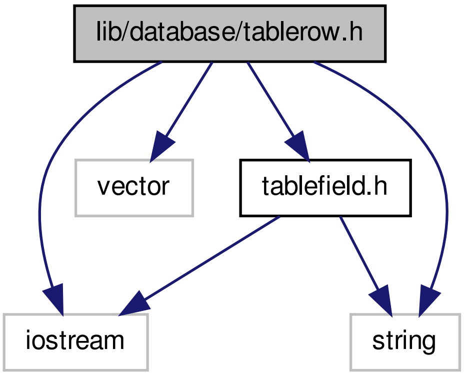
Copyright

8.14 lib/database/tablerow.h File Reference

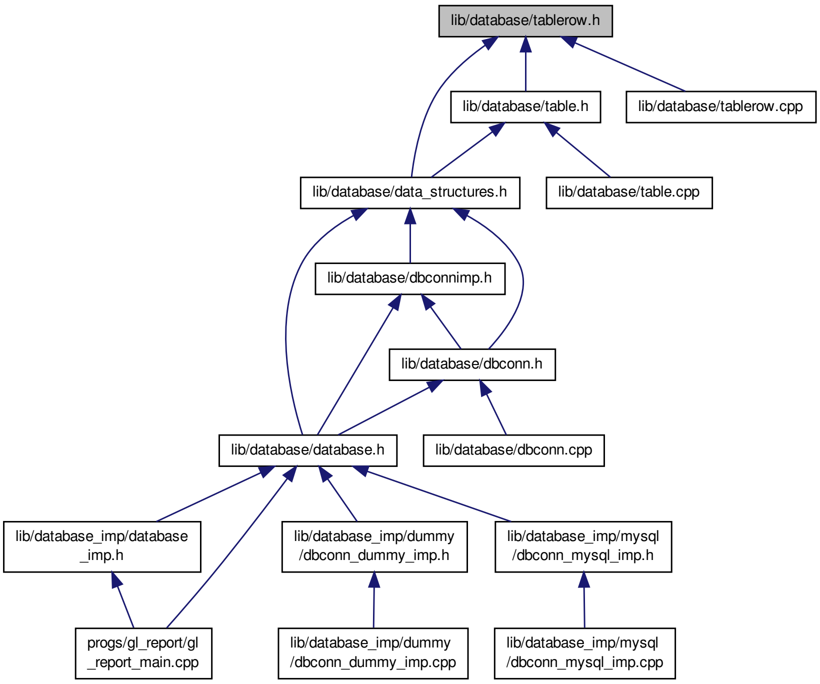
Interface to database table row data structure.

```
#include <iostream>
#include <vector>
#include <string>
#include "tablefield.h"
```

Include dependency graph for tablerow.h:



This graph shows which files directly or indirectly include this file:


lib/database/tablerow.h
lib/database/table.h
lib/database/tablerow.cpp
lib/database/data_structures.h
lib/database/table.cpp
lib/database/dbconnimp.h
lib/database/dbconn.h
lib/database/database.h
lib/database/dbconn.cpp
lib/database_imp/database _imp.h
lib/database_imp/dummy /dbconn_dummy_imp.h
lib/database_imp/mysql /dbconn_mysql_imp.h
progs/gl_report/gl _report_main.cpp
lib/database_imp/dummy /dbconn_dummy_imp.cpp
lib/database_imp/mysql /dbconn_mysql_imp.cpp

Classes

- class gldb::TableRow

  Database table row class.

8.14.1 Detailed Description

Interface to database table row data structure.

Author

Paul Griffiths

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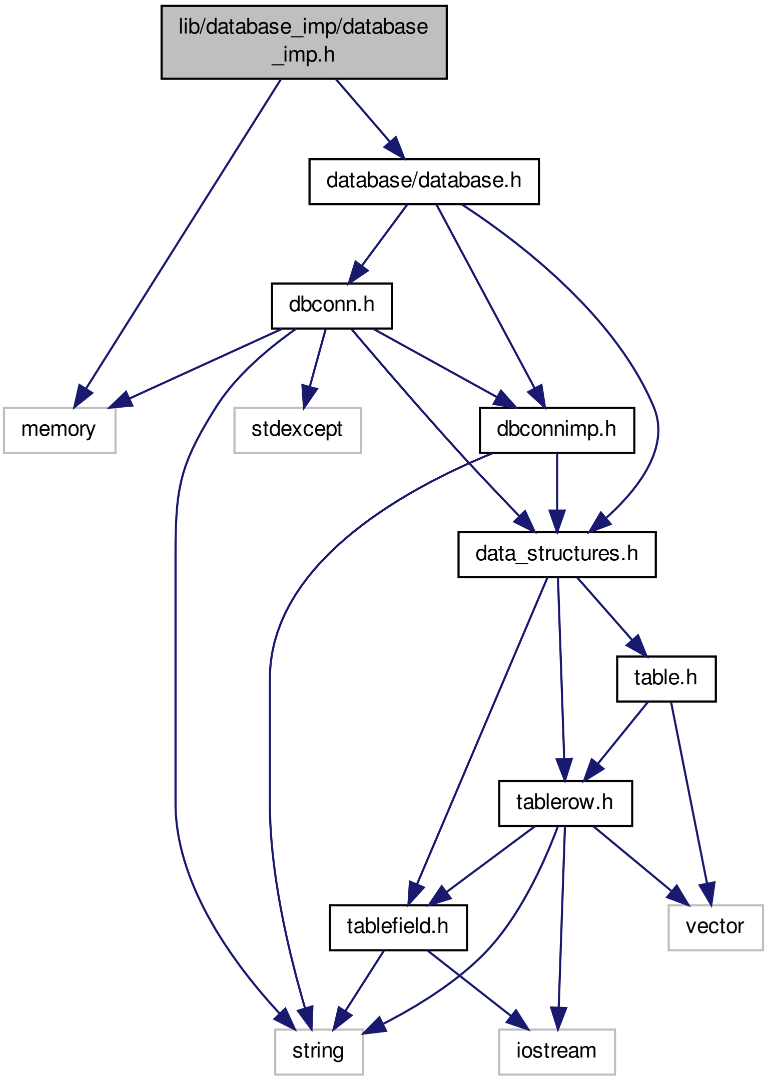
8.15 lib/database_imp/database_imp.h File Reference

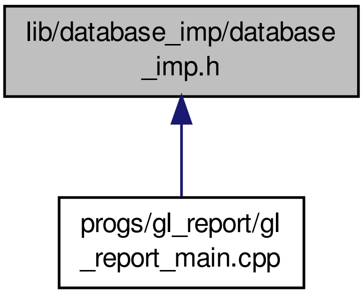
Interface to database implementation factory function.

```
#include <memory>
#include "database/database.h"
```

Include dependency graph for database_imp.h:



This graph shows which files directly or indirectly include this file:


lib/database_imp/database_imp.h
progs/gl_report/gl_report_main.cpp

Functions

- DBConnImp ∗ gldb::get_connection (const std::string database, const std::string hostname, const std::string username, const std::string password)

  Creates and returns a pointer to a database implementation.

- std::string gldb::get_database_type ()

  Returns the name of the compiled-in database type.

8.15.1 Detailed Description

Interface to database implementation factory function.

Author

Paul Griffiths

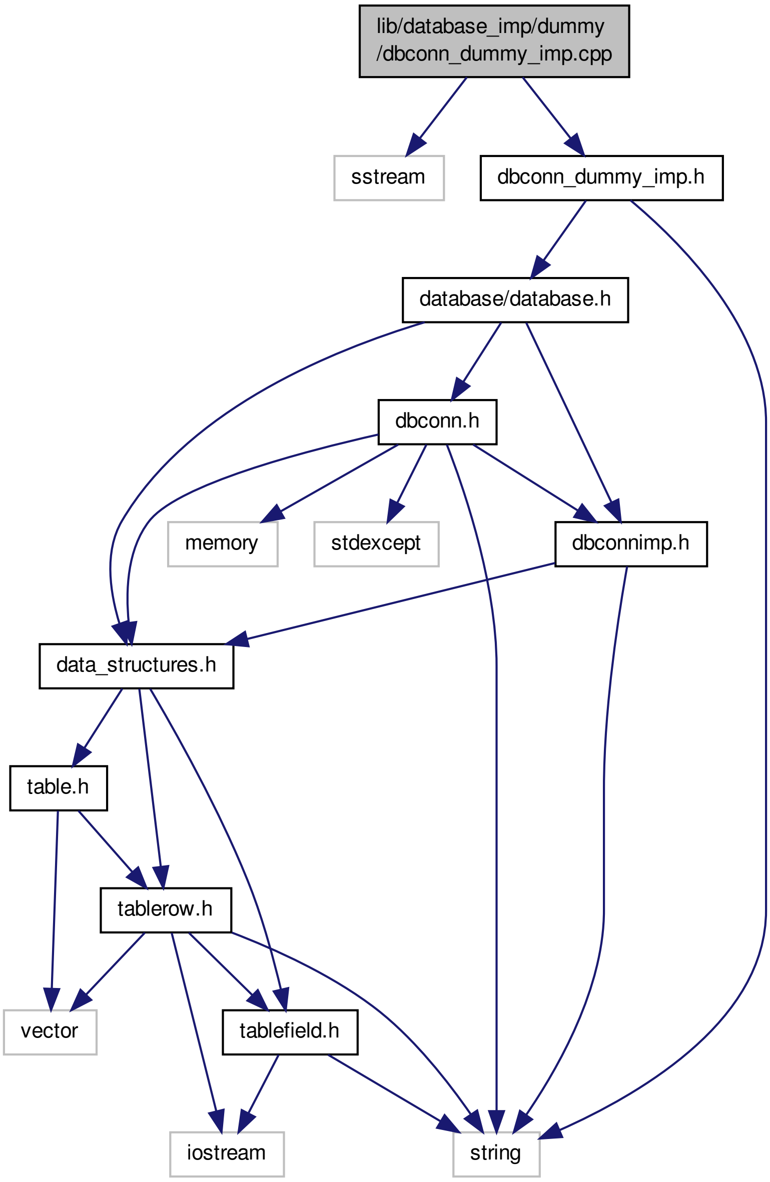
Copyright

8.16 lib/database_imp/dummy/dbconn_dummy_imp.cpp File Reference

Implementation of Dummy database connection implementation class.

```
#include <sstream>
#include "dbconn_dummy_imp.h"
```

Include dependency graph for dbconn_dummy_imp.cpp:



8.16.1 Detailed Description

Implementation of Dummy database connection implementation class.

Author

Paul Griffiths

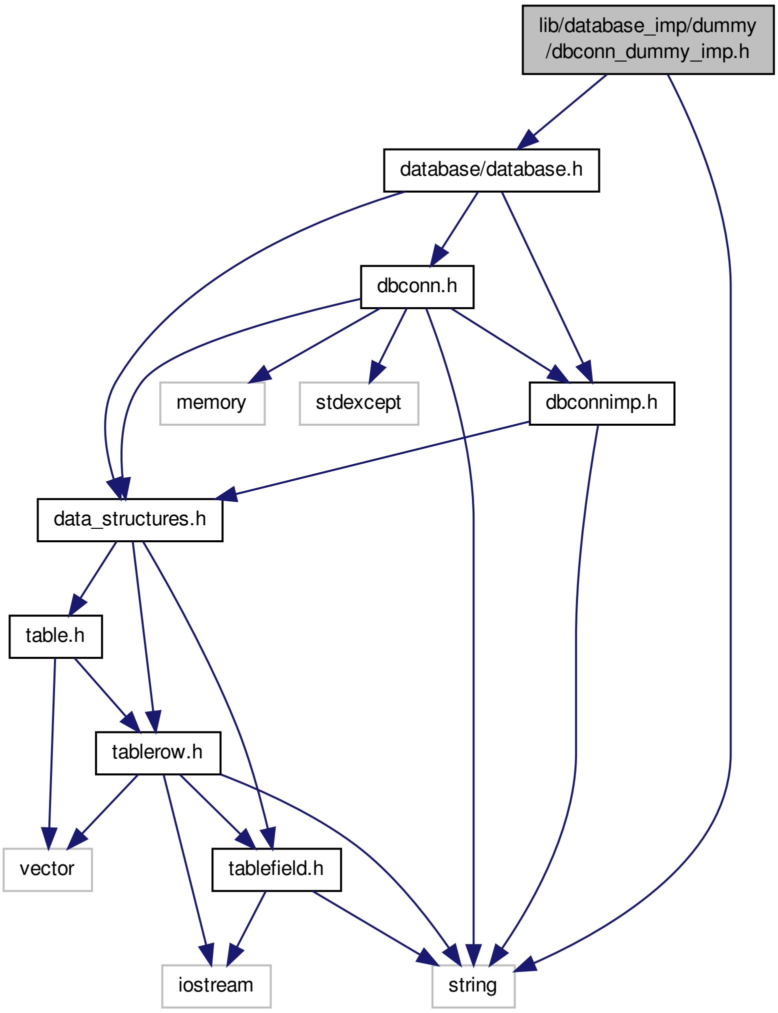
Copyright

8.17 lib/database_imp/dummy/dbconn_dummy_imp.h File Reference

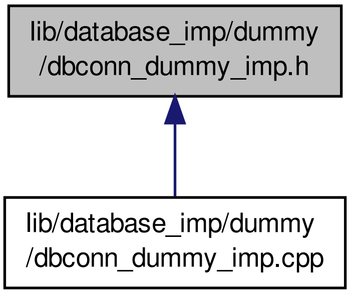
Interface to dummy database connection implementation class.

```
#include <string>
#include "database/database.h"
```

Include dependency graph for dbconn_dummy_imp.h:



This graph shows which files directly or indirectly include this file:



Classes

- class gldb::DBConnDummy

  Dummy database implementation class.

8.17.1 Detailed Description

Interface to dummy database connection implementation class.

Author

Paul Griffiths

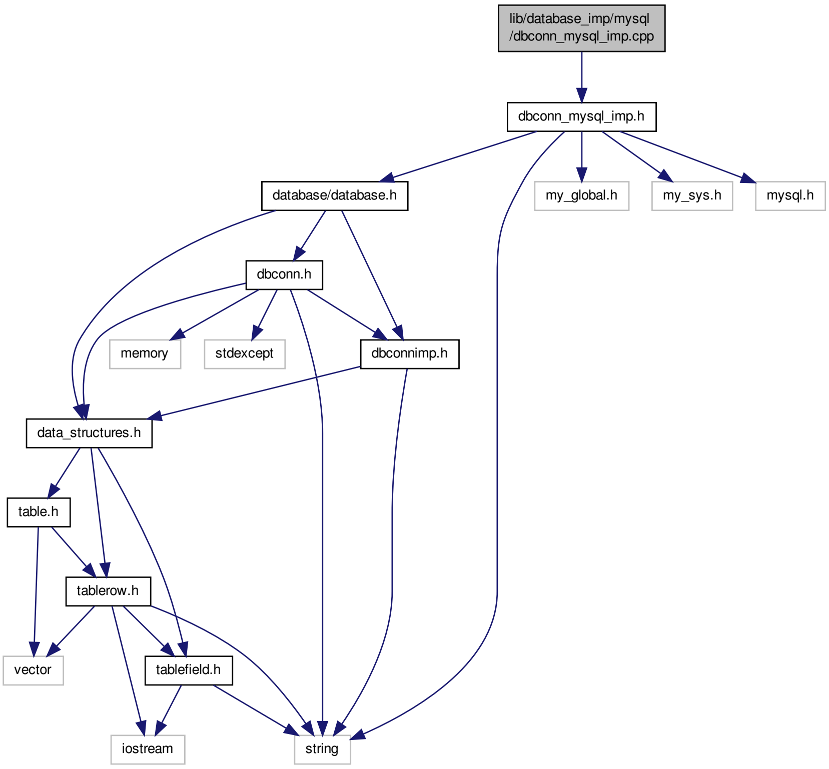
Copyright

8.18 lib/database_imp/mysql/dbconn_mysql_imp.cpp File Reference

Implementation of MySQL database connection implementation class.

```
#include "dbconn_mysql_imp.h"
```

Include dependency graph for dbconn_mysql_imp.cpp:



8.18.1 Detailed Description

Implementation of MySQL database connection implementation class.

Author

Paul Griffiths

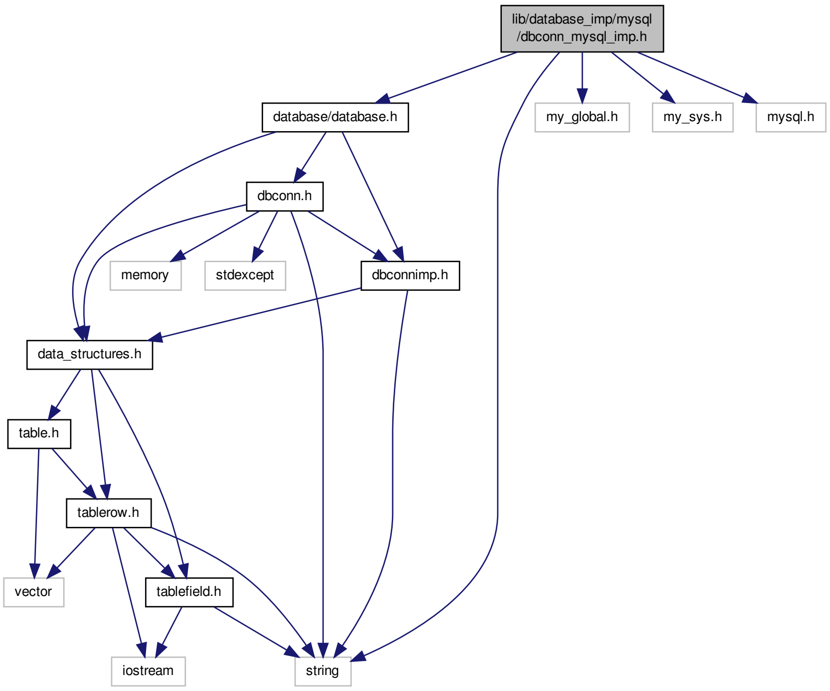
Copyright

8.19 lib/database_imp/mysql/dbconn_mysql_imp.h File Reference

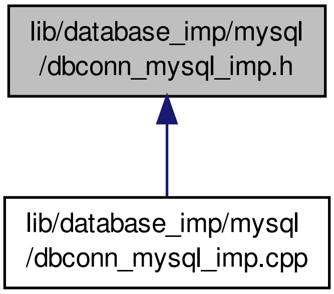
Interface to MySQL database connection implementation class.

```
#include <string>
#include "database/database.h"
#include <my_global.h>
#include <my_sys.h>
#include <mysql.h>
```

Include dependency graph for dbconn_mysql_imp.h:



This graph shows which files directly or indirectly include this file:



Classes

- class gldb::DBConnMySQL

  MySQL database implementation class.

8.19.1 Detailed Description

Interface to MySQL database connection implementation class.

Author

Paul Griffiths

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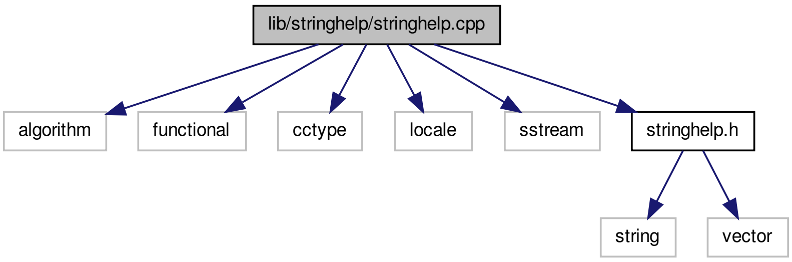
8.20 lib/stringhelp/stringhelp.cpp File Reference

Implementation of string helper functions.

```
#include <algorithm>
#include <functional>
#include <cctype>
#include <locale>
#include <sstream>
#include "stringhelp.h"
```

Include dependency graph for stringhelp.cpp:



8.20.1 Detailed Description

Implementation of string helper functions.

Author

Paul Griffiths

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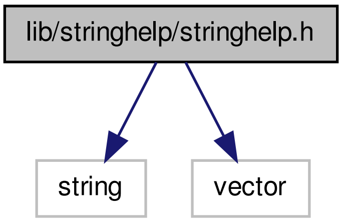
8.21 lib/stringhelp/stringhelp.h File Reference

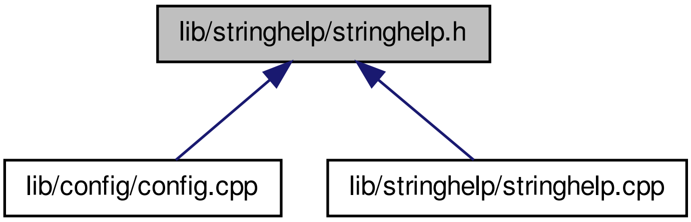
Interface to string helper functions.

```
#include <string>
#include <vector>
```

Include dependency graph for stringhelp.h:



This graph shows which files directly or indirectly include this file:



Functions

- std::string & pgstring::trim_front (std::string &s)

  Trims leading whitespace from a string.
- std::string & pgstring::trim_back (std::string &s)

  Trims trailing whitespace from a string.
- std::string & pgstring::trim (std::string &s)

  Trims leading and trailing whitespace from a string.
- std::vector< std::string > pgstring::split (const std::string &s, const char delim)

  Splits a delimited string into tokens.

8.21.1 Detailed Description

Interface to string helper functions.

Author

Paul Griffiths

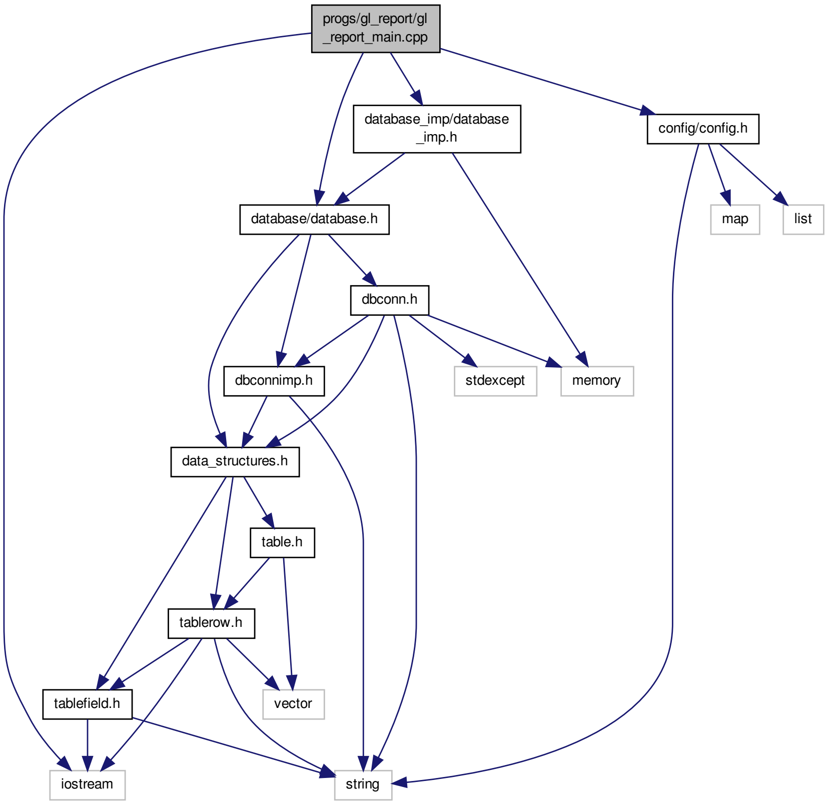
Copyright

8.22 progs/gl_report/gl_report_main.cpp File Reference

Main functionality for gl_report program.

```
#include <iostream>
#include "database/database.h"
#include "database_imp/database_imp.h"
#include "config/config.h"
```

Include dependency graph for gl_report_main.cpp:



Functions

- static void set_configuration (genleg::Config &config, int argc, char ∗argv[])

  Sets program configuration options.
- static void print_usage_message ()

  Prints a program usage message.
- static void print_version_message ()

Prints a program version message.

- static void print_help_message ()

  Prints a program help message.

- static std::string login (void)

  Gets a password from the terminal.

- int main (int argc, char ∗argv[])

  Main function.

Variables

- static const char ∗ progname = "gl_report"

  Static variable for program name.

8.22.1 Detailed Description

Main functionality for gl_report program.

Author

Paul Griffiths

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