1 Introduction

The Vienna Database Library (VDBL) is a in-memory database developed with generic programming in mind. It uses STL containers like map and vector to organize its internal structure. It structure is designed in such a way that the in-memory structure can be mixed with standard SQL databases.

Databases in the VDBL consist of tables, which are constructed from columns and rows as ordinary relational databases.

Columns can take arbitrary types, and their values need not be constant. Using function objects, called methods, the column values can change according to an evaluation context.

It is possible to construct views onto the tables of a database.

1.1 Database

A VDBL database consists of a number of tables which can be dynamically constructed, changed and destroyed. Every table (see Section Tables) has a unique name (a std::string) and a unique table id, which is used for organizing the internal structure.

There is a general table interface defined in class table, which defines the minimal functionality needed for implementing a VDBL table. The structure is defined in such a way that SQL interfaces could be written, as well as tables which keep all their data in memory.

In addition to tables, the database knows of users. There are access control lists (at the moment not fully implemented) for restricting the access of users to the tables on a global and a column-wise base. The users are defined in the class user.

Users can construct views onto tables (see Section Views). These views can restrict a table to a subset of columns and/or rows. Also, additional rows can be defined for a view, and it is even possible to join various tables into one view. All views onto tables are constructed within a prespecified context (see - Section Contexts). Using this mechanism, columns can change their value automatically according to the evaluation context. This is, e.g., useful in the COCONUT project for organizing points, where some of the properties change from work node to work node, like whether the point is feasible or not.
1.2 Tables

A VDBL table consists of a number of columns and rows. The definition of a table is always done by specifying its columns (see Section Columns). The type of the columns value, which can be any C++ type, is fixed upon creating the column. This can be done dynamically, like modifying and removing. Optionally, for each column a default value can be given (this default value may also change w.r.t. the evaluation context). All columns within a table have a name (a std::string) and a column id, which is used for organizing the column structure of the table internally. A column of a table can be accessed by specifying its name or, equivalently, its column id.

In addition to the column structure, which determines the outline of the table, the table’s data is organized in rows (see Section Rows). Every row has a row id, which is used for internal organization. Rows themselves consist of columns. When creating a new row, strict type checking is done between the row’s column entries and the column type stored in the table. Column entries of a row can be left out, if a default value for the column is specified in the table definition.

It is possible to implement differently organized tables, as long as they are subclasses of the class table.

Implemented are two table subclasses:

- **Standard Table**: A table which keeps all data in memory, internally organized as STL maps (vdbl::standard_table).
- **View Table**: A table which is constructed from an arbitrary view using the view’s internal structure to organize the data (vdbl::view_table).

1.3 Columns

VDBL columns are built in a very complicated way using three classes on top of each other, making it possible that arbitrary C++ types can be stored in a column.

There are two main column classes implemented:

- **typed_col**: This column holds constant values of arbitrary types. Their values are independent of the evaluation context (class vdbl::typed_col<_TT>).
- **method_col**: A column of this type holds data, whose value is computed whenever it is retrieved and may depend on the evaluation context (vdbl::method_col<_TT>). Instead of holding data, its contents are function objects (methods), which are subclasses of class vdbl::method<_TT>. These function objects are used to calculate the column value.

Within a table different column types can be mixed within different rows and the default value, as long as their content types (strict run-time type checking) coincide.

1.4 Rows

The VDBL rows (class vdbl::row) are internally defined as STL maps of columns, organized with column id keys and column entries.

In principle, different types of rows could be defined, but at the moment only standard rows are implemented.

Every row contains a number of columns, whose values can be retrieved within an evaluation context (see Section Contexts). The column type within a row is arbitrary. If you want to make sure, that type checking is used, you have to change the rows through the table methods.
1.5 Views

A view (class vdbl::view_base) onto a table is table-like construct built from table structures. They may be restricted to a subset of the rows and/or columns of the table.

The most important properties of a view is that it is always created within a given context (see Section Contexts). The contents of the view can vary depending on this context. Two different views to the same table can at the same time show different data in the same column of the same row.

Two different classes of views have been implemented:

- **Standard View**: This view (of class vdbl::view) is constructed over one table, and it can only be restricted to subsets of rows and columns of this table.
- **Hierarchical View**: A hierarchical view (in class vdbl::hierarchical_view) looks onto a stack of tables, the top ones “overlaying” the lower ones. This makes it possible to have, e.g., a globally valid table on bottom and a stack of locally valid tables on top of them.

Some views can hold an internal cache of table entries, which are used for fast access, reducing the number of calls to function objects within columns.

1.6 View Database

A view database is a view onto a complete database, automatically constructing views (standard or hierarchical) for every table defined in the database. These views can be accessed under the same names as the defining tables, having a subset of their columns (also with identical names). The defining class is vdbl::viewdbase.

1.7 Contexts

Evaluation contexts are subclasses of class vdbl::context. They may hold arbitrary data and are keeping a const vdbl::table * to their associated table.

This context is passed to every function object along with the row the column belongs to for constructing the columns value. The contexts have no influence on typed_col columns, whose values don’t change within different contexts.

2 Module Index

2.1 Modules

Here is a list of all modules:

- Classes and types for external use 11
- Classes and types for internal use 17

3 Namespace Index
3.1 Namespace List

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

- **vdbl**
  - Main namespace of the VDBL

4 Class Index

4.1 Class Hierarchy

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

- _VDBL_colbase
- _VDBL_colbase
- _VDBL_index
- _VDBL_index_<TT>
- _VDBL_view::<_col_iterator_base
- _VDBL_view::<_col_iterator
- _VDBL_table::<_col_iterator_base
- _VDBL_table::<_col_iterator
- _VDBL_view::<_default_iterator
- _VDBL_table::<_row_iterator
- _VDBL_view::<_row_iterator_base
- _VDBL_view::<_row_iterator
- _VDBL_acl
- _VDBL_aclentry
- _VDBL_alltype::<_TT>
- alltype
- _VDBL_alltype::<_TR>
- _VDBL_colbase::<_TR>
- _VDBL_mthdcol
4.1 Class Hierarchy

- col_base
- _VDBL_colbase<_TT >
- _VDBL_stdcoll
- _VDBL_colflags
- _VDBL_context
- _VDBL_database
database
- _VDBL_date
- _VDBL_dateinterval
- _VDBL_eval_expr
- _VDBL_exprcol
- _VDBL_exprequal
- _VDBL_exprneql
- _VDBL_exprrow
- _VDBL_index_l<_TR >
  list_index
  list_index_def
- _VDBL_index_l< std::pair<_TR, _TS > >
  _VDBL_index_lex2
- _VDBL_index_l< std::triple<_TR, _TS, _TT > >
  _VDBL_index_lex3
- _VDBL_index_lex2<_TR, _TS >
  lexi_pair_index
  lexi_pair_index_def
- _VDBL_index_lex3<_TR, _TS, _TT >
  lexi_triple_index
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5 Class Index

5.1 Class List

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   The templated alltype class 118

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db_user ??
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7 Module Documentation

7.1 Classes and types for external use

Classes

- class alltype
7.1 Classes and types for external use

The templated alltype class.

- **class col_base**
  
  column base class

- **class typed_col**
  
  external name for constant data columns

- **class method_col**
  
  external name for computed columns

- **class database**
  
  the database class

- **class hierarchical_view**
  
  hierarchical view class onto a stack of tables

- **class method**
  
  base class for methods usable in method columns.

- **class row**
  
  class implementing table rows

- **class view**
  
  standard view class onto a single table

- **class table**
  
  base class for tables in a database

- **class col_spec**
  
  column specification

- **class standard_table**
  
  standard table of a database

- **class viewdbase**
  
  a view to a complete database

Defines

- #define VDBL_MAXUSERID ((__VDBL::_VDBL_userid)-1)
- #define VDBL_MAXVIEWID ((__VDBL::_VDBL_viewid)-1)
- #define VDBL_MAXCOLID ((__VDBL::_VDBL_colid)-1)
- #define VDBL_MAXROWID ((__VDBL::_VDBL_rowid)-1)
- #define VDBL_MAXTABLEID ((__VDBL::_VDBL_tableid)-1)

Typedefs

- typedef _VDBL_date date
  
  the date type

- typedef _VDBL_dateinterval dateinterval
  
  the dateinterval type

- typedef _VDBL_mixtype mixtype
  
  a mixed type of various scalars and vectors

- typedef _VDBL_alltype_base alltype_base
  
  the base class of the alltype

- typedef _VDBL_col col
  
  the column class

- typedef _VDBL_stdcol< mixtype > standard_col
7.1 Classes and types for external use

*the standard column class with constant mixtype data*

- typedef _VDBL_context context
  
evaluation context base class
- typedef _VDBL_userflags userflags
  
user flags and permissions
- typedef _VDBL_viewflags viewflags
  
view flags and ACLs
- typedef _VDBL_tableflags tableflags
  
table flags and ACLs
- typedef _VDBL_aclentry aclentry
  
entry in the access control list (ACL)
- typedef _VDBL_acl acl
  
ACL for one user.
- typedef _VDBL_userid userid
  
user id
- typedef _VDBL_viewid viewid
  
view id
- typedef _VDBL_colid colid
  
column id
- typedef _VDBL_rowid rowid
  
row id
- typedef _VDBL_tableid tableid
  
table id
- typedef _VDBL_colflags colflags
  
additional column properties
- typedef _V_enum view_enum
  
the view type

**Variables**

- bool _VDBL_colflags::master_index

7.1.1 Detailed Description

The classes and types in this section are for external use.

7.1.2 Define Documentation

7.1.2.1 #define VDBL_MAXCOLID ((__VDBL::VDBL_colid)-1)

The maximal column id

Definition at line 151 of file vdbl_types.h.

7.1.2.2 #define VDBL_MAXROWID ((__VDBL::VDBL_rowid)-1)

The maximal row id

Definition at line 156 of file vdbl_types.h.
7.1 Classes and types for external use

7.1.2.3 \#define VDBL_MAXTABLEID ((__VDBL::_VDBL_tableid)-1)

The maximal table id
Definition at line 161 of file vdbl_types.h.

7.1.2.4 \#define VDBL_MAXUSERID ((__VDBL::_VDBL_userid)-1)

The maximal possible values. They mean not initialized
The maximal user id
Definition at line 141 of file vdbl_types.h.

7.1.2.5 \#define VDBL_MAXVIEWID ((__VDBL::_VDBL_viewid)-1)

The maximal view id
Definition at line 146 of file vdbl_types.h.

7.1.3 Typedef Documentation

7.1.3.1 typedef _VDBL_acl acl acl

this is the external name for access control lists
Definition at line 1042 of file vdbl_database.h.

7.1.3.2 typedef _VDBL_aclentry aclentry

this is the external name for access control list entries
Definition at line 1036 of file vdbl_database.h.

7.1.3.3 typedef _VDBL_alltype_base alltype_base

The base class of the alltype templated classes
Definition at line 607 of file vdbl_alltype.h.

7.1.3.4 typedef _VDBL_col col col

this is the external name of the column class
Definition at line 569 of file vdbl_col.h.

7.1.3.5 typedef _VDBL_colflags colflags

This type describes the additional properties of a column in a table.
Definition at line 192 of file vdbl_types.h.

7.1.3.6 typedef _VDBL_colid colid colid

The column id type
Definition at line 177 of file vdbl_types.h.

7.1.3.7 typedef _VDBL_context context

this is the external name of the base class for context objects
Definition at line 88 of file vdbl_context.h.
7.1 Classes and types for external use

7.1.3.8 typedef _VDBL_.date date
the 'official' name of the date class
Definition at line 588 of file vdbl_alltype.h.

7.1.3.9 typedef _VDBL_.dateinterval dateinterval
the 'official' name of the dateinterval class
Definition at line 594 of file vdbl_alltype.h.

7.1.3.10 typedef _VDBL_.mixtype mixtype
the official name of the mixtype class
Definition at line 600 of file vdbl_alltype.h.

7.1.3.11 typedef _VDBL_.rowid rowid
The row id type
Definition at line 182 of file vdbl_types.h.

7.1.3.12 typedef _VDBL_.stdcol<mixtype> standard_col
the standard column holds constant data of type mixtype
Definition at line 576 of file vdbl_col.h.

7.1.3.13 typedef _VDBL_.tableflags tableflags
this is the external name for table flags
Definition at line 1029 of file vdbl_database.h.

7.1.3.14 typedef _VDBL_.tableid tableid
The table id type
Definition at line 187 of file vdbl_types.h.

7.1.3.15 typedef _VDBL_.userflags userflags
this is the external name for user flags
Definition at line 1017 of file vdbl_database.h.

7.1.3.16 typedef _VDBL_.userid userid
The user id type
Definition at line 167 of file vdbl_types.h.

7.1.3.17 typedef _V_enum view_enum
This type describes the various view types.
Definition at line 198 of file vdbl_types.h.
7.1.3.18  typedef _VDBL_viewflags viewflags

this is the external name for view flags
Definition at line 1023 of file vdbl_database.h.

7.1.3.19  typedef _VDBL_viewid viewid

The view id type
Definition at line 172 of file vdbl_types.h.

7.1.4  Variable Documentation

7.1.4.1  bool _VDBL_colflags::master_index

see class description
Definition at line 71 of file vdbl_types.h.
Classes and types for internal use

Classes

- class `_VDBL_alltype_base`
  The base class for the all_type class.
- class `_VDBL_alltype`
  The templated class for the all_type class.
- class `_VDBL_date`
  The VDBL date class.
- class `_VDBL_dateinterval`
  The VDBL date interval class.
- class `_VDBL_mixtype`
  mixed type
- class `__VDBL_colbase`
  The base class of the internal column structure.
- class `_VDBL_colbase`
  The type dependent base class of the internal column structure.
- class `_VDBL_col`
  The generic column class (the external structure)
- class `_VDBL_stdcol`
  generic column class for constant values
- class `_VDBL_mthdcol`
  generic column class for methods
- class `_VDBL_context`
  base class for context objects
- class `_VDBL_userflags`
  The permission flags for a user.
- class `_VDBL_aclentry`
  entry in the access control list
- class `_VDBL_acl`
  Access control list.
- class `_VDBL_tableflags`
  flags for one table
- class `_VDBL_viewflags`
  flags for one view
- class `_VDBL_database`
  the database class
- class `_VDBL_hierarchicalview`
  hierarchical view class
- class `_VDBL_method`
  base class for methods usable in _VDBL_mthdcol columns.
- class `_VDBL_row`
  row class
- class `_VDBL_standardview`
  standard view onto one table
- class `_VDBL_table`
the base class describing database tables

- class _VDBL_standardtable
  standard table in databases, constructed from rows and columns
- class _VDBL_colflags
  additional table information for a column
- class _VDBL_view
  base class of all views.
- class _VDBL_viewdbase
  a view to a complete database

Typedefs

- typedef uint32_t _VDBL_userid
- typedef uint32_t _VDBL_viewid
- typedef uint64_t _VDBL_colid
- typedef uint64_t _VDBL_rowid
- typedef uint32_t _VDBL_tableid

Enumerations

- enum _V_enum
  different view properties

Functions

- template<class _TC>
  std::ostream & print_it (std::ostream &o, const _TC &t)

7.2.1 Detailed Description

The classes and types in this section are used VDBL internally.

7.2.2 Typedef Documentation

7.2.2.1 typedef uint64_t _VDBL_colid

The column id type
Definition at line 93 of file vdbl_types.h.

7.2.2.2 typedef uint64_t _VDBL_rowid

The row id type
Definition at line 97 of file vdbl_types.h.

7.2.2.3 typedef uint32_t _VDBL_tableid

The table id type
Definition at line 101 of file vdbl_types.h.
### 7.2 Classes and types for internal use

#### 7.2.2.4 typedef uint32_t _VDBL_userid

The user id type
Definition at line 85 of file vdbl_types.h.

#### 7.2.2.5 typedef uint32_t _VDBL_viewid

The view id type
Definition at line 89 of file vdbl_types.h.

#### 7.2.3 Enumeration Type Documentation

#### 7.2.3.1 enum _V_enum

This enum describes different view properties. Depending on this type, the view behaves differently.

- **V_hole**: This view looks through to a table. It is possible to change the table contents through the view.
- **V_window**: This view looks through to a table. It is impossible to change the table contents through the view.
- **V_transparent**: This view does not change the underlying table. It can be expanded, but changes are not committed to the table
- **V_frozen**: This view is a constant view to a table. It does not change and cannot be changed.
- **V_materialized**: The view is the result of a select, and there is not an underlying table
- **V_independent**: The view is just a temporary collection of rows and columns w/o a table.

Definition at line 121 of file vdbl_types.h.

#### 7.2.4 Function Documentation

#### 7.2.4.1 template <class TC> std::ostream& print_it ( std::ostream & o, const TC & t ) [inline]

This internal function is called from operator<< for columns. This hack was necessary, because a direct call of the operator<< for the class _TC did not work properly with g++ 3.2.
Definition at line 55 of file vdbl_col.h.
8 Namespace Documentation

8.1 vdbl Namespace Reference

Main namespace of the VDBL.

8.1.1 Detailed Description

This is the main namespace holding all classes and functions of the Vienna DataBase Library (VDBL).

9 Class Documentation

9.1 __VDBL_colbase Class Reference

The base class of the internal column structure.

#include <vdbl_col.h>

Inheritance diagram for __VDBL_colbase:

```
__VDBL_colbase

__VDBL_colbase< _TR >

__VDBL_mthdcol< _TM::context, _TM, _TM::return_type >

__VDBL_stdcol< _TT >

Public Member Functions

- virtual __VDBL_colbase * new_copy () const VDBL_PURE_VIRTUAL.virtual void setcontext(const context * c)
```
9.1 __VDBL_colbase Class Reference

- __VDBL_colbase ()
- __VDBL_colbase (const __VDBL_colbase &v)
- virtual ∼__VDBL_colbase ()

9.1.1 Detailed Description

__VDBL_colbase is the base class of all columns. This class defines a few virtual functions needed for all columns independent of their type. Especially important is the overloading trick for the (not overloadable) copy-constructor. This is the type independent part of the column implementation.

9.1.2 Constructor & Destructor Documentation

9.1.2.1 __VDBL_colbase::__VDBL_colbase ( ) [inline]
Standard constructor, copy constructor, and destructor
Definition at line 80 of file vdbl_col.h.

9.1.2.2 __VDBL_colbase::__VDBL_colbase ( const __VDBL_colbase &v ) [inline]
Standard constructor, copy constructor, and destructor
Definition at line 81 of file vdbl_col.h.

9.1.2.3 virtual __VDBL_colbase::∼__VDBL_colbase ( ) [inline, virtual]
Standard constructor, copy constructor, and destructor
Definition at line 82 of file vdbl_col.h.

9.1.3 Member Function Documentation

9.1.3.1 virtual __VDBL_colbase::new_copy ( ) const [virtual]
This function is used to overload the copy constructor. A call to this function defines the context for column value retrieval
Reimplemented in __VDBL_colbase.

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

- vdbl_col.h
9.2 __VDBL_index Class Reference

Inheritance diagram for __VDBL_index:

```
__VDBL_index
    ^_________
    |         
_VDBL_index_l
    |         
    v         
_VDBL_index_l< _TR >
    |          
    v          
_VDBL_index_l< std::pair< _TR, _TS >
    |            
    v              
_VDBL_index_l< std::triple< _TR, _TS, _TT >
    |                  
    v                    
_VDBL_index_lex2
    |                      
    v                        
_VDBL_index_lex2< _TR, _TS >
    |                            
    v                                
_VDBL_index_lex3
    |                                    
    v                                        
_VDBL_index_lex3< _TR, _TS, _TT >
    |                                            
    v                                                
lexi_triple_index
    |                                                      
    v                                                          
lexi_triple_index_def
```

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

- vdbl_index.h

9.3 __VDBL_view::col_iterator Struct Reference

```
#include <vdbl_view.h>
```

Inheritance diagram for __VDBL_view::col_iterator:

```
_VDBL_view::col_iterator_base
    ^
    |__VDBL_view::col_iterator
```

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9.3.1 Detailed Description

This is the base class for iterators over all columns, defining constructors, in(de)crement operations, and dereference operations.

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

• vdbl_view.h

9.4 _VDBL_table::col_iterator Struct Reference

#include <vdbl_table.h>

Inheritance diagram for _VDBL_table::col_iterator:
9.5 _VDBL_view::col_iterator_base Class Reference

Collaboration diagram for _VDBL_table::col_iterator:

9.4.1 Detailed Description

This is the base class for iterators over all columns, defining constructors, in(de)crement operations, and dereference operations.

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

- vdbl_table.h

9.5 _VDBL_view::col_iterator_base Class Reference

#include <vdbl_view.h>

Inheritance diagram for _VDBL_view::col_iterator_base:
9.6 _VDBL_table::col_iterator_base Class Reference

Collaboration diagram for _VDBL_view::col_iterator_base:

```plaintext
_VDBL_view
  |  _DI_v
  |  _VDBL_view::col_iterator_base
```

9.5.1 Detailed Description

This is the fundamental class for iterators over all columns, defining basic in(de)crementation for overloading, and basic comparison.

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

- vdbl_view.h

9.6 _VDBL_table::col_iterator_base Class Reference

#include <vdbl_table.h>

Inheritance diagram for _VDBL_table::col_iterator_base:

```plaintext
_VDBL_table::col_iterator_base
  |  _VDBL_table::col_iterator
```
Collaboration diagram for _VDBL_table::col_iterator_base:

```
_VDBL_table
  _CI_t
  _VDBL_table::col_iterator_base
```

9.6.1 Detailed Description

This is the fundamental class for iterators over all columns, defining basic in(de)crementation for overloading, and basic comparison.

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

- vdbl_table.h

9.7 _VDBL_view::default_iterator Struct Reference

#include <vdbl_view.h>

9.7.1 Detailed Description

This is the base class for iterators over all default columns, defining constructors, in(de)crement operations, and dereference operations.

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

- vdbl_view.h

9.8 _VDBL_view::row_iterator Struct Reference

#include <vdbl_view.h>
Inheritance diagram for _VDBL_view::_row_iterator:

Collaboration diagram for _VDBL_view::_row_iterator:

9.8.1 Detailed Description

This is the base class for iterators over all rows, defining constructors, in(de)crement operations, and dereference operations.

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

- vdbl_view.h

9.9 _VDBL_table::_row_iterator Struct Reference

#include <vdbl_table.h>
9.10  

9.9.1 Detailed Description

This is the base class for iterators over all rows, defining constructors, in(de)crement operations, and dereference operations.

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

- vdbl_table.h

9.10  

9.10.1 Detailed Description

This is the fundamental class for iterators over all columns, defining basic in(de)crementation for overloading, and basic comparison.
The documentation for this class was generated from the following file:

- vdbl_view.h

Access control list.
#include <vdbl_database.h>

Collaboration diagram for _VDBL_acl:

```
  _VDBL_aclentry
      | global
      |
  _VDBL_acl
```

Public Member Functions

- _VDBL_acl (bool _gr=false, bool _ga=false, bool _gw=false, bool _gd=false, bool _gctp=false)
- _VDBL_acl (const _VDBL_acl & _a)
- virtual ~ _VDBL_acl ()
- _VDBL_acl & operator= (const _VDBL_acl & _a)

Public Attributes

- _VDBL_aclentry global
- std::map< _VDBL_colid, _VDBL_aclentry > colwise

9.11.1 Detailed Description

This class defines an access control list. There is an entry for global access (valid for all columns) and special permissions for various columns

9.11.2 Constructor & Destructor Documentation

9.11.2.1 _VDBL_acl::_VDBL_acl ( bool _gr=false, bool _ga=false, bool _gw=false, bool _gd=false, bool _gctp=false ) [inline]

standard constructor which optionally initializes the global ACL entry

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Definition at line 186 of file vdbl_database.h.

9.11.2.2 _VDBL_acl::_VDBL_acl ( const _VDBL_acl & _a ) [inline]
copy constructor
Definition at line 193 of file vdbl_database.h.

9.11.2.3 virtual _VDBL_acl::~_VDBL_acl ( ) [inline, virtual]
standard destructor
Definition at line 199 of file vdbl_database.h.

9.11.3 Member Function Documentation

9.11.3.1 _VDBL_acl&_VDBL_acl::operator= ( const _VDBL_acl & _a ) [inline]
assignment operator
Definition at line 204 of file vdbl_database.h.

9.11.4 Member Data Documentation

9.11.4.1 std::map<_VDBL_colid, _VDBL_aclentry> _VDBL_acl::colwise
this defines permissions for single columns
Definition at line 180 of file vdbl_database.h.

9.11.4.2 _VDBL_aclentry _VDBL_acl::global
this defines permissions for all columns
Definition at line 176 of file vdbl_database.h.

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

- vdbl_database.h

9.12 _VDBL_aclentry Class Reference

entry in the access control list
#include <vdbl_database.h>

Public Member Functions

- _VDBL_aclentry (bool _r=false, bool _a=false, bool _w=false, bool _d=false, bool _ctp=false)
- _VDBL_aclentry (const _VDBL_aclentry & _a)
- virtual ~_VDBL_aclentry ()
- _VDBL_aclentry & operator= (const _VDBL_aclentry & _a)
Public Attributes

- bool read
- bool write
- bool append
- bool drop
- bool commit_to_parent

9.12.1 Detailed Description

This class describes one entry in the access control list of the table or view.

9.12.2 Constructor & Destructor Documentation

9.12.2.1 _VDBL_aclentry::VDBL_aclentry ( bool r = false, bool a = false, bool w = false, bool d = false, bool ctp = false ) [inline]

standard constructor which optionally initializes the data members
Definition at line 130 of file vdbl_database.h.

9.12.2.2 _VDBL_aclentry::VDBL_aclentry ( const _VDBL_aclentry & a ) [inline]

copy constructor
Definition at line 139 of file vdbl_database.h.

9.12.2.3 virtual _VDBL_aclentry::~VDBL_aclentry ( ) [inline, virtual]

standard destructor
Definition at line 147 of file vdbl_database.h.

9.12.3 Member Function Documentation

9.12.3.1 _VDBL_aclentry&_VDBL_aclentry::operator= ( const _VDBL_aclentry & _a ) [inline]

assignment operator
Definition at line 152 of file vdbl_database.h.

9.12.4 Member Data Documentation

9.12.4.1 bool _VDBL_aclentry::append
These flags describe the permissions
Definition at line 121 of file vdbl_database.h.

9.12.4.2 bool _VDBL_aclentry::commit_to_parent
These flags describe the permissions
Definition at line 123 of file vdbl_database.h.
9.12.4.3 bool _VDBL_aclentry::drop
These flags describe the permissions
Definition at line 122 of file vdbl_database.h.

9.12.4.4 bool _VDBL_aclentry::read
These flags describe the permissions
Definition at line 119 of file vdbl_database.h.

9.12.4.5 bool _VDBL_aclentry::write
These flags describe the permissions
Definition at line 120 of file vdbl_database.h.

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

- vdbl_database.h

9.13 _VDBL_alltype Class Reference

The templated class for the all_type class.
#include <vdbl_alltype.h>
Inheritance diagram for _VDBL_alltype:
Collaboration diagram for _VDBL_alltype:

```
_VDBL_alltype_base

_VDBL_alltype
```

### Public Types

- typedef _TR cont_type
  
  *The type this object holds.*

### Public Member Functions

- _VDBL_alltype ()
- _VDBL_alltype (const cont_type & p)
- _VDBL_alltype (cont_type * p)
- virtual ~_VDBL_alltype ()
- const std::type_info & get_type () const
- const cont_type & content () const

- void operator= (const void * p)
- void operator= (const cont_type * p)

- bool operator== (const _VDBL_alltype_base & p) const
- bool operator!= (const _VDBL_alltype_base & p) const

- bool operator== (const _Self & p) const
- bool operator!= (const _Self & p) const

### 9.13.1 Detailed Description

This class is the templated part of the all_type class. Here the member functions are implemented for every possible type. The class is merely used if values (mostly columns) of unknown type have to be returned and later need to be referenced.
9.13.2 Constructor & Destructor Documentation

9.13.2.1  _VDBL_alltype::VDBL_alltype ( ) [inline]
This is the empty constructor which produces an empty all_type
Definition at line 111 of file vdbl_alltype.h.

9.13.2.2  _VDBL_alltype::VDBL_alltype ( const cont_type & p ) [inline]
The standard copy constructor allocates a new data member. Note, that valid data members must provide a
copy constructor.
Definition at line 117 of file vdbl_alltype.h.

9.13.2.3  _VDBL_alltype::VDBL_alltype ( cont_type * p ) [inline]
this constructor is for direct setting of ALREADY allocated values! ONLY use this constructor with
pointers whose contents have been allocated using new! This constructor is merely used VDBL internal.
Definition at line 124 of file vdbl_alltype.h.

9.13.2.4 virtual _VDBL_alltype::~VDBL_alltype ( ) [inline, virtual]
The destructor removes the allocated data to prevent memory leaks.
Definition at line 129 of file vdbl_alltype.h.

9.13.3 Member Function Documentation

9.13.3.1 const cont_type & _VDBL_alltype::content ( ) const [inline]
This method returns a const reference to the stored data
Definition at line 140 of file vdbl_alltype.h.

9.13.3.2 const std::type_info & _VDBL_alltype::get_type ( ) const [inline]
This member function is used for run-time type checking. It returns the of the .
Definition at line 135 of file vdbl_alltype.h.

9.13.3.3 bool _VDBL_alltype::operator!= ( const _VDBL_alltype_base & p ) const [inline]
The standard comparison operators are mainly used for expressions and selectors.
Definition at line 164 of file vdbl_alltype.h.

9.13.3.4 bool _VDBL_alltype::operator!= ( const _Self & p ) const [inline]
The standard comparison operators are mainly used for expressions and selectors.
Definition at line 175 of file vdbl_alltype.h.

9.13.3.5 void _VDBL_alltype::operator= ( const void * p ) [inline]
The assignment operators can take either pointers to the or void pointers. Anyway, the data passed is copied
and reallocated. So it is safe to use or destroy the data passed after the assignment operator has been called.
Definition at line 149 of file vdbl_alltype.h.
9.13.3.6 void _VDBL_alltype::operator=( const cont_type * p ) [inline]

The assignment operators can take either pointers to the or void pointers. Anyway, the data passed is copied
and reallocated. So it is safe to use or destroy the data passed after the assignment operator has been called.
Definition at line 152 of file vdbl_alltype.h.

9.13.3.7 bool _VDBL_alltype::operator==( const _VDBL_alltype_base & p ) const [inline]

The standard comparison operators are mainly used for expressions and selectors.
Definition at line 161 of file vdbl_alltype.h.

9.13.3.8 bool _VDBL_alltype::operator==( const _Self & p ) const [inline]

The standard comparison operators are mainly used for expressions and selectors.
Definition at line 174 of file vdbl_alltype.h.

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

- vdbl_alltype.h

9.14 _VDBL_alltype_base Class Reference

The base class for the all_type class.
#include <vdbl_alltype.h>

Inheritance diagram for _VDBL_alltype_base:

```
_VDBL_alltype_base
  |   
  |   _VDBL_alltype
  |   |   < _TT >
  |   
  |   _VDBL_alltype< _TT >
  |          |   
  |          |   alltype
```

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9.15  _VDBL_col Class Reference

Public Member Functions

- _VDBL_alltype_base ()
- virtual ~_VDBL_alltype_base ()

9.14.1 Detailed Description

This class is the base for all templated all_type classes. All important members are purely virtual. The
class is merely used if values (mostly columns) of unknown type have to be returned.

9.14.2 Constructor & Destructor Documentation

9.14.2.1 _VDBL_alltype_base::_VDBL_alltype_base ( ) [inline]

standard constructor

Definition at line 61 of file vdbl_alltype.h.

9.14.2.2 virtual _VDBL_alltype_base::~_VDBL_alltype_base ( ) [inline, virtual]

standard destructor

Definition at line 65 of file vdbl_alltype.h.

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

- vdbl_alltype.h

9.15  _VDBL_col Class Reference

The generic column class (the external structure)

#include <vdbl_col.h>

Public Member Functions

- _VDBL_col ()
  
  generic constructor
- _VDBL_col (const _VDBL_col &__c)
  
  copy constructor - using copy constructor overloading of the base class
- _VDBL_col (__VDBL_colbase *__p)
- template<class _RR>
  _VDBL_col (const _RR &_c)
- virtual ~_VDBL_col ()
  
  standard destructor
- void setcontext (const context *__c, const _VDBL_row *__r)
  
  set the context for value retrieval
- template<class _TR>
  void set (_VDBL_colbase<_TR> *__p)
- template<class _TR>
  void get (_TR &c) const
9.15 _VDBL_col Class Reference

- template<class _TR >
  void def (_TR &d) const
- template<class _TR >
  void get_ptr (_TR const * &c) const
- template<class _TR >
  void get_copy (_TR * &p) const
- template<class _TR >
  void def_copy (_TR * &p) const
- void get_copy (_VDBL_alltype_base * & v) const
- void def_copy (_VDBL_alltype_base * & d) const
- const std::type_info & return_type_id () const
- const __VDBL_colbase * get_ptr_to_val () const

Friends

- std::ostream & operator<< (std::ostream & o, const _VDBL_col & c)

9.15.1 Detailed Description

_VDBL_col is the generic column class. It contains the actual data, and columns of this type are stored in rows. The copy constructor and operator<< are overloaded using the virtual functions defined in the __VDBL_colbase and afterwards in the _VDBL_colbase<_TT> classes.

This is the third and final step in constructing columns of arbitrary type.

9.15.2 Constructor & Destructor Documentation

9.15.2.1 _VDBL_col::_VDBL_col ( __VDBL_colbase * _p ) [inline, explicit]

direct constructor - handle with care, no implicit copying is done, the destructor, however, will try to delete _p. This is mostly used VDBL internal. If you want to use it, you should KNOW WHAT YOU ARE DOING!

Definition at line 261 of file vdbl_col.h.

9.15.2.2 template<class _RR > _VDBL_col::_VDBL_col ( const _RR & _c ) [inline, explicit]

This is a generic type independent constructor. It produces a column of type _RR. The column data is copied, so it is safe to destroy the _c data afterwards.

Definition at line 366 of file vdbl_col.h.

9.15.3 Member Function Documentation

9.15.3.1 template<class _TR > void _VDBL_col::def ( _TR & d ) const [inline]

This function stores a copy of the column default value into d.

Definition at line 380 of file vdbl_col.h.
9.15.3.2 template<class TR> void _VDBL_col::def_copy ( _TR * & p ) const [inline]

This function returns a pointer to a copy of the column’s default value. The copy of the value is allocated by new. It has to be deleted by the user to avoid memory leaks.

Definition at line 391 of file vdbl_col.h.

9.15.3.3 void _VDBL_col::def_copy ( _VDBL_alltype_base * & d ) const [inline]

This version of get_copy returns a copy of the columns default value within an alltype. This is useful for passing on column values. It can also be used to circumvent the strict run-time type checking. The user is, however, DISCOURAGED to do so.

Definition at line 397 of file vdbl_col.h.

9.15.3.4 template<class TR> void _VDBL_col::get ( _TR & c ) const [inline]

This function stores a copy of the column value into c.

Definition at line 377 of file vdbl_col.h.

9.15.3.5 template<class TR> void _VDBL_col::get_copy ( _TR * & p ) const [inline]

This function returns a pointer to a copy of the column’s value. The copy of the value is allocated by new. It has to be deleted by the user to avoid memory leaks.

Definition at line 387 of file vdbl_col.h.

9.15.3.6 void _VDBL_col::get_copy ( _VDBL_alltype_base * & v ) const [inline]

This version of get_copy returns a copy of the columns value within an alltype. This is useful for passing on column values. It can also be used to circumvent the strict run-time type checking. The user is, however, DISCOURAGED to do so.

Definition at line 394 of file vdbl_col.h.

9.15.3.7 template<class TR> void _VDBL_col::get_ptr ( _TR const * & c ) const [inline]

This function sets c to a const pointer pointing to the column’s actual value. Here, no copying is done.

Definition at line 383 of file vdbl_col.h.

9.15.3.8 const __VDBL_colbase* _VDBL_col::get_ptr_to_val ( ) const [inline]

This function is needed for the operator<< for columns of type return_type.

Definition at line 349 of file vdbl_col.h.

9.15.3.9 const std::type_info& _VDBL_col::return_type_id ( ) const [inline]

This function returns the type_info of the column type. This information is used during run-time type checking.

Definition at line 342 of file vdbl_col.h.

9.15.3.10 template<class TR> void _VDBL_col::set ( _VDBL_colbase< _TR > * p ) [inline]

This function sets the data to the pointer passed. This is a direct set operation - handle with care, no implicit copying is done. The destructor, however, will try to delete __p. This is mostly used VDBL internal. If you want to use it, you should KNOW WHAT YOU ARE DOING!
Definition at line 285 of file vdbl_col.h.

9.15.4  

Friends And Related Function Documentation

9.15.4.1 std::ostream& operator<< ( std::ostream & o, const _VDBL_col & c ) [friend]

The print operation for generic columns. This implicitly calls operator<< for the columns type. So it is necessary that this operator is indeed defined.

Definition at line 360 of file vdbl_col.h.

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

- vdbl_col.h

9.16  

_VDBL_colbase Class Reference

The type dependent base class of the internal column structure.

#include <vdbl_col.h>

Inheritance diagram for _VDBL_colbase:
Collaboration diagram for _VDBL_colbase:

- _VDBL_colbase

Public Types

- typedef _TR return_type

  return_type is the type of object stored

Public Member Functions

- virtual _Self * new_copy () const VDBLPUREVIRTUAL
- virtual _Self const _VDBL_row _r virtual VDBLPUREVIRTUAL void get (return_type &c) const VDBLPUREVIRTUAL
- virtual void def (return_type &d) const VDBLPUREVIRTUAL
- virtual void get_ptr (return_type const * &c) const VDBLPUREVIRTUAL
- virtual void get_copy (return_type * &c) const VDBLPUREVIRTUAL
- virtual void def_copy (return_type * &d) const
- virtual void get_copy (_VDBL_alltype_base * &v) const
- virtual void def_copy (_VDBL_alltype_base * &v) const
- virtual std::type_info & return_type_id () const
- virtual std::ostream & print_contents (std::ostream &o) const

- _VDBL_colbase ()
- _VDBL_colbase (const _Self & __c)
- virtual ~_VDBL_colbase ()

9.16.1 Detailed Description

_VDBL_colbase is the templated base class of all columns of the same type - for copy-constructor and get-operation overload. This class is the second step. The first step is done in __VDBL_colbase, which makes columns "type independent". The second step makes it possible to have different kinds of columns of the same type. All type dependent member functions are virtual in this class.
9.16.2 Constructor & Destructor Documentation

9.16.2.1 VDBL_colbase::VDBL_colbase ( ) [inline]

standard constructor, copy constructor, and destructor
Definition at line 144 of file vdbl_col.h.

9.16.2.2 VDBL_colbase::VDBL_colbase ( const _Self & c ) [inline]

standard constructor, copy constructor, and destructor
Definition at line 145 of file vdbl_col.h.

9.16.2.3 virtual VDBL_colbase::~VDBL_colbase ( ) [inline, virtual]

standard constructor, copy constructor, and destructor
Definition at line 146 of file vdbl_col.h.

9.16.3 Member Function Documentation

9.16.3.1 virtual void VDBL_colbase::def_copy ( return_type *& d ) const [inline, virtual]

This function returns a pointer to a copy of the column’s default value. The copy of the value is allocated by new. It has to be deleted by the user to avoid memory leaks.
Reimplemented in _VDBL_mthdcol, and _VDBL_stdcol.
Definition at line 188 of file vdbl_col.h.

9.16.3.2 virtual void VDBL_colbase::def_copy ( _VDBL_alltype_base *& v ) const [inline, virtual]

This version of get_copy returns a copy of the column's default value within an alltype. This is useful for passing on column values. It can also be used to circumvent the strict run-time type checking. The user is, however, DISCOURAGED to do so.
Reimplemented in _VDBL_stdcol.
Definition at line 210 of file vdbl_col.h.

9.16.3.3 virtual _Self const _VDBL_row * r virtual VDBL PURE_VIRTUAL void VDBL_colbase::get ( return_type & c ) const [inline, virtual]

This function stores a copy of the column value into c. This function stores a copy of the column default value into d. This function sets c to a const pointer pointing to the column’s actual value. Here, no copying is done. This function returns a pointer to a copy of the column’s value. The copy of the value is allocated by new. It has to be deleted by the user to avoid memory leaks.
Reimplemented in _VDBL_mthdcol.
Definition at line 162 of file vdbl_col.h.

9.16.3.4 virtual void VDBL_colbase::get_copy ( _VDBL_alltype_base *& v ) const [inline, virtual]

This version of get_copy returns a copy of the columns value within an alltype. This is useful for passing on column values. It can also be used to circumvent the strict run-time type checking. The user is,
however, DISCOURAGED to do so.
Reimplemented in _VDBL_stdcol.
Definition at line 197 of file vdbl_col.h.

9.16.3.5 virtual Self* _VDBL_colbase::new_copy ( ) const [virtual]
new_copy is the clone operation for copy-constructor overloading. setcontext sets the context for value retrieval.
Reimplemented from __VDBL_colbase.
Reimplemented in _VDBL_mthdcol, and _VDBL_stdcol.

9.16.3.6 virtual std::ostream& _VDBL_colbase::print_contents ( std::ostream & o ) const [inline, 
virtual]
This function is needed for the operator<< for columns of type return_type.
Reimplemented in _VDBL_mthdcol, and _VDBL_stdcol.
Definition at line 228 of file vdbl_col.h.

9.16.3.7 virtual const std::type_info& _VDBL_colbase::return_type_id ( ) const [inline, virtual]
This function returns the type_info of the column type. This information is used during run-time type checking.
Definition at line 221 of file vdbl_col.h.

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

- vdbl_col.h

9.17 _VDBL_colflags Class Reference

additional table information for a column
#include <vdbl_types.h>

Public Member Functions

- _VDBL_colflags (bool __d=false, bool __mi=false)
- ~_VDBL_colflags ()

Public Attributes

- bool master_index

9.17.1 Detailed Description

_VDBL_colflags contains the additional table information for a column

- has_default does this column have a default value?
- master_index is this column a master_index, i.e. are all entries throughout the table unique?
9.17.2 Constructor & Destructor Documentation

9.17.2.1 _VDBL_colflags::_VDBL_colflags ( bool _d = false, bool _mi = false ) [inline]
standard constructor, optionally setting the entries
Definition at line 76 of file vdbl_types.h.

9.17.2.2 _VDBL_colflags::~_VDBL_colflags ( ) [inline]
standard destructor
Definition at line 79 of file vdbl_types.h.
The documentation for this class was generated from the following file:

  • vdbl_types.h

9.18 _VDBL_context Class Reference
base class for context objects
#include <vdbl_context.h>

Public Member Functions

  • _VDBL_context (const _VDBL_table *t)
  • const _VDBL_table * table() const
  • void table (const _VDBL_table *t)

  • _VDBL_context ()
  • _VDBL_context (const _VDBL_context &c)
  • virtual ~_VDBL_context ()

9.18.1 Detailed Description
this is the base class for all context objects in the VDBL.

9.18.2 Constructor & Destructor Documentation

9.18.2.1 _VDBL_context::_VDBL_context ( ) [inline]
standard constructor, copy constructor, and destructor.
Definition at line 62 of file vdbl_context.h.

9.18.2.2 _VDBL_context::_VDBL_context ( const _VDBL_context & c ) [inline]
standard constructor, copy constructor, and destructor.
Definition at line 63 of file vdbl_context.h.
9.18.2.3 virtual _VDBL_context::~_VDBL_context ( ) [inline, virtual]
standard constructor, copy constructor, and destructor.
Definition at line 64 of file vdbl_context.h.

9.18.2.4 _VDBL_context::_VDBL_context ( const _VDBL_table * t ) [inline]
constructor which explicitely sets the table pointer
Definition at line 70 of file vdbl_context.h.

9.18.3 Member Function Documentation

9.18.3.1 const _VDBL_table* _VDBL_context::table ( ) const [inline]
retrieve a pointer to the table this object belongs to
Definition at line 75 of file vdbl_context.h.

9.18.3.2 void _VDBL_context::table ( const _VDBL_table * t ) [inline]
set the table pointer
Definition at line 80 of file vdbl_context.h.

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

- vdbl_context.h

9.19 _VDBL_database Class Reference

the database class
#include <vdbl_database.h>
Inheritance diagram for _VDBL_database:
Public Member Functions

- bool create_table (const std::string &_C_i, const _VDBL_userid &_C_u, const _VDBL_tableflags &__f=_VDBL_tableflags())
- _VDBL_tableid get_tableid (const std::string &_C_i, const _VDBL_userid &_C_u) const
- bool drop_table (const _D_tables::iterator &__t, const _D_table_names::iterator &__tn, const _VDBL_userid &_C_u)
- bool drop_table (const _VDBL_tableid &_C_i, const _VDBL_userid &_C_u)
- bool drop_table (const std::string &_C_i, const _VDBL_userid &_C_u)
- bool has_table (const _VDBL_tableid &_C_i, const _VDBL_userid &_C_u) const
- bool has_table (const std::string &_C_i, const _VDBL_userid &_C_u) const
- _VDBL_table * get_table (const _VDBL_tableid &_C_i, const _VDBL_userid &_C_u) const
- _VDBL_table * get_table (const std::string &_C_i, const _VDBL_userid &_C_u) const
- _VDBL_viewid get_viewid (const std::string &_C_i, const _VDBL_userid &_C_u) const
- bool create_view (const std::string &_C_i, const _VDBL_userid &_C_u, const _VDBL_context &__c, const std::string &_C_t, const _V_enum &__e)
- bool drop_view (const _D_views::iterator &__v, const _D_view_names::iterator &__vn, const _VDBL_userid &_C_u)
- bool drop_view (const _VDBL_viewid &_C_i, const _VDBL_userid &_C_u)
- bool drop_view (const std::string &_C_i, const _VDBL_userid &_C_u)
- bool has_view (const _VDBL_viewid &_C_i, const _VDBL_userid &_C_u) const
- bool has_view (const std::string &_C_i, const _VDBL_userid &_C_u) const
- _VDBL_view * get_view (const _VDBL_viewid &_C_i, const _VDBL_userid &_C_u) const
- _VDBL_view * get_view (const std::string &_C_i, const _VDBL_userid &_C_u) const
- _VDBL_database ()
- _VDBL_database (const _VDBL_database &) virtual ~_VDBL_database ()

Protected Member Functions

- _VDBL_tableid get_tableid ()
- _VDBL_userid get_userid ()
- _VDBL_viewid get_viewid ()

Friends

- class _VDBL_viewdbase

9.19.1 Detailed Description

This is the base class for a whole database including tables and views.

9.19.2 Constructor & Destructor Documentation

9.19.2.1 _VDBL_database::_VDBL_database ( ) [inline]

standard constructor

Definition at line 794 of file vdbl_database.h.
9.19 _VDBL_database Class Reference

9.19.2.2 _VDBL_database::VDBL_database ( const _VDBL_database & _t ) [inline]
copy constructor
Definition at line 800 of file vdbl_database.h.

9.19.2.3 virtual _VDBL_database::~_VDBL_database ( ) [inline, virtual]
standard destructor
Definition at line 814 of file vdbl_database.h.

9.19.3 Member Function Documentation

9.19.3.1 bool _VDBL_database::create_table ( const std::string & _C_i, const _VDBL_userid & _C_u, const _VDBL_tableflags & _f = _VDBL_tableflags() ) [inline]
create a new table
• _C_i: name
• _C_u: user id
• _f: the table flags (if they are not default) return true, if creating the table was successful.
Reimplemented in database.
Definition at line 406 of file vdbl_database.h.

9.19.3.2 bool _VDBL_database::create_view ( const std::string & _C_i, const _VDBL_userid & _C_u, const _VDBL_context & _c, const std::string & _C_t, const _V_enum & _e ) [inline]
create a new standard view with name _C_i, evaluation context _c, for table _C_t, of type _e. return true if creating worked, and false otherwise.
Reimplemented in database.
Definition at line 675 of file vdbl_database.h.

9.19.3.3 bool _VDBL_database::drop_table ( const _D_tables::iterator & _t, const _D_table_names::iterator & _tn, const _VDBL_userid & _C_u ) [inline]
delete a table, internal function. The first argument is the iterator into the table map, the second argument is the iterator into the table names map, return true, if deleting the table has worked.
Definition at line 471 of file vdbl_database.h.

9.19.3.4 bool _VDBL_database::drop_table ( const _VDBL_tableid & _C_i, const _VDBL_userid & _C_u ) [inline]
delete a table, whose table id is provided. return true, if deleting the table has worked.
Definition at line 496 of file vdbl_database.h.

9.19.3.5 bool _VDBL_database::drop_table ( const std::string & _C_i, const _VDBL_userid & _C_u ) [inline]
delete a table, whose name is provided. return true, if deleting the table has worked.
Reimplemented in database.
delete a view, internal function. The first argument is the iterator into the table map, the second argument is the iterator into the table names map, return true, if deleting the table has worked.

Definition at line 704 of file vdbl_database.h.

9.19.3.7 bool _VDBL_database::drop_view ( const _VDBL_viewid & C_i, const _VDBL_userid & C_u ) [inline]
delete a view, whose id is provided. return true, if deleting the table has worked.
Definition at line 729 of file vdbl_database.h.

9.19.3.8 bool _VDBL_database::drop_view ( const std::string & C_i, const _VDBL_userid & C_u ) [inline]
delete a view, whose name is provided. return true, if deleting the table has worked.
Reimplemented in database.
Definition at line 742 of file vdbl_database.h.

9.19.3.9 _VDBL_table * _VDBL_database::get_table ( const _VDBL_tableid & C_i, const _VDBL_userid & C_u ) const [inline]
return a pointer to the table with id _C_i.
Reimplemented in database.
Definition at line 537 of file vdbl_database.h.

9.19.3.10 _VDBL_table * _VDBL_database::get_table ( const std::string & C_i, const _VDBL_userid & C_u ) const [inline]
return a pointer to the table with name _C_i.
Reimplemented in database.
Definition at line 550 of file vdbl_database.h.

9.19.3.11 _VDBL_tableid _VDBL_database::get_tableid ( ) [inline, protected]
generate a new unique id for tables, views, and users
Definition at line 392 of file vdbl_database.h.

9.19.3.12 _VDBL_tableid _VDBL_database::get_tableid ( const std::string & C_i, const _VDBL_userid & C_u ) const [inline]
return the table id for a given name
Definition at line 448 of file vdbl_database.h.

9.19.3.13 _VDBL_userid _VDBL_database::get_userid ( ) [inline, protected]
generate a new unique id for tables, views, and users
Definition at line 393 of file vdbl_database.h.
9.19.3.14 _VDBL_view _VDBL_database::get_view ( const _VDBL_viewid & _C_i, const _VDBL_userid & _C_u ) const [inline]

return a pointer to the view with id _C_i.
Definition at line 769 of file vdbl_database.h.

9.19.3.15 _VDBL_view _VDBL_database::get_view ( const std::string & _C_i, const _VDBL_userid & _C_u ) const [inline]

return a pointer to the view with name _C_i.
Reimplemented in database.
Definition at line 781 of file vdbl_database.h.

9.19.3.16 _VDBL_viewid _VDBL_database::get_viewid ( ) [inline, protected]

generate a new unique id for tables, views, and users
Definition at line 394 of file vdbl_database.h.

9.19.3.17 _VDBL_viewid _VDBL_database::get_viewid ( const std::string & _C_i, const _VDBL_userid & _C_u ) const [inline]

return the view id of view _C_i.
Definition at line 661 of file vdbl_database.h.

9.19.3.18 bool _VDBL_database::has_table ( const _VDBL_tableid & _C_i, const _VDBL_userid & _C_u ) const [inline]

check whether the table _C_i exists
Definition at line 518 of file vdbl_database.h.

9.19.3.19 bool _VDBL_database::has_table ( const std::string & _C_i, const _VDBL_userid & _C_u ) const [inline]

check whether the table _C_i exists
Reimplemented in database.
Definition at line 530 of file vdbl_database.h.

9.19.3.20 bool _VDBL_database::has_view ( const _VDBL_viewid & _C_i, const _VDBL_userid & _C_u ) const [inline]

check whether the view with id _C_i exists
Definition at line 751 of file vdbl_database.h.

9.19.3.21 bool _VDBL_database::has_view ( const std::string & _C_i, const _VDBL_userid & _C_u ) const [inline]

check whether the view _C_i exists
Reimplemented in database.
Definition at line 763 of file vdbl_database.h.

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

#include <vdbl_alltype.h>

Public Member Functions

- _VDBL_dateinterval operator- (const _VDBL_date &_v) const
- _VDBL_date & operator- (const _VDBL_dateinterval &_v) const
- _VDBL_date & operator+= (const _VDBL_dateinterval &_v)
- _VDBL_date & operator+= (const _VDBL_dateinterval &_v)

Public Attributes

- int timezone
- int year
- signed char month
- signed char day
- unsigned int seconds
- unsigned int microseconds

9.20.1 Detailed Description

The date base class for the database

9.20.2 Member Function Documentation

9.20.2.1 _VDBL_date& VDBL_date::operator+ ( const _VDBL_dateinterval & _v ) const

These operators add or subtract time differences to a date

9.20.2.2 _VDBL_date& VDBL_date::operator+= ( const _VDBL_dateinterval & _v )

These operators add or subtract time differences to a date

9.20.2.3 _VDBL_dateinterval VDBL_date::operator- ( const _VDBL_date & _v ) const

This method computes the time difference between two dates.

9.20.2.4 _VDBL_date& VDBL_date::operator- ( const _VDBL_dateinterval & _v ) const

These operators add or subtract time differences to a date
9.21  _VDBL_dateinterval Class Reference

9.20.2.5  _VDBL_date& _VDBL_date::operator-= ( const _VDBL_dateinterval & v )

These operators add or subtract time differences to a date

9.20.3  Member Data Documentation

9.20.3.1  signed char _VDBL_date::day

the date is stored as year, month, day with the time in seconds and microseconds.
Definition at line 199 of file vdbl_alltype.h.

9.20.3.2  unsigned int _VDBL_date::microseconds

the date is stored as year, month, day with the time in seconds and microseconds.
Definition at line 201 of file vdbl_alltype.h.

9.20.3.3  signed char _VDBL_date::month

the date is stored as year, month, day with the time in seconds and microseconds.
Definition at line 199 of file vdbl_alltype.h.

9.20.3.4  unsigned int _VDBL_date::seconds

the date is stored as year, month, day with the time in seconds and microseconds.
Definition at line 200 of file vdbl_alltype.h.

9.20.3.5  int _VDBL_date::timezone

This defines the timezone in minutes deviation from GMT.
Definition at line 192 of file vdbl_alltype.h.

9.20.3.6  int _VDBL_date::year

the date is stored as year, month, day with the time in seconds and microseconds.
Definition at line 198 of file vdbl_alltype.h.

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

- vdbl_alltype.h

9.21  _VDBL_dateinterval Class Reference

The VDBL date interval class.
#include <vdbl_alltype.h>

Public Member Functions

- _VDBL_date operator+ (const _VDBL_date & d) const
9.21 _VDBL_dateinterval Class Reference

- _VDBL_dateinterval operator* (double d) const
- _VDBL_dateinterval operator/ (double d) const
- _VDBL_dateinterval & operator*= (double d)
- _VDBL_dateinterval & operator/= (double d)

- _VDBL_dateinterval & operator- (const _VDBL_dateinterval & v) const
- _VDBL_dateinterval & operator-= (const _VDBL_dateinterval & v)
- _VDBL_dateinterval & operator+ (const _VDBL_dateinterval & v) const
- _VDBL_dateinterval & operator+= (const _VDBL_dateinterval & v)

Public Attributes

- int years
- short int days
- int seconds
- int microseconds

9.21.1 Detailed Description

The date interval base class for the database. This class describes the difference between two dates.

9.21.2 Member Function Documentation

9.21.2.1 _VDBL_dateinterval _VDBL_dateinterval::operator* ( double d ) const

Date differences can be multiplied by or divided through doubles. E.g., half the time between two dates would be (d1-d2)/2.

9.21.2.2 _VDBL_dateinterval& _VDBL_dateinterval::operator*= ( double d )

Date differences can be multiplied by or divided through doubles. E.g., half the time between two dates would be (d1-d2)/2.

9.21.2.3 _VDBL_dateinterval& _VDBL_dateinterval::operator+ ( const _VDBL_dateinterval & v ) const

Date differences can be added/subtracted using this operator.

9.21.2.4 _VDBL_date _VDBL_dateinterval::operator+ ( const _VDBL_date & d ) const

Add a date difference to a date

9.21.2.5 _VDBL_dateinterval& _VDBL_dateinterval::operator+= ( const _VDBL_dateinterval & v )

Date differences can be added/subtracted using this operator.
9.21.2.6 _VDBL_dateinterval& _VDBL_dateinterval::operator- ( const _VDBL_dateinterval & v )
const

Date differences can be added/subtracted using this operator.

9.21.2.7 _VDBL_dateinterval& _VDBL_dateinterval::operator-= ( const _VDBL_dateinterval & v )

Date differences can be added/subtracted using this operator.

9.21.2.8 _VDBL_dateinterval _VDBL_dateinterval::operator/ ( double d ) const

Date differences can be multiplied by or divided through doubles. E.g., half the time between two dates would be (d1-d2)/2.

9.21.2.9 _VDBL_dateinterval& _VDBL_dateinterval::operator/= ( double d )

Date differences can be multiplied by or divided through doubles. E.g., half the time between two dates would be (d1-d2)/2.

9.21.3 Member Data Documentation

9.21.3.1 short int _VDBL_dateinterval::days

the date differences is stored as year, day with the time difference in seconds and microseconds.
Definition at line 263 of file vdbl_alltype.h.

9.21.3.2 int _VDBL_dateinterval::microseconds

the date differences is stored as year, day with the time difference in seconds and microseconds.
Definition at line 265 of file vdbl_alltype.h.

9.21.3.3 int _VDBL_dateinterval::seconds

the date differences is stored as year, day with the time difference in seconds and microseconds.
Definition at line 264 of file vdbl_alltype.h.

9.21.3.4 int _VDBL_dateinterval::years

the date differences is stored as year, day with the time difference in seconds and microseconds.
Definition at line 262 of file vdbl_alltype.h.

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

- vdbl_alltype.h

9.22 _VDBL_eval_expr Class Reference

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

- vdbl_expression.h
9.23  _VDBL_exprcol Class Reference
The documentation for this class was generated from the following file:

- vdbl_expression.h

9.24  _VDBL_exprequal Class Reference
The documentation for this class was generated from the following file:

- vdbl_expression.h

9.25  _VDBL_exprneql Class Reference
The documentation for this class was generated from the following file:

- vdbl_expression.h

9.26  _VDBL_exprrow Class Reference
The documentation for this class was generated from the following file:

- vdbl_expression.h

9.27  _VDBL_hierarchicalview Class Reference
hierarchical view class
#include <vdbl_hrview.h>

Inheritance diagram for _VDBL_hierarchicalview:

```
_VDBL_view

_VDBL_hierarchicalview

hierarchical_view
```
Collaboration diagram for \_VDBL\_hierarchicalview:

```
\_VDBL\_hierarchicalview
```

### Public Types

- typedef std::pair\<std::string, \_VDBL\_col\> \_T_colspec

### Public Member Functions

- \_VDBL\_hierarchicalview(const \_VDBL\_tableid &\_ti, \_VDBL\_table *\_t, const \_VDBL\_context &\_c, \_V_enum \_en)
- \_VDBL\_hierarchicalview(const \_VDBL\_tableid &\_ti, \_VDBL\_table *\_t, const \_VDBL\_context &\_c, \_V_enum \_en, const std::vector<\_VDBL\_rowid> &\_rs)
- \_VDBL\_hierarchicalview(const \_VDBL\_hierarchicalview &\_v)
- virtual \~\_VDBL\_hierarchicalview()
- void push_table(const \_VDBL\_tableid &\_ti, \_VDBL\_table *\_t)
- void push_table(const \_VDBL\_tableid &\_ti, \_VDBL\_table *\_t, const std::vector<\_VDBL\_rowid> &\_rs)
- \_VDBL\_tableid pop_table()
- bool insert(const std::vector<\_T_colspec> &\_row)
- std::ostream &print_col(std::ostream &o, const std::pair<\_VDBL\_tableid, \_VDBL\_rowid>&\_ri, const \_VDBL\_colid &\_ci, bool &printed) const
- template<class \_TR> bool get_raw_ptr(const std::pair<\_VDBL\_tableid, \_VDBL\_rowid>&\_ri, const \_VDBL\_colid &\_ci, \_TR const *\&r) const
- template<class \_TR> bool get(const std::pair<\_VDBL\_tableid, \_VDBL\_rowid>&\_ri, const \_VDBL\_colid &\_ci, \_TR &\_r) const
- virtual \_VDBL\_view* new_copy() VDBL\_PURE\_VIRTUALvirtual void destroy_copy(\_VDBL\_view* \_v) VDBL\_PURE\_VIRTUALvirtual const std

### Protected Types

- typedef _default_iterator<\_VDBL\_col, const \_VDBL\_col &, const \_VDBL\_col * > default_\_const_iterator
- typedef _col_iterator<\_VDBL\_col, const \_VDBL\_col &, const \_VDBL\_col * > col_\_const_iterator
typedef row_iterator<_VDBL_row, const _VDBL_row &, const _VDBL_row *> row_const_iterator

Protected Member Functions

- std::triple<_VDBL_tableid, _VDBL_colid, void *> _next_def_col (const _VDBL_tableid &t, const _VDBL_colid &c, void *d) const
- void *_copy_def_data (void *d) const
- void *_copy_col_data (void *d) const
- void *_copy_row_data (void *d) const
- void made_change ()
  increment the change counter.
- unsigned int get_change_ctr () const
  read the change counter

Protected Attributes

- _V_rows _V_r
- _V_cols _V_c
- _V_colxref _VCx

Friends

- class _VDBL_table

9.27.1 Detailed Description

This class implements a hierarchical view onto various tables.

9.27.2 Member Typedef Documentation

9.27.2.1 typedef std::pair<std::string, _VDBL_col> _VDBL_view::_T_colspec [inherited]

This is the description of one column

Definition at line 61 of file vdbl_view.h.

9.27.2.2 typedef _col_iterator<_VDBL_col, const _VDBL_col &, const _VDBL_col *> _VDBL_view::col_const_iterator [protected, inherited]

const iterator over all columns

Definition at line 439 of file vdbl_view.h.

9.27.2.3 typedef _default_iterator<_VDBL_col, const _VDBL_col &, const _VDBL_col *> _VDBL_view::default_const_iterator [protected, inherited]

const iterator over all default columns

Definition at line 301 of file vdbl_view.h.
9.27.2.4 typedef _row_iterator<_VDBL_row, const _VDBL_row&, const _VDBL_row*> _VDBL_view::row_const_iterator [protected, inherited]

const iterator over all rows

Definition at line 568 of file vdbl_view.h.

9.27.3 Constructor & Destructor Documentation

9.27.3.1 _VDBL_hierarchicalview::_VDBL_hierarchicalview ( const _VDBL_tableid & _ti, _VDBL_table * _t, const _VDBL_context & _c, _V_enum _en ) [inline]

standard constructor which initializes the table and the tableid of the master table, the evaluation context, and the view type.

Definition at line 342 of file vdbl_hrview.h.

9.27.3.2 _VDBL_hierarchicalview::_VDBL_hierarchicalview ( const _VDBL_tableid & _ti, _VDBL_table * _t, const _VDBL_context & _c, _V_enum _en, const std::vector<_VDBL_rowid> & _rs ) [inline]

standard constructor which initializes the table and the tableid of the master table, the evaluation context, and the view type. In addition the vector _rs contains a list of rows, which should be visible in this view.

Definition at line 369 of file vdbl_hrview.h.

9.27.3.3 _VDBL_hierarchicalview::_VDBL_hierarchicalview ( const _VDBL_hierarchicalview & _v ) [inline]

copy constructor

Definition at line 395 of file vdbl_hrview.h.

9.27.3.4 virtual _VDBL_hierarchicalview::~_VDBL_hierarchicalview ( ) [inline, virtual]

standard destructor

Definition at line 404 of file vdbl_hrview.h.

9.27.4 Member Function Documentation

9.27.4.1 void* _VDBL_hierarchicalview::copy_col_data ( void* _d ) const [inline, protected, virtual]

This function copies the additional data needed by a _col_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the next row for a _row_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous row for a _row_iterator. This function destroys the additional data needed by a _row_iterator.

Reimplemented from _VDBL_view.

Definition at line 290 of file vdbl_hrview.h.
9.27.4.2 void _VDBL_hierarchicalview::copy_def_data ( void * _d ) const [inline, protected, virtual]

This function copies the additional data needed by a _default_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the next column for a _col_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous column for a _col_iterator. This function destroys the additional data needed by a _col_iterator.

Reimplemented from _VDBL_view.

Definition at line 233 of file vdbl_hrview.h.

9.27.4.3 void _VDBL_hierarchicalview::copy_row_data ( void * _d ) const [inline, protected, virtual]

This function copies the additional data needed by a _row_iterator. This is the fundamental class for iterators over all default columns, defining basic (de)crementation for overloading, and basic comparison.

Reimplemented from _VDBL_view.

Definition at line 327 of file vdbl_hrview.h.

9.27.4.4 std::triple<_VDBL_tableid, _VDBL_colid, void*> _VDBL_hierarchicalview::next_def_col ( const _VDBL_tableid & _t, const _VDBL_colid & _c, void * _d ) const [inline, protected, virtual]

This virtual function has to be overloaded by the derived view classes, and it performs the step to the next default of a column a _default_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous default of a column a _default_iterator. This function destroys the additional data needed by a _default_iterator.

Reimplemented from _VDBL_view.

Definition at line 181 of file vdbl_hrview.h.

9.27.4.5 template <class _TR> bool _VDBL_hierarchicalview::get ( const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, _TR & _r ) const [inline]

get the data from column _ci in row _ri.second of table _ri.first. The data stored in the column must be of type _TR.

Definition at line 651 of file vdbl_hrview.h.

9.27.4.6 template <class _TR> bool _VDBL_hierarchicalview::get_raw_ptr ( const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, _TR const * & _r ) const [inline]

get a const ptr to the data from column _ci in row _ri.second of table _ri.first. The data stored in the column must be of type _TR. In this function no data copying is done. Note that this function returns a pointer to the columns raw data, so it can only be used to refer to constant columns.

Definition at line 632 of file vdbl_hrview.h.

9.27.4.7 bool _VDBL_hierarchicalview::insert ( const std::vector<_T_colspec> & _row ) [inline]

for now window views can only make changes in the top table in the list of tables.

Definition at line 506 of file vdbl_hrview.h.
9.27.4.8 virtual _VDBL_view* _VDBL_view::new_copy ( ) const [inline, virtual, inherited]

clone operation clone destructor return the column information for column _C_n. return value is a reference to the type_info of the column’s value type. The reference _r contains upon returning whether the function was successful, the column id, and the column flags. return a reference to the type_info of the column’s value type. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. The function returns true, if inserting was successful. remove the row with it _ri from the table return whether the column _C_n is defined in the table return table id and column id of column _C_n return column name of column _C_n return a const reference to the column with column id _ci in row _ri.second of table _ri.first. If successful, set error to false, and to true otherwise. Note that in this function the context for the column is NOT set. This method adds the row ids in _rs to the visible part of the view. This method removes the row ids in _rs from the visible part of the view. print the contents of the column with column id _ci in row _ri.second of table _ri.first. If the row is empty and no default is defined, print nothing. return a const reference to the row with row id _ri.second of table _ri.first. If successful, set error to false, and to true otherwise. return a const reference to the default column with column id _ri.second of table _ri.first. If successful, set error to false, and to true otherwise. return iterator to first default column return iterator beyond last default column return iterator to first row return iterator beyond last row return iterator to first column return iterator beyond last column return the type of this view

Definition at line 587 of file vdbl_view.h.

9.27.4.9 _VDBL_tableid _VDBL_hierarchicalview::pop_table ( ) [inline]

remove the topmost table from the view, and return its table id.

Definition at line 459 of file vdbl_hrview.h.

9.27.4.10 std::ostream & _VDBL_hierarchicalview::print_col ( std::ostream & o, const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, bool & printed ) const [inline]

print the contents of column _ci in row _ri.second of table _ri.first.

Definition at line 606 of file vdbl_hrview.h.

9.27.4.11 void _VDBL_hierarchicalview::push_table ( const _VDBL_tableid & _ti, _VDBL_table * _t ) [inline]

This pushes a new table onto the top of the hierarchical view stack.

Definition at line 409 of file vdbl_hrview.h.

9.27.4.12 void _VDBL_hierarchicalview::push_table ( const _VDBL_tableid & _ti, _VDBL_table * _t, const std::vector<_VDBL_rowid> & _rs ) [inline]

This pushes a new table onto the top of the hierarchical view stack. Additionally, a subset of the table’s rows, which are visible in the view, can be specified.

Definition at line 434 of file vdbl_hrview.h.

9.27.5 Member Data Documentation

9.27.5.1 _V_cols _VDBL_hierarchicalview::_V_c [protected]

This contains all columns of the view
9.28 _VDBL_index_l Class Reference

Definition at line 90 of file vdbl_hrview.h.

9.27.5.2 _V_colref _VDBL_hierarchicalview::V_cx [protected]
This is the cross reference: view col id -> <tableid, real col id>
Definition at line 94 of file vdbl_hrview.h.

9.27.5.3 _V_rows _VDBL_hierarchicalview::V_r [protected]
This contains all rows of the view
Definition at line 86 of file vdbl_hrview.h.

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

- vdbl_hrview.h

9.28 _VDBL_index_l Class Reference

Inheritance diagram for _VDBL_index_l:

Collaboration diagram for _VDBL_index_l:

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

- vdbl_listindex.h
Inheritance diagram for _VDBL_index_lex2:
Collaboration diagram for _VDBL_index_lex2:

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

- vdbl_lexiindex.h
9.30  _VDBL_index_lex3 Class Reference

Inheritance diagram for _VDBL_index_lex3:

```
  _VDBL_index

  _VDBL_index_l
  < std::triple<_TR, _TS, _TT> >

  _VDBL_index_l< std::triple<_TR, _TS, _TT> >

  _VDBL_index_lex3
  < _TR, _TS, _TT >

  _VDBL_index_lex3< _TR, _TS, _TT >

  lexi_triple_index
  lexi_triple_index_def
```
Collaboration diagram for _VDBL_index_lex3:

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

- vdbl_lexiindex.h
9.31 _VDBL_joinview Class Reference

Inheritance diagram for _VDBL_joinview:

Collaboration diagram for _VDBL_joinview:

Public Types

- typedef std::pair<std::string, _VDBL_col> _T_colspec

Public Member Functions

- bool insert (const std::vector<_T_colspec> &_row)
- bool remove (std::pair<_VDBL_tableid, _VDBL_rowid> _r)
- virtual _VDBL_view * new_copy () VDBL_PURE_VIRTUAL
- virtual void destroy_copy(_VDBL_view *v) VDBL_PURE_VIRTUAL
- virtual const std std
Protected Types

- typedef _default_iterator < _VDBL_col, const _VDBL_col &, const _VDBL_col * > default_const_iterator
- typedef _col_iterator < _VDBL_col, const _VDBL_col &, const _VDBL_col * > col_const_iterator
- typedef _row_iterator < _VDBL_row, const _VDBL_row &, const _VDBL_row * > row_const_iterator

Protected Member Functions

- void made_change ()
  increment the change counter.
- unsigned int get_changeCtr () const
  read the change counter.
- virtual std::triple < _VDBL_tableid, _VDBL_colid, void * > _next_def_col (const _VDBL_tableid & _t, const _VDBL_colid & _c, void * _d) const VDBL_PURE_VIRTUAL virtual std
- virtual void * _copy_def_data (void * _d) const VDBL_PURE_VIRTUAL virtual std
- virtual void * _copy_col_data (void * _d) const VDBL_PURE_VIRTUAL virtual std
- virtual void * _copy_row_data (void * _d) const VDBL_PURE_VIRTUAL public

Friends

- class _VDBL_table

9.31.1 Member Typedef Documentation

9.31.1.1 typedef std::pair < std::string, _VDBL_col > _VDBL_view::_T_colspec [inherited]

This is the description of one column
Definition at line 61 of file vdbl_view.h.

9.31.1.2 typedef _col_iterator < _VDBL_col, const _VDBL_col &, const _VDBL_col * > _VDBL_view::col_const_iterator [protected, inherited]

const iterator over all columns
Definition at line 439 of file vdbl_view.h.

9.31.1.3 typedef _default_iterator < _VDBL_col, const _VDBL_col &, const _VDBL_col * > _VDBL_view::default_const_iterator [protected, inherited]

const iterator over all default columns
Definition at line 301 of file vdbl_view.h.

9.31.1.4 typedef _row_iterator < _VDBL_row, const _VDBL_row &, const _VDBL_row * > _VDBL_view::row_const_iterator [protected, inherited]

const iterator over all rows
Definition at line 568 of file vdbl_view.h.

Generated on Mon Oct 28 2013 22:57:27 for Vienna Database Library by Doxygen
9.31.2 Member Function Documentation

9.31.2.1 virtual void*_VDBL_view::copy_col_data ( void *d ) const [inline, protected, virtual, inherited]

This function copies the additional data needed by a _col_iterator This virtual function has to be overloaded by the derived view classes, and it performs the step to the next row for a _row_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous row for a _row_iterator. This function destroys the additional data needed by a _row_iterator.

Reimplemented in _VDBL_hierarchicalview, and _VDBL_standardview.

Definition at line 138 of file vdbl_view.h.

9.31.2.2 virtual void*_VDBL_view::copy_def_data ( void *d ) const [inline, protected, virtual, inherited]

This function copies the additional data needed by a _default_iterator This virtual function has to be overloaded by the derived view classes, and it performs the step to the next column for a _col_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous column for a _col_iterator. This function destroys the additional data needed by a _col_iterator.

Reimplemented in _VDBL_hierarchicalview, and _VDBL_standardview.

Definition at line 106 of file vdbl_view.h.

9.31.2.3 virtual void*_VDBL_view::copy_row_data ( void *d ) const [inline, protected, virtual, inherited]

This function copies the additional data needed by a _row_iterator This is the fundamental class for iterators over all default columns, defining basic in(de)crementation for overloading, and basic comparison.

Reimplemented in _VDBL_hierarchicalview, and _VDBL_standardview.

Definition at line 170 of file vdbl_view.h.

9.31.2.4 virtual std::triple<_VDBL_tableid, _VDBL_colid,void*> _VDBL_view::next_def_col ( const _VDBL_tableid &t, const _VDBL_colid &c, void *d ) const [inline, protected, virtual, inherited]

This virtual function has to be overloaded by the derived view classes, and it performs the step to the next default of a column a _default_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous default of a column a _default_iterator. This function destroys the additional data needed by a _default_iterator.

Reimplemented in _VDBL_hierarchicalview, and _VDBL_standardview.

Definition at line 82 of file vdbl_view.h.

9.31.2.5 bool _VDBL_joinview::insert ( const std::vector<_T_colspec> &row ) [inline]

for now window views can only have one table in the list of tables.

Definition at line 197 of file vdbl_view.h.

9.31.2.6 virtual _VDBL_view*_VDBL_view::new_copy ( ) const [inline, virtual, inherited]

clone operation clone destructor return the column information for column _C_n. the return value is a reference to the type_info of the column’s value type. The reference _r contains upon returning...
whether the function was successful, the column id, and the column flags. return a reference to the type-
_info of the column’s value type. insert a new row of specification _row into the table, and return the
row id of the newly created row in _r. The function returns true, if inserting was successful. remove the
row with it _ri from the table return whether the column _C_n is defined in the table return table id and
column id of column _C_n return column name of column _C_n return a const reference to the column
with column id _ci in row _ri.second of table ri.first. If successful, set error to false, and
to true otherwise. Note that in this function the context for the column is NOT set. This method adds
the row ids in _rs to the visible part of the view. This method removes the row ids in _rs from the
visible part of the view. print the contents of the column with column id _ci in row _ri.second of
table ri.first. If the row is empty and no default is defined, print nothing. return a const reference
to the row with row id _ri.second of table ri.first. If successful, set error to false, and
to true otherwise. return a const reference to the default column with column id _ri.second of table
ri.first. If successful, set error to false, and to true otherwise. return iterator to first default
column return iterator to first default column return iterator beyond last default column return iterator to first row return iterator beyond last row
return iterator to first column return iterator beyond last column return the type of this view

Definition at line 587 of file vdbl_view.h.

9.31.27 bool _VDBL_joinview::remove ( std::pair<_VDBL_tableid, _VDBL_rowid> r ) [inline]
for now window views can only have one table in the list of tables

Definition at line 207 of file vdbl_joinview.h.

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

- vdbl_joinview.h

9.32 _VDBL_method Class Reference

base class for methods usable in _VDBL_mthdcol columns.
#include <vdbl_method.h>

Inheritance diagram for _VDBL_method:
Public Member Functions

- _VDBL_method ()
- _VDBL_method (const _VDBL_method &m)
- virtual ∼_VDBL_method ()
- virtual return_type operator() () const VDBL_PURE_VIRTUAL
- virtual return_type def() const VDBL_PURE_VIRTUAL
- virtual void setcontext(const context *c)

9.32.1 Detailed Description

This is the base class, from which all methods should be derived that are used in _VDBL_mtdcol. Its virtual methods are those required from a method used for computing column names dynamically. Such a method is a function object with two additional methods described below.

9.32.2 Constructor & Destructor Documentation

9.32.2.1 _VDBL_method::_VDBL_method ( ) [inline]

standard constructor
Definition at line 66 of file vdbl_method.h.

9.32.2.2 _VDBL_method::_VDBL_method ( const _VDBL_method &m ) [inline]

copy constructor
Definition at line 70 of file vdbl_method.h.

9.32.3 Member Function Documentation

9.32.3.1 virtual return_type _VDBL_method::operator() ( ) const [virtual]

compute the value compute the default value set the evaluation context and the evaluation row.
The documentation for this class was generated from the following file:

- vdbl_method.h

9.33 _VDBL_mixtype Class Reference

mixed type
#include <vdbl_alltype.h>
Collaboration diagram for _VDBL_mixtype:

Public Member Functions

- virtual _VDBL_mixtype ()
  destructor
- _VDBL_mixtype (const _VDBL_mixtype &__a)
  copy constructor
- _VDBL_mixtype & operator= (const _VDBL_mixtype &__a)
  assignment operator
- _VDBL_mixtype & clear ()
  deallocate all data and reset the mixtype to its empty state
- bool is_vector () const
  returns whether the mixtype stores a vector
- bool empty () const
  returns whether the mixtype is empty

- _VDBL_mixtype ()
- _VDBL_mixtype (bool __x)
- _VDBL_mixtype (int __x)
- _VDBL_mixtype (double __x)
- _VDBL_mixtype (unsigned int __x)
- _VDBL_mixtype (_VDBL_date __x)
- _VDBL_mixtype (_VDBL_dateinterval __x)
- _VDBL_mixtype (const char * __cp)
- _VDBL_mixtype (const std::string &__x)
- _VDBL_mixtype (const std::vector< bool &__x>)
- _VDBL_mixtype (const std::vector< int &__x>)
- _VDBL_mixtype (const std::vector< double &__x>)
- _VDBL_mixtype (const std::vector< unsigned int &__x>)
### _VDBL_mixtype Class Reference

- `_VDBL_mixtype & operator= (bool __x)`
- `_VDBL_mixtype & operator= (int __x)`
- `_VDBL_mixtype & operator= (double __x)`
- `_VDBL_mixtype & operator= (unsigned int __x)`
- `_VDBL_mixtype & operator= (const _VDBL_date &__x)`
- `_VDBL_mixtype & operator= (const _VDBL_dateinterval &__x)`
- `_VDBL_mixtype & operator= (const std::string &__x)`
- `_VDBL_mixtype & operator= (const char ∗__x)`
- `_VDBL_mixtype & operator= (const std::vector<bool> &__x)`
- `_VDBL_mixtype & operator= (const std::vector<int> &__x)`
- `_VDBL_mixtype & operator= (const std::vector<double> &__x)`
- `_VDBL_mixtype & operator= (const std::vector<unsigned int> &__x)`

- `bool nb () const`
- `int nn () const`
- `double nd () const`
- `unsigned int nu () const`
- `_VDBL_date dt () const`
- `_VDBL_dateinterval di () const`
- `std::string & s () const`
- `std::vector<bool> & b () const`
- `std::vector<int> & n () const`
- `std::vector<double> & d () const`
- `std::vector<unsigned int> & u () const`

#### 9.33.1 Detailed Description

This is an alternative definition of something like an all_type. It has a useful copy constructor and could be used as column type. The class can hold data of several basic types:

- `bool`
- `int`
- `unsigned int`
- `double`
- `date`
- `dateinterval`
- `string`
- `vector<bool>`
- `vector<int>`
- `vector<unsigned int>`
- `vector<double>`

Data is allocated and destroyed automatically.
9.33.2 Constructor & Destructor Documentation

9.33.2.1 _VDBL_mixtype::_VDBL_mixtype ( ) [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty _VDBL_mixtype, and a const char * argument is stored as a string.
Definition at line 429 of file vdbl_alltype.h.

9.33.2.2 _VDBL_mixtype::_VDBL_mixtype ( bool x ) [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty _VDBL_mixtype, and a const char * argument is stored as a string.
Definition at line 430 of file vdbl_alltype.h.

9.33.2.3 _VDBL_mixtype::_VDBL_mixtype ( int x ) [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty _VDBL_mixtype, and a const char * argument is stored as a string.
Definition at line 432 of file vdbl_alltype.h.

9.33.2.4 _VDBL_mixtype::_VDBL_mixtype ( double x ) [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty _VDBL_mixtype, and a const char * argument is stored as a string.
Definition at line 434 of file vdbl_alltype.h.

9.33.2.5 _VDBL_mixtype::_VDBL_mixtype ( unsigned int x ) [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty _VDBL_mixtype, and a const char * argument is stored as a string.
Definition at line 436 of file vdbl_alltype.h.

9.33.2.6 _VDBL_mixtype::_VDBL_mixtype ( _VDBL_date x ) [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty _VDBL_mixtype, and a const char * argument is stored as a string.
Definition at line 438 of file vdbl_alltype.h.

9.33.2.7 _VDBL_mixtype::_VDBL_mixtype ( _VDBL_dateinterval x ) [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty _VDBL_mixtype, and a const char * argument is stored as a string.
Definition at line 440 of file vdbl_alltype.h.

9.33.2.8 _VDBL_mixtype::_VDBL_mixtype ( const char * cp ) [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty _VDBL_mixtype, and a const char * argument is stored as a string.
Definition at line 442 of file vdbl_alltype.h.
9.33.9 `VDBL_mixtype::VDBL_mixtype ( const std::string & _x )` [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty `_VDBL_mixtype`, and a `const char *` argument is stored as a `string`.
Definition at line 444 of file vdbl_alltype.h.

9.33.10 `VDBL_mixtype::VDBL_mixtype ( const std::vector<bool> & _x )` [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty `_VDBL_mixtype`, and a `const char *` argument is stored as a `string`.
Definition at line 446 of file vdbl_alltype.h.

9.33.11 `VDBL_mixtype::VDBL_mixtype ( const std::vector<int> & _x )` [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty `_VDBL_mixtype`, and a `const char *` argument is stored as a `string`.
Definition at line 448 of file vdbl_alltype.h.

9.33.12 `VDBL_mixtype::VDBL_mixtype ( const std::vector<double> & _x )` [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty `_VDBL_mixtype`, and a `const char *` argument is stored as a `string`.
Definition at line 450 of file vdbl_alltype.h.

9.33.13 `VDBL_mixtype::VDBL_mixtype ( const std::vector<unsigned int> & _x )` [inline]

For every type which can be stored there exists a constructor. The constructor without arguments produces an empty `_VDBL_mixtype`, and a `const char *` argument is stored as a `string`.
Definition at line 453 of file vdbl_alltype.h.

9.33.3 Member Function Documentation

9.33.3.1 `std::vector<bool> & _VDBL_mixtype::b ( ) const` [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.
Definition at line 569 of file vdbl_alltype.h.

9.33.3.2 `std::vector<double> & _VDBL_mixtype::d ( ) const` [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.
Definition at line 571 of file vdbl_alltype.h.

9.33.3.3 `_VDBL_dateinterval _VDBL_mixtype::di ( ) const` [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.
Definition at line 567 of file vdbl_alltype.h.
9.33.3.4 \texttt{\_VDBL\_mixtype::dt()} const [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.

Definition at line 566 of file vdbl_alltype.h.

9.33.3.5 \texttt{std::vector\textless int\textgreater \& \_VDBL\_mixtype::n()} const [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.

Definition at line 570 of file vdbl_alltype.h.

9.33.3.6 \texttt{bool \_VDBL\_mixtype::nb()} const [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.

Definition at line 562 of file vdbl_alltype.h.

9.33.3.7 \texttt{double \_VDBL\_mixtype::nd()} const [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.

Definition at line 564 of file vdbl_alltype.h.

9.33.3.8 \texttt{int \_VDBL\_mixtype::nn()} const [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.

Definition at line 563 of file vdbl_alltype.h.

9.33.3.9 \texttt{unsigned int \_VDBL\_mixtype::nu()} const [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.

Definition at line 565 of file vdbl_alltype.h.

9.33.3.10 \texttt{\_VDBL\_mixtype& \_VDBL\_mixtype::operator=} ( bool \_x ) [inline]

For every type which can be stored there exists an assignment operator, and a \texttt{const char *} argument is stored as a \texttt{string}.

Definition at line 471 of file vdbl_alltype.h.

9.33.3.11 \texttt{\_VDBL\_mixtype& \_VDBL\_mixtype::operator=} ( int \_x ) [inline]

For every type which can be stored there exists an assignment operator, and a \texttt{const char *} argument is stored as a \texttt{string}.

Definition at line 476 of file vdbl_alltype.h.

9.33.3.12 \texttt{\_VDBL\_mixtype& \_VDBL\_mixtype::operator=} ( double \_x ) [inline]

For every type which can be stored there exists an assignment operator, and a \texttt{const char *} argument is stored as a \texttt{string}.
For every type which can be stored there exists an assignment operator, and a `const char *` argument is stored as a string.

Definition at line 486 of file vdbl_alltype.h.

For every type which can be stored there exists an assignment operator, and a `const char *` argument is stored as a string.

Definition at line 491 of file vdbl_alltype.h.

For every type which can be stored there exists an assignment operator, and a `const char *` argument is stored as a string.

Definition at line 496 of file vdbl_alltype.h.

For every type which can be stored there exists an assignment operator, and a `const char *` argument is stored as a string.

Definition at line 501 of file vdbl_alltype.h.

For every type which can be stored there exists an assignment operator, and a `const char *` argument is stored as a string.

Definition at line 507 of file vdbl_alltype.h.

For every type which can be stored there exists an assignment operator, and a `const char *` argument is stored as a string.

Definition at line 513 of file vdbl_alltype.h.

For every type which can be stored there exists an assignment operator, and a `const char *` argument is stored as a string.

Definition at line 519 of file vdbl_alltype.h.

For every type which can be stored there exists an assignment operator, and a `const char *` argument is stored as a string.

Definition at line 525 of file vdbl_alltype.h.
9.33.3.21  `VDBL_mixtype::operator=` (const std::vector<unsigned int>& _x)

For every type which can be stored there exists an assignment operator, and a const char * argument is stored as a string.

Definition at line 531 of file vdbl_alltype.h.

9.33.3.22  std::string& VDBL_mixtype::s() const [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.

Definition at line 568 of file vdbl_alltype.h.

9.33.3.23  std::vector<unsigned int>& VDBL_mixtype::u() const [inline]

Retrieve the value of the appropriate type. Note, that no internal type checking is done, whatsoever. So you should have a good idea what is stored in the mixtype, if you want to call one of the retrieval routines.

Definition at line 572 of file vdbl_alltype.h.

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

- vdbl_alltype.h

9.34  `VDBL_mthdcol Class Reference`

generic column class for methods

#include <vdbl_col.h>
Inheritance diagram for _VDBL_mthdcol:
Public Member Functions

- `_VDBL_mthdcol` (const method & m)
- `_Self * new_copy () const`
- virtual void setcontext (const context *, const _VDBL_row *)
- void get (type & c) const
  
  the function object provides us with the retrieval method
- void get_ptr (type const * & c) const
  
  there is no way to get a pointer to the method’s result properly
- void def (type & d) const
  
  the default value might be different, and might be computed differently
- void def_copy (return_type *)& d) const
- std::ostream & print_contents (std::ostream & o) const
- virtual void def_copy (_VDBL_alltype_base *)& v) const
- virtual void get_copy (_VDBL_alltype_base *)& v) const
- virtual const std::type_info & return_type_id () const

- `_VDBL_mthdcol ()`
  
  > __c_m holds the function object used
- `_VDBL_mthdcol (const _Self & __c)`
  
  > __c_m holds the function object used
- virtual `~_VDBL_mthdcol ()`
  
  > __c_m holds the function object used
9.34 _VDBL_mthdcol Class Reference

9.34.1 Detailed Description

_VDBL_mthdcol is the generic column class for computed values. It allows to define a method, which is called within the given context together with a reference to the row, whenever a column is accessed.

9.34.2 Constructor & Destructor Documentation

9.34.2.1 _VDBL_mthdcol::VDBL_mthdcol ( ) [inline]
standard constructor, copy constructor, and destructor
Definition at line 524 of file vdbl_col.h.

9.34.2.2 _VDBL_mthdcol::VDBL_mthdcol ( const _Self & _c ) [inline]
standard constructor, copy constructor, and destructor
Definition at line 525 of file vdbl_col.h.

9.34.2.3 virtual _VDBL_mthdcol::~VDBL_mthdcol ( ) [inline, virtual]
standard constructor, copy constructor, and destructor
Definition at line 526 of file vdbl_col.h.

9.34.2.4 _VDBL_mthdcol::VDBL_mthdcol ( const method & _m ) [inline]
constructor for explicitly setting the method
Definition at line 532 of file vdbl_col.h.

9.34.3 Member Function Documentation

9.34.3.1 virtual void _VDBL_colbase::def_copy ( _VDBL_alltype_base * & v ) const [inline, virtual, inherited]
This version of get_copy returns a copy of the columns default value within an alltype. This is useful for passing on column values. It can also be used to circumvent the strict run-time type checking. The user is, however, DISCOURAGED to do so.
Definition at line 210 of file vdbl_col.h.

9.34.3.2 void _VDBL_mthdcol::def_copy ( return_type * & d ) const [inline, virtual]
This function returns a pointer to a copy of the column’s default value. The copy of the value is allocated by new. It has to be deleted by the user to avoid memory leaks.
Reimplemented from _VDBL_colbase< _TR >.
Definition at line 558 of file vdbl_col.h.

9.34.3.3 virtual void _VDBL_colbase::get_copy ( _VDBL_alltype_base * & v ) const [inline, virtual, inherited]
This version of get_copy returns a copy of the columns value within an alltype. This is useful for passing on column values. It can also be used to circumvent the strict run-time type checking. The user is, however, DISCOURAGED to do so.
9.34.3.4 _Self∗._VDBL_mthdcol::new_copy ( ) const [inline, virtual]

new_copy is the clone operation for copy-constructor overloading. setcontext sets the context for value retrieval.

Reimplemented from _VDBL_colbase< _TR >.

Definition at line 534 of file vdbl_col.h.

9.34.3.5 std::ostream& _VDBL_mthdcol::print_contents ( std::ostream & o ) const [inline, virtual]

This function is needed for the operator<< for columns of type return_type.

Reimplemented from _VDBL_colbase< _TR >.

Definition at line 561 of file vdbl_col.h.

9.34.3.6 virtual const std::type_info& _VDBL_colbase::return_type_id ( ) const [inline, virtual, inherited]

This function returns the type_info of the column type. This information is used during run-time type checking.

Definition at line 221 of file vdbl_col.h.

9.34.3.7 virtual void _VDBL_mthdcol::setcontext ( const context∗ c, const _VDBL_row∗ r )

[inline, virtual]

for setting the context, the setcontext method of the function object is used.

Definition at line 540 of file vdbl_col.h.

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

- vdbl_col.h

9.35 _VDBL_row Class Reference

row class

#include <vdbl_row.h>
Inheritance diagram for _VDBL_row:

Public Member Functions

- _VDBL_row()
- _VDBL_row(const _VDBL_row &r)
- virtual _VDBL_row()
- const _VDBL_col & get_col(const _VDBL_colid &id, bool &error) const
- _VDBL_col & get_col(const _VDBL_colid &id, bool &error)
- bool has_col(const _VDBL_colid &id) const
- bool insert(const _VDBL_colid &id, const _VDBL_col &col)
- bool drop(const _VDBL_colid &id)
- void update(const _VDBL_colid &id, const _VDBL_col &col)

9.35.1 Detailed Description

This class implements rows of a table as a map column id -> column

9.35.2 Constructor & Destructor Documentation

9.35.2.1 _VDBL_row::_VDBL_row() [inline]

standard constructor which optionally initializes the global ACL entry
Definition at line 67 of file vdbl_row.h.

9.35.2.2 _VDBL_row::_VDBL_row(const _VDBL_row &r) [inline]

copy constructor
Definition at line 71 of file vdbl_row.h.

9.35.2.3 virtual _VDBL_row::~_VDBL_row() [inline, virtual]

standard destructor
Definition at line 75 of file vdbl_row.h.
9.35.3 Member Function Documentation

9.35.3.1 bool _VDBL_row::drop ( const _VDBL_colid & _id ) [inline]
remove the column with id _id from this row. Return true if erasing was successful, and false if the
column does not exist.
Definition at line 149 of file vdbl_row.h.

9.35.3.2 const _VDBL_col & _VDBL_row::get_col ( const _VDBL_colid & _id, bool & error ) const
[inline]
get a const reference to the column with id _id. If the column existed, error will be false, otherwise
error will be true.
Definition at line 82 of file vdbl_row.h.

9.35.3.3 _VDBL_col & _VDBL_row::get_col ( const _VDBL_colid & _id, bool & error ) [inline]
get a reference to the column with id _id. If the column existed, error will be false, otherwise error
will be true.
Definition at line 103 of file vdbl_row.h.

9.35.3.4 bool _VDBL_row::has_col ( const _VDBL_colid & _id ) const [inline]
return whether a column with id _id exists in this row.
Definition at line 122 of file vdbl_row.h.

9.35.3.5 bool _VDBL_row::insert ( const _VDBL_colid & _id, const _VDBL_col & _col ) [inline]
insert the new column _col with id _id in this row. If this id exists, return false, otherwise return
true.
Definition at line 132 of file vdbl_row.h.

9.35.3.6 void _VDBL_row::update ( const _VDBL_colid & _id, const _VDBL_col & _col ) [inline]
update the column with id _id with the value _col. If the column does not yet exist, insert it. Otherwise,
change its value.
Definition at line 166 of file vdbl_row.h.

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

• vdbl_row.h

9.36 _VDBL_standardtable Class Reference

standard table in databases, constructed from rows and columns
#include <vdbl_table.h>
Inheritance diagram for _VDBL_standardtable:

```
  _VDBL_table
    
  _VDBL_standardtable

  standard_table
```

Collaboration diagram for _VDBL_standardtable:

```
  _VDBL_table
    
  _VDBL_standardtable
```

Public Types

- typedef std::pair<std::string, _VDBL_col> _T_colspec
- typedef std::pair<const std::string*, const _VDBL_col*> _T_ptrcolspec
- typedef _Base::col_const_iterator col_const_iterator
- typedef row_iterator<_VDBL_rowid, const _VDBL_rowid&, const _VDBL_rowid*> row_ const_iterator

Public Member Functions

- const std::type_info & get_colinfo (const std::string&_C_n, std::triple<bool, _VDBL_colid, _VDBL_colflags>&_r) const
- _VDBL_colid get_col_id (const std::string&_C_n) const
9.36 _VDBL_standardtable Class Reference

- std::string get_col_name (const _VDBL_colid & C_id) const
- _VDBL_standardtable ()
- _VDBL_standardtable (const _VDBL_standardtable & t)
- template<template< class __Tp, class __AllocTp > class __SequenceCtr, class Allocator1 > 
  _VDBL_standardtable (const __SequenceCtr< std::triple< std::string, _VDBL_col, _VDBL_colflags >, Allocator1 > & __cc)
- virtual ~_VDBL_standardtable ()
- virtual _VDBL_table * new_copy ()
- virtual void destroy_copy (_VDBL_table * t)
- template< class VALclass >
  bool retrieve (const _VDBL_rowid & r, const _VDBL_colid & c, const _VDBL_context * ctx, 
  VALclass * & val) const
- std::pair< std::string, _VDBL_colid > _next_col (const std::pair< std::string, _VDBL_colid > & ci) const
- _VDBL_rowid _next_row (const _VDBL_rowid & ci) const
- virtual _VDBL_table * new_copy () VDBL_PURE_VIRTUAL
- virtual void destroy_copy(_VDBL_table * t) VDBL_PURE_VIRTUAL
- virtual bool add_col(const std
- template<template< class __Tp1, class __AllocTp1 > class __SequenceCtrOut, template< class __Tp2, class __AllocTp2 > class __SequenceCtrIn, class AllocatorOut , class AllocatorIn >
  bool insert_row (const __SequenceCtrOut< __SequenceCtrIn< _T_colspec, AllocatorIn >, AllocatorOut > & rows)

Protected Member Functions

- void made_change ()

- _VDBL_colid get_colid ()
- _VDBL_rowid get_rowid ()

Friends

- class _VDBL_view

9.36.1 Detailed Description

This is the class describing standard tables as they usually appear in databases, constructed from rows and columns.

9.36.2 Member Typedef Documentation

9.36.2.1 typedef std::pair< std::string, _VDBL_col > _VDBL_standardtable:: _T_colspec

specifier of one column, a pair of column name (string) and entry (_VDBL_col).
Reimplemented from _VDBL_table.

Definition at line 591 of file vdbl_table.h.
9.36.2.2 typedef std::pair<const std::string*, const _VDBL_col*> _VDBL_standardtable::_T_ptrcolspec
specifier of pointers to one column, a pair of column name (string*) and entry (_VDBL_col*).
Reimplemented from _VDBL_table.
Definition at line 596 of file vdbl_table.h.

9.36.2.3 typedef _Base::col_const_iterator _VDBL_standardtable::col_const_iterator
const iterator over all columns
Reimplemented from _VDBL_table.
Definition at line 601 of file vdbl_table.h.

9.36.2.4 typedef _row_iterator<_VDBL_rowid, const _VDBL_rowid&, const _VDBL_rowid*> _VDBL_table::row_const_iterator [inherited]
const iterator over all rows
Definition at line 321 of file vdbl_table.h.

9.36.3 Constructor & Destructor Documentation

9.36.3.1 _VDBL_standardtable::_VDBL_standardtable ( ) [inline]
standard constructor which optionally initializes the global ACL entry
Definition at line 663 of file vdbl_table.h.

9.36.3.2 _VDBL_standardtable::_VDBL_standardtable ( const _VDBL_standardtable & _t ) [inline]
copy constructor
Definition at line 667 of file vdbl_table.h.

9.36.3.3 template<template<class Tp, class AllocTp> class _SequenceCtr, class Allocator1 > _VDBL_standardtable::_VDBL_standardtable ( const _SequenceCtr< std::triple<std::string, _VDBL_col, _VDBL_colflags>, Allocator1 & _cc > ) [inline]
constructor which builds a table from a list of column definitions. This list can be contained in any sequential STL container.
Definition at line 677 of file vdbl_table.h.

9.36.3.4 virtual _VDBL_standardtable::~_VDBL_standardtable ( ) [inline, virtual]
standard destructor
Definition at line 707 of file vdbl_table.h.

9.36.4 Member Function Documentation
9.36.4.1 std::pair<std::string, _VDBL_colid> _VDBL_standardtable::next_col ( const std::pair<std::string, _VDBL_colid> & ci ) const [inline, virtual]

This virtual function has to be overloaded by the derived table classes, and it performs the step to the next column for a _col_iterator. This virtual function has to be overloaded by the derived table classes, and it performs the step to the previous column for a _col_iterator. return iterator to first column return iterator beyond last column This is the fundamental class for iterators over all rows, defining basic in(de)crementation for overloading, and basic comparison.

Reimplemented from _VDBL_table.

Definition at line 1174 of file vdbl_table.h.

9.36.4.2 _VDBL_rowid _VDBL_standardtable::next_row ( const _VDBL_rowid & ci ) const [inline, virtual]

This virtual function has to be overloaded by the derived table classes, and it performs the step to the next row for a _col_iterator. This virtual function has to be overloaded by the derived table classes, and it performs the step to the previous row for a _col_iterator. return iterator to first row return iterator beyond last row construct a new copy of a row iterator standard constructor

Reimplemented from _VDBL_table.

Definition at line 1209 of file vdbl_table.h.

9.36.4.3 virtual void _VDBL_standardtable::destroy_copy ( _VDBL_table * t ) [inline, virtual]

close destructor method

Definition at line 717 of file vdbl_table.h.

9.36.4.4 _VDBL_colid _VDBL_standardtable::get_colid ( const std::string & C_n ) const [inline]

return the column id of column _C_n

Definition at line 637 of file vdbl_table.h.

9.36.4.5 std::string _VDBL_standardtable::get_colname ( const _VDBL_colid & _C_id ) const [inline]

return the column name of column _C_id

Definition at line 650 of file vdbl_table.h.

9.36.4.6 _VDBL_colid _VDBL_table::get_colid ( ) [inline, protected, inherited]

generate new unique id’s for rows and columns

Definition at line 99 of file vdbl_table.h.

9.36.4.7 const std::type_info & _VDBL_standardtable::get_colinfo ( const std::string & _C_n, std::triple< bool, _VDBL_colid, _VDBL_colflags > & r ) const [inline, virtual]

return the column information for column _C_n. The return value is a reference to the type_info of the column’s value type. The reference _r contains upon returning whether the function was successful, the column id, and the column flags. what was the id of the last change to the table

Reimplemented from _VDBL_table.

Definition at line 614 of file vdbl_table.h.
9.36.8  _VDBL_rowid _VDBL_table::get_rowid ( ) [inline, protected, inherited]

generate new unique id’s for rows and columns

Definition at line 100 of file vdbl_table.h.

9.36.9 template<template< class _Tp1, class _AllocTp1 > class _SequenceCtrOut, template< class _Tp2, class _AllocTp2 > class _SequenceCtrl, class AllocatorOut , class AllocatorIn > bool _VDBL_table::insert_row ( const _SequenceCtrOut< _SequenceCtrl< _T_colspec, AllocatorIn >, AllocatorOut > & _rows ) [inline, inherited]

insert a many new rows of specifications _rows into the table. The list of rows can be contained in any sequential STL container, which holds any other sequential STL container of column entries. The function returns true, if inserting was successful for all rows.

Definition at line 473 of file vdbl_table.h.

9.36.10 void _VDBL_table::made_change ( ) [inline, protected, inherited]

increment the last_change counter.

Definition at line 106 of file vdbl_table.h.

9.36.11 virtual _VDBL_table* _VDBL_table::new_copy ( ) const [inline, virtual, inherited]

close method clone destructor method add a new column of name _C_n, which contains __c, and has column flags __f. The function returns true, if adding the column was successful. modify the column of name _C_n, to new contents __c, and new column flags __f. The function returns true, if modifying was successful. modify the contents of column of name _C_n The function returns true, if modifying was successful. modify the column flags of column of name _C_n The function returns true, if modifying was successful. remove the column _C_n from the table The function returns true, if erasing was successful. rename the column _C_old to new name _C_new. The function returns true, if renaming was successful. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. The function returns true, if inserting was successful. insert a new row of specification _row into the table. The function returns true, if inserting was successful. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. Take any sequential STL container to hold the row entries of the column. The function returns true, if inserting was successful.

Definition at line 380 of file vdbl_table.h.

9.36.12 virtual _VDBL_table* _VDBL_standardtable::new_copy ( ) [inline, virtual]

close method

Reimplemented in standard_table.

Definition at line 712 of file vdbl_table.h.

9.36.13 template< class VALclass > bool _VDBL_standardtable::retrieve ( const _VDBL_rowid & _r, const _VDBL_colid & _c, const _VDBL_context * _ctx, VALclass*& _val ) const [inline]

retrieve the value of column (id = _c) in row (id = _r) under evaluation context _ctx to _val. Return whether retrieval was successful. If there is no defined value in row _r for column _c, then return the default value of column _c, if defined.

Definition at line 1105 of file vdbl_table.h.
The documentation for this class was generated from the following file:

- vdbl_table.h

### Public Types

- typedef _Base::default_const_iterator defaults_const_iterator
  
  *iterator over all default columns*
typedef std::pair<std::string, _VDBL_col> _T_colspec

Public Member Functions

• _VDBL_standardview (const _VDBL_tableid &__ti, _VDBL_table ∗__t, const _VDBL_context &-__c, _V_enum __e)
• _VDBL_standardview (const _VDBL_tableid &__ti, _VDBL_table ∗__t, const _VDBL_context &-__c, _V_enum __e, const std::vector<_VDBL_rowid> &_rs)
• _VDBL_standardview (const _VDBL_standardview &__v)
• virtual ∼_VDBL_standardview ()
• virtual _VDBL_view ∗new_copy ()
• virtual void destroy_copy (_VDBL_view ∗v)
• bool insert (const std::vector<_T_colspec> &_row)
• bool add_visible (const std::vector<_VDBL_rowid> &_rs)
• bool rm_visible (const std::vector<_VDBL_rowid> &_rs)
• std::ostream & print_col (std::ostream &o, const std::pair<_VDBL_tableid, _VDBL_rowid> &_ri, const _VDBL_colid &_ci, bool &printed) const
• template<class _TR >
  bool get (const std::pair<_VDBL_tableid, _VDBL_rowid> &_ri, const _VDBL_colid &_ci, _TR &r) const
• template<class _TR >
  bool get_raw_ptr (const std::pair<_VDBL_tableid, _VDBL_rowid> &_ri, const _VDBL_colid &_ci, _TR const &r) const
• virtual _VDBL_view ∗new_copy () VDBL_PURE_VIRTUAL

Protected Types

• typedef _default_iterator < _VDBL_col, const _VDBL_col &, const _VDBL_col ∗> default_const_iterator
• typedef _col_iterator < _VDBL_col, const _VDBL_col &, const _VDBL_col ∗> col_const_iterator
• typedef _row_iterator < _VDBL_row, const _VDBL_row &, const _VDBL_row ∗> row_const_iterator

Protected Member Functions

• std::triple<_VDBL_tableid, _VDBL_col, void ∗> _next_def_col (const _VDBL_tableid &_t, const _VDBL_col &_c, void ∗_d) const
• void ∗_copy_def_data (void ∗_d) const
• void ∗_copy_col_data (void ∗_d) const
• void ∗_copy_row_data (void ∗_d) const
• void made_change ()
  increment the change counter.
• unsigned int get_change_ctr () const
  read the change counter

Protected Attributes

• _V_rows _V_r
• _V_cols _V_c
Friends

- class _VDBL_table

9.37.1 Detailed Description

This class implements views onto a single table.

9.37.2 Member Typedef Documentation

9.37.2.1 typedef std::pair<std::string, _VDBL_col> _VDBL_view::_T_colspec [inherited]

This is the description of one column
Definition at line 61 of file vdbl_view.h.

9.37.2.2 typedef _col_iterator<_VDBL_col, const _VDBL_col &, const _VDBL_col *> _VDBL_view::col_const_iterator [protected, inherited]

const iterator over all columns
Definition at line 439 of file vdbl_view.h.

9.37.2.3 typedef _default_iterator<_VDBL_col, const _VDBL_col &, const _VDBL_col *> _VDBL_view::default_const_iterator [protected, inherited]

const iterator over all default columns
Definition at line 301 of file vdbl_view.h.

9.37.2.4 typedef _row_iterator<_VDBL_row, const _VDBL_row &, const _VDBL_row *> _VDBL_view::row_const_iterator [protected, inherited]

const iterator over all rows
Definition at line 568 of file vdbl_view.h.

9.37.3 Constructor & Destructor Documentation

9.37.3.1 _VDBL_standardview::_VDBL_standardview ( const _VDBL_tableid & _ti, _VDBL_table * _t, const _VDBL_context & _c, _V_enum _e ) [inline]

standard constructor which initializes the table and the tableid, the evaluation context, and the view type.
Definition at line 327 of file vdbl_stview.h.

9.37.3.2 _VDBL_standardview::_VDBL_standardview ( const _VDBL_tableid & _ti, _VDBL_table * _t, const _VDBL_context & _c, _V_enum _e, const std::vector<_VDBL_rowid> & _rs )

[inline]

standard constructor which initializes the table and the tableid, the evaluation context, and the view type. In addition the vector _rs contains a list of rows, which should be visible in this view.
Definition at line 353 of file vdbl_stview.h.
9.37 _VDBL_standardview Class Reference

9.37.3 _VDBL_standardview::_VDBL_standardview ( const _VDBL_standardview & v ) [inline]
copy constructor
Definition at line 372 of file vdbl_stview.h.

9.37.4 virtual _VDBL_standardview::~_VDBL_standardview ( ) [inline, virtual]
standard destructor
Definition at line 382 of file vdbl_stview.h.

9.37.4 Member Function Documentation

9.37.4.1 void* _VDBL_standardview::copy_col_data ( void * d ) const [inline, protected, virtual]
This function copies the additional data needed by a _col_iterator This virtual function has to be overloaded
by the derived view classes, and it performs the step to the next row for a _row_iterator. This virtual
function has to be overloaded by the derived view classes, and it performs the step to the previous row for
a _row_iterator. This function destroys the additional data needed by a _row_iterator
Reimplemented from _VDBL_view.
Definition at line 196 of file vdbl_stview.h.

9.37.4.2 void* _VDBL_standardview::copy_def_data ( void * d ) const [inline, protected, virtual]
This function copies the additional data needed by a _default_iterator This virtual function has to be over-
loaded by the derived view classes, and it performs the step to the next column for a _col_iterator. This virtual
function has to be overloaded by the derived view classes, and it performs the step to the previous column for a _col_iterator. This function destroys the additional data needed by a _col_iterator
Reimplemented from _VDBL_view.
Definition at line 146 of file vdbl_stview.h.

9.37.4.3 void* _VDBL_standardview::copy_row_data ( void * d ) const [inline, protected, virtual]
This function copies the additional data needed by a _row_iterator This is the fundamental class for iterators
over all default columns, defining basic in(de)crementation for overloading, and basic comparison.
Reimplemented from _VDBL_view.
Definition at line 294 of file vdbl_stview.h.

9.37.4.4 std::triple<_VDBL_tableid, _VDBL_colid, void*> _VDBL_standardview::next_def_col ( const _VDBL_tableid & t, const _VDBL_colid & c, void * d ) const [inline, protected, virtual]
This virtual function has to be overloaded by the derived view classes, and it performs the step to the next
default of a column a _default_iterator. This virtual function has to be overloaded by the derived
view classes, and it performs the step to the previous default of a column a _default_iterator. This function destroys the additional data needed by a _default_iterator
Reimplemented from _VDBL_view.
Definition at line 102 of file vdbl_stview.h.

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9.37.4.5 bool _VDBL_standardview::add_visible ( const std::vector<_VDBL_rowid> & _rs ) [inline]
This method adds the row ids in _rs to the visible part of the view.
Definition at line 497 of file vdbl_stview.h.

9.37.4.6 virtual void _VDBL_standardview::destroy_copy ( _VDBL_view * _v ) [inline, virtual]
clone destructor
Definition at line 391 of file vdbl_stview.h.

9.37.4.7 template<class _TR> bool _VDBL_standardview::get ( const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, _TR & _r ) const [inline]
get the data from column _ci in row _ri.second of table _ri.first. The data stored in the column must be of type _TR.
Definition at line 559 of file vdbl_stview.h.

9.37.4.8 template<class _TR> bool _VDBL_standardview::get_raw_ptr ( const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, _TR const * & _r ) const [inline]
get a const ptr to the data from column _ci in row _ri.second of table _ri.first. The data stored in the column must be of type _TR. In this function no data copying is done. Note that this function returns a pointer to the columns raw data, so it can only be used to refer to constant columns.
Definition at line 581 of file vdbl_stview.h.

9.37.4.9 bool _VDBL_standardview::insert ( const std::vector<_T_colspec> & _row ) [inline]
for now window views can only have one table in the list of tables
Definition at line 412 of file vdbl_stview.h.

9.37.4.10 virtual _VDBL_view* _VDBL_standardview::new_copy ( ) [inline, virtual]
clone operation
Reimplemented in view.
Definition at line 387 of file vdbl_stview.h.

9.37.4.11 virtual _VDBL_view* _VDBL_view::new_copy ( ) const [inline, virtual, inherited]
clone operation clone destructor return the column information for column _C_n. the return value is a reference to the type_info of the column’s value type. The reference _r contains upon returning whether the function was successful, the column id, and the column flags. return a reference to the type_info of the column’s value type. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. The function returns true, if inserting was successful. remove the row with it _ri from the table return whether the column _C_n is defined in the table return table id and column id of column _C_n return column name of column _C_n return a const reference to the column with column id _ci in row _ri.second of table ri.first. If successful, set error to false, and to true otherwise. Note that in this function the context for the column is NOT set. This method adds the row ids in _rs to the visible part of the view. This method removes the row ids in _rs from the visible part of the view. print the contents of the column with column id _ci in row _ri.second of
table \texttt{ri.first}. If the row is empty and no default is defined, print nothing. return a const reference to the row with row id \texttt{ri.second} of table \texttt{ri.first}. If successful, set \texttt{error} to \texttt{false}, and to \texttt{true} otherwise. return a const reference to the default column with column id \texttt{ri.second} of table \texttt{ri.first}. If successful, set \texttt{error} to \texttt{false}, and to \texttt{true} otherwise. return iterator to first default column return iterator beyond last default column return iterator to first row return iterator beyond last row return iterator to first column return iterator beyond last column return the type of this view

Definition at line 587 of file \texttt{vdbl}._view.h.

\subsection{std::ostream& \texttt{VDBL}standardview::print\_col ( std::ostream & o, const std::pair<
\texttt{VDBL}._tableid, \texttt{VDBL}._rowid > & \texttt{ri}, const \texttt{VDBL}._colid & \texttt{ci}, bool & \texttt{printed} ) const [inline]

print the contents of column \texttt{ci} in row \texttt{ri.second} of table \texttt{ri.first}.

Definition at line 536 of file \texttt{vdbl}._stview.h.

\subsection{bool \texttt{VDBL}standardview::rm\_visible ( const std::vector< \texttt{VDBL}._rowid > & \texttt{rs} ) [inline]

This method removes the row ids in \texttt{rs} from the visible part of the view.

Definition at line 514 of file \texttt{vdbl}._stview.h.

\section{Member Data Documentation}

\subsection{\texttt{VDBL}standardview::\_V_c [protected]

This contains all columns of the view

Definition at line 88 of file \texttt{vdbl}._stview.h.

\subsection{\texttt{VDBL}standardview::\_V_r [protected]

This contains all rows of the view unless it is a window view

Definition at line 84 of file \texttt{vdbl}._stview.h.

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

- \texttt{vdbl}._stview.h

\section{\texttt{VDBL}stdcol Class Reference}

generic column class for constant values

\#include <\texttt{vdbl}._col.h>
Inheritance diagram for _VDBL_stdcol:
Collaboration diagram for _VDBL_stdcol:

Public Member Functions

- _VDBL_stdcol (const type &__t)
- _Self * new_copy () const
- void set (const _Self &__p)
- void setcontext (const context *c, const _VDBL_row *r)
- void def (type &d) const
- void def_copy (return_type &d) const
- void get_copy (_VDBL_alltype_base *v) const
- void def_copy (_VDBL_alltype_base *v) const
- void set (const type &__t)
- void set_default (const type &__t)
- const type & get_val () const
- std::ostream & print_contents (std::ostream &o) const
- virtual _Self const _VDBL_row * & virtual VDBL PURE_VIRTUAL void get (return_type &c) const VDBL PURE_VIRTUAL virtual void def (return_type &d) const VDBL PURE_VIRTUAL virtual void get_ptr (return_type const &c) const VDBL PURE_VIRTUAL virtual void get_copy (return_type const &c) const
- virtual const std::type_info & return_type_id () const

- _VDBL_stdcol ()

> _c_t holds the data
9.38 \_VDBL\_stdcol Class Reference

- \_VDBL\_stdcol (const \_Self \&_c)
  > \_C\_t holds the data
- virtual \~\_VDBL\_stdcol ()
  > \_C\_t holds the data

9.38.1 Detailed Description

\_VDBL\_stdcol is the generic column class for constant values.

9.38.2 Constructor & Destructor Documentation

9.38.2.1 \_VDBL\_stdcol::\_VDBL\_stdcol ( ) [inline]
standard constructor, copy constructor, destructor
Definition at line 423 of file vdbl\_col.h.

9.38.2.2 \_VDBL\_stdcol::\_VDBL\_stdcol ( const \_Self \&\_c ) [inline]
standard constructor, copy constructor, destructor
Definition at line 424 of file vdbl\_col.h.

9.38.2.3 virtual \_VDBL\_stdcol::\~\_VDBL\_stdcol ( ) [inline, virtual]
standard constructor, copy constructor, destructor
Definition at line 425 of file vdbl\_col.h.

9.38.2.4 \_VDBL\_stdcol::\_VDBL\_stdcol ( const \_t &\_t ) [inline]
explicit constructor setting the column’s value
Definition at line 431 of file vdbl\_col.h.

9.38.3 Member Function Documentation

9.38.3.1 void \_VDBL\_stdcol::def ( \_t &\_d ) const [inline]
the default for the constant value coincides with the value, since in the table definition the reference object of this class will hold the default, then. There have to be different access methods get and def for more complicated column types
Definition at line 454 of file vdbl\_col.h.

9.38.3.2 void \_VDBL\_stdcol::def\_copy ( return\_type *&\_d ) const [inline, virtual]
This function returns a pointer to a copy of the column’s default value. The copy of the value is allocated by new. It has to be deleted by the user to avoid memory leaks.
Reimplemented from \_VDBL\_colbase<\_TT >.
Definition at line 460 of file vdbl\_col.h.
9.38.3.3 `void _VDBL_stdcol::def_copy ( _VDBL_alltype_base * v ) const` [inline, virtual]

This version of `get_copy` returns a copy of the column's default value within an `alltype`. This is useful for passing on column values. It can also be used to circumvent the strict run-time type checking. The user is, however, DISCOURAGED to do so.

Reimplemented from `_VDBL_colbase<_TT>`.

Definition at line 462 of file `vdbl_col.h`.

9.38.3.4 `virtual _Self* _VDBL_row*_r VDBL PURE_VIRTUAL void _VDBL_colbase::get ( return_type & c ) const` [inline, virtual, inherited]

This function stores a copy of the column value into `c`. This function stores a copy of the column default value into `&d`. This function sets `c` to a const pointer pointing to the column's actual value. Here, no copying is done. This function returns a pointer to a copy of the column's value. The copy of the value is allocated by `new`. It has to be deleted by the user to avoid memory leaks.

Definition at line 162 of file `vdbl_col.h`.

9.38.3.5 `void _VDBL_stdcol::get_copy ( _VDBL_alltype_base * v ) const` [inline, virtual]

This version of `get_copy` returns a copy of the column's value within an `alltype`. This is useful for passing on column values. It can also be used to circumvent the strict run-time type checking. The user is, however, DISCOURAGED to do so.

Reimplemented from `_VDBL_colbase<_TT>`.

Definition at line 469 of file `vdbl_col.h`.

9.38.3.6 `const type& _VDBL_stdcol::get_val () const` [inline]

get a const reference to the column value

Definition at line 491 of file `vdbl_col.h`.

9.38.3.7 `_Self* _VDBL_stdcol::new_copy () const` [inline, virtual]

`new_copy` is the clone operation for copy-constructor overloading. `setcontext` sets the context for value retrieval.

Reimplemented from `_VDBL_colbase<_TT>`.

Definition at line 433 of file `vdbl_col.h`.

9.38.3.8 `std::ostream& _VDBL_stdcol::print_contents ( std::ostream & o ) const` [inline, virtual]

This function is needed for the operator `<<` for columns of type `return_type`.

Reimplemented from `_VDBL_colbase<_TT>`.

Definition at line 493 of file `vdbl_col.h`.

9.38.3.9 `virtual const std::type_info& _VDBL_colbase::return_type_id () const` [inline, virtual, inherited]

This function returns the `type_info` of the column type. This information is used during run-time type checking.

Definition at line 221 of file `vdbl_col.h`.

---

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9.38.3.10  void _VDBL_stdcol::set ( const _Self & _p ) [inline]  
explicit copy operation  
Definition at line 438 of file vdbl_col.h.

9.38.3.11  void _VDBL_stdcol::set ( const type & _t ) [inline]  
set the column value  
Definition at line 479 of file vdbl_col.h.

9.38.3.12  void _VDBL_stdcol::set_default ( const type & _t ) [inline]  
set the default value for this column. This is actually equivalent to set, since default and standard columns coincide for constant values.  
Definition at line 486 of file vdbl_col.h.

9.38.3.13  void _VDBL_stdcol::setcontext ( const context * _c, const _VDBL_row * _r ) [inline]  
this method is empty, since constant values are independent of the context.  
Definition at line 444 of file vdbl_col.h.
The documentation for this class was generated from the following file:

  • vdbl_col.h

9.39  _VDBL_table Class Reference

the base class describing database tables  
#include <vdbl_table.h>

Inheritance diagram for _VDBL_table:
Classes

- struct _col_iterator
- class _col_iterator_base
- struct _row_iterator

Public Types

- typedef std::pair< std::string, _VDBL_col > _T_colspec
- typedef std::pair< const std::string *, const _VDBL_col * > _T_ptrcolspec
- typedef _col_iterator < std::pair< std::string, _VDBL_col >, const std::pair< std::string, _VDBL_col > &, const std::pair< std::string, _VDBL_col > * > col_const_iterator
- typedef _row_iterator < _VDBL_rowid, const _VDBL_rowid &, const _VDBL_rowid * > row_const_iterator

Public Member Functions

- virtual const std::type_info & get_colinfo (const std::string & _C_n, std::triple< bool, _VDBL_colid, _VDBL_colflags > & _r) const VDBL_PURE_VIRTUAL public
- virtual std::pair< std::string, _VDBL_colid > _next_col (const std::pair< std::string, _VDBL_colid > & _ci) const VDBL_PURE_VIRTUAL virtual
- virtual _VDBL_rowid _next_row (const _VDBL_rowid & _ci) const VDBL_PURE_VIRTUAL virtual
- virtual _VDBL_rowid _prev_row(const _VDBL_rowid & _ci) const VDBL_PURE_VIRTUAL virtual
- row_const_iterator row_begin() const VDBL_PURE_VIRTUAL virtual
- row_const_iterator row_end() const VDBL_PURE_VIRTUAL virtual
- _VDBL_table (const _VDBL_table & __t)
- template<template< class __Tp, class __AllocTp > class __SequenceCtr, class Allocator1 > _VDBL_table (const __SequenceCtr< std::triple< std::string, _VDBL_col, _VDBL_colflags >, -Allocator1 > & __cc)
- virtual ~_VDBL_table ()
- virtual _VDBL_table * new_copy () VDBL_PURE_VIRTUAL virtual
- void destroy_copy(_VDBL_table * t) VDBL_PURE_VIRTUAL virtual
- bool add_col(const std::string & _C_n, std::triple< bool, _VDBL_colid, _VDBL_colflags > & _r)
- virtual void made_change ()
- _VDBL_colid get_colid ()
- _VDBL_rowid get_rowid ()

Protected Member Functions

- virtual _VDBL_rowid _next_row (const _VDBL_rowid & _ci) const VDBL_PURE_VIRTUAL virtual
- virtual _VDBL_rowid _prev_row(const _VDBL_rowid & _ci) const VDBL_PURE_VIRTUAL virtual
- bool insert_row (const __SequenceCtrOut< _T_colspec, AllocatorOut > & _rows)

Friends

- class _VDBL_view
9.39 _VDBL_table Class Reference

9.39.1 Detailed Description

This is the base class of all tables within a database. A table is defined by a set of columns, which can be added and removed dynamically. The columns might have default values. Those are stored with the table, as well. The columns all consist of objects of class _VDBL_col.

The whole table then consists of a set of rows (_VDBL_row objects), organized in a map rowid -> row.

9.39.2 Member Typedef Documentation

9.39.2.1 typedef std::pair<std::string,_VDBL_col> _VDBL_table::_T_colspec
specifier of one column, a pair of column name (string) and entry (_VDBL_col).
Reimplemented in _VDBL_standardtable, and _VDBL_viewtable.
Definition at line 78 of file vdbl_table.h.

9.39.2.2 typedef std::pair<const std::string*,const _VDBL_col*> _VDBL_table::_T_ptrcolspec
specifier of pointers to one column, a pair of column name (string*) and entry (_VDBL_col*).
Reimplemented in _VDBL_standardtable.
Definition at line 83 of file vdbl_table.h.

9.39.2.3 typedef _col_iterator<std::pair<std::string,_VDBL_colid>, const std::pair<std::string,_VDBL_colid>&, const std::pair<std::string,_VDBL_colid>*> _VDBL_table::col_const_iterator
const iterator over all columns
Reimplemented in _VDBL_standardtable.
Definition at line 214 of file vdbl_table.h.

9.39.2.4 typedef _row_iterator<_VDBL_rowid, const _VDBL_rowid&, const _VDBL_rowid*> _VDBL_table::row_const_iterator
const iterator over all rows
Definition at line 321 of file vdbl_table.h.

9.39.3 Constructor & Destructor Documentation

9.39.3.1 _VDBL_table::_VDBL_table ( const _VDBL_table & _f ) [inline]
copy constructor
Definition at line 359 of file vdbl_table.h.

9.39.3.2 template<template <class _Tp, class _AllocTp > class __SequenceCtr, class Allocator1 >
_VDBL_table::_VDBL_table ( const __SequenceCtr< std::triple< std::string, _VDBL_col, _VDBL_colflags >, Allocator1 > & __cc ) [inline]
constructor which builds a table from a list of column definitions. This list can be contained in any sequential STL container.
Definition at line 368 of file vdbl_table.h.
9.39.3.3 virtual _VDBL_table::~_VDBL_table ( ) [inline, virtual]
standard destructor
Definition at line 375 of file vdbl_table.h.

9.39.4 Member Function Documentation

9.39.4.1 virtual std::pair<std::string, _VDBL_colid> _VDBL_table::next_col ( const std::pair<std::string, _VDBL_colid> & ci ) const [inline, virtual]
This virtual function has to be overloaded by the derived table classes, and it performs the step to the next column for a _col_iterator. This virtual function has to be overloaded by the derived table classes, and it performs the step to the previous column for a _col_iterator. return iterator to first column return iterator beyond last column This is the fundamental class for iterators over all rows, defining basic in(de)crementation for overloading, and basic comparison.
Reimplemented in _VDBL_standardtable.
Definition at line 221 of file vdbl_table.h.

9.39.4.2 virtual _VDBL_rowid _VDBL_table::next_row ( const _VDBL_rowid & ci ) const [inline, virtual]
This virtual function has to be overloaded by the derived table classes, and it performs the step to the next row for a _col_iterator. This virtual function has to be overloaded by the derived table classes, and it performs the step to the previous row for a _col_iterator. return iterator to first row return iterator beyond last row construct a new copy of a row iterator standard constructor
Reimplemented in _VDBL_standardtable.
Definition at line 328 of file vdbl_table.h.

9.39.4.3 _VDBL_colid _VDBL_table::get_colid ( ) [inline, protected]
generate new unique id’s for rows and columns
Definition at line 99 of file vdbl_table.h.

9.39.4.4 virtual const std::type_info& _VDBL_table::get_colinfo ( const std::string & Cn, std::triple<bool, _VDBL_colid, _VDBL_colflags> & r ) const [inline, virtual]
return the column information for column _C_n. the return value is a referenc to the type_info of the column’s value type. The reference _r contains upon returning whether the function was successful, the column id, and the column flags. what was the id of the last change to the table
Reimplemented in _VDBL_standardtable.
Definition at line 116 of file vdbl_table.h.

9.39.4.5 _VDBL_rowid _VDBL_table::get_rowid ( ) [inline, protected]
generate new unique id’s for rows and columns
Definition at line 100 of file vdbl_table.h.
9.40 _VDBL_tableflags Class Reference

flags for one table

#include <vdbl_database.h>

9.39.4.6 template<typename Tp1, class AllocTp1> class SequenceCtrOut, template<typename Tp2, class AllocTp2> class SequenceCtrIn, class AllocatorOut , class AllocatorIn > bool VDBL_table::insert_row ( const SequenceCtrOut<_T_colspec, AllocatorIn>&, AllocatorOut &, &_rows ) [inline]

insert a many new rows of specifications _rows into the table. The list of rows can be contained in any sequential STL container, which holds any other sequential STL container of column entries. The function returns true, if inserting was successful for all rows.

Definition at line 473 of file vdbl_table.h.

9.39.4.7 void VDBL_table::made_change ( ) [inline, protected]

increment the last_change counter.

Definition at line 106 of file vdbl_table.h.

9.39.4.8 virtual _VDBL_table _VDBL_table::new_copy ( ) const [inline, virtual]

clone method clone destructor method add a new column of name _C_n, which contains __c, and has column flags __f. The function returns true, if adding the column was successful. modify the column of name _C_n, to new contents __c, and new column flags __f. The function returns true, if modifying was successful. modify the contents of column of name _C_n. The function returns true, if modifying was successful. modify the column flags of column of name _C_n. The function returns true, if modifying was successful. remove the column _C_n from the table. The function returns true, if erasing was successful. rename the column _C_old to new name _C_new. The function returns true, if renaming was successful. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. The function returns true, if inserting was successful. insert a new row of specification _row into the table. The function returns true, if inserting was successful. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. Take any sequential STL container to hold the row entries of the column. The function returns true, if inserting was successful.

Definition at line 380 of file vdbl_table.h.

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

- vdbl_table.h
Collaboration diagram for _VDBL_tableflags:

Public Member Functions

- _VDBL_tableflags (bool _temp=false, bool _unrest=true)
- _VDBL_tableflags (const _VDBL_acl & _g_acl, bool _temp=false, bool _unrest=true)
- _VDBL_tableflags (const _VDBL_tableflags & __t)
- virtual ~_VDBL_tableflags ()
- _VDBL_tableflags & operator= (const _VDBL_tableflags & __t)

Public Attributes

- bool temporary
- bool unrestricted
- _VDBL_acl global
- std::map<_VDBL_userid, _VDBL_acl> ACLs

9.40.1 Detailed Description

This class describes the additional information for a table within a database, including access control

9.40.2 Constructor & Destructor Documentation

9.40.2.1 _VDBL_tableflags::_VDBL_tableflags ( bool _temp = false, bool _unrest = true ) [inline]

standard constructor which optionally initializes some members

Definition at line 243 of file vdbl_database.h.
9.40.2.2 `VDBL_tableflags::VDBL_tableflags ( const _VDBL_acl & acl, bool _temp = false, bool _unrest = true )` [inline]

constructor which initializes the global ACL and optionally some members
Definition at line 250 of file vdbl_database.h.

9.40.2.3 `VDBL_tableflags::VDBL_tableflags ( const _VDBL_tableflags & t )` [inline]

copy constructor
Definition at line 258 of file vdbl_database.h.

9.40.2.4 virtual `VDBL_tableflags::~VDBL_tableflags ( )` [inline, virtual]

standard destructor
Definition at line 266 of file vdbl_database.h.

9.40.3 Member Function Documentation

9.40.3.1 `VDBL_tableflags& _VDBL_tableflags::operator= ( const _VDBL_tableflags & t )` [inline]

assignment operator
Definition at line 271 of file vdbl_database.h.

9.40.4 Member Data Documentation

9.40.4.1 `std::map<_VDBL_userid, _VDBL_acl> _VDBL_tableflags::ACLs`

this is an access control list for every single user
Definition at line 237 of file vdbl_database.h.

9.40.4.2 `_VDBL_acl _VDBL_tableflags::global`

this is the global access control list (valid for all users)
Definition at line 233 of file vdbl_database.h.

9.40.4.3 bool `_VDBL_tableflags::temporary`

decides whether this is a temporary table
Definition at line 225 of file vdbl_database.h.

9.40.4.4 bool `_VDBL_tableflags::unrestricted`

decides whether this is table is completely unrestricted
Definition at line 229 of file vdbl_database.h.

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

- vdbl_database.h
9.41  _VDBL_user Class Reference

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

- vdbl_user.h

9.42  _VDBL_userflags Class Reference

The permission flags for a user.

#include <vdbl_database.h>

Public Member Functions

- _VDBL_userflags ()
- _VDBL_userflags (const _VDBL_userflags &a)
- virtual ~_VDBL_userflags ()

Public Attributes

- struct {
  } table_privileges
- struct {
  } view_privileges

9.42.1  Detailed Description

This class describes the global privileges of a user w.r.t. tables and views.

9.42.2  Constructor & Destructor Documentation

9.42.2.1  _VDBL_userflags::_VDBL_userflags ( ) [inline]

standard constructor
Definition at line 93 of file vdbl_database.h.

9.42.2.2  _VDBL_userflags::_VDBL_userflags ( const _VDBL_userflags &a ) [inline]

copy constructor
Definition at line 97 of file vdbl_database.h.

9.42.2.3  virtual _VDBL_userflags::~_VDBL_userflags ( ) [inline, virtual]

standard destructor
Definition at line 103 of file vdbl_database.h.
9.42.3 Member Data Documentation

9.42.3.1 struct {...} _VDBL_userflags::table_privileges

The global table privileges

- read
- write
- modify
- append
- delete

9.42.3.2 struct {...} _VDBL_userflags::view_privileges

The global view privileges

- commit to parent table through the view

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

- vdbl_database.h

9.43 _VDBL_view Class Reference

base class of all views.
#include <vdbl_view.h>

Inheritance diagram for _VDBL_view:

```
_VDBL_view
  _VDBL_hierarchicalview
    hierarchical_view
  _VDBL_joinview
    join_view
  _VDBL_standardview
    view
```

Classes

- struct _col_iterator
- class _col_iterator_base

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9.43 _VDBL_view Class Reference

- struct _default_iterator
- struct _row_iterator
- class _row_iterator_base

Public Types

- typedef std::pair<std::string, _VDBL_col > _T_colspec

Public Member Functions

- _VDBL_view (_V_enum __e=V_independent)
- _VDBL_view (const _VDBL_view &__v)
- virtual ~_VDBL_view ()
- virtual _VDBL_view * new_copy () VDBL_PURE_VIRTUAL
- virtual void destroy_copy(_VDBL_view *v) VDBL_PURE_VIRTUAL

Protected Types

- typedef _default_iterator < _VDBL_col, const _VDBL_col &, const _VDBL_col * > default_const_iterator
- typedef _col_iterator < _VDBL_col, const _VDBL_col &, const _VDBL_col * > col_const_iterator
- typedef _row_iterator < _VDBL_row, const _VDBL_row &, const _VDBL_row * > row_const_iterator

Protected Member Functions

- void made_change ()
- unsigned int get_changeCtr () const
- virtual std::triple < _VDBL_tableid, _VDBL_colid, void * > _next_def_col (const _VDBL_tableid &t, const _VDBL_colid &c, void * _d) const VDBL_PURE_VIRTUAL
- virtual void * _copy_def_data (void * _d) const VDBL_PURE_VIRTUAL
- virtual void * _copy_col_data (void * _d) const VDBL_PURE_VIRTUAL
- virtual void * _copy_row_data (void * _d) const VDBL_PURE_VIRTUAL

9.43.1 Detailed Description

This is the base class of all views. A view in the database must be a subclass of this class.

9.43.2 Member Typedef Documentation

9.43.2.1 typedef std::pair<std::string,_VDBL_col> _VDBL_view::_T_colspec

This is the description of one column

Definition at line 61 of file vdbl_view.h.
typedef _col_iterator<_VDBL_col, const _VDBL_col&, const _VDBL_col*>& _VDBL_view::col_const_iterator [protected]

const iterator over all columns
Definition at line 439 of file vdbl_view.h.

typedef _default_iterator<_VDBL_col, const _VDBL_col&, const _VDBL_col*>& _VDBL_view::default_const_iterator [protected]

const iterator over all default columns
Definition at line 301 of file vdbl_view.h.

typedef _row_iterator<_VDBL_row, const _VDBL_row&, const _VDBL_row*>& _VDBL_view::row_const_iterator [protected]

const iterator over all rows
Definition at line 568 of file vdbl_view.h.

Constructor & Destructor Documentation

_VDBL_view::_VDBL_view ( _V_enum _e = V_independent ) [inline]
standard constructor which optionally initializes the view type
Definition at line 574 of file vdbl_view.h.

_VDBL_view::_VDBL_view ( const _VDBL_view& _v ) [inline]
copy constructor
Definition at line 578 of file vdbl_view.h.

_VDBL_view::~_VDBL_view ( ) [inline, virtual]
standard destructor
Definition at line 582 of file vdbl_view.h.

Member Function Documentation

_VDBL_view::copy_col_data ( void* _d ) const [inline, protected, virtual]
This function copies the additional data needed by a _col_iterator. This virtual function
has to be overloaded by the derived view classes, and it performs the step to the next row
for a _row_iterator. This virtual function has to be overloaded by the derived view classes,
and it performs the step to the previous row for a _row_iterator. This function destroys
the additional data needed by a _row_iterator.
Reimplemented in _VDBL_hierarchicalview, and _VDBL_standardview.
Definition at line 138 of file vdbl_view.h.
9.43 __VDBL__ view Class Reference

9.43.4.2 virtual void& __VDBL__view::copy_def_data ( void* _d ) const [inline, protected, virtual]

This function copies the additional data needed by a __default_iterator__ This virtual function has to be over-loaded by the derived view classes, and it performs the step to the next column for a __col_iterator__. This virtual function has to be over-loaded by the derived view classes, and it performs the step to the previous column for a __col_iterator__. This function destroys the additional data needed by a __col_iterator__ Reimplemented in __VDBL_hierarchicalview__ and __VDBL_standardview__.

Definition at line 106 of file vdbl_view.h.

9.43.4.3 virtual void& __VDBL__view::copy_row_data ( void* _d ) const [inline, protected, virtual]

This function copies the additional data needed by a __row_iterator__ This is the fundamental class for iterators over all default columns, defining basic in(de)crementation for overloading, and basic comparison.

Reimplemented in __VDBL_hierarchicalview__ and __VDBL_standardview__.

Definition at line 170 of file vdbl_view.h.

9.43.4.4 virtual std::triple<_VDBL_tableid, _VDBL_colid, void*> __VDBL__view::next_def_col ( const _VDBL_tableid & _t, const _VDBL_colid & _c, void* _d ) const [inline, protected, virtual]

This virtual function has to be over-loaded by the derived view classes, and it performs the step to the next default of a column a __default_iterator__. This virtual function has to be over-loaded by the derived view classes, and it performs the step to the previous default of a column a __default_iterator__. This function destroys the additional data needed by a __default_iterator__

Reimplemented in __VDBL_hierarchicalview__ and __VDBL_standardview__.

Definition at line 82 of file vdbl_view.h.

9.43.4.5 virtual __VDBL__view* __VDBL__view::new_copy ( ) const [inline, virtual]

clone operation clone destructor return the column information for column __C_n__. the return value is a reference to the type_info of the column’s value type. The reference __r__ contains upon returning whether the function was successful, the column id, and the column flags. return a reference to the type_info of the column’s value type. insert a new row of specification __row__ into the table, and return the row id of the newly created row in __r__. The function returns true, if inserting was successful. remove the row with it __ri__ from the table return whether the column __C_n__ is defined in the table return table id and column id of column __C_n__ return column name of column __C_n__ return a const reference to the column with column id __ci__ in row __ri_.second of table __ri_.first. If successful, set error to false, and to true otherwise. Note that in this function the context for the column is NOT set. This method adds the row ids in __rs__ to the visible part of the view. This method removes the row ids from the visible part of the view. print the contents of the column with column id __ci__ in row __ri_.second of table __ri_.first. If the row is empty and no default is defined, print nothing. return a const reference to the row with row id __ri_.second of table __ri_.first. If successful, set error to false, and to true otherwise. return iterator to first default column return iterator beyond last default column return iterator to first row return iterator beyond last row return iterator to first column return iterator beyond last column return the type of this view

Definition at line 587 of file vdbl_view.h.

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

9.44 _VDBL_viewdbase Class Reference

a view to a complete database

#include <vdbl_viewdbase.h>

Inheritance diagram for _VDBL_viewdbase:

Public Member Functions

- _VDBL_tableid get_tableid (const std::string &C_i) const
- bool has_view (const _VDBL_tableid &C_i) const
- bool has_view (const std::string &C_i) const
- _VDBL_view * get_view (const _VDBL_tableid &C_i) const
- _VDBL_view * get_view (const std::string &C_i) const
- _VDBL_viewdbase ()
- _VDBL_viewdbase (const _VDBL_database &db, const _VDBL_userid &uid, const _VDBL_context &__c, const _V_enum &__e=V_frozen)
- _VDBL_viewdbase (const _VDBL_database &db, const _VDBL_userid &uid, const _VDBL_context &__c, const SqCtr< std::pair<_VDBL_tableid, _VDBL_rowid> >&__an, const _V_enum &__e=V_frozen)
- virtual ~_VDBL_viewdbase ()
- bool add_table_view (const _VDBL_tableid &t, const std::string &s, const _VDBL_context &__c)
- template<template< class_TC, class_TA > class_SqCtr, class _Al > bool add_table_view (const _VDBL_tableid &t, const std::string &s, const _VDBL_context &__c, const SqCtr< std::pair<_VDBL_tableid, _VDBL_rowid> >&__an)
- bool add_table_view (const std::string &s, const _VDBL_context &__c)
- template<template< class_TC, class_TA > class_SqCtr, class _Al > bool add_table_view (const std::string &s, const _VDBL_context &__c, const SqCtr< std::pair<_VDBL_tableid, _VDBL_rowid> >&__an)
- bool add_visible (const SqCtr< std::pair<_VDBL_tableid, _VDBL_rowid> >&__an)
- template<template< class_TC, class_TA > class_SqCtr, class _Al > bool rm_visible (const SqCtr< std::pair<_VDBL_tableid, _VDBL_rowid> >&__an)
9.44  _VDBL_viewdbase Class Reference

9.44.1  Detailed Description

This class implements a view onto a complete database. The view names correspond to the names of all
existing tables.

9.44.2  Constructor & Destructor Documentation

9.44.2.1  _VDBL_viewdbase::_VDBL_viewdbase ( ) [inline]

standard constructor
Definition at line 151 of file vdbl_viewdbase.h.

9.44.2.2  _VDBL_viewdbase::_VDBL_viewdbase ( const _VDBL_database & db, const _VDBL_userid &
       uid, const _VDBL_context & _c, const _V_enum & _e = V::frozen ) [inline]

constructor which builds a view to the database from

- _db -- the database
- __c -- the evaluation context for all views

Definition at line 159 of file vdbl_viewdbase.h.

9.44.2.3  template<template< class _TC, class _TA > class _SqCtr, class _Al >
       _VDBL_viewdbase::_VDBL_viewdbase ( const _VDBL_database & db, const _VDBL_userid &
       uid, const _VDBL_context & _c, const _SqCtr< std::pair<_VDBL_tableid, _VDBL_rowid>
       >, _Al > & _an, const _V_enum & _e = V::frozen ) [inline]

constructor which builds a view to the database from

- _db -- the database
- __c -- the evaluation context for all views

The third argument is any sequential container of table,row
pairs to which the view shall be restricted.

Definition at line 184 of file vdbl_viewdbase.h.

9.44.2.4  virtual _VDBL_viewdbase::~_VDBL_viewdbase ( ) [inline, virtual]

standard destructor
Definition at line 203 of file vdbl_viewdbase.h.

9.44.3  Member Function Documentation

9.44.3.1  bool _VDBL_viewdbase::add_table_view ( const _VDBL_tableid & __t, const std::string & __s,
       const _VDBL_context & __c ) [inline]

This method adds another view to the viewdb. The table id is given by __t, the table name is given by
__s, and the context by __c.

Reimplemented in viewdbase.
Definition at line 213 of file vdbl_viewdbase.h.
This method adds another view to the viewdb. The table id is given by \_t, the table name is given by \_s, and the context by \_c. The sequential container of table,row pairs specifies additional table,row pairs which shall be visible in the view.

Reimplemented in viewdbase.

Definition at line 232 of file vdbl_viewdbase.h.

This method adds another view to the viewdb. The table name is given by \_s, and the context by \_c.

Reimplemented in viewdbase.

Definition at line 249 of file vdbl_viewdbase.h.

This method adds another view to the viewdb. The table name is given by \_s, and the context by \_c. The sequential container of table,row pairs specifies additional table,row pairs which shall be visible in the view.

Reimplemented in viewdbase.

Definition at line 264 of file vdbl_viewdbase.h.

The sequential container of table,row pairs specifies additional table,row pairs which shall be visible in the view.

Reimplemented in viewdbase.

Definition at line 278 of file vdbl_viewdbase.h.

return the table id (and view id) of table \_ci

Definition at line 73 of file vdbl_viewdbase.h.

this method returns a pointer to the view associated to id \_ci.

Definition at line 115 of file vdbl_viewdbase.h.

this method returns a pointer to the view \_ci.
9.45 _VDBL_viewflags Class Reference

Reimplemented in viewbase.
Definition at line 145 of file vdbl_viewdbase.h.

9.44.3.9 bool _VDBL_viewdbase::has_view ( const _VDBL_tableid & _C_i ) const [inline]
check whether a given view (associated to table id _C_i) exists
Definition at line 92 of file vdbl_viewdbase.h.

9.44.3.10 bool _VDBL_viewdbase::has_view ( const std::string & _C_i ) const [inline]
check whether the view _C_i exists
Definition at line 109 of file vdbl_viewdbase.h.

9.44.3.11 template <template < class _TC, class _TA > class _SqCtr, class _Al > bool _VDBL_viewdbase::rm_visible ( const _SqCtr < std::<pair < _VDBL_tableid, _VDBL_rowid >, _Al & _an > ) [inline]
The sequential container of table,row pairs specifies table,row pairs which shall no longer be visible in the view.
Reimplemented in viewbase.
Definition at line 292 of file vdbl_viewdbase.h.
The documentation for this class was generated from the following file:

- vdbl_viewbase.h

9.45 _VDBL_viewflags Class Reference
flags for one view
#include <vdbl_database.h>
Collaboration diagram for \_VDBL\_viewflags:

```
\_VDBL\_acl
  \| __global
  \|     \_VDBL\_aclentry
      \| __global
          \_VDBL\_viewflags
```

Public Member Functions

- \_VDBL\_viewflags ()
- \_VDBL\_viewflags (const \_VDBL\_acl & _gacl)
- \_VDBL\_viewflags (const \_VDBL\_viewflags & __v)
- virtual \_VDBL\_viewflags ()
- \_VDBL\_viewflags & operator= (const \_VDBL\_viewflags & __v)

Public Attributes

- \_VDBL\_acl global
- std::map\_< \_VDBL\_userid, \_VDBL\_acl > ACLs

9.45.1 Detailed Description

This class describes the additional information for a view within a database, including access control

9.45.2 Constructor & Destructor Documentation

9.45.2.1 \_VDBL\_viewflags::\_VDBL\_viewflags ( ) [inline]

standard constructor

Definition at line 303 of file vdbl_database.h.
 constructor which initializes the global ACL entry
Definition at line 308 of file vdbl_database.h.

9.45.2.3  

 copy constructor
Definition at line 313 of file vdbl_database.h.

9.45.2.4  

 standard destructor
Definition at line 318 of file vdbl_database.h.

9.45.3  

 Member Function Documentation

9.45.3.1  

 assignment operator
Definition at line 323 of file vdbl_database.h.

9.45.4  

 Member Data Documentation

9.45.4.1  

 this is an access control list for every single user
Definition at line 297 of file vdbl_database.h.

9.45.4.2  

 this is the global access control list (valid for all users)
Definition at line 293 of file vdbl_database.h.

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

- vdbl_database.h

9.46  

# include <vdbl_vtable.h>
Inheritance diagram for _VDBL_viewtable:

```
            _VDBL_table
              ↑
    _VDBL_viewtable
          ↑
    view_table
```

Collaboration diagram for _VDBL_viewtable:

```
            _VDBL_table
              ↑
    _VDBL_viewtable
```

Public Types

- typedef std::pair<std::string, _VDBL_col> _T_colspec
- typedef std::pair<const std::string *, const _VDBL_col *> _T_ptrcolspec
- typedef _col_iterator< std::pair< std::string, _VDBL_colid >, const std::pair< std::string, _VDBL_colid > & > col_const_iterator
- typedef _row_iterator<_VDBL_rowid, const _VDBL_rowid &, const _VDBL_rowid *> row_const_iterator

Public Member Functions

- bool insert (const std::vector<_T_colspec> & _row)
- bool remove (const _VDBL_rowid _ri)
virtual std::pair<std::string, _VDBL_colid> _next_col (const std::pair<std::string, _VDBL_colid> &_ci) const VDBL_PURE_VIRTUAL

virtual _VDBL_rowid _next_row (const _VDBL_rowid &_ci) const VDBL_PURE_VIRTUAL

virtual _VDBL_rowid _prev_row(const _VDBL_rowid &_ci) const VDBL_PURE_VIRTUAL

virtual _VDBL_rowid _row_begin() const VDBL_PURE_VIRTUAL

virtual _VDBL_rowid _row_end() const VDBL_PURE_VIRTUAL

virtual _VDBL_rowid _row_iterator_copy(const _VDBL_rowid &) const VDBL_PURE_VIRTUAL

virtual _VDBL_table *new_copy () VDBL_PURE_VIRTUAL

virtual void destroy_copy(_VDBL_table *) VDBL_PURE_VIRTUAL

template<typename __Tp1, typename __AllocTp1> class __SequenceCtrOut, template<typename __Tp2, typename __AllocTp2> class __SequenceCtrIn, class AllocatorOut , class AllocatorIn >

bool insert_row (const __SequenceCtrOut<__SequenceCtrIn<_T_colspec, AllocatorIn>, AllocatorOut>, AllocatorOut &_rows)

Protected Member Functions

void made_change ()

_VDBL_colid get_colid ()

_VDBL_rowid get_rowid ()

Friends

class _VDBL_view

9.46.1 Detailed Description

This is a table on top of a view. The view can be used like a table later. This is especially useful for constructing a hierarchy of tables. Depending on the “transparency” of the view rows are automatically updated or “overshadowed”.

9.46.2 Member Typedef Documentation

9.46.2.1 typedef std::pair<std::string, _VDBL_col> _VDBL_viewtable::_T_colspec

Specifier of one column, a pair of column name (string) and entry (_VDBL_col).

Reimplemented from _VDBL_table.

Definition at line 63 of file vdbl_vtable.h.

9.46.2.2 typedef std::pair<const std::string*, const _VDBL_col*> _VDBL_table::_T_ptrcolspec [inherited]

Specifier of pointers to one column, a pair of column name (string*) and entry (_VDBL_col*).

Reimplemented in _VDBL_standardtable.

Definition at line 83 of file vdbl_table.h.
9.46.2.3 typedef _col_iterator<std::pair<std::string,_VDBL_colid>, const std::pair<std::string,_VDBL_colid>&, const std::pair<std::string,_VDBL_colid>*> _VDBL_table::col_const_iterator [inherited]

const iterator over all columns
Reimplemented in _VDBL_standardtable.
Definition at line 214 of file vdbl_table.h.

9.46.2.4 typedef _row_iterator<_VDBL_rowid, const _VDBL_rowid&, const _VDBL_rowid*> _VDBL_table::row_const_iterator [inherited]

const iterator over all rows
Definition at line 321 of file vdbl_table.h.

9.46.3 Member Function Documentation

9.46.3.1 virtual std::pair<std::string,_VDBL_colid> _VDBL_table::next_col ( const std::pair<std::string,_VDBL_colid> & _ci ) const [inline, virtual, inherited]

This virtual function has to be overloaded by the derived table classes, and it performs the step to the next column for a _col_iterator. This virtual function has to be overloaded by the derived table classes, and it performs the step to the previous column for a _col_iterator. return iterator to first column return iterator beyond last column This is the fundamental class for iterators over all rows, defining basic in(de)crementation for overloading, and basic comparison.
Reimplemented in _VDBL_standardtable.
Definition at line 221 of file vdbl_table.h.

9.46.3.2 virtual _VDBL_rowid _VDBL_table::next_row ( const _VDBL_rowid & _ri ) const [inline, virtual, inherited]

This virtual function has to be overloaded by the derived table classes, and it performs the step to the next row for a _col_iterator. This virtual function has to be overloaded by the derived table classes, and it performs the step to the previous row for a _col_iterator. return iterator to first row return iterator beyond last row construct a new copy of a row iterator standard constructor
Reimplemented in _VDBL_standardtable.
Definition at line 328 of file vdbl_table.h.

9.46.3.3 _VDBL_colid _VDBL_table::get_colid ( ) [inline, protected, inherited]

generate new unique id’s for rows and columns
Definition at line 99 of file vdbl_table.h.

9.46.3.4 _VDBL_rowid _VDBL_table::get_rowid ( ) [inline, protected, inherited]

generate new unique id’s for rows and columns
Definition at line 100 of file vdbl_table.h.

9.46.3.5 bool _VDBL_viewtable::insert ( const std::vector<_T_colspec> & _row ) [inline]

> must not change this
> insert them into local rows

Definition at line 138 of file vdbl_vtable.h.

9.46.3.6 template<template< class _Tp1, class _AllocTp1 > class _SequenceCtrOut, template< class _Tp2, class _AllocTp2 > class _SequenceCtrIn, class AllocatorOut, class AllocatorIn > bool _VDBL_table::insert_row ( const _SequenceCtrOut<_SequenceCtrIn<_T_colspec, AllocatorIn>, AllocatorOut>& _rows ) [inline, inherited]

insert a many new rows of specifications _rows into the table. The list of rows can be contained in any sequential STL container, which holds any other sequential STL container of column entries. The function returns true, if inserting was successful for all rows.

Definition at line 473 of file vdbl_table.h.

9.46.3.7 void _VDBL_table::made_change ( ) [inline, protected, inherited]
increment the last_change counter.

Definition at line 106 of file vdbl_table.h.

9.46.3.8 virtual _VDBL_table* _VDBL_table::new_copy ( ) const [inline, virtual, inherited]

clone method clone destructor method add a new column of name _C_n, which contains __c, and has column flags __f. The function returns true, if adding the column was successful. modify the column of name _C_n, to new contents __c, and new column flags __f. The function returns true, if modifying was successful. modify the contents of column of name _C_n The function returns true, if modifying was successful. modify the column flags of column of name _C_n The function returns true, if modifying was successful. remove the column _C_n from the table The function returns true, if erasing was successful. rename the column _C_old to new name _C_new. The function returns true, if renaming was successful. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. The function returns true, if inserting was successful. insert a new row of specification _row into the table. The function returns true, if inserting was successful. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. Take any sequential STL container to hold the row entries of the column. The function returns true, if inserting was successful.

Definition at line 380 of file vdbl_table.h.

9.46.3.9 bool _VDBL_vtable::remove ( const _VDBL_rowid _r ) [inline]
can only remove local rows unless we have a window view

Definition at line 210 of file vdbl_vtable.h.

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

- vdbl_vtable.h

9.47 alltype Class Reference

The templated alltype class.

#include <vdbl_alltype.h>
Inheritance diagram for alltype:
Collaboration diagram for alltype:

```
_VDBL_alltype_base

_VDBL_alltype

_VDBL_alltype< _TT >

alltype
```

### Public Types

- typedef _Base::cont_type cont_type
  
  *the type of the internally stored data*

### Public Member Functions

- const std::type_info & get_type () const
- const cont_type & content () const

- bool operator== (const _VDBL_alltype_base &p) const
- bool operator!= (const _VDBL_alltype_base &p) const

- bool operator== (const _Self &p) const
- bool operator!= (const _Self &p) const

### 9.47.1 Detailed Description

This class is used to hold data of arbitrary types. It is mainly used as return value.
Data stored in this class has to provide a copy constructor, an assignment operator. Finally, it would be useful if the stored type has a `<<` operator.

### 9.47.2 Member Function Documentation

#### 9.47.2.1 const cont_type& VDBL_alltype::content ( ) const [inline, inherited]

This method returns a const reference to the stored data. Definition at line 140 of file vdbl_alltype.h.

#### 9.47.2.2 const std::type_info& VDBL_alltype::get_type ( ) const [inline, inherited]

This member function is used for run-time type checking. It returns the of the . Definition at line 135 of file vdbl_alltype.h.

#### 9.47.2.3 bool VDBL_alltype::operator!= ( const _VDBL_alltype_base & p ) const [inline, inherited]

The standard comparison operators are mainly used for expressions and selectors. Definition at line 164 of file vdbl_alltype.h.

#### 9.47.2.4 bool VDBL_alltype::operator!= ( const _Self & p ) const [inline, inherited]

The standard comparison operators are mainly used for expressions and selectors. Definition at line 175 of file vdbl_alltype.h.

#### 9.47.2.5 bool VDBL_alltype::operator== ( const _VDBL_alltype_base & p ) const [inline, inherited]

The standard comparison operators are mainly used for expressions and selectors. Definition at line 161 of file vdbl_alltype.h.

#### 9.47.2.6 bool VDBL_alltype::operator== ( const _Self & p ) const [inline, inherited]

The standard comparison operators are mainly used for expressions and selectors. Definition at line 174 of file vdbl_alltype.h.

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

- vdbl_alltype.h

### 9.48 col_base Class Reference

column base class

```cpp
#include <vdbl_col.h>
```
Inheritance diagram for col_base:
Collaboration diagram for col_base:

Public Types

- typedef _TR return_type  
  
  *return_type is the type of object stored*

Public Member Functions

- virtual _Self * new_copy () const VDBL_PURE_VIRTUALvirtual void setcontext(const context * _c
- virtual _Self const _VDBL_row * _r virtual VDBL_PURE_VIRTUAL  void get (return_type &c)
  const VDBL_PURE_VIRTUALvirtual void def(return_type &d) const VDBL_PURE_VIRTUA-
  _Lvirtual void get_ptr(return_type const *c) const VDBL_PURE_VIRUTALvirtual void get_copy(return-
  _type *c) const
- virtual void def_copy (return_type *&d) const
- virtual void def_copy (_VDBL_alltype_base *&v) const
- virtual void get_copy (_VDBL_alltype_base *&v) const
- virtual const std::type_info & return_type_id () const
- virtual std::ostream & print_contents (std::ostream &o) const

9.48.1 Detailed Description

this is the external name of the column base class
9.48.2 Member Function Documentation

9.48.2.1 virtual void VDBL\_colbase::def\_copy ( return\_type \&\& d ) const [inline, virtual, inherited]

This function returns a pointer to a copy of the column’s default value. The copy of the value is allocated by new. It has to be deleted by the user to avoid memory leaks.

Reimplemented in \_VDBL\_mthdcol.

Definition at line 188 of file vdbl\_col.h.

9.48.2.2 virtual void VDBL\_colbase::def\_copy ( \_VDBL\_alltype\_base \& v ) const [inline, virtual, inherited]

This version of get\_copy returns a copy of the columns default value within an alltype. This is useful for passing on column values. It can also be used to circumvent the strict run-time type checking. The user is, however, DISCOURAGED to do so.

Definition at line 210 of file vdbl\_col.h.

9.48.2.3 virtual\_Self const \_VDBL\_row\_* r virtual VDBL\_PURE\_VIRTUAL void VDBL\_colbase::get ( return\_type \& c ) const [inline, virtual, inherited]

This function stores a copy of the column value into\_c. This function stores a copy of the column default value into\_d. This function sets\_c to a const pointer pointing to the column’s actual value. Here, no copying is done. This function returns a pointer to a copy of the column’s value. The copy of the value is allocated by new. It has to be deleted by the user to avoid memory leaks.

Reimplemented in \_VDBL\_mthdcol.

Definition at line 162 of file vdbl\_col.h.

9.48.2.4 virtual void VDBL\_colbase::get\_copy ( \_VDBL\_alltype\_base \& v ) const [inline, virtual, inherited]

This version of get\_copy returns a copy of the columns value within an alltype. This is useful for passing on column values. It can also be used to circumvent the strict run-time type checking. The user is, however, DISCOURAGED to do so.

Definition at line 197 of file vdbl\_col.h.

9.48.2.5 virtual\_Self\_\_* VDBL\_colbase::new\_copy ( ) const [virtual, inherited]

new\_copy is the clone operation for copy-constructor overloading. setcontext sets the context for value retrieval.

Reimplemented in \_VDBL\_mthdcol.

9.48.2.6 virtual std::ostream\& VDBL\_colbase::print\_contents ( std::ostream \& o ) const [inline, virtual, inherited]

This function is needed for the operator<< for columns of type return\_type.

Reimplemented in \_VDBL\_mthdcol.

Definition at line 228 of file vdbl\_col.h.
9.48.2.7 virtual const std::type_info& _VDBL_colbase::return_type_id ( ) const [inline, virtual, inherited]

This function returns the type_info of the column type. This information is used during run-time type checking.

Definition at line 221 of file vdbl_col.h.

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

- vdbl_col.h

9.49 col_spec Class Reference

column specification

#include <vdbl_table.h>

Public Member Functions

- col_spec (const col_spec &__c)
- virtual ~col_spec ()

- col_spec (const std::string &__s, const _VDBL_col &__c)
- col_spec (const char *__s, const _VDBL_col &__c)

- template<class _CR >
  col_spec (const std::string &__s, const _CR &__c)
- template<class _CR >
  col_spec (const char *__s, const _CR &__c)

9.49.1 Detailed Description

This class is used to specify columns of a table.

9.49.2 Constructor & Destructor Documentation

9.49.2.1 col_spec::col_spec ( const std::string &__s, const _VDBL_col &__c ) [inline]

constructor building a column description with a name (__s) and column data (__c).

Definition at line 1279 of file vdbl_table.h.

9.49.2.2 col_spec::col_spec ( const char *__s, const _VDBL_col &__c ) [inline]

constructor building a column description with a name (__s) and column data (__c).

Definition at line 1282 of file vdbl_table.h.
9.49.2.3  template<class _CR > col_spec::col_spec ( const std::string & _s, const _CR & _c ) [inline]

constructor building a column description with a name (_s) and arbitrary data (_c) which is converted to column data.
Definition at line 1292 of file vdbl_table.h.

9.49.2.4  template<class _CR > col_spec::col_spec ( const char * _s, const _CR & _c ) [inline]

constructor building a column description with a name (_s) and arbitrary data (_c) which is converted to column data.
Definition at line 1296 of file vdbl_table.h.

9.49.2.5  col_spec::col_spec ( const col_spec & _c ) [inline]

copy constructor
Definition at line 1303 of file vdbl_table.h.

9.49.2.6  virtual col_spec::~col_spec ( ) [inline, virtual]

standard destructor
Definition at line 1308 of file vdbl_table.h.

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

- vdbl_table.h

9.50  database Class Reference

the database class
#include <vdbl_database.h>
Inheritance diagram for database:

```
  _VDBL_database
    database
```

Generated on Mon Oct 28 2013 22:57:27 for Vienna Database Library by Doxygen
Collaboration diagram for database:

![Collaboration Diagram]

Public Member Functions

- `bool create_table (const std::string &_C_i, const _VDBL_userid &C_u, const _VDBL_tableflags &__f=_VDBL_tableflags())`
- `bool create_table (const char *_C_i, const _VDBL_userid &C_u, const _VDBL_tableflags &__f=_VDBL_tableflags())`
- `bool drop_table (const std::string &_C_i, const _VDBL_userid &C_u)`
- `bool drop_table (const char *_C_i, const _VDBL_userid &C_u)`
- `bool has_table (const std::string &_C_i, const _VDBL_userid &C_u) const`
- `bool has_table (const char *_C_i, const _VDBL_userid &C_u) const`
- `bool create_view (const std::string &_C_i, const _VDBL_userid &C_u, const _VDBL_context &__c, const std::string &_C_t, const _V_enum &__e)`
- `bool create_view (const char *_C_i, const _VDBL_userid &C_u, const _VDBL_context &__c, const char *_C_t, const _V_enum &__e)`
- `bool drop_view (const std::string &_C_i, const _VDBL_userid &C_u)`
- `bool drop_view (const char *_C_i, const _VDBL_userid &C_u)`
- `bool has_view (const std::string &_C_i, const _VDBL_userid &C_u) const`
- `bool has_view (const char *_C_i, const _VDBL_userid &C_u) const`
- `viewbase *get_view (const std::string &_C_i, const _VDBL_userid &C_u) const`
- `viewbase *get_view (const char *_C_i, const _VDBL_userid &C_u) const`
- `table *get_table (const tableid &_C_i, const _VDBL_userid &C_u) const`
- `table *get_table (const std::string &_C_i, const _VDBL_userid &C_u) const`
- `_VDBL_tableid get_tableid (const std::string &_C_i, const _VDBL_userid &C_u) const`
- `_VDBL_viewid get_viewid (const std::string &_C_i, const _VDBL_userid &C_u) const`
9.50 database Class Reference

- bool drop_view (const _VDBL_viewid &C_i, const _VDBL_userid &C_u)
- bool has_view (const _VDBL_viewid &C_i, const _VDBL_userid &C_u) const
- _VDBL_view* get_view (const _VDBL_viewid &C_i, const _VDBL_userid &C_u) const

Protected Member Functions

- _VDBL_tableid get_tableid ()
- _VDBL_userid get_userid ()
- _VDBL_viewid get_viewid ()

Friends

- class _VDBL_viewdbase

9.50.1 Detailed Description

This is the class describing a whole database including users, tables and views.

9.50.2 Member Function Documentation

9.50.2.1 bool database::create_table ( const std::string &C_i, const _VDBL_userid &C_u, const _VDBL_tableflags &f = _VDBL_tableflags () ) [inline]

create a new table

- _C_i: name
- _C_u: user id
- __f: the table flags (if they are not default) return true, if creating the table was successful.

Reimplemented from _VDBL_database.
Definition at line 849 of file vdbl_database.h.

9.50.2.2 bool database::create_table ( const char *C_i, const _VDBL_userid &C_u, const _VDBL_tableflags &f = _VDBL_tableflags () ) [inline]

create a new table

- _C_i: name
- _C_u: user id
- __f: the table flags (if they are not default) return true, if creating the table was successful.

Definition at line 859 of file vdbl_database.h.
create a new standard view with name _C_i, evaluation context _C_c, for table _C_t, of type _C_e. return true if creating worked, and false otherwise.

Reimplemented from _VDBL_database.
Definition at line 907 of file vdbl_database.h.

create a new standard view with name _C_i, evaluation context _C_c, for table _C_t, of type _C_e. return true if creating worked, and false otherwise.
Definition at line 916 of file vdbl_database.h.

create a new standard view with name _C_i, evaluation context _C_c, for table _C_t, of type _C_e. return true if creating worked, and false otherwise.
Definition at line 925 of file vdbl_database.h.

create a new standard view with name _C_i, evaluation context _C_c, for table _C_t, of type _C_e. return true if creating worked, and false otherwise.
Definition at line 934 of file vdbl_database.h.

delete a table, internal function. The first argument is the iterator into the table map, the second argument is the iterator into the table names map. return true, if deleting the table has worked.
Definition at line 471 of file vdbl_database.h.

delete a table, whose table id is provided. return true, if deleting the table has worked.
Definition at line 496 of file vdbl_database.h.

delete a table, whose name is provided. return true, if deleting the table has worked.
Reimplemented from _VDBL_database.
Definition at line 884 of file vdbl_database.h.
9.50.2.10  bool database::drop_table ( const char * _C_i, const _VDBL_userid & _C_u )  [inline]
delete a table, whose name is provided. return true, if deleting the table has worked.
Definition at line 890 of file vdbl_database.h.

9.50.2.11  bool _VDBL_database::drop_view ( const _D_views::iterator & _v, const _D_view_names::iterator & _vn, const _VDBL_userid & _C_u )  [inline, inherited]
delete a view, internal function. The first argument is the iterator into the table map, the second argument
is the iterator into the table names map, return true, if deleting the table has worked.
Definition at line 704 of file vdbl_database.h.

9.50.2.12  bool _VDBL_database::drop_view ( const _VDBL_viewid & _C_i, const _VDBL_userid & _C_u )  [inline, inherited]
delete a view, whose id is provided. return true, if deleting the table has worked.
Definition at line 729 of file vdbl_database.h.

9.50.2.13  bool database::drop_view ( const std::string & _C_i, const _VDBL_userid & _C_u )  [inline]
delete a view, whose name is provided. return true, if deleting the view has worked.
Reimplemented from _VDBL_database.
Definition at line 947 of file vdbl_database.h.

9.50.2.14  bool database::drop_view ( const char * _C_i, const _VDBL_userid & _C_u )  [inline]
delete a view, whose name is provided. return true, if deleting the view has worked.
Definition at line 953 of file vdbl_database.h.

9.50.2.15  table* database::get_table ( const tableid & _C_i, const _VDBL_userid & _C_u ) const  [inline]
return a pointer to the table with id _C_i.
Reimplemented from _VDBL_database.
Definition at line 998 of file vdbl_database.h.

9.50.2.16  table* database::get_table ( const std::string & _C_i, const _VDBL_userid & _C_u ) const  [inline]
return a pointer to the table with name _C_i.
Reimplemented from _VDBL_database.
Definition at line 1003 of file vdbl_database.h.

9.50.2.17  table* database::get_table ( const char * _C_i, const _VDBL_userid & _C_u ) const  [inline]
return a pointer to the table with name _C_i.
Definition at line 1008 of file vdbl_database.h.
9.50.2.18  _VDBL_tableid  _VDBL_database::get_tableid ( )  [inline, protected, inherited]

generate a new unique id for tables, views, and users
Definition at line 392 of file vdbl_database.h.

9.50.2.19  _VDBL_tableid  _VDBL_database::get_tableid ( const std::string & _C_i, const _VDBL_userid & _C_u ) const  [inline, inherited]

return the table id for a given name
Definition at line 448 of file vdbl_database.h.

9.50.2.20  _VDBL_userid  _VDBL_database::get_userid ( )  [inline, protected, inherited]

generate a new unique id for tables, views, and users
Definition at line 393 of file vdbl_database.h.

9.50.2.21  _VDBL_view*  _VDBL_database::get_view ( const _VDBL_viewid & _C_i, const _VDBL_userid & _C_u ) const  [inline, inherited]

return a pointer to the view with id _C_i.
Definition at line 769 of file vdbl_database.h.

9.50.2.22  viewbase*  database::get_view ( const std::string & _C_i, const _VDBL_userid & _C_u ) const  [inline]

return a pointer to the view with name _C_i.
Reimplemented from _VDBL_database.
Definition at line 968 of file vdbl_database.h.

9.50.2.23  viewbase*  database::get_view ( const char * _C_i, const _VDBL_userid & _C_u ) const  [inline]

return a pointer to the view with name _C_i.
Definition at line 973 of file vdbl_database.h.

9.50.2.24  _VDBL_viewid  _VDBL_database::get_viewid ( )  [inline, protected, inherited]

generate a new unique id for tables, views, and users
Definition at line 394 of file vdbl_database.h.

9.50.2.25  _VDBL_viewid  _VDBL_database::get_viewid ( const std::string & _C_i, const _VDBL_userid & _C_u ) const  [inline, inherited]

return the view id of view _C_i.
Definition at line 661 of file vdbl_database.h.
9.50.2.26 bool VDBL_database::has_table ( const _VDBL_tableid & Ci, const _VDBL_userid & Cu ) const [inline, inherited]
check whether the table _C_i exists
Definition at line 518 of file vdbl_database.h.

9.50.2.27 bool database::has_table ( const std::string & Ci, const _VDBL_userid & Cu ) const [inline]
check whether the table _C_i exists
Reimplemented from _VDBL_database.
Definition at line 895 of file vdbl_database.h.

9.50.2.28 bool database::has_table ( const char * Ci, const _VDBL_userid & Cu ) const [inline]
check whether the table _C_i exists
Definition at line 900 of file vdbl_database.h.

9.50.2.29 bool VDBL_database::has_view ( const _VDBL_viewid & Ci, const _VDBL_userid & Cu ) const [inline, inherited]
check whether the view with id _C_i exists
Definition at line 751 of file vdbl_database.h.

9.50.2.30 bool database::has_view ( const std::string & Ci, const _VDBL_userid & Cu ) const [inline]
check whether the view _C_i exists
Reimplemented from _VDBL_database.
Definition at line 958 of file vdbl_database.h.

9.50.2.31 bool database::has_view ( const char * Ci, const _VDBL_userid & Cu ) const [inline]
check whether the view _C_i exists
Definition at line 963 of file vdbl_database.h.

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

- vdbl_database.h

9.51 hierarchical_view Class Reference

hierarchical view class onto a stack of tables

#include <vdbl_hrview.h>
Inheritance diagram for hierarchical_view:

```
_VDBL_view
     |     
     |     
  _VDBL_hierarchicalview
     |     
     |     
hierarchical_view
```

Collaboration diagram for hierarchical_view:

```
_VDBL_view
     |     
     |     
  _VDBL_hierarchicalview
     |     
     |     
hierarchical_view
```

Public Types

- typedef std::pair<std::string, _VDBL_col> _T_colspec

Public Member Functions

- hierarchical_view (const _VDBL_tableid &__ti, _VDBL_table *__t, const _VDBL_context &__c, _V_enum __e=V_window)
- hierarchical_view (const hierarchical_view &_v)
• template< class _TR >
  bool get (const tableid &_ti, const rowid &_ri, const colid &_ci, _TR &r) const
• template< class _TR >
  bool get_raw_ptr (const tableid &_ti, const rowid &_ri, const colid &_ci, _TR const * &r) const
• void push_table (const _VDBL_tableid & _ti, _VDBL_table * _t)
• void push_table (const _VDBL_tableid & _ti, _VDBL_table * _t, const std::vector<_VDBL_rowid> & _rs)
• _VDBL_tableid pop_table ()
• bool insert (const std::vector<_T_colspec> & _row)
• std::ostream & print_col (std::ostream & o, const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, bool & printed) const
• template< class _TR >
  bool get_raw_ptr (const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, _TR const * & r) const
• template< class _TR >
  bool get (const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, _TR & r) const
• protected _VDBL_view * new_copy () VDBL_PURE_VIRTUAL virtual void destroy_copy(_VDBL_view *v) VDBL_PURE_VIRTUAL virtual const std

• template< class _TR >
  bool get (const rowid & _ri, const std::string & _c, _TR & r) const
• template< class _TR >
  bool get (const rowid & _ri, const char * _c, _TR & r) const

Protected Types
• typedef _default_iterator < _VDBL_col, const _VDBL_col & , const _VDBL_col * > default_const_iterator
• typedef _col_iterator < _VDBL_col, const _VDBL_col & , const _VDBL_col * > col_const_iterator
• typedef _row_iterator < _VDBL_row, const _VDBL_row & , const _VDBL_row * > row_const_iterator

Protected Member Functions
• std::triple< _VDBL_tableid, _VDBL_colid, void * > _next_def_col (const _VDBL_tableid & _t, const _VDBL_colid & _c, void * _d) const
• void _copy_def_data (void * _d) const
• void _copy_col_data (void * _d) const
• void _copy_row_data (void * _d) const
• void made_change ()
• increment the change counter.
• unsigned int get_change_ctr () const
• read the change counter.
Protected Attributes

- \_V\_rows \_V\_r
- \_V\_cols \_V\_c
- \_V\_colxref \_V\_cx

9.51.1 Detailed Description

This is the hierarchical view. It is an in-memory view onto a stack of VDBL tables. In a hierarchical view the master table (the table lowest in the stack) determines the columns valid in this view. The tables upwards in the stack add rows and can change the default values of columns. The upmost definition of a column counts.

9.51.2 Member Typedef Documentation

9.51.2.1 typedef std::pair

This is the description of one column

Definition at line 61 of file vdbl_view.h.

9.51.2.2 typedef _col_iterator

const iterator over all columns

Definition at line 439 of file vdbl_view.h.

9.51.2.3 typedef _default_iterator

const iterator over all default columns

Definition at line 301 of file vdbl_view.h.

9.51.2.4 typedef _row_iterator

const iterator over all rows

Definition at line 568 of file vdbl_view.h.

9.51.3 Constructor & Destructor Documentation

9.51.3.1 hierarchical_view::hierarchical_view ( const _VDBL_tableid & _ti, _VDBL_table * _t, const _VDBL_context & _c, _V_enum _e = V_window ) [inline]

standard constructor which initalizes the table and the tableid of the master table, the evaluation context, and the view type.

Definition at line 750 of file vdbl_hrview.h.

9.51.3.2 hierarchical_view::hierarchical_view ( const hierarchical_view & _v ) [inline]

copy constructor
9.51 hierarchical_view Class Reference

Definition at line 757 of file vdbl_hrview.h.

9.51.4 Member Function Documentation

9.51.4.1 void * VDBL_hierarchicalview::copy_col_data ( void * _d ) const [inline, protected, virtual, inherited]

This function copies the additional data needed by a _col_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the next row for a _row_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous row for a _row_iterator. This function destroys the additional data needed by a _row_iterator. Reimplemented from _VDBL_view.
Definition at line 290 of file vdbl_hrview.h.

9.51.4.2 void * VDBL_hierarchicalview::copy_def_data ( void * _d ) const [inline, protected, virtual, inherited]

This function copies the additional data needed by a _default_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the next column for a _col_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous column for a _col_iterator. This function destroys the additional data needed by a _col_iterator. Reimplemented from _VDBL_view.
Definition at line 233 of file vdbl_hrview.h.

9.51.4.3 void * VDBL_hierarchicalview::copy_row_data ( void * _d ) const [inline, protected, virtual, inherited]

This function copies the additional data needed by a _row_iterator. This is the fundamental class for iterators over all default columns, defining basic in(de)crementation for overloading, and basic comparison. Reimplemented from _VDBL_view.
Definition at line 327 of file vdbl_hrview.h.

9.51.4.4 std::triple<_VDBL_tableid, _VDBL_colid, void*> VDBL_hierarchicalview::next_def_col ( const _VDBL_tableid & _t, const _VDBL_colid & _c, void * _d ) const [inline, protected, virtual, inherited]

This virtual function has to be overloaded by the derived view classes, and it performs the step to the next default of a column a _default_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous default of a column a _default_iterator. This function destroys the additional data needed by a _default_iterator. Reimplemented from _VDBL_view.
Definition at line 181 of file vdbl_hrview.h.

9.51.4.5 template <class _TR> bool VDBL_hierarchicalview::get ( const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, _TR & r ) const [inline, inherited]

get the data from column _ci in row _ri.second of table _ri.first. The data stored in the column must be of type _TR.
Definition at line 651 of file vdbl_hrview.h.
9.51 hierarchical_view Class Reference

9.51.4.6 template<class _TR > bool hierarchical_view::get ( const tableid & _ti, const rowid & _ri, const colid & _ci, _TR & r ) const [inline]

get the data from column _ci in row _ri of table _ti. The data stored in the column must be of type _TR.

Definition at line 764 of file vdbl_hrview.h.

9.51.4.7 template<class _TR > bool hierarchical_view::get ( const rowid & _ri, const std::string & _c, _TR & r ) const [inline]

get the data from column _c in row _ri. The data stored in the column must be of type _TR.

Definition at line 784 of file vdbl_hrview.h.

9.51.4.8 template<class _TR > bool hierarchical_view::get ( const rowid & _ri, const char * _c, _TR & r ) const [inline]

get the data from column _c in row _ri. The data stored in the column must be of type _TR.

Definition at line 789 of file vdbl_hrview.h.

9.51.4.9 template<class _TR > bool VDBL_hierarchicalview::get_raw_ptr ( const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, _TR const * & r ) const [inline, inherited]

get a const ptr to the data from column _ci in row _ri.second of table _ri.first. The data stored in the column must be of type _TR. In this function no data copying is done. Note that this function returns a pointer to the columns raw data, so it can only be used to refer to constant columns.

Definition at line 632 of file vdbl_hrview.h.

9.51.4.10 template<class _TR > bool hierarchical_view::get_raw_ptr ( const tableid & _ti, const rowid & _ri, const colid & _ci, _TR const * & r ) const [inline]

get a const pointer to the data from column _ci in row _ri of table _ti. The data stored in the column must be of type _TR. This only works if the column’s data is constant. There is no implicit copying performed.

Definition at line 774 of file vdbl_hrview.h.

9.51.4.11 bool VDBL_hierarchicalview::insert ( const std::vector<_T_colspec> & _row ) [inline, inherited]

for now window views can only make changes in the top table in the list of tables.

Definition at line 506 of file vdbl_hrview.h.

9.51.4.12 virtual _VDBL_view* VDBL_view::new_copy ( ) const [inline, virtual, inherited]

clone operation clone destructor return the column information for column _C_n. the return value is a reference to the type_info of the column’s value type. The reference _r contains upon returning whether the function was successful, the column id, and the column flags. return a reference to the type_info of the column’s value type. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. remove the row with it _ri from the table return whether the column _C_n is defined in the table return table id and column id of column _C_n return column name of column _C_n return a const reference to the column with column id _ci in row _ri.second of table ri.first. If successful, set error to false, and
to true otherwise. Note that in this function the context for the column is NOT set. This method adds the row ids in _rs to the visible part of the view. This method removes the row ids in _rs from the visible part of the view. print the contents of the column with column id _ci in row _ri.second of table _ri.first. If the row is empty and no default is defined, print nothing. return a const reference to the row with row id _ri.second of table _ri.first. If successful, set error to false, and to true otherwise. return a const reference to the default column with column id _ri.second of table _ri.first. If successful, set error to false, and to true otherwise. return iterator to first default column return iterator beyond last default column return iterator to first row return iterator beyond last row return iterator to first column return iterator beyond last column return the type of this view

Definition at line 587 of file vdbl_view.h.

9.51.4.13 _VDBL_tableid _VDBL_hierarchicalview::pop_table ( ) [inline, inherited]
remove the topmost table from the view, and return its table id.
Definition at line 459 of file vdbl_hrview.h.

9.51.4.14 std::ostream& _VDBL_hierarchicalview::print_col ( std::ostream & o, const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, bool & printed ) const [inline, inherited]
print the contents of column _ci in row _ri.second of table _ri.first.
Definition at line 606 of file vdbl_hrview.h.

9.51.4.15 void _VDBL_hierarchicalview::push_table ( const _VDBL_tableid & _ti, _VDBL_table * _t ) [inline, inherited]
This pushes a new table onto the top of the hierarchical view stack.
Definition at line 409 of file vdbl_hrview.h.

9.51.4.16 void _VDBL_hierarchicalview::push_table ( const _VDBL_tableid & _ti, _VDBL_table * _t, const std::vector<_VDBL_rowid & _rs ) [inline, inherited]
This pushes a new table onto the top of the hierarchical view stack. Additionally, a subset of the table’s rows, which are visible in the view, can be specified.
Definition at line 434 of file vdbl_hrview.h.

9.51.5 Member Data Documentation

9.51.5.1 _Vcols _VDBL_hierarchicalview::V_c [protected, inherited]
This contains all columns of the view
Definition at line 90 of file vdbl_hrview.h.

9.51.5.2 _Vcolxref _VDBL_hierarchicalview::V_cx [protected, inherited]
This is the cross reference: view col id -> <tableid, real col id>
Definition at line 94 of file vdbl_hrview.h.

9.51.5.3 _Vrows _VDBL_hierarchicalview::V_r [protected, inherited]
This contains all rows of the view
Definition at line 86 of file vdbl_hrview.h.
The documentation for this class was generated from the following file:

- vdbl_hrview.h

9.52 index Class Reference

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

- vdbl_index.h

9.53 join_view Class Reference

Inheritance diagram for join_view:

```
_VDBL_view

_VDBL_joinview

join_view
```
Collaboration diagram for join_view:

```
join_view
    `_VDBL_joinview
    `_VDBL_view

Public Types
```
- typedef std::pair<std::string, _VDBL_col> _T_colspec

```
Public Member Functions
```
- bool insert (const std::vector<_T_colspec> &_row)
- bool remove (std::pair<_VDBL_tableid, _VDBL_rowid> _r)
- virtual _VDBL_view ∗ new_copy () VDBL_PURE_VIRTUAL virtual void destroy_copy(_VDBL_view ∗v) VDBL_PURE_VIRTUAL virtual const std

```
Protected Types
```
- typedef _default_iterator<_VDBL_col, const _VDBL_col &, const _VDBL_col ∗> default_const_iterator
- typedef _col_iterator<_VDBL_col, const _VDBL_col &, const _VDBL_col ∗> col_const_iterator
- typedef _row_iterator<_VDBL_row, const _VDBL_row &, const _VDBL_row ∗> row_const_iterator

```
Protected Member Functions
```
- virtual std::triple<_VDBL_tableid, _VDBL_colid, void ∗> _next_def_col (const _VDBL_tableid &t, const _VDBL_colid &c, void ∗_d) const VDBL_PURE_VIRTUAL virtual std
- void made_change ()
  increment the change counter.
- unsigned int get_change_ctr () const
  read the change counter
- virtual void ∗_copy_def_data (void ∗_d) const VDBL_PURE_VIRTUAL virtual std
• virtual void * _copy_col_data (void * _d) const VDBL_PURE_VIRTUAL virtual std
• virtual void * _copy_row_data (void * _d) const VDBL_PURE_VIRTUAL public

9.53.1 Member Typedef Documentation
9.53.1.1 typedef std::pair<std::string, VDBL_view::_VDBL_col> VDBL_view::_T_colspec [inherited]
This is the description of one column
Definition at line 61 of file vdbl_view.h.

9.53.1.2 typedef _col_iterator<_VDBL_col, const _VDBL_col&, const _VDBL_col*> VDBL_view::col_const_iterator [protected, inherited]
const iterator over all columns
Definition at line 439 of file vdbl_view.h.

9.53.1.3 typedef _default_iterator<_VDBL_col, const _VDBL_col&, const _VDBL_col*> VDBL_view::default_const_iterator [protected, inherited]
const iterator over all default columns
Definition at line 301 of file vdbl_view.h.

9.53.1.4 typedef _row_iterator<_VDBL_row, const _VDBL_row&, const _VDBL_row*> VDBL_view::row_const_iterator [protected, inherited]
const iterator over all rows
Definition at line 568 of file vdbl_view.h.

9.53.2 Member Function Documentation
9.53.2.1 virtual void* VDBL_view::_copy_col_data ( void * _d ) const [inline, protected, virtual, inherited]
This function copies the additional data needed by a _col_iterator This virtual function has to be overloaded by the derived view classes, and it performs the step to the next row for a _row_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous row for a _row_iterator. This function destroys the additional data needed by a _row_iterator
Reimplemented in _VDBL_hierarchicalview, and _VDBL_standardview.
Definition at line 138 of file vdbl_view.h.

9.53.2.2 virtual void* VDBL_view::_copy_def_data ( void * _d ) const [inline, protected, virtual, inherited]
This function copies the additional data needed by a _default_iterator This virtual function has to be overloaded by the derived view classes, and it performs the step to the next column for a _col_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous column for a _col_iterator. This function destroys the additional data needed by a _col_iterator
Reimplemented in _VDBL_hierarchicalview, and _VDBL_standardview.
Definition at line 106 of file vdbl_view.h.
9.53.2.3 virtual void _VDBL_view::copy_row_data ( void * _d ) const [inline, protected, virtual, inherited]

This function copies the additional data needed by a _row_iterator. This is the fundamental class for iterators over all default columns, defining basic in(de)crementation for overloading, and basic comparison. Reimplemented in _VDBL_hierarchicalview, and _VDBL_standardview.

Definition at line 170 of file vdbl_view.h.

9.53.2.4 virtual std::triple<const _VDBL_tableid & t, const _VDBL_colid & c, void * _d ) const [inline, protected, virtual, inherited]

This virtual function has to be overloaded by the derived view classes, and it performs the step to the next default of a column a _default_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous default of a column a _default_iterator. This function destroys the additional data needed by a _default_iterator. Reimplemented in _VDBL_hierarchicalview, and _VDBL_standardview.

Definition at line 82 of file vdbl_view.h.

9.53.2.5 bool _VDBL_joinview::insert ( const std::vector<_T_colspec> & _row ) [inline, inherited]

for now window views can only have one table in the list of tables

Definition at line 197 of file vdbl_joinview.h.

9.53.2.6 virtual _VDBL_view* _VDBL_view::new_copy ( ) const [inline, virtual, inherited]

clone operation clone destructor return the column information for column _C_n. the return value is a reference to the type_info of the column’s value type. The reference _r contains upon returning whether the function was successful, the column id, and the column flags. return a reference to the type_info of the column’s value type. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. The function returns true, if inserting was successful. remove the row with it _ri from the table return whether the column _C_n is defined in the table return table id and column id of column _C_n return column name of column _C_n return a const reference to the column with column id _ci in row _ri.second of table ri.first. If successful, set error to false, and to true otherwise. Note that in this function the context for the column is NOT set. This method adds the row ids in _rs to the visible part of the view. This method removes the row ids in _rs from the visible part of the view. print the contents of the column with column id _ci in row _ri.second of table ri.first. If the row is empty and no default is defined, print nothing. return a const reference to the row with row id _ri.second of table ri.first. If successful, set error to false, and to true otherwise. return a const reference to the default column with column id _ri.second of table ri.first. If successful, set error to false, and to true otherwise. return iterator to first default column return iterator beyond last default column return iterator to first row return iterator beyond last row return iterator to first column return iterator beyond last column return the type of this view

Definition at line 587 of file vdbl_view.h.

9.53.2.7 bool _VDBL_joinview::remove ( std::pair<_VDBL_tableid, _VDBL_rowid > _r ) [inline, inherited]

for now window views can only have one table in the list of tables

Definition at line 207 of file vdbl_joinview.h.
The documentation for this class was generated from the following file:

- vdbl_joinview.h

### 9.54 lexi_pair_index Class Reference

Inheritance diagram for lexi_pair_index:
Collaboration diagram for lexi_pair_index:

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

- vdbl_lexiindex.h
Inheritance diagram for lexi_pair_index_def:
Collaboration diagram for lexi_pair_index_def:

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

- vdbl_lexiindex.h
Inheritance diagram for lexi_triple_index:
Collaboration diagram for lexi_triple_index:

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

- `vdbl_lexiindex.h`
Inheritance diagram for lexi_triple_index_def:
Collaboration diagram for lexi_triple_index_def:

```
__VDBL_index

__VDBL_index_l
< std::triple<_TR, _TS, _TT> >

__VDBL_index_l< std::triple<_TR, _TS, _TT> >

__VDBL_index_lex3
< _TR, _TS, _TT >

__VDBL_index_lex3< _TR, _TS, _TT >

lexi_triple_index_def
```

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

- vdbl_lexiindex.h
Inheritance diagram for list_index:
Collaboration diagram for list_index:

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

- vdbl_listindex.h
Inheritance diagram for list_index_def:
The documentation for this class was generated from the following file:

- vdbl_listindex.h

9.60 method Class Reference

base class for methods usable in method columns.
#include <vdbl_method.h>
Inheritance diagram for method:

```plaintext
  _VDBL_method
    < _TR >
    
    _VDBL_method< _TR >
    
    method
```

Collaboration diagram for method:

```plaintext
  _VDBL_method
    < _TR >
    
    _VDBL_method< _TR >
    
    method
```

Public Types

- typedef _TR return_type
Public Member Functions

- virtual return_type operator() () const VDBL_PURE_VIRTUAL
- virtual return_type def() const VDBL_PURE_VIRTUAL
- virtual void setcontext(const context * c)

9.60.1 Detailed Description

This is the base class, from which all methods should be derived that are used in method_col columns. Its virtual methods are those required from a method used for computing column names dynamically. Such a method is a function object with two additional methods described below.

9.60.2 Member Typedef Documentation

9.60.2.1 typedef _TR method::return_type

This is the type of the return value of the evaluation methods. Note that this type has to coincide with the column type.

Reimplemented from _VDBL_method<_TR >.

Definition at line 108 of file vdbl_method.h.

9.60.3 Member Function Documentation

9.60.3.1 virtual return_type _VDBL_method::operator() ( ) const [virtual, inherited]

compute the value compute the default value set the evaluation context and the evaluation row.

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

- vdbl_method.h

9.61 method_col Class Reference

external name for computed columns

#include <vdbl_col.h>
Inheritance diagram for method_col:
Public Member Functions

- virtual void setcontext (const context *c, const _VDBL_row *r)
- void get (type &c) const
  
  *the function object provides us with the retrieval method*
- void get_ptr (type const *c) const
  
  *there is no way to get a pointer to the method’s result properly*
- void def (type &d) const
  
  *the default value might be different, and might be computed differently*

9.61.1 Detailed Description

This is the external name of the standard column for methods. A method can only be used if it provides at least the following:

- Type definitions: # context specifies the context class for evaluation # return_type specifies the return value type of the evaluation
• methods: # const return_type& operator()() const for evaluation # const return_type& def() const for evaluation of the default value # void setcontext(const context* _c, const _VDBL_row* _r) for setting the evaluation context

usually, a method will be a class derived from the method base class.

9.61.2 Member Function Documentation

9.61.2.1 virtual void _VDBL_mthdcol::setcontext ( const context* _c, const _VDBL_row* _r )
[inline, virtual, inherited]

for setting the context, the setcontext method of the function object is used.

Definition at line 540 of file vdbl_col.h.

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

• vdbl_col.h

9.62 row Class Reference

class implementing table rows
#include <vdbl_row.h>

Inheritance diagram for row:
Collaboration diagram for row:

```
_VDBL_row

row
```

Public Member Functions

- `row ()`
- `row (const row &__r)`
- `row (const _Base &__r)`
- `row & operator= (const row &_x)`
- `row & operator= (const _Base &_x)`
- `const _VDBL_col & get_col (const _VDBL_colid &_id, bool &error) const`
- `_VDBL_col & get_col (const _VDBL_colid &_id, bool &error)`
- `bool has_col (const _VDBL_colid &_id) const`
- `bool insert (const _VDBL_colid &_id, const _VDBL_col &_col)`
- `bool drop (const _VDBL_colid &_id)`
- `void update (const _VDBL_colid &_id, const _VDBL_col &_col)`

9.62.1 Detailed Description

This class implements the rows of a table

9.62.2 Constructor & Destructor Documentation

9.62.2.1 row::row ( ) [inline]

standard constructor

Definition at line 191 of file vdbl_row.h.

9.62.2.2 row::row ( const row & __r ) [inline]

copy constructor

Definition at line 195 of file vdbl_row.h.

9.62.2.3 row::row ( const _Base & __r ) [inline]

copy constructor from internal class

Definition at line 199 of file vdbl_row.h.
9.62.3 Member Function Documentation

9.62.3.1 bool _VDBL_row::drop ( const _VDBL_colid & _id ) [inline, inherited]
remove the column with id _id from this row. Return true if erasing was successful, and false if the column does not exist.
Definition at line 149 of file vdbl_row.h.

9.62.3.2 const _VDBL_col& _VDBL_row::get_col ( const _VDBL_colid & _id, bool & error ) const [inline, inherited]
get a const reference to the column with id _id. If the column existed, error will be false, otherwise error will be true.
Definition at line 82 of file vdbl_row.h.

9.62.3.3 _VDBL_col& _VDBL_row::get_col ( const _VDBL_colid & _id, bool & error ) [inline, inherited]
get a reference to the column with id _id. If the column existed, error will be false, otherwise error will be true.
Definition at line 103 of file vdbl_row.h.

9.62.3.4 bool _VDBL_row::has_col ( const _VDBL_colid & _id ) const [inline, inherited]
return whether a column with id _id exists in this row.
Definition at line 122 of file vdbl_row.h.

9.62.3.5 bool _VDBL_row::insert ( const _VDBL_colid & _id, const _VDBL_col & _col ) [inline, inherited]
insert the new column _col with id _id in this row. If this id exists, return false, otherwise return true.
Definition at line 132 of file vdbl_row.h.

9.62.3.6 row& row::operator= ( const row & _x ) [inline]
assignment operator
Definition at line 204 of file vdbl_row.h.

9.62.3.7 row& row::operator= ( const _Base & _x ) [inline]
assignment operator from internal class
Definition at line 212 of file vdbl_row.h.

9.62.3.8 void _VDBL_row::update ( const _VDBL_colid & _id, const _VDBL_col & _col ) [inline, inherited]
update the column with id _id with the value _col. If the column does not yet exist, insert it. Otherwise, change its value.
Definition at line 166 of file vdbl_row.h.

The documentation for this class was generated from the following file:
9.63 standard_table Class Reference

standard table of a database

#include <vdbl_table.h>

Inheritance diagram for standard_table:

Collaboration diagram for standard_table:
Public Types

- typedef std::pair<std::string, _VDBL_col> _T_colspec
- typedef std::pair<const std::string *, const _VDBL_col *> _T_ptrcolspec
- typedef _Base::col_const_iterator col_const_iterator
- typedef _row_iterator<_VDBL_rowid, const _VDBL_rowid &, const _VDBL_rowid *> row_const_iterator

Public Member Functions

- standard_table()
- standard_table(const standard_table &t)
- template<
    template<class __Tp, class __AllocTp>
class __SequenceCtr,
    class Allocator1>
    standard_table(const __SequenceCtr<
        std::triple<std::string, _VDBL_col, _VDBL_colflags>, -
        Allocator1 > &cc)
- virtual ~standard_table()
- virtual standard_table * new_copy()
- virtual void destroy_copy(standard_table *t)
- bool insert(const std::vector<_T_ptrcolspec> &row, rowid &ri)
- bool insert(const std::vector<_T_ptrcolspec> &row)
- template<
    template<class __Tp, class __AllocTp>
class __SequenceCtr,
    class Allocator1>
    bool insert_row(const __SequenceCtr<
        col_spec, Allocator1 > &row, rowid &ri)
- template<
    template<class __Tp1, class __AllocTp1>
class __SequenceCtrOut,
    template<class __Tp2, class __AllocTp2>
class __SequenceCtrIn, class AllocatorOut, class AllocatorIn>
    bool insert_row(const __SequenceCtrOut<
        __SequenceCtrIn<
            col_spec, AllocatorIn >, Allocator-Out > &rows)
- bool update(const std::vector<_T_ptrcolspec> &row, _VDBL_rowid &ri)
- template<
    template<class __Tp1, class __AllocTp1>
class __SequenceCtrOut,
    class AllocatorOut, class AllocatorIn>
    bool update_row(const __SequenceCtr<
        col_spec, Allocator1 > &row, rowid &ri)
- const row & get_row(const rowid &ri, bool &error) const
- const row * get_row_ptr(const rowid &ri) const
- row & get_row(const rowid &ri, bool &error)
- std::string get_colname(const colid &C_i) const
- row_const_iterator row_begin() const
- row_const_iterator row_end() const
- const std::type_info & get_colinfo(const std::string &_C_n, std::triple<bool, _VDBL_colid, _VD-BL_colflags> &r) const
- _VDBL_colid get_col_id(const std::string &C_n) const
- std::string get_col_name(const _VDBL_colid &C_id) const
- virtual _VDBL_table * new_copy() VDBL_PURE_VIRTUAL
- virtual void destroy_copy(_VDBL_table *t) VDBL_PURE_VIRTUAL
- virtual bool add_col(const std::VALclass &val) const
- template<class _VALclass>
    bool retrieve(const _VDBL_rowid &r, const _VDBL_colid &c, const _VDBL_context *ctx,
    _VALclass &v) const
- std::pair<std::string, _VDBL_colid> _next_col(const std::pair<std::string, _VDBL_colid> &ci) const
- _VDBL_rowid _next_row(const _VDBL_rowid &ci) const
9.63 standard_table Class Reference

- template<template<class __Tp1, class __AllocTp1>, template<class __Tp2, class __AllocTp2>
class __SequenceCtrOut, template<class __Tp2, class __AllocTp2>
class __SequenceCtrIn, class AllocatorOut, class AllocatorIn>
  bool insert_row (const __SequenceCtrOut<__SequenceCtrIn<_T_colspec, AllocatorIn>, AllocatorOut>&_rows)

- template<class _CB>
  bool add_col (const char *_C_n, const _CB &__c, const _VDBL_colflags &__f)
  bool add_col (const std::string &_C_n, const _CB &__c, const _VDBL_colflags &__f)

- colid get_colid (const std::string &_C_n) const
  colid get_colid (const char *_C_n) const

Protected Member Functions

- void made_change ()

  _VDBL_colid get_colid ()
  _VDBL_rowid get_rowid ()

9.63.1 Detailed Description

This class describes the standard table of a database, consisting of rows and columns.

9.63.2 Member Typedef Documentation

9.63.2.1 typedef std::pair<std::string,_VDBL_col> _VDBL_standardtable::_T_colspec
[inherited]
specifier of one column, a pair of column name (string) and entry (_VDBL_col).
Reimplemented from _VDBL_table.
Definition at line 591 of file vdbl_table.h.

9.63.2.2 typedef std::pair<const std::string*,const _VDBL_col*> _VDBL_standardtable::_T_ptrcolspec
[inherited]
specifier of pointers to one column, a pair of column name (strings*) and entry (_VDBL_col*).
Reimplemented from _VDBL_table.
Definition at line 596 of file vdbl_table.h.

9.63.2.3 typedef _Base::col_const_iterator _VDBL_standardtable::col_const_iterator
[inherited]
const iterator over all columns
9.63 standard_table Class Reference

Reimplemented from _VDBL_table.
Definition at line 601 of file vdbl_table.h.

9.63.2.4 typedef _row_iterator<_VDBL_rowid, const _VDBL_rowid &, const _VDBL_rowid *> _VDBL_table::row_const_iterator [inherited]

const iterator over all rows
Definition at line 321 of file vdbl_table.h.

9.63.3 Constructor & Destructor Documentation

9.63.3.1 standard_table::standard_table ( ) [inline]
standard constructor
Definition at line 1330 of file vdbl_table.h.

9.63.3.2 standard_table::standard_table ( const standard_table & t ) [inline]
copy constructor
Definition at line 1334 of file vdbl_table.h.

9.63.3.3 template<template< class _Tp, class _AllocTp > class _SequenceCtr, class Allocator1 > standard_table::standard_table ( const _SequenceCtr< std::triple< std::string, _VDBL_col, _VDBL_colflags >, Allocator1 > & _cc ) [inline]

constructor defining a table using a list of columns. This list can be contained in any STL sequence container.
Definition at line 1342 of file vdbl_table.h.

9.63.3.4 virtual standard_table::~standard_table ( ) [inline, virtual]
standard destructor
Definition at line 1348 of file vdbl_table.h.

9.63.4 Member Function Documentation

9.63.4.1 std::pair<std::string, _VDBL_colid> _VDBL_standard_table::next_col ( const std::pair< std::string, _VDBL_colid > & _cl ) const [inline, virtual, inherited]

This virtual function has to be overloaded by the derived table classes, and it performs the step to the next column for a _col_iterator. This virtual function has to be overloaded by the derived table classes, and it performs the step to the previous column for a _col_iterator. return iterator to first column return iterator beyond last column This is the fundamental class for iterators over all rows, defining basic in(de)crementation for overloading, and basic comparison.
Reimplemented from _VDBL_table.
Definition at line 1174 of file vdbl_table.h.
This virtual function has to be overloaded by the derived table classes, and it performs the step to the next row for a _col_iterator. This virtual function has to be overloaded by the derived table classes, and it performs the step to the previous row for a _col_iterator. Return iterator to first row return iterator beyond last row construct a new copy of a row iterator standard constructor

Reimplemented from _VDBL_table.

Definition at line 1209 of file vdbl_table.h.

add a new column of name _C_n, with data __c, and column flags __f. The function returns true, if adding the column was successful.

Definition at line 1367 of file vdbl_table.h.

add a new column of name _C_n, with data __c, and column flags __f. The function returns true, if adding the column was successful.

Definition at line 1371 of file vdbl_table.h.

clone destructor method

Definition at line 717 of file vdbl_table.h.

clone destructor method

Definition at line 1358 of file vdbl_table.h.

return the column id of column _C_n

Definition at line 637 of file vdbl_table.h.

return the column name of column _C_id

Definition at line 650 of file vdbl_table.h.

generate new unique id’s for rows and columns

Definition at line 99 of file vdbl_table.h.
9.63.4.10  
\texttt{colid standard\_table::get\_colid ( const std::string & _Cn ) const} [inline]

return the column id of column \_C\_n

Definition at line 1503 of file vdbl\_table.h.

9.63.4.11  
\texttt{colid standard\_table::get\_colid ( const char * \_Cn ) const} [inline]

return the column id of column \_C\_n

Definition at line 1506 of file vdbl\_table.h.

9.63.4.12  
\texttt{const std::type\_info& \_VDBL\_standard\_table::get\_colinfo ( const std::string & \_Cn, std::triple< bool, \_VDBL\_colid, \_VDBL\_colflags > & \_r ) const} [inline, virtual, inherited]

return the column information for column \_C\_n. the return value is a reference to the type\_info of the column's value type. The reference \_r contains upon returning whether the function was successful, the column id, and the column flags. what was the id of the last change to the table

Reimplemented from \_VDBL\_table.

Definition at line 614 of file vdbl\_table.h.

9.63.4.13  
\texttt{std::string standard\_table::get\_colname ( const \_colid & \_Cj ) const} [inline]

return the column name of column \_C\_n

Definition at line 1513 of file vdbl\_table.h.

9.63.4.14  
\texttt{const row& standard\_table::get\_row ( const rowid & \_ri, bool & \_error ) const} [inline]

return a const reference to the row with id \_ri. If an error occurs, set \_error to true, otherwise to false.

Reimplemented from \_VDBL\_standard\_table.

Definition at line 1482 of file vdbl\_table.h.

9.63.4.15  
\texttt{row& standard\_table::get\_row ( const rowid & \_ri, bool & \_error )} [inline]

return a reference to the row with id \_ri. If an error occurs, set \_error to true, otherwise to false.

Reimplemented from \_VDBL\_standard\_table.

Definition at line 1496 of file vdbl\_table.h.

9.63.4.16  
\texttt{const row\_ptr standard\_table::get\_row\_ptr ( const rowid & \_ri ) const} [inline]

return a const pointer to the row with id \_ri. If an error occurs, return NULL

Reimplemented from \_VDBL\_standard\_table.

Definition at line 1489 of file vdbl\_table.h.

9.63.4.17  
\texttt{\_VDBL\_rowid VDBL\_table::get\_rowid ( )} [inline, protected, inherited]

generate new unique id's for rows and columns

Definition at line 100 of file vdbl\_table.h.
9.63.4.18  bool standard_table::insert ( const std::vector<_T_ptrcolspec> & _row, rowid & _ri ) [inline]

insert a new row of specification _row into the table, and return the row id of the newly created row in _r. The function returns true, if inserting was successful.
Reimplemented from _VDBL_standardtable.
Definition at line 1381 of file vdbl_table.h.

9.63.4.19  bool standard_table::insert ( const std::vector<_T_ptrcolspec> & _row ) [inline]

insert a new row of specification _row into the table. The function returns true, if inserting was successful.
Reimplemented from _VDBL_standardtable.
Definition at line 1388 of file vdbl_table.h.

9.63.4.20  template<template< class _Tp1, class _AllocTp1 > class _SequenceCtrOut, template< class _Tp2, class _AllocTp2 > class _SequenceCtrIn, class AllocatorOut, class AllocatorIn > bool _VDBL_table::insert_row ( const _SequenceCtrOut<_SequenceCtrIn<_T_colspec, AllocatorIn >, AllocatorOut > & _rows ) [inline, inherited]

insert a many new rows of specifications _rows into the table. The list of rows can be contained in any sequential STL container, which holds any other sequential STL container of column entries. The function returns true, if inserting was successful for all rows.
Definition at line 473 of file vdbl_table.h.

9.63.4.21  template<template< class _Tp, class _AllocTp > class _SequenceCtr, class Allocator1 > bool standard_table::insert_row ( const _SequenceCtr< col_spec, Allocator1 > & _row, rowid & _ri ) [inline]

insert a new row of specification _row into the table, and return the row id of the newly created row in _r. Take any sequential STL container to hold the row entries of the column. The function returns true, if inserting was successful.
Definition at line 1400 of file vdbl_table.h.

9.63.4.22  template<template< class _Tp, class _AllocTp > class _SequenceCtr, class Allocator1 > bool standard_table::insert_row ( const _SequenceCtr< col_spec, Allocator1 > & _row ) [inline]

insert a new row of specification _row into the table. Take any sequential STL container to hold the row entries of the column. The function returns true, if inserting was successful.
Definition at line 1418 of file vdbl_table.h.

9.63.4.23  template<template< class _Tp1, class _AllocTp1 > class _SequenceCtrOut, template< class _Tp2, class _AllocTp2 > class _SequenceCtrIn, class AllocatorOut, class AllocatorIn > bool standard_table::insert_row ( const _SequenceCtrOut<_SequenceCtrIn< col_spec, AllocatorIn >, AllocatorOut > & _rows ) [inline]

insert a many new rows of specifications _rows into the table. The list of rows can be contained in any sequential STL container, which holds any other sequential STL container of column entries. The function returns true, if inserting was successful for all rows.
Definition at line 1434 of file vdbl_table.h.
9.63.4.24  void _VDBL_table::made_change ( )  [inline, protected, inherited]
increment the last_change counter.
Definition at line 106 of file vdbl_table.h.

9.63.4.25  virtual _VDBL_table* _VDBL_table::new_copy ( ) const  [inline, virtual, inherited]
clone method clone destructor method add a new column of name _C_n, which contains __c, and has
column flags __f. The function returns true, if adding the column was successful. modify the column of
name _C_n, to new contents __c, and new column flags __f. The function returns true, if modifying
was successful. modify the contents of column of name _C_n. The function returns true, if modifying was
successful. modify the column flags of column of name _C_n. The function returns true, if modifying was
successful. remove the column _C_n from the table. The function returns true, if erasing was successful.
rename the column _C_old to new name _C_new. The function returns true, if renaming was successful.
insert a new row of specification _row into the table, and return the row id of the newly created row in
_r. The function returns true, if inserting was successful. insert a new row of specification _row into
the table, and return the row id of the newly created row in _r. Take any sequential STL container to
hold the row entries of the column. The function returns true, if inserting was successful.
Definition at line 380 of file vdbl_table.h.

9.63.4.26  virtual standard_table* standard_table::new_copy ( )  [inline, virtual]
clone method
Reimplemented from _VDBL_standardtable.
Definition at line 1353 of file vdbl_table.h.

9.63.4.27  template<class VALclass > bool _VDBL_standardtable::retrieve ( const _VDBL_rowid & _r,
 const _VDBL_colid & _c, const _VDBL_context * _ctx, VALclass & & _val ) const  [inline, inherited]
retrieve the value of column (id = _c) in row (id = _r) under evaluation context _ctx to _val. Return
whether retrieval was successful. If there is no defined value in row _r for column _c, then return the
default value of column _c, if defined.
Definition at line 1105 of file vdbl_table.h.

9.63.4.28  row_const_iterator standard_table::row_begin ( ) const  [inline]
return iterator to first row
Reimplemented from _VDBL_standardtable.
Definition at line 1519 of file vdbl_table.h.

9.63.4.29  row_const_iterator standard_table::row_end ( ) const  [inline]
return iterator beyond last row
Reimplemented from _VDBL_standardtable.
Definition at line 1523 of file vdbl_table.h.
9.63.4.30 bool standard_table::update ( const std::vector<_T_ptrcolspec>& _row, _VDBL_rowid& _ri ) [inline]

update the row with row id _r to the new of specification _row The function returns true, if updating was successful. The function returns true if updating was successful. Reimplemented from _VDBL_standardtable.
Definition at line 1453 of file vdbl_table.h.

9.63.4.31 template<template< class _Tp, class _AllocTp > class _SequenceCtr, class Allocator1 > bool standard_table::update_row ( const _SequenceCtr< col_spec, Allocator1 >& _row, rowid& _ri ) [inline]

update the row with row id _r to the new of specification _row The function returns true, if updating was successful. The function returns true if updating was successful. Take any sequential STL container to hold the row entries of the column. The function returns true, if inserting was successful.
Definition at line 1468 of file vdbl_table.h.

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

- vdbl_table.h

9.64 table Class Reference

base class for tables in a database
#include <vdbl_table.h>

Inheritance diagram for table:
Collaboration diagram for table:

```
\_VDBL_table

  table
```

Public Types

- `typedef std::pair< std::string, \_VDBL_col > \_T_colspec`
- `typedef std::pair< const std::string *, const \_VDBL_col * > \_T_ptrcolspec`
- `typedef \_col_iterator < std::pair< std::string, \_VDBL_colid >, const std::pair< std::string, \_VDBL_colid > & > col_const_iterator`
- `typedef \_row_iterator < \_VDBL_rowid, const \_VDBL_rowid &, const \_VDBL_rowid * > row_const_iterator`

Public Member Functions

- `virtual const std::type_info & get_colinfo (const std::string &\_C_n, std::tuple< bool, \_VDBL_colid, \_VDBL_colflags > &\_r) const VDBL_PURE_VIRTUAL public`
- `virtual std::pair< std::string, \_VDBL_colid > \_next_col (const std::pair< std::string, \_VDBL_colid > &\_ci) const VDBL_PURE_VIRTUAL virtual std`
- `virtual \_VDBL_rowid _next_row (const \_VDBL_rowid &\_ci) const VDBL_PURE_VIRTUALvirtual row-_const_iterator row_begin() const VDBL_PURE_VIRTUALvirtual row_const_iterator row_end() const VDBL_PURE_VIRTUALvirtual row_const_iterator row_iterator_copy(const row_const_iterator &\_) const VDBL_PURE_VIRTUAL public`
- `virtual \_VDBL_table * new_copy () VDBL_PURE_VIRTUALvirtual void destroy_copy(\_VDBL_-table *) VDBL_PURE_VIRTUALvirtual bool add_col(const std
- `template<template< class \_Tp1, class \_AllocTp1 > class \_SequenceCtrOut, template< class \_Tp2, class \_AllocTp2 > class \_SequenceCtrIn, class AllocatorOut , class AllocatorIn > bool insert_row (const \_SequenceCtrOut<__SequenceCtrIn<\_T_colspec, AllocatorIn >>, AllocatorOut > &\_rows)`

Protected Member Functions

- `void made_change ()`
- `\_VDBL_colid get_colid ()`
- `\_VDBL_rowid get_rowid ()`

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9.64 table Class Reference

9.64.1 Detailed Description

This is the base class for all tables in a database

9.64.2 Member Typedef Documentation

9.64.2.1 typedef std::pair<std::string, _VDBL_col> _VDBL_table::_T_colspec [inherited]

specifier of one column, a pair of column name (string) and entry (_VDBL_col).
Reimplemented in _VDBL_standardtable, and _VDBL_viewtable.
Definition at line 78 of file vdbl_table.h.

9.64.2.2 typedef std::pair<const std::string*, const _VDBL_col*> _VDBL_table::_T_ptrcolspec [inherited]

specifier of pointers to one column, a pair of column name (strings) and entry (_VDBL_col*).
Reimplemented in _VDBL_standardtable.
Definition at line 83 of file vdbl_table.h.

9.64.2.3 typedef _col_iterator<std::pair<std::string, _VDBL_colid>, const std::pair<std::string, _VDBL_colid>&, const std::pair<std::string, _VDBL_colid>*> _VDBL_table::col_const_iterator [inherited]

const iterator over all columns
Reimplemented in _VDBL_standardtable.
Definition at line 214 of file vdbl_table.h.

9.64.2.4 typedef _row_iterator<_VDBL_rowid, const _VDBL_rowid&, const _VDBL_rowid*> _VDBL_table::row_const_iterator [inherited]

const iterator over all rows
Definition at line 321 of file vdbl_table.h.

9.64.3 Member Function Documentation

9.64.3.1 virtual std::pair<std::string, _VDBL_colid> _VDBL_table::next_col ( const std::pair<std::string, _VDBL_colid> & _p ) const [inline, virtual, inherited]

This virtual function has to be overloaded by the derived table classes, and it performs the step to the next column for a _col_iterator. This virtual function has to be overloaded by the derived table classes, and it performs the step to the previous column for a _col_iterator. return iterator to first column return iterator beyond last column This is the fundamental class for iterators over all rows, defining basic in(de)crementation for overloading, and basic comparison.
Reimplemented in _VDBL_standardtable.
Definition at line 221 of file vdbl_table.h.
9.64.3.2 virtual _VDBL_rowid _VDBL_table::next_row ( const _VDBL_rowid & _ci ) const

[inline, virtual, inherited]

This virtual function has to be overloaded by the derived table classes, and it performs the step to the next
row for a _col_iterator. This virtual function has to be overloaded by the derived table classes, and
it performs the step to the previous row for a _col_iterator. return iterator to first row return iterator
beyond last row construct a new copy of a row iterator standard constructor

Reimplemented in _VDBL_standardtable.

Definition at line 328 of file vdbl_table.h.

9.64.3.3 _VDBL_colid _VDBL_table::get_colid ( ) [inline, protected, inherited]

generate new unique id's for rows and columns

Definition at line 99 of file vdbl_table.h.

9.64.3.4 virtual const std::type_info & _VDBL_table::get_colinfo ( const std::string & _C_n, std::triple<bool, _VDBL_colid, _VDBL_colflags> & _r ) const [inline, virtual, inherited]

return the column information for column _C_n. the return value is a reference to the type_info of the
column's value type. The reference _r contains upon returning whether the function was successful, the
column id, and the column flags. what was the id of the last change to the table

Reimplemented in _VDBL_standardtable.

Definition at line 116 of file vdbl_table.h.

9.64.3.5 _VDBL_rowid _VDBL_table::get_rowid ( ) [inline, protected, inherited]

generate new unique id's for rows and columns

Definition at line 100 of file vdbl_table.h.

9.64.3.6 template<template<class _Tp1, class AllocTp1> class SequenceCtrOut, template<class _Tp2, class AllocTp2> class SequenceCtrIn, class AllocatorOut , class AllocatorIn>

bool _VDBL_table::insert_row ( const SequenceCtrOut<_T_colspec, AllocatorIn>, AllocatorOut & _rows ) [inline, inherited]

insert a many new rows of specifications _rows into the table. The list of rows can be contained in any
sequential STL container, which holds any other sequential STL container of column entries. The function
returns true, if inserting was successful for all rows.

Definition at line 473 of file vdbl_table.h.

9.64.3.7 void _VDBL_table::made_change ( ) [inline, protected, inherited]

increment the last_change counter.

Definition at line 106 of file vdbl_table.h.

9.64.3.8 virtual _VDBL_table * _VDBL_table::new_copy ( ) const [inline, virtual, inherited]

clone method clone destructor method add a new column of name _C_n, which contains __c, and has
column flags __f. The function returns true, if adding the column was successful. modify the column of
name _C_n, to new contents __c, and new column flags __f. The function returns true, if modifying
was successful. modify the contents of column of name _C_n. The function returns true, if modifying was
successful. modify the column flags of column of name _C_n. The function returns true, if modifying was
successful. remove the column _C_n from the table. The function returns true, if erasing was successful.
rename the column _C_old to new name _C_new. The function returns true, if renaming was successful.
insert a new row of specification _row into the table, and return the row id of the newly created row in _r. The function returns true, if inserting was successful. insert a new row of specification _row into the table. The function returns true, if inserting was successful. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. Take any sequential STL container to hold the row entries of the column. The function returns true, if inserting was successful.

Definition at line 380 of file vdbl_table.h.

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

- vdbl_table.h

9.65 typed_col Class Reference

external name for constant data columns

#include <vdbl_col.h>
Inheritance diagram for typed_col:
Collaboration diagram for typed_col:

```
_public_base
 VDBL_colbase< _TT >
 VDBL_colbase

 VDBL_stdcol< _TT >
 VDBL_stdcol

 VDBL_colbase< _TT >
 VDBL_colbase

 typed_col
```

Public Member Functions

- void set (const _Self &_p)
- void set (const type &__t)
- void setcontext (const context &c, const _VDBL_row &r)
- void def (type &d) const
- void set_default (const type &__t)
- const type & get_val () const

9.65.1 Detailed Description

this is the external name of the standard column for constant data all methods are implemented in class _VDBL_stdcol< _TT >.
9.65.2 Member Function Documentation

9.65.2.1 void _VDBL_stdcol::def ( type & d ) const [inline, inherited]

the default for the constant value coincides with the value, since in the table definition the reference object of this class will hold the default, then. There have to be different access methods get and def for more complicated column types

Definition at line 454 of file vdbl_col.h.

9.65.2.2 const type& _VDBL_stdcol::get_val ( ) const [inline, inherited]

get a const reference to the column value

Definition at line 491 of file vdbl_col.h.

9.65.2.3 void _VDBL_stdcol::set ( const _Self & p ) [inline, inherited]

explicit copy operation

Definition at line 438 of file vdbl_col.h.

9.65.2.4 void _VDBL_stdcol::set ( const type & t ) [inline, inherited]

set the column value

Definition at line 479 of file vdbl_col.h.

9.65.2.5 void _VDBL_stdcol::set_default ( const type & _f ) [inline, inherited]

set the default value for this column. This is actually equivalent to set, since default and standard columns coincide for constant values.

Definition at line 486 of file vdbl_col.h.

9.65.2.6 void _VDBL_stdcol::setcontext ( const context * _c, const _VDBL_row * _r ) [inline, inherited]

this method is empty, since constant values are independend of the context.

Definition at line 444 of file vdbl_col.h.

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

- vdbl_col.h

9.66 view Class Reference

standard view class onto a single table
#include <vdbl_stview.h>
Inheritance diagram for view:

Collaboration diagram for view:

Public Types

- typedef _Base::default_const_iterator defaults_const_iterator
  iterator over all default columns
- typedef std::pair<std::string, _VDBL_col > _T_colspec
Public Member Functions

- `view` (const `_VDBL_tableid` & `ti`, `_VDBL_table` *, `const _VDBL_context` & `c`, `_V_enum` `e` = `V_hole`)
- `view` (const `view` & `_v`)
- `virtual view * new_copy ()`
- `virtual void destroy_copy (view * v)`
- `template<class _TR >
  bool get (const tableid &`ti`, const rowid & `ri`, const colid & `ci`, _TR &`r`) const
- `template<class _TR >
  bool get_raw_ptr (const tableid & `ti`, const rowid & `ri`, const colid & `ci`, _TR const & `r`) const
- `const col & get_raw_col (const std::pair < tableid, rowid > & `ri`, const colid & `ci`, row const &`rr`, bool &`error`) const
- `virtual _VDBL_view * new_copy () VDBL_PURE_VIRTUAL`
- `virtual void destroy_copy (_VDBL_view *v) VDBL_PURE_VIRTUAL`
- `virtual const std::triple < _VDBL_tableid, _VDBL_colid, void * > _next_def_col (const _VDBL_tableid & `t`,
  const _VDBL_colid & `c`, void * `d`) const
- `void * _copy_def_data (void * `d`) const
- `void * _copy_col_data (void * `d`) const
- `void * _copy_row_data (void * `d`) const`

Protected Types

- typedef _default_iterator < _VDBL_col, const _VDBL_col &, const _VDBL_col * > default_const_iterator
- typedef _col_iterator < _VDBL_col, const _VDBL_col &, const _VDBL_col * > col_const_iterator
- typedef _row_iterator < _VDBL_row, const _VDBL_row &, const _VDBL_row * > row_const_iterator

Protected Member Functions

- `std::triple < _VDBL_tableid, _VDBL_colid, void * > _next_def_col (const _VDBL_tableid & `t`,
  const _VDBL_colid & `c`, void * `d`) const
- `void * _copy_def_data (void * `d`) const
- `void * _copy_col_data (void * `d`) const
- `void * _copy_row_data (void * `d`) const

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- void made_change ()
  increment the change counter.
- unsigned int get_change_ctr () const
  read the change counter

Protected Attributes
- _V_rows _V_r
- _V_cols _V_c

9.66.1 Detailed Description
This is the standard view. It is an in-memory view onto a single VDBL table.

9.66.2 Member Typedef Documentation
9.66.2.1 typedef std::pair<std::string, VDBL_col> VDBL_view::T_colspec [inherited]
This is the description of one column
Definition at line 61 of file vdbl_view.h.

9.66.2.2 typedef col_iterator<VDBL_col, const VDBL_col&, const VDBL_col*> VDBL_view::col_const_iterator [protected, inherited]
const iterator over all columns
Definition at line 439 of file vdbl_view.h.

9.66.2.3 typedef default_iterator<VDBL_col, const VDBL_col&, const VDBL_col*> VDBL_view::default_const_iterator [protected, inherited]
const iterator over all default columns
Definition at line 301 of file vdbl_view.h.

9.66.2.4 typedef row_iterator<VDBL_row, const VDBL_row&, const VDBL_row*> VDBL_view::row_const_iterator [protected, inherited]
const iterator over all rows
Definition at line 568 of file vdbl_view.h.

9.66.3 Constructor & Destructor Documentation
9.66.3.1 view::view ( const VDBL_tableid & _ti, VDBL_table & _t, const VDBL_context & _c,
  _V_enum _e = V_hole ) [inline]
standard constructor which initializes the table and the tableid, the evaluation context, and the view type.
Definition at line 716 of file vdbl_stview.h.
9.66.3.2 view::view ( const view & v ) [inline]

copy constructor

Definition at line 723 of file vdbl_stview.h.

9.66.4 Member Function Documentation

9.66.4.1 void* _VDBL_standardview::copy_col_data ( void* _d ) const [inline, protected, virtual, inherited]

This function copies the additional data needed by a _col_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the next row for a _row_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous row for a _row_iterator. This function destroys the additional data needed by a _row_iterator.

Reimplemented from _VDBL_view.

Definition at line 196 of file vdbl_stview.h.

9.66.4.2 void* _VDBL_standardview::copy_def_data ( void* _d ) const [inline, protected, virtual, inherited]

This function copies the additional data needed by a _default_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the next column for a _col_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous column for a _col_iterator. This function destroys the additional data needed by a _col_iterator.

Reimplemented from _VDBL_view.

Definition at line 146 of file vdbl_stview.h.

9.66.4.3 void* _VDBL_standardview::copy_row_data ( void* _d ) const [inline, protected, virtual, inherited]

This function copies the additional data needed by a _row_iterator. This is the fundamental class for iterators over all default columns, defining basic in(de)crementation for overloading, and basic comparison.

Reimplemented from _VDBL_view.

Definition at line 294 of file vdbl_stview.h.

9.66.4.4 std::triple<_VDBL_tableid, _VDBL_colid, void*> _VDBL_standardview::next_def_col ( const _VDBL_tableid & t, const _VDBL_colid & c, void* _d ) const [inline, protected, virtual, inherited]

This virtual function has to be overloaded by the derived view classes, and it performs the step to the next default of a column a _default_iterator. This virtual function has to be overloaded by the derived view classes, and it performs the step to the previous default of a column a _default_iterator. This function destroys the additional data needed by a _default_iterator.

Reimplemented from _VDBL_view.

Definition at line 102 of file vdbl_stview.h.

9.66.4.5 bool _VDBL_standardview::add_visible ( const std::vector<_VDBL_rowid> & _rs )

[inline, inherited]

This method adds the row ids in _rs to the visible part of the view.
9.66  view Class Reference

Definition at line 497 of file vdbl_stview.h.

9.66.4.6 virtual void _VDBL_standardview::destroy_copy ( _VDBL_view * v ) [inline, virtual, inherited]

clone destructor

Definition at line 391 of file vdbl_stview.h.

9.66.4.7 virtual void view::destroy_copy ( view * v ) [inline, virtual]

clone destructor

Definition at line 732 of file vdbl_stview.h.

9.66.4.8 template <class TR> bool _VDBL_standardview::get ( const std::pair<_VDBL_tableid, _VDBL_rowid> & ri, const _VDBL_colid & ci, _TR & r ) const [inline, inherited]

get the data from column _ci in row _ri.second of table _ri.first. The data stored in the column must be of type _TR.

Definition at line 559 of file vdbl_stview.h.

9.66.4.9 template <class TR> bool view::get ( const tableid & ti, const rowid & ri, const colid & ci, TR & r ) const [inline]

get the data from column _ci in row _ri of table _ti. The data stored in the column must be of type _TR.

Definition at line 739 of file vdbl_stview.h.

9.66.4.10 template <class TR> bool view::get ( const rowid & _ri, const std::string & _c, _TR & r ) const [inline]

get the data from column _c in row _ri. The data stored in the column must be of type _TR.

Definition at line 759 of file vdbl_stview.h.

9.66.4.11 template <class TR> bool view::get ( const rowid & _ri, const char * _c, _TR & r ) const [inline]

get the data from column _c in row _ri. The data stored in the column must be of type _TR.

Definition at line 764 of file vdbl_stview.h.

9.66.4.12 const col& view::get_raw_col ( const std::pair<tableid, rowid> & _ri, const colid & _ci, row const * & _rr, bool & error ) const [inline]

get a const reference to column _ci in row _ri.second of table _ri.first. If the retrieval was successful, set error to , otherwise to true.

Definition at line 773 of file vdbl_stview.h.

9.66.4.13 template <class TR> bool _VDBL_standardview::get_raw_ptr ( const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, _TR const * & _rr ) const [inline, inherited]

get a const ptr to the data from column _ci in row _ri.second of table _ri.first. The data stored in the column must be of type _TR. In this function no data copying is done. Note that this function returns
a pointer to the columns raw data, so it can only be used to refer to constant columns.

Definition at line 581 of file vdbl_stview.h.

template <class TR>
bool view::get_raw_ptr ( const tableid & ti, const rowid & ri, const
colid & ci, TR const * & r ) const [inline]

get a const pointer to the data from column _ci in row _ri of table _ti. The data stored in the column must be of type _TR. This only works if the column’s data is constant. There is no implicit copying performed.

Definition at line 749 of file vdbl_stview.h.

bool VDBL_standardview::insert ( const std::vector<_T_colspec> & row ) [inline, inherited]

for now window views can only have one table in the list of tables

Definition at line 412 of file vdbl_stview.h.

virtual _VDBL_view* _VDBL_view::new_copy ( ) const [inline, virtual, inherited]

clone operation clone destructor return the column information for column _C_n. the return value is a reference to the type_info of the column’s value type. The reference _r contains upon returning whether the function was successful, the column id, and the column flags. return a reference to the type_info of the column’s value type. insert a new row of specification _row into the table, and return the row id of the newly created row in _r. The function returns true, if inserting was successful. remove the row with id _ri from the table return whether the column _C_n is defined in the table return table id and column id of column _C_n return column name of column _C_n return a const reference to the column with column id _ci in row _ri.second of table _ri.first. If successful, set error to false, and to true otherwise. Note that in this function the context for the column is NOT set. This method adds the row ids in _rs to the visible part of the view. This method removes the row ids in _rs from the visible part of the view. print the contents of the column with column id _ci in row _ri.second of table _ri.first. If the row is empty and no default is defined, print nothing. return a const reference to the row with row id _ri.second of table _ri.first. If successful, set error to false, and to true otherwise. return a const reference to the default column with column id _ri.second of table _ri.first. If successful, set error to false, and to true otherwise. return iterator to first default column return iterator beyond last default column return iterator to first row return iterator beyond last row return iterator to first column return iterator beyond last column return the type of this view

Definition at line 587 of file vdbl_view.h.

virtual view* view::new_copy ( ) [inline, virtual]

clone operation

Reimplemented from _VDBL_standardview.

Definition at line 728 of file vdbl_stview.h.

std::ostream& _VDBL_standardview::print_col ( std::ostream & o, const std::pair<_VDBL_tableid, _VDBL_rowid> & _ri, const _VDBL_colid & _ci, bool & printed ) const [inline, inherited]

print the contents of column _ci in row _ri.second of table _ri.first.

Definition at line 536 of file vdbl_stview.h.
9.66.4.19  bool _VDBL_standardview::rm_visible ( const std::vector<_VDBL_rowid> & _rs )
            [inline, inherited]

This method removes the row ids in _rs from the visible part of the view.
Definition at line 514 of file vdbl_stview.h.

9.66.5 Member Data Documentation

9.66.5.1 _V_cols _VDBL_standardview::_V_c  [protected, inherited]
This contains all columns of the view
Definition at line 88 of file vdbl_stview.h.

9.66.5.2 _V_rows _VDBL_standardview::_V_r  [protected, inherited]
This contains all rows of the view unless it is a window view
Definition at line 84 of file vdbl_stview.h.

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

- vdbl_stview.h

9.67 view_table Class Reference

Inheritance diagram for view_table:

- _VDBL_table

- _VDBL_viewtable

- view_table
Collaboration diagram for view_table:

Private Types

- typedef std::pair<std::string, _VDBL_col> _T_colspec
- typedef std::pair<const std::string*, const _VDBL_col*> _T_ptrcolspec
- typedef _col_iterator<std::pair<std::string, _VDBL_colid>&, const std::pair<std::string, _VDBL_colid>*> col_const_iterator
- typedef _row_iterator<_VDBL_rowid, const _VDBL_rowid&, const _VDBL_rowid*> row_const_iterator

Private Member Functions

- bool insert (const std::vector<_T_colspec>&_row)
- bool remove (const _VDBL_rowid _ri)
- void made_change ()
- virtual std::pair<const std::string, _VDBL_colid> _next_col (const std::pair<std::string, _VDBL_colid>&_ci) const VDBL_PURE_VIRTUALvirtual std
- virtual _VDBL_rowid _next_row (const _VDBL_rowid &_ci) const VDBL_PURE_VIRTUALvirtual _VDBL_rowid _prev_row(const _VDBL_rowid &_ri) const VDBL_PURE_VIRTUALvirtual row_const_iterator row_begin() const VDBL_PURE_VIRTUALvirtual row_const_iterator row_end() const VDBL_PURE_VIRTUALvirtual row_const_iterator row_iterator_copy(const row_const_iterator&) const VDBL_PURE_VIRTUAL public
- virtual _VDBL_table* new_copy () VDBL_PURE_VIRTUALvirtual void destroy_copy(_VDBL_table*t) VDBL_PURE_VIRTUALvirtual bool add_col(const std
- template<template<class __Tp1, class __AllocTp1>, template<class __Tp2, class __AllocTp2>&> __SequenceCtrOut, template<class __Tp2, class __AllocTp2>&> __SequenceCtrIn, class AllocatorOut, class AllocatorIn>
- bool insert_row (const __SequenceCtrOut<__SequenceCtrIn<_T_colspec, AllocatorIn>, AllocatorOut>&>

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• _VDBL_colid get_colid ()
• _VDBL_rowid get_rowid ()

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

• vdbl_vtable.h

9.68 viewdbase Class Reference

a view to a complete database

#include <vdbl_viewdbase.h>

Inheritance diagram for viewdbase:

Collaboration diagram for viewdbase:

Public Member Functions

• bool has_view (const char * _C_i) const
• viewbase * get_view (const char * _C_i) const
9.68 viewdbase Class Reference

- viewbased * get_view (const std::string & _C_i) const
- viewbase ()
- viewbase (const database & db, const userid & uid, const context & c, view_enum e = V_frozen)
  - template <template <class _TC, class _TA > class _SqCtr, class _Al >
    viewbase (const database & db, const userid & uid, const context & c, const _SqCtr < std::pair < tableid, rowid >, _Al > & __an, view_enum e = V_frozen)
- virtual ~viewbase ()
- bool add_table_view (const _VDBL_tableid & _t, const std::string & __s, const _VDBL_context & _c)
  - template <template <class _TC, class _TA > class _SqCtr, class _Al >
    bool add_table_view (const _VDBL_tableid & _t, const std::string & __s, const _VDBL_context & _c, const _SqCtr < std::pair <_VDBL_tableid, _VDBL_rowid>, _Al > & __an)
- bool add_table_view (const std::string & __s, const _VDBL_context & _c)
  - template <template <class _TC, class _TA > class _SqCtr, class _Al >
    bool add_table_view (const std::string & __s, const _VDBL_context & _c, const _SqCtr < std::pair <_VDBL_tableid, _VDBL_rowid>, _Al > & __an)
- bool add_visible (const _SqCtr < std::pair <_VDBL_tableid, _VDBL_rowid>, _Al > & __an)
- bool rm_visible (const _SqCtr < std::pair <_VDBL_tableid, _VDBL_rowid>, _Al > & __an)
- _VDBL_tableid get_tableid (const std::string & _C_i) const
- bool has_view (const _VDBL_tableid & _C_i) const
- bool has_view (const std::string & _C_i) const
- _VDBL_view * get_view (const _VDBL_tableid & _C_i) const

9.68.1 Detailed Description

This class implements a view onto a complete database. The view names correspond to the names of all existing tables. Optionally, the views can be restricted to subsets of the tables. All constructed views are standard views.

9.68.2 Constructor & Destructor Documentation

9.68.2.1 viewbase::viewbase ( ) [inline]

standard constructor

Definition at line 338 of file vdbl_viewbase.h.

9.68.2.2 viewbase::viewbase ( const database & db, const userid & uid, const context & c,
  view_enum e = V_frozen ) [inline]

constructor which builds a view to the database from

- db -- the database
- c -- the evaluation context for all views
- e -- the view type for all views

Definition at line 346 of file vdbl_viewbase.h.
9.68.2.3  

`template<typename TDBase, template<typename TC, typename TA> class SqCtr, class AI> viewdbase::viewdbase ( 
    const database & db, const userid & uid, const context & c, const SqCtr< std::pair< tableid, 
    rowid >, AI > & _an, view_enum e = V_frozen ) [inline]`

constructor which builds a view to the database from

- `db` -- the database
- `c` -- the evaluation context for all views
- `uid` -- the user id of the user who owns the view
- `e` -- the view type for all views The fourth argument is any sequential container of table,row pairs to
  which the view shall be restricted.

Definition at line 360 of file vdbl_viewdbase.h.

9.68.2.4  

`virtual viewdbase::~viewdbase ( ) [inline, virtual]`

standard destructor

Definition at line 368 of file vdbl_viewdbase.h.

9.68.3  

Member Function Documentation

9.68.3.1  

`bool viewdbase::add_table_view ( const _VDBL_tableid & _t, const std::string & _s, const 
    _VDBL_context & _c ) [inline]`

This method adds another view to the viewdb. The table id is given by __t, the table name by __s, and
the context by __c.

Reimplemented from _VDBL_viewdbase.

Definition at line 374 of file vdbl_viewdbase.h.

9.68.3.2  

`template<typename TDBase, template<typename TC, typename TA> class SqCtr, class AI> bool 
    viewdbase::add_table_view ( const _VDBL_tableid & _t, const std::string & _s, const 
    _VDBL_context & _c, const SqCtr< std::pair< _VDBL_tableid, _VDBL_rowid >, AI > & 
    _an ) [inline]`

This method adds another view to the viewdb. The table id is given by __t, the table name by __s, and
the context by __c. The sequential container of table,row pairs specifies additional table,row pairs which
shall be visible in the view.

Reimplemented from _VDBL_viewdbase.

Definition at line 387 of file vdbl_viewdbase.h.

9.68.3.3  

`bool viewdbase::add_table_view ( const std::string & _s, const _VDBL_context & _c ) 
    [inline]`

This method adds another view to the viewdb. The table name is given by __s, and the context by __c.

Reimplemented from _VDBL_viewdbase.

Definition at line 398 of file vdbl_viewdbase.h.
This method adds another view to the viewdb. The table name is given by \texttt{\_s}, and the context by \texttt{\_c}. The sequential container of table,row pairs specifies additional table,row pairs which shall be visible in the view.

Reimplemented from \_VDBL\_viewdbase.

Definition at line 410 of file vdbl\_viewdbase.h.

The sequential container of table,row pairs specifies additional table,row pairs which shall be visible in the view.

Reimplemented from \_VDBL\_viewdbase.

Definition at line 421 of file vdbl\_viewdbase.h.

return the table id (and view id) of table \_C\_i

Definition at line 73 of file vdbl\_viewdbase.h.

this method returns a pointer to the view associated to id \_C\_i.

Definition at line 115 of file vdbl\_viewdbase.h.

this method returns a pointer to the view \_C\_i.

Definition at line 327 of file vdbl\_viewdbase.h.

this method returns a pointer to the view \_C\_i.

Reimplemented from \_VDBL\_viewdbase.

Definition at line 332 of file vdbl\_viewdbase.h.

check whether a given view (associated to table id \_C\_i) exists

Definition at line 92 of file vdbl\_viewdbase.h.

check whether the view \_C\_i exists
Definition at line 109 of file vdbl_viewdbase.h.

9.68.3.12 bool viewdbase::has_view ( const char * _C_i ) const [inline]

check whether the view _C_i exists

Definition at line 322 of file vdbl_viewdbase.h.

9.68.3.13 template <template <class TC, class TA > class SqCtr, class Al > bool viewdbase::rm_visible ( const SqCtr < std::pair<_VDBL_tableid, _VDBL_rowid >, Al > & an ) [inline]

The sequential container of table,row pairs specifies table,row pairs which shall no longer be visible in the view.

Reimplemented from _VDBL_viewdbase.

Definition at line 431 of file vdbl_viewdbase.h.

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

• vdbl_viewdbase.h

10 File Documentation

10.1 database File Reference

#include <vdbl_database.h> Include dependency graph for database:

10.1.1 Detailed Description

This is the external header file intended for direct use.

Definition in file database.
10.2 db_alltype File Reference

#include <vdbl_alltype.h> Include dependency graph for db_alltype:

10.2.1 Detailed Description

This is the external header file intended for direct use.
Definition in file db_alltype.
10.3  

10.3  db_col File Reference

#include <vdbl_col.h> Include dependency graph for db_col:

10.3.1 Detailed Description

This is the external header file intended for direct use.

Definition in file db_col.
10.4 db_context File Reference

#include <vdbl_context.h> Include dependency graph for db_context:

10.4.1 Detailed Description

This is the external header file intended for direct use.

Definition in file db_context.
10.5  

10.5  db_hrview File Reference

#include <vdbl_hrview.h> Include dependency graph for db_hrview:

![Dependency Graph for db_hrview](image.png)

10.5.1 Detailed Description

This is the external header file intended for direct use.
Definition in file db_hrview.

10.6  db_index File Reference

#include <vdbl_index.h> Include dependency graph for db_index:

![Dependency Graph for db_index](image.png)
10.6.1 Detailed Description

This is the external header file intended for direct use.
Definition in file db_index.

10.7 db_joinview File Reference

#include <vdbl_joinview.h> Include dependency graph for db_joinview:

10.7.1 Detailed Description

This is the external header file intended for direct use.
Definition in file db_joinview.
#include <vdbl_lexiindex.h> Include dependency graph for db_lexiindex:

10.8.1 Detailed Description

This is the external header file intended for direct use.
Definition in file db_lexiindex.
10.9  db_listindex File Reference

#include <vdbl_listindex.h> Include dependency graph for db_listindex:

10.9.1 Detailed Description

This is the external header file intended for direct use.
Definition in file db_listindex.
10.10 db_method File Reference

#include <vdbl_method.h> Include dependency graph for db_method:

10.10.1 Detailed Description

This is the external header file intended for direct use.
Definition in file db_method.
10.11 db_row File Reference

#include <vdbl_row.h> Include dependency graph for db_row:

10.11.1 Detailed Description

This is the external header file intended for direct use.
Definition in file db_row.

10.12 db_table File Reference

#include <vdbl_table.h> Include dependency graph for db_table:

10.12.1 Detailed Description

This is the external header file intended for direct use.
Definition in file db_table.
10.13 db_view File Reference

#include <vdbl_view.h> #include <vdbl_stview.h> Include dependency graph for db_view:

10.13.1 Detailed Description

This is the external header file intended for direct use.
Definition in file db_view.

10.14 vdbl_alltype.h File Reference

#include <vdbl_config.h> #include <vdbl_types.h> #include <string> #include <vector> #include <typeinfo> Include dependency graph for vdbl_alltype.h:
This graph shows which files directly or indirectly include this file:

Classes

- class _VDBL__alltype_base
  The base class for the all_type class.
- class _VDBL__alltype
  The templated class for the all_type class.
- class _VDBL__date
  The VDBL date class.
- class _VDBL__dateinterval
  The VDBL date interval class.
- class _VDBL__mixtype
  mixed type
- class alltype
  The templated alltype class.

Defines

- #define VDBL_MIXTYPE_EMPTY -1
- #define VDBL_MIXTYPE_ALLOCED_NONE 0
- #define VDBL_MIXTYPE_ALLOCED_B 1
- #define VDBL_MIXTYPE_ALLOCED_N 2
- #define VDBL_MIXTYPE_ALLOCED_D 3
- #define VDBL_MIXTYPE_ALLOCED_U 4
- #define VDBL_MIXTYPE_ALLOCED_S 5

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Typedefs

- `typedef _VDBL_date date`
  the date type
- `typedef _VDBL_dateinterval dateinterval`
  the dateinterval type
- `typedef _VDBL_mixtype mixtype`
  a mixed type of various scalars and vectors
- `typedef _VDBL_alltype_base alltype_base`
  the base class of the alltype

10.14.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly.
Definition in file vdbl_alltype.h.

10.14.2 Define Documentation

10.14.2.1 `#define VDBL_MIXTYPE_ALLOCED_B 1`

These defines internally describe which kind of vector has been allocated for a mixtype, or whether it is scalar or empty.
Definition at line 337 of file vdbl_alltype.h.

10.14.2.2 `#define VDBL_MIXTYPE_ALLOCED_D 3`

These defines internally describe which kind of vector has been allocated for a mixtype, or whether it is scalar or empty.
Definition at line 339 of file vdbl_alltype.h.

10.14.2.3 `#define VDBL_MIXTYPE_ALLOCED_N 2`

These defines internally describe which kind of vector has been allocated for a mixtype, or whether it is scalar or empty.
Definition at line 338 of file vdbl_alltype.h.

10.14.2.4 `#define VDBL_MIXTYPE_ALLOCED_NONE 0`

These defines internally describe which kind of vector has been allocated for a mixtype, or whether it is scalar or empty.
Definition at line 336 of file vdbl_alltype.h.

10.14.2.5 `#define VDBL_MIXTYPE_ALLOCED_S 5`

These defines internally describe which kind of vector has been allocated for a mixtype, or whether it is scalar or empty.
Definition at line 341 of file vdbl_alltype.h.
10.14.2.6  \#define VDBL_MIXTYPE_ALLOCED_U 4

These defines internally describe which kind of vector has been allocated for a mixtype, or whether it is scalar or empty.
Definition at line 340 of file vdbl_alltype.h.

10.14.2.7  \#define VDBL_MIXTYPE_EMPTY -1

These defines internally describe which kind of vector has been allocated for a mixtype, or whether it is scalar or empty.
Definition at line 335 of file vdbl_alltype.h.

10.15  vdbl_col.h File Reference

#include <stddef.h> #include <typeinfo> #include <iostream> #include <vdbl-config.h> #include <vdbl_types.h> #include <vdbl_context.h> #include <vdbl_alltype.h> Include dependency graph for vdbl_col.h:
This graph shows which files directly or indirectly include this file:

Classes

- class \_VDBL\_colbase
  
  The base class of the internal column structure.

- class \_VDBL\_colbase
  
  The type dependent base class of the internal column structure.

- class \_VDBL\_col

  The generic column class (the external structure)

- class \_VDBL\_stdcol

  generic column class for constant values

- class \_VDBL\_mthdcol

  generic column class for methods

- class col\_base

  column base class

- class typed\_col

  external name for constant data columns

- class method\_col

  external name for computed columns

Typedefs

- typedef \_VDBL\_col col

  the column class

- typedef \_VDBL\_stdcol< mixtype > standard\_col

  the standard column class with constant mixtype data
Functions

- template<class _TC > std::ostream & print_it (std::ostream &o, const _TC &t)
- std::ostream & operator<< (std::ostream &o, const _VDBL_col &c)

10.15.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file vdbl_col.h.

10.15.2 Function Documentation

10.15.2.1 std::ostream& operator<< ( std::ostream & o, const _VDBL_col & c ) [inline]

The print operation for generic columns. This implicitly calls operator<< for the columns type. So it is necessary that this operator is indeed defined.

Definition at line 360 of file vdbl_col.h.

10.16 vdbl_config.h File Reference

#include <cstring> #include <cstddef> Include dependency graph for vdbl_config.h:
10.17 vdbl_context.h File Reference

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

10.16.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file vdbl_config.h.

10.17 vdbl_context.h File Reference

#include <vdbl_config.h> #include <vdbl_types.h> Include dependency graph for vdbl_context.h:
This graph shows which files directly or indirectly include this file:

Classes

- class _VDBL_context
  base class for context objects

Typedefs

- typedef _VDBL_context context
evaluation context base class

10.17.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file vdbl_context.h.

10.18 vdbl_database.h File Reference

#include <algorithm>
#include <map>
#include <vdbl_config.h>
#include <vdbl_types.h>
#include <vdbl_table.h>
#include <vdbl_user.h>
#include <vdbl-
_view.h>
#include <vdbl_stview.h>  

Include dependency graph for vdbl_database.h:

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

Classes

- class _VDBL_userflags
  The permission flags for a user.
- class _VDBL_aclentry
  entry in the access control list
- class _VDBL_acl
  Access control list.
- class _VDBL_tableflags
  flags for one table
- class _VDBL_viewflags
  flags for one view
• class _VDBL_database
  the database class
• class database
  the database class

Typedefs

• typedef _VDBL_userflags userflags
  user flags and permissions
• typedef _VDBL_viewflags viewflags
  view flags and ACLs
• typedef _VDBL_tableflags tableflags
  table flags and ACLs
• typedef _VDBL_aclentry aclentry
  entry in the access control list (ACL)
• typedef _VDBL_acl acl
  ACL for one user.

10.18.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly.
Definition in file vdbl_database.h.

10.19 vdbl_expression.h File Reference

#include <algorithm>
#include <map>
#include <vector>
#include <typeinfo>
#include <vdbl_config.h>
#include <vdbl_types.h>
#include <vdbl_context.h>

Include dependency graph for vdbl_expression.h:
This graph shows which files directly or indirectly include this file:

![Graph showing file inclusions](attachment:image.png)

**Classes**
- class _VDBL_eval_expr
- class _VDBL_exprrow
- class _VDBL_exprcol
- class _VDBL_exprequal
- class _VDBL_exprneql

10.19.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file `vdbl_expression.h`.

10.20 vdbl_extradocu.h File Reference

**Namespaces**
- namespace vdbl

  *Main namespace of the VDBL.*

10.20.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file `vdbl_extradocu.h`.
#include <iostream> #include <vdbl_table.h> #include <vdbl_view.h>

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

```
#include <iostream>
#include <vdbl_table.h>
#include <vdbl_view.h>
```

Classes

- class _VDBL_hierarchicalview
  
hierarchical view class
- class hierarchical_view
  
hierarchical view class onto a stack of tables

10.21.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file vdbl_hrview.h.
10.22  vdbl_index.h File Reference

#include <list>
#include <typeinfo>
#include <counted_ptr.h>
#include <vdbl_config.h>
#include <vdbl_types.h>
#include <vdbl_col.h>

Include dependency graph for vdbl_index.h:

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

Classes

- class __VDBL_index
- class index

10.22.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file vdbl_index.h.
#include <iostream>
#include <vdbl_table.h>
#include <vdbl_view.h>

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

Classes

- class _VDBL_joinview
- class join_view

10.23.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly.
Definition in file vdbl_joinview.h.
#include <map>
#include <list>
#include <triple>
#include <vdbl_listindex.h>

Include dependency graph for vdbl_lexiindex.h:

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

Classes

- class _VDBL_index_lex2
- class lexi_pair_index
- class lexi_pair_index_def
- class _VDBL_index_lex3
- class lexi_triple_index
- class lexi_triple_index_def
10.24.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly.
Definition in file vdbl_lexiindex.h.

10.25 vdbl_listindex.h File Reference

#include <map> #include <list> #include <vdbl_index.h>

Include dependency graph for vdbl_listindex.h:

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

Classes

- class _VDBL_index_l
- class list_index
- class list_index_def

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10.25.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file vdbl_listindex.h.

10.26 vdbl_method.h File Reference

#include <vdbl_config.h>
#include <vdbl_types.h>
#include <vdbl_context.h>

Include dependency graph for vdbl_method.h:

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

This graph shows which files directly or indirectly include this file:
### 10.27 vdbl_row.h File Reference

#### Classes

- class **_VDBL_method**
  
  *base class for methods usable in _VDBL_mthdcol columns.*

- class **method**
  
  *base class for methods usable in method columns.*

#### 10.26.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly.

Definition in file `vdbl_method.h`.

#### 10.27 vdbl_row.h File Reference

```
#include <algorithm>
#include <map>
#include <vdbl_config.h>
#include <vdbl_types.h>
#include <vdbl_col.h>
```

Include dependency graph for vdbl_row.h:
This graph shows which files directly or indirectly include this file:

### Classes

- **class _VDBL_row**
  - row class
- **class row**
  - class implementing table rows

### 10.27.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file vdbl_row.h.

### 10.28 vdbl_stview.h File Reference

```cpp
#include <iostream>
#include <vdbl_table.h>
#include <vdbl_view.h>
```
dependency graph for vdbl_stview.h:

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

Classes

- class _VDBL_standardview
  
  standard view onto one table

- class view
  
  standard view class onto a single table
10.28.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file vdbl_stview.h.

10.29 vdbl_table.h File Reference

#include <algorithm>
#include <map>
#include <set>
#include <vector>
#include <string>
#include <triple>
#include <vdbl_config.h>
#include <vdbl_row.h>
#include <vdbl_col.h>
#include <vdbl_index.h>
#include <vdbl_context.h>
#include <vdbl_view.h>

Include dependency graph for vdbl_table.h:

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

Classes

- class _VDBL_table
  the base class describing database tables
- class _VDBL_table::__col_iterator_base
- struct _VDBL_table::__col_iterator
• struct _VDBL_table::_row_iterator
• class _VDBL_standardtable
  standard table in databases, constructed from rows and columns
• class table
  base class for tables in a database
• class col_spec
  column specification
• class standard_table
  standard table of a database

10.29.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly.
Definition in file vdbl_table.h.

10.30 vdbl_types.h File Reference

#include <stdint.h> #include <vdbl_config.h> #include <string> #include <vector> #include <typeinfo> Include dependency graph for vdbl_types.h:
This graph shows which files directly or indirectly include this file:

Classes

- class _VDBL_colflags
  
  *additional table information for a column*

Defines

- #define VDBL_MAXUSERID ((__VDBL::_VDBL_userid)-1)
- #define VDBL_MAXVIEWID ((__VDBL::_VDBL_viewid)-1)
- #define VDBL_MAXCOLID ((__VDBL::_VDBL_colid)-1)
- #define VDBL_MAXROWID ((__VDBL::_VDBL_rowid)-1)
- #define VDBL_MAXTABLEID ((__VDBL::_VDBL_tableid)-1)

Typedefs

- typedef uint32_t _VDBL_userid
- typedef uint32_t _VDBL_viewid
- typedef uint64_t _VDBL_colid
- typedef uint64_t _VDBL_rowid
- typedef uint32_t _VDBL_tableid
- typedef _VDBL_userid userid
  
  *user id*

- typedef _VDBL_viewid viewid
  
  *view id*

- typedef _VDBL_colid colid
  
  *column id*

- typedef _VDBL_rowid rowid
  
  *row id*

- typedef _VDBL_tableid tableid

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10.31 vdbl_user.h File Reference

```cpp
#include <algorithm>
#include <map>
#include <vector>
#include <vdbl_config.h>
```

Include dependency graph for vdbl_user.h:

[Diagram showing dependencies between vdbl_user.h, algorithm, map, vector, vdbl_config.h, cstring, and cstddef]

---

**table id**

- typedef _VDBL_colflags colflags
  
  additional column properties

- typedef _V_enum view_enum
  
  the view type

**Enumerations**

- enum _V_enum
  
  different view properties

### 10.30.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly.

Definition in file vdbl_types.h.

### 10.31 vdbl_user.h File Reference

#include <algorithm> #include <map> #include <vector> #include <vdbl_config.h>  Include dependency graph for vdbl_user.h:
This graph shows which files directly or indirectly include this file:

Classes

- class _VDBL_user

10.31.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly.
Definition in file vdbl_user.h.

10.32 vdbl_view.h File Reference

#include <algorithm> #include <map> #include <vector> #include <typeinfo> #include <triple> #include <vdbl_table.h> #include <vdbl_config.h> #include
<vdbl_types.h> Include dependency graph for vdbl_view.h:

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

Classes

- class _VDBL_view
  base class of all views.
- struct _VDBL_view::_default_iterator
- class _VDBL_view::_col_iterator_base
- struct _VDBL_view::_col_iterator
- class _VDBL_view::_row_iterator_base
- struct _VDBL_view::_row_iterator

10.32.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly. Definition in file vdbl_view.h.
10.33 vdbl_viewdbase.h File Reference

#include <algorithm> #include <map> #include <vdbl_config.h> #include <vdbl_database.h>  Include dependency graph for vdbl_viewdbase.h:

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

Classes

- class _VDBL_viewdbase
  
a view to a complete database
- class viewdbase
  
a view to a complete database

10.33.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly.

Definition in file vdbl_viewdbase.h.
10.34 vdbl_vtable.h File Reference

#include <vdbl_table.h> #include <vdbl_view.h> Include dependency graph for vdbl_vtable.h:

Classes

- class _VDBL_viewtable
- class view_table

10.34.1 Detailed Description

This is an internal header file, included by other library headers. You should not attempt to use it directly.
Definition in file vdbl_vtable.h.
10.35 viewdbase File Reference

#include <vdbl_viewdbase.h>  Include dependency graph for viewdbase:

10.35.1 Detailed Description

This is the external header file intended for direct use.

Definition in file viewdbase.