

## Package Deilvery

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# Chapter 1

## CS3528\_Project

Final project for class CS3528

### Team Hope

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### Basic Idea

To create a utility application for a (UPS) style package delivery system which operates in one town.

### Requirements

- Sort and order packages into truck
- Determine packages that can be delivered on time
  - Each truck can only operate for 8 hours per day
  - Trucks will have a weight limit
  - Assume it takes 1 minute to drive one block
  - Each stop takes 5 minutes
- Output should include list of packages for each truck and a set of driving directions for each driver.
- Packages have the following information
  - UUID
  - Two client objects: Sender and receiver
  - Priority: Overnight, Two Day, Regular
- Clients have the following information
  - UUID (Maybe?)
  - Name and address information

- A list record of sent packages
  - A list record of received packages
- The city has the following qualities
  - Assumed to be divided into quadrants
  - X axis is Main Street
  - Y axis is Central Avenue
  - Streets that are  $y=n$  are called nth Street North or nth Street South
  - Streets that are  $x=n$  are called nth Avenue East or nth Avenue West

## Chapter 2

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## Chapter 3

# Class Documentation

### 3.1 Hash::\_ht Struct Reference

Collaboration diagram for Hash::\_ht:

#### Public Attributes

- int **count**
- [HashElem](#) \* **chain**

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

- `sqlite3.c`

### 3.2 AggInfo Struct Reference

Collaboration diagram for AggInfo:

### 3.3 AggInfo::AggInfo\_col Struct Reference

Collaboration diagram for AggInfo::AggInfo\_col:

#### Public Attributes

- [Table](#) \* **pTab**
- int **iTable**
- int **iColumn**
- int **iSorterColumn**
- int **iMem**
- [Expr](#) \* **pExpr**

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

- `sqlite3.c`

### 3.4 AggInfo::AggInfo\_func Struct Reference

Collaboration diagram for AggInfo::AggInfo\_func:

#### Public Attributes

- [Expr](#) \* **pExpr**
- [FuncDef](#) \* **pFunc**
- int **iMem**
- int **iDistinct**

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

- `sqlite3.c`

### 3.5 analysisInfo Struct Reference

Collaboration diagram for analysisInfo:

#### Public Attributes

- [sqlite3](#) \* **db**
- const char \* **zDatabase**

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

- `sqlite3.c`

### 3.6 AuthContext Struct Reference

Collaboration diagram for AuthContext:

#### Public Attributes

- const char \* **zAuthContext**
- [Parse](#) \* **pParse**

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

- `sqlite3.c`

## 3.7 AutoincInfo Struct Reference

Collaboration diagram for AutoincInfo:

### Public Attributes

- [AutoincInfo](#) \* **pNext**
- [Table](#) \* **pTab**
- int **iDb**
- int **regCtr**

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

- `sqlite3.c`

## 3.8 AuxData Struct Reference

Collaboration diagram for AuxData:

### Public Attributes

- int **iOp**
- int **iArg**
- void \* **pAux**
- void(\* **xDelete** )(void \*)
- [AuxData](#) \* **pNext**

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

- `sqlite3.c`

## 3.9 Bitvec Struct Reference

Collaboration diagram for Bitvec:

### Public Attributes

- u32 **iSize**
- u32 **nSet**
- u32 **iDivisor**
- union {
  - BITVEC\_TELEM **aBitmap** [BITVEC\_NELEM]
  - u32 **aHash** [BITVEC\_NINT]
  - [Bitvec](#) \* **apSub** [BITVEC\_NPTR]
- } **u**

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

- `sqlite3.c`

### 3.10 BtCursor Struct Reference

Collaboration diagram for BtCursor:

#### Public Attributes

- [Btree](#) \* **pBtree**
- [BtShared](#) \* **pBt**
- [BtCursor](#) \* **pNext**
- Pgno \* **aOverflow**
- [CellInfo](#) **info**
- i64 **nKey**
- void \* **pKey**
- Pgno **pgnoRoot**
- int **nOvflAlloc**
- int **skipNext**
- u8 **curFlags**
- u8 **curPagerFlags**
- u8 **eState**
- u8 **hints**
- i8 **iPage**
- u8 **curlntKey**
- struct [KeyInfo](#) \* **pKeyInfo**
- void \* **padding1**
- u16 **aildx** [BTCURSOR\_MAX\_DEPTH]
- [MemPage](#) \* **apPage** [BTCURSOR\_MAX\_DEPTH]

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

- `sqlite3.c`

### 3.11 BtLock Struct Reference

Collaboration diagram for BtLock:

#### Public Attributes

- [Btree](#) \* **pBtree**
- Pgno **iTable**
- u8 **eLock**
- [BtLock](#) \* **pNext**

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

- `sqlite3.c`

## 3.12 Btree Struct Reference

Collaboration diagram for Btree:

### Public Attributes

- [sqlite3](#) \* **db**
- [BtShared](#) \* **pBt**
- u8 **inTrans**
- u8 **sharable**
- u8 **locked**
- u8 **hasIncrblobCur**
- int **wantToLock**
- int **nBackup**
- u32 **iDataVersion**
- [Btree](#) \* **pNext**
- [Btree](#) \* **pPrev**
- [BtLock](#) **lock**

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

- [sqlite3.c](#)

## 3.13 BtreePayload Struct Reference

### Public Attributes

- const void \* **pKey**
- [sqlite3\\_int64](#) **nKey**
- const void \* **pData**
- int **nData**
- int **nZero**

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

- [sqlite3.c](#)

## 3.14 BtShared Struct Reference

Collaboration diagram for BtShared:

## Public Attributes

- [Pager](#) \* **pPager**
- [sqlite3](#) \* **db**
- [BtCursor](#) \* **pCursor**
- [MemPage](#) \* **pPage1**
- u8 **openFlags**
- u8 **autoVacuum**
- u8 **incrVacuum**
- u8 **bDoTruncate**
- u8 **inTransaction**
- u8 **max1bytePayload**
- u16 **btsFlags**
- u16 **maxLocal**
- u16 **minLocal**
- u16 **maxLeaf**
- u16 **minLeaf**
- u32 **pageSize**
- u32 **usableSize**
- int **nTransaction**
- u32 **nPage**
- void \* **pSchema**
- void(\* **xFreeSchema** )(void \*)
- [sqlite3\\_mutex](#) \* **mutex**
- [Bitvec](#) \* **pHasContent**
- int **nRef**
- [BtShared](#) \* **pNext**
- [BtLock](#) \* **pLock**
- [Btree](#) \* **pWriter**
- u8 \* **pTmpSpace**

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

- [sqlite3.c](#)

## 3.15 BusyHandler Struct Reference

### Public Attributes

- int(\* **xFunc** )(void \*, int)
- void \* **pArg**
- int **nBusy**

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

- [sqlite3.c](#)

## 3.16 CellArray Struct Reference

Collaboration diagram for CellArray:

### Public Attributes

- int **nCell**
- [MemPage](#) \* **pRef**
- u8 \*\* **apCell**
- u16 \* **szCell**

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

- `sqlite3.c`

## 3.17 CellInfo Struct Reference

### Public Attributes

- i64 **nKey**
- u8 \* **pPayload**
- u32 **nPayload**
- u16 **nLocal**
- u16 **nSize**

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

- `sqlite3.c`

## 3.18 Client Class Reference

[Client](#) class.

```
#include <Client.h>
```

### Public Member Functions

- [Client](#) (const string &nam, const string &add, const string &cit, const string &st, const string &z)  
*[Client](#) basic constructor.*
- void [setName](#) (const string &)  
*Setter for name.*
- string [getName](#) () const  
*Getter for name.*
- void [setAddress](#) (const string &add, const string &cit, const string &st, const string &z)  
*Setter for address.*
- string [getAddress](#) () const  
*Getter for address.*
- string [getCity](#) () const  
*Getter for city.*
- string [getState](#) () const

- *Getter for state.*
- string `getZip ()` const
- *Getter for zip.*
- void `sendPackage (Package *pack)`
- *Add a sent package.*
- vector< `Package *` > `getSentPackages ()` const
- *Get sent packages.*
- void `receivePackage (Package *pack)`
- *Add a received package.*
- vector< `Package *` > `getReceivedPackages ()` const
- *Get received packages.*
- string `toString ()` const
- *To String.*
- pair< int, int > `getCoords ()`
- *Returns coordinate pair of client.*
- `Client *` `getPointer ()`
- *Returns a pointer to this client.*
- unsigned int `getID ()`
- *returns the ID of this `Client`*

## Static Public Member Functions

- static int `getCount ()`
- *Returns the count of total number of clients.*

## Private Member Functions

- void `parseAddress ()`
- *Parses address into coordinates.*

## Private Attributes

- string `name` = "TEST"
- *`Client` name.*
- string `address` = ""
- *`Client` street address.*
- string `city` = ""
- *`Client` city.*
- string `state` = ""
- *`Client` state.*
- string `zip` = ""
- *`Client` zip. Note as string due to possible upgrades to none numeric zips (eg, UK.)*
- vector< `Package *` > `sentPackages`
- *Vector of packages sent by this client.*
- vector< `Package *` > `receivedPackages`
- *Vector of packages received by this client.*
- pair< int, int > `coordinates`
- *Coordinate pair of address in the city.*
- const int `ID`
- *ID of client.*



## Static Private Attributes

- static int `count` = 0  
*static count of Clients*

## Friends

- std::ostream & `operator<<` (std::ostream &, const `Client` &)  
*Insertion Operator override.*

### 3.18.1 Detailed Description

`Client` class.

This client class defines a citizen of the town who can send and receive packages. Each person has a name, address, and vectors representing records of all packages sent and received.

### 3.18.2 Constructor & Destructor Documentation

3.18.2.1 `Client::Client ( const string & nam, const string & add, const string & cit, const string & st, const string & z )`

`Client` basic constructor.

Basic constructor.

#### Parameters

|            |   |
|------------|---|
| <i>nam</i> | Name of client.   |
| <i>add</i> | Street address for client.  |
| <i>cit</i> | City of client  |
| <i>st</i>  | State of client   |
| <i>z</i>   | ZIP code of client. Note string usage for international packages. |

### 3.18.3 Member Function Documentation

3.18.3.1 `string Client::getAddress ( ) const` `[inline]`

Getter for address.

#### Returns

String of street address

### 3.18.3.2 `pair<int, int> Client::getCoords ( ) [inline]`

Returns coordinate pair of client.

#### Returns

Coordinate pair of client on City grid.

### 3.18.3.3 `static int Client::getCount ( ) [inline],[static]`

Returns the count of total number of clients.

#### Returns

int client count

### 3.18.3.4 `unsigned int Client::getID ( ) [inline]`

returns the ID of this [Client](#)

#### Returns

int this client's ID

### 3.18.3.5 `Client* Client::getPointer ( ) [inline]`

Returns a pointer to this client.

#### Returns

Client\* pointer to this client

### 3.18.3.6 `vector< Package * > Client::getReceivedPackages ( ) const`

Get received packages.

#### Returns

Vector of received packages

### 3.18.3.7 `vector< Package * > Client::getSentPackages ( ) const`

Get sent packages.

#### Returns

Vector of sent packages

**3.18.3.8 void Client::parseAddress ( ) [private]**

Parses address into coordinates.

Parses the address stored in object variables to Cartesian coordinates. Main Street runs East/West at  $Y = 0$ . Central Avenue runs North/South at  $X = 0$ . All avenues are N/S, while all streets are E/W. Building numbers are modulus 100, and rounded up or down to the nearest integer.

**3.18.3.9 void Client::receivePackage ( Package \* pack )**

Add a received package.

## Parameters

|             |                    |
|-------------|--------------------|
| <i>pack</i> | pointer to package |
|-------------|--------------------|

3.18.3.10 void Client::sendPackage ( Package \* *pack* )

Add a sent package.

## Parameters

|             |                    |
|-------------|--------------------|
| <i>pack</i> | pointer to package |
|-------------|--------------------|

3.18.3.11 void Client::setAddress ( const string & *add*, const string & *cit*, const string & *st*, const string & *z* )

Setter for address.

Updates address for client.

## Parameters

|            |   |
|------------|---|
| <i>add</i> | Street address for client.  |
| <i>cit</i> | City of client  |
| <i>st</i>  | State of client   |
| <i>z</i>   | ZIP code of client. Note string usage for international packages. |

## 3.18.3.12 string Client::toString ( ) const

To String.

Converts client information to string for debugging output.

## Returns

String containing client info for std::cout

Prints out client's name and address and also all packages associated with the client. Insertion operator only prints name and address.

## Returns

string representation of client and all sent and received packages

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

- Client.h
- Client.cpp

## 3.19 CollSeq Struct Reference

### Public Attributes

- char \* **zName**
- u8 **enc**
- void \* **pUser**
- int(\* **xCmp** )(void \*, int, const void \*, int, const void \*)
- void(\* **xDel** )(void \*)

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

- sqlite3.c

## 3.20 Column Struct Reference

Collaboration diagram for Column:

### Public Attributes

- char \* **zName**
- Expr \* **pDflt**
- char \* **zColl**
- u8 **notNull**
- char **affinity**
- u8 **szEst**
- u8 **colFlags**

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

- sqlite3.c

## 3.21 compareInfo Struct Reference

### Public Attributes

- u8 **matchAll**
- u8 **matchOne**
- u8 **matchSet**
- u8 **noCase**

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

- sqlite3.c

### 3.22 CountCtx Struct Reference

#### Public Attributes

- i64 **n**

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

- `sqlite3.c`

### 3.23 With::Cte Struct Reference

Collaboration diagram for With::Cte:

#### Public Attributes

- char \* **zName**
- [ExprList](#) \* **pCols**
- [Select](#) \* **pSelect**
- const char \* **zCteErr**

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

- `sqlite3.c`

### 3.24 DateTime Struct Reference

#### Public Attributes

- sqlite3\_int64 **iJD**
- int **Y**
- int **M**
- int **D**
- int **h**
- int **m**
- int **tz**
- double **s**
- char **validYMD**
- char **validHMS**
- char **validJD**
- char **validTZ**
- char **tzSet**

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

- `sqlite3.c`

## 3.25 Db Struct Reference

Collaboration diagram for Db:

### Public Attributes

- char \* **zDbSName**
- [Btree](#) \* **pBt**
- u8 **safety\_level**
- u8 **bSyncSet**
- [Schema](#) \* **pSchema**

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

- `sqlite3.c`

## 3.26 DbFixer Struct Reference

Collaboration diagram for DbFixer:

### Public Attributes

- [Parse](#) \* **pParse**
- [Schema](#) \* **pSchema**
- int **bVarOnly**
- const char \* **zDb**
- const char \* **zType**
- const [Token](#) \* **pName**

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

- `sqlite3.c`

## 3.27 DistinctCtx Struct Reference

### Public Attributes

- u8 **isTnct**
- u8 **eTnctType**
- int **tabTnct**
- int **addrTnct**

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

- `sqlite3.c`

### 3.28 et\_info Struct Reference

#### Public Attributes

- char **fmttype**
- etByte **base**
- etByte **flags**
- etByte **type**
- etByte **charset**
- etByte **prefix**

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

- `sqlite3.c`

### 3.29 Expr Struct Reference

Collaboration diagram for Expr:

#### Public Attributes

- u8 **op**
- char **affinity**
- u32 **flags**
- union {
  - char \* **zToken**
  - int **iValue** } **u**
- Expr \* **pLeft**
- Expr \* **pRight**
- union {
  - ExprList \* **pList**
  - Select \* **pSelect** } **x**
- int **nHeight**
- int **iTable**
- ynVar **iColumn**
- i16 **iAgg**
- i16 **iRightJoinTable**
- u8 **op2**
- AggInfo \* **pAggInfo**
- Table \* **pTab**

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

- `sqlite3.c`



## 3.30 ExprList Struct Reference

Collaboration diagram for ExprList:

### Classes

- struct [ExprList\\_item](#)

### Public Attributes

- int **nExpr**
- struct [ExprList::ExprList\\_item](#) \* **a**

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

- [sqlite3.c](#)

## 3.31 ExprList::ExprList\_item Struct Reference

Collaboration diagram for ExprList::ExprList\_item:

### Public Attributes

- [Expr](#) \* **pExpr**
- char \* **zName**
- char \* **zSpan**
- u8 **sortOrder**
- unsigned **done**:1
- unsigned **bSpanIsTab**:1
- unsigned **reusable**:1
- union {
  - struct {
    - u16 **iOrderByCol**
    - u16 **iAlias**
  - **x**
  - int **iConstExprReg**
- **u**

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

- [sqlite3.c](#)

## 3.32 ExprSpan Struct Reference

Collaboration diagram for ExprSpan:

### Public Attributes

- [Expr](#) \* **pExpr**
- const char \* **zStart**
- const char \* **zEnd**

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

- `sqlite3.c`

## 3.33 FileChunk Struct Reference

Collaboration diagram for FileChunk:

### Public Attributes

- [FileChunk](#) \* **pNext**
- u8 **zChunk** [8]

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

- `sqlite3.c`

## 3.34 FilePoint Struct Reference

Collaboration diagram for FilePoint:

### Public Attributes

- sqlite3\_int64 **iOffset**
- [FileChunk](#) \* **pChunk**

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

- `sqlite3.c`

## 3.35 FKey Struct Reference

Collaboration diagram for FKey:

## Classes

- struct [sColMap](#)

## Public Attributes

- [Table](#) \* **pFrom**
- [FKey](#) \* **pNextFrom**
- char \* **zTo**
- [FKey](#) \* **pNextTo**
- [FKey](#) \* **pPrevTo**
- int **nCol**
- u8 **isDeferred**
- u8 **aAction** [2]
- [Trigger](#) \* **apTrigger** [2]
- struct [FKey::sColMap](#) **aCol** [1]

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

- [sqlite3.c](#)

## 3.36 fts5\_api Struct Reference

## Public Attributes

- int **iVersion**
- int(\* **xCreateTokenizer** )(fts5\_api \*pApi, const char \*zName, void \*pContext, [fts5\\_tokenizer](#) \*pTokenizer, void(\*xDestroy)(void \*))
- int(\* **xFindTokenizer** )(fts5\_api \*pApi, const char \*zName, void \*\*ppContext, [fts5\\_tokenizer](#) \*pTokenizer)
- int(\* **xCreateFunction** )(fts5\_api \*pApi, const char \*zName, void \*pContext, fts5\_extension\_function x↵Function, void(\*xDestroy)(void \*))

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

- [sqlite3.c](#)
- [sqlite3.h](#)

## 3.37 fts5\_tokenizer Struct Reference

## Public Attributes

- int(\* **xCreate** )(void \*, const char \*\*azArg, int nArg, Fts5Tokenizer \*\*ppOut)
- void(\* **xDelete** )(Fts5Tokenizer \*)
- int(\* **xTokenize** )(Fts5Tokenizer \*, void \*pCtx, int flags, const char \*pText, int nText, int(\*xToken)(void \*pCtx, int tflags, const char \*pToken, int nToken, int iStart, int iEnd))

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

- [sqlite3.c](#)
- [sqlite3.h](#)

### 3.38 Fts5ExtensionApi Struct Reference

#### Public Attributes

- `int iVersion`
- `void (*)(xUserData)(Fts5Context *)`
- `int (*)(xColumnCount)(Fts5Context *)`
- `int (*)(xRowCount)(Fts5Context *, sqlite3_int64 *pnRow)`
- `int (*)(xColumnTotalSize)(Fts5Context *, int iCol, sqlite3_int64 *pnToken)`
- `int (*)(xTokenize)(Fts5Context *, const char *pText, int nText, void *pCtx, int(*xToken)(void *, int, const char *, int, int, int))`
- `int (*)(xPhraseCount)(Fts5Context *)`
- `int (*)(xPhraseSize)(Fts5Context *, int iPhrase)`
- `int (*)(xInstCount)(Fts5Context *, int *pnInst)`
- `int (*)(xInst)(Fts5Context *, int idx, int *piPhrase, int *piCol, int *piOff)`
- `sqlite3_int64 (*)(xRowid)(Fts5Context *)`
- `int (*)(xColumnText)(Fts5Context *, int iCol, const char **pz, int *pn)`
- `int (*)(xColumnSize)(Fts5Context *, int iCol, int *pnToken)`
- `int (*)(xQueryPhrase)(Fts5Context *, int iPhrase, void *pUserData, int*)(const Fts5ExtensionApi *, Fts5Context *, void *)`
- `int (*)(xSetAuxdata)(Fts5Context *, void *pAux, void(*xDelete)(void *))`
- `void (*)(xGetAuxdata)(Fts5Context *, int bClear)`
- `int (*)(xPhraseFirst)(Fts5Context *, int iPhrase, Fts5Phraselter *, int *, int *)`
- `void (*)(xPhraseNext)(Fts5Context *, Fts5Phraselter *, int *piCol, int *piOff)`
- `int (*)(xPhraseFirstColumn)(Fts5Context *, int iPhrase, Fts5Phraselter *, int *)`
- `void (*)(xPhraseNextColumn)(Fts5Context *, Fts5Phraselter *, int *piCol)`

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

- `sqlite3.c`
- `sqlite3.h`

### 3.39 Fts5Phraselter Struct Reference

#### Public Attributes

- `const unsigned char * a`
- `const unsigned char * b`

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

- `sqlite3.c`
- `sqlite3.h`

### 3.40 FuncDef Struct Reference

Collaboration diagram for FuncDef:

### Public Attributes

- i8 **nArg**
- u16 **funcFlags**
- void \* **pUserData**
- [FuncDef](#) \* **pNext**
- void(\* **xFunc**)([sqlite3\\_context](#) \*, int, [sqlite3\\_value](#) \*\*)
- void(\* **xFinalize**)([sqlite3\\_context](#) \*)
- const char \* **zName**
- union {
  - [FuncDef](#) \* **pHash**
  - [FuncDestructor](#) \* **pDestructor**
- **u**

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

- [sqlite3.c](#)

## 3.41 FuncDefHash Struct Reference

Collaboration diagram for FuncDefHash:

### Public Attributes

- [FuncDef](#) \* **a** [[SQLITE\\_FUNC\\_HASH\\_SZ](#)]

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

- [sqlite3.c](#)

## 3.42 FuncDestructor Struct Reference

### Public Attributes

- int **nRef**
- void(\* **xDestroy**)(void \*)
- void \* **pUserData**

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

- [sqlite3.c](#)

### 3.43 Genetic Class Reference

#### Public Member Functions

- [Genetic](#) (vector< [Package](#) \* > \*packs, vector< vector< unsigned int > > \*matrix, unsigned int weight, unsigned int packLimit, unsigned int population, float stops, float drive)  
*Default constructor \*/.*
- virtual [~Genetic](#) ()  
*Default destructor \*/.*
- void **initPopulation** ()
- float **fitness** (vector< [Client](#) \* >)

#### Private Attributes

- vector< [Package](#) \* > \* **packages**
- vector< vector< unsigned int > > \* **adMatrix**
- unsigned int **popNum**
- unsigned int **weightLimit**
- unsigned int **packageLimit**
- float **stopTime**
- float **driveTime**
- vector< vector< [Client](#) \* > > **genes**
- vector< [Client](#) \* > **bestFit**

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

- Genetic.h
- Genetic.cpp

### 3.44 Hash Struct Reference

Collaboration diagram for Hash:

#### Classes

- struct [\\_ht](#)

#### Public Attributes

- unsigned int **htsize**
- unsigned int **count**
- [HashElem](#) \* **first**
- struct [Hash::\\_ht](#) \* **ht**

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

- sqlite3.c

## 3.45 HashElem Struct Reference

Collaboration diagram for HashElem:

### Public Attributes

- [HashElem](#) \* **next**
- [HashElem](#) \* **prev**
- void \* **data**
- const char \* **pKey**

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

- `sqlite3.c`

## 3.46 IdList Struct Reference

Collaboration diagram for IdList:

### Classes

- struct [IdList\\_item](#)

### Public Attributes

- struct [IdList::IdList\\_item](#) \* **a**
- int **nId**

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

- `sqlite3.c`

## 3.47 IdList::IdList\_item Struct Reference

### Public Attributes

- char \* **zName**
- int **idx**

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

- `sqlite3.c`

### 3.48 IdxCover Struct Reference

Collaboration diagram for IdxCover:

#### Public Attributes

- [Index](#) \* **pIdx**
- int **iCur**

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

- sqlite3.c

### 3.49 ImportCtx Struct Reference

#### Public Attributes

- const char \* **zFile**
- FILE \* **in**
- char \* **z**
- int **n**
- int **nAlloc**
- int **nLine**
- int **cTerm**
- int **cColSep**
- int **cRowSep**

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

- shell.c

### 3.50 Incrblob Struct Reference

Collaboration diagram for Incrblob:

#### Public Attributes

- int **flags**
- int **nByte**
- int **iOffset**
- int **iCol**
- [BtCursor](#) \* **pCsr**
- sqlite3\_stmt \* **pStmt**
- [sqlite3](#) \* **db**
- char \* **zDb**
- [Table](#) \* **pTab**

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

- sqlite3.c



## 3.51 IncrMerger Struct Reference

Collaboration diagram for IncrMerger:

### Public Attributes

- [SortSubtask](#) \* **pTask**
- [MergeEngine](#) \* **pMerger**
- i64 **iStartOff**
- int **mxSz**
- int **bEof**
- int **bUseThread**
- [SorterFile](#) **aFile** [2]

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

- `sqlite3.c`

## 3.52 Index Struct Reference

Collaboration diagram for Index:

### Public Attributes

- char \* **zName**
- i16 \* **aiColumn**
- LogEst \* **aiRowLogEst**
- [Table](#) \* **pTable**
- char \* **zColAff**
- [Index](#) \* **pNext**
- [Schema](#) \* **pSchema**
- u8 \* **aSortOrder**
- const char \*\* **azColl**
- [Expr](#) \* **pPartIdxWhere**
- [ExprList](#) \* **aColExpr**
- int **tnum**
- LogEst **szIdxRow**
- u16 **nKeyCol**
- u16 **nColumn**
- u8 **onError**
- unsigned **idxType**:2
- unsigned **bUnordered**:1
- unsigned **uniqNotNull**:1
- unsigned **isResized**:1
- unsigned **isCovering**:1
- unsigned **noSkipScan**:1

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

- `sqlite3.c`

### 3.53 IndexSample Struct Reference

#### Public Attributes

- void \* **p**
- int **n**
- tRowcnt \* **anEq**
- tRowcnt \* **anLt**
- tRowcnt \* **anDLt**

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

- `sqlite3.c`

### 3.54 InitData Struct Reference

Collaboration diagram for InitData:

#### Public Attributes

- [sqlite3](#) \* **db**
- char \*\* **pzErrMsg**
- int **iDb**
- int **rc**

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

- `sqlite3.c`

### 3.55 IntegrityCk Struct Reference

Collaboration diagram for IntegrityCk:

#### Public Attributes

- [BtShared](#) \* **pBt**
- [Pager](#) \* **pPager**
- u8 \* **aPgRef**
- Pgno **nPage**
- int **mxErr**
- int **nErr**
- int **mallocFailed**
- const char \* **zPfx**
- int **v1**
- int **v2**
- [StrAccum](#) **errMsg**
- u32 \* **heap**

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

- `sqlite3.c`

## 3.56 KeyInfo Struct Reference

Collaboration diagram for KeyInfo:

### Public Attributes

- u32 **nRef**
- u8 **enc**
- u16 **nField**
- u16 **nXField**
- [sqlite3](#) \* **db**
- u8 \* **aSortOrder**
- [CollSeq](#) \* **aColl** [1]

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

- [sqlite3.c](#)

## 3.57 LimitVal Struct Reference

Collaboration diagram for LimitVal:

### Public Attributes

- [Expr](#) \* **pLimit**
- [Expr](#) \* **pOffset**

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

- [sqlite3.c](#)

## 3.58 Lookaside Struct Reference

Collaboration diagram for Lookaside:

### Public Attributes

- u32 **bDisable**
- u16 **sz**
- u8 **bMallored**
- int **nOut**
- int **mxOut**
- int **anStat** [3]
- [LookasideSlot](#) \* **pFree**
- void \* **pStart**
- void \* **pEnd**

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

- [sqlite3.c](#)

### 3.59 LookasideSlot Struct Reference

Collaboration diagram for LookasideSlot:

#### Public Attributes

- [LookasideSlot](#) \* **pNext**

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

- `sqlite3.c`

### 3.60 Mem Struct Reference

Collaboration diagram for Mem:

#### Classes

- union [MemValue](#)

#### Public Attributes

- union [Mem::MemValue](#) **u**
- u16 **flags**
- u8 **enc**
- u8 **eSubtype**
- int **n**
- char \* **z**
- char \* **zMalloc**
- int **szMalloc**
- u32 **uTemp**
- [sqlite3](#) \* **db**
- void(\* **xDel** )(void \*)

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

- `sqlite3.c`

### 3.61 MemJournal Struct Reference

Collaboration diagram for MemJournal:

## Public Attributes

- const [sqlite3\\_io\\_methods](#) \* **pMethod**
- int **nChunkSize**
- int **nSpill**
- int **nSize**
- [FileChunk](#) \* **pFirst**
- [FilePoint](#) **endpoint**
- [FilePoint](#) **readpoint**
- int **flags**
- [sqlite3\\_vfs](#) \* **pVfs**
- const char \* **zJournal**

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

- [sqlite3.c](#)

## 3.62 MemPage Struct Reference

Collaboration diagram for MemPage:

## Public Attributes

- u8 **isInit**
- u8 **nOverflow**
- u8 **intKey**
- u8 **intKeyLeaf**
- u8 **leaf**
- u8 **hdrOffset**
- u8 **childPtrSize**
- u8 **max1bytePayload**
- u8 **bBusy**
- u16 **maxLocal**
- u16 **minLocal**
- u16 **cellOffset**
- u16 **nFree**
- u16 **nCell**
- u16 **maskPage**
- u16 **aiOvfl** [5]
- u8 \* **apOvfl** [5]
- [BtShared](#) \* **pBt**
- u8 \* **aData**
- u8 \* **aDataEnd**
- u8 \* **aCellIdx**
- u8 \* **aDataOfst**
- [DbPage](#) \* **pDbPage**
- u16(\* **xCellSize** )([MemPage](#) \*, u8 \*)
- void(\* **xParseCell** )([MemPage](#) \*, u8 \*, [CellInfo](#) \*)
- Pgno **pgno**

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

- [sqlite3.c](#)

### 3.63 Mem::MemValue Union Reference

Collaboration diagram for Mem::MemValue:

#### Public Attributes

- double **r**
- i64 **i**
- int **nZero**
- [FuncDef](#) \* **pDef**
- [RowSet](#) \* **pRowSet**
- [VdbeFrame](#) \* **pFrame**

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

- [sqlite3.c](#)

### 3.64 MergeEngine Struct Reference

Collaboration diagram for MergeEngine:

#### Public Attributes

- int **nTree**
- [SortSubtask](#) \* **pTask**
- int \* **aTree**
- [PmaReader](#) \* **aReadr**

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

- [sqlite3.c](#)

### 3.65 Module Struct Reference

Collaboration diagram for Module:

#### Public Attributes

- const [sqlite3\\_module](#) \* **pModule**
- const char \* **zName**
- void \* **pAux**
- void(\* **xDestroy** )(void \*)
- [Table](#) \* **pEpoTab**

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

- [sqlite3.c](#)

## 3.66 NameContext Struct Reference

Collaboration diagram for NameContext:

### Public Attributes

- [Parse](#) \* **pParse**
- [SrcList](#) \* **pSrcList**
- [ExprList](#) \* **pEList**
- [AgglInfo](#) \* **pAgglInfo**
- [NameContext](#) \* **pNext**
- int **nRef**
- int **nErr**
- u16 **ncFlags**

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

- `sqlite3.c`

## 3.67 VdbeOp::p4union Union Reference

Collaboration diagram for VdbeOp::p4union:

### Public Attributes

- int **i**
- void \* **p**
- char \* **z**
- i64 \* **pl64**
- double \* **pReal**
- [FuncDef](#) \* **pFunc**
- [sqlite3\\_context](#) \* **pCtx**
- [CollSeq](#) \* **pColl**
- [Mem](#) \* **pMem**
- [VTable](#) \* **pVtab**
- [KeyInfo](#) \* **pKeyInfo**
- int \* **ai**
- [SubProgram](#) \* **pProgram**
- [Table](#) \* **pTab**
- int(\* **xAdvance**)([BtCursor](#) \*, int \*)

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

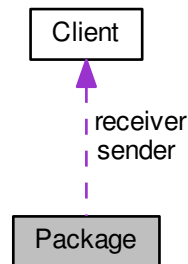
- `sqlite3.c`

### 3.68 Package Class Reference

[Package](#) class.

```
#include <Package.h>
```

Collaboration diagram for Package:



#### Public Member Functions

- [Package](#) ([Client](#) \*s, [Client](#) \*r, const float w, const Priority p)  
*Constructor.*
- void [setSender](#) ([Client](#) \*)  
*Sender setter.*
- [Client](#) \* [getSender](#) () const  
*Sender getter.*
- void [setReceiver](#) ([Client](#) \*)  
*Receiver setter.*
- [Client](#) \* [getReceiver](#) () const  
*Receiver getter.*
- void [setWeight](#) (const double)  
*Weight setter.*
- float [getWeight](#) () const  
*Weight getter.*
- void [setPriority](#) (const Priority)  
*Priority setter.*
- Priority [getPriority](#) () const  
*Priority getter.*
- string [getPriorityString](#) () const  
*Priority string getter.*
- bool [getDelivered](#) () const  
*Returns delivered flag.*
- void [deliver](#) ()  
*Sets delivered flag to true.*
- [Package](#) \* [getPointer](#) ()  
*Returns a pointer to this package.*



## Private Attributes

- `Client * sender`  
*Pointer to sender client.*
- `Client * receiver`  
*Pointer to receiver client.*
- `float weight`  
*Weight of package in ounces.*
- `Priority priority`  
*Priority enum of package.*
- `bool delivered = false`  
*Package delivered?*

## Friends

- `std::ostream & operator<< (std::ostream &, const Package &)`  
*Insertion Operator Override.*

### 3.68.1 Detailed Description

`Package` class.

This `Package` class defines a package which was sent by a `Client` and received by a `Client`. Each package has a priority, a weight, and two clients (a sender and receiver).

### 3.68.2 Constructor & Destructor Documentation

#### 3.68.2.1 `Package::Package ( Client * s, Client * r, const float w, const Priority p )`

Constructor.

Parameters

|                |                               |
|----------------|-------------------------------|
| <code>s</code> | Sender <code>Client</code>    |
| <code>r</code> | Receiver <code>Client</code>  |
| <code>w</code> | <code>Package</code> weight   |
| <code>p</code> | <code>Package</code> priority |

### 3.68.3 Member Function Documentation

#### 3.68.3.1 `bool Package::getDelivered ( ) const`

Returns delivered flag.

return bool delivered flag

### 3.68.3.2 `Priority Package::getPriority ( ) const`

Priority getter.

[Package](#) priority getter.

Returns

[Package](#) priority

### 3.68.3.3 `string Package::getPriorityString ( ) const`

Priority string getter.

Priority is an enum and hence is actually an int. Here's a nice way to print the string value.

Returns

string of priority

### 3.68.3.4 `Client * Package::getReceiver ( ) const`

Receiver getter.

Returns

pointer to receiver client

### 3.68.3.5 `Client * Package::getSender ( ) const`

Sender getter.

Returns

pointer to sender client

### 3.68.3.6 `float Package::getWeight ( ) const`

Weight getter.

[Package](#) Weight getter.

Returns

[Package](#) weight

### 3.68.3.7 `void Package::setPriority ( const Priority p )`

Priority setter.

[Package](#) Priority setter.

## Parameters

|          |               |
|----------|---------------|
| <i>p</i> | Priority enum |
|----------|---------------|

3.68.3.8 void Package::setReceiver ( Client \* *r* )

Receiver setter.

## Parameters

|          |                            |
|----------|----------------------------|
| <i>r</i> | pointer to receiver client |
|----------|----------------------------|

3.68.3.9 void Package::setSender ( Client \* *s* )

Sender setter.

## Parameters

|          |                          |
|----------|--------------------------|
| <i>s</i> | pointer to sender client |
|----------|--------------------------|

3.68.3.10 void Package::setWeight ( const double *w* )

Weight setter.

[Package](#) weight setter.

Throws error on negative weight.

## Parameters

|          |                                |
|----------|--------------------------------|
| <i>w</i> | <a href="#">Package</a> weight |
|----------|--------------------------------|

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

- Package.h
- Package.cpp

## 3.69 Pager Struct Reference

Collaboration diagram for Pager:

## Public Attributes

- [sqlite3\\_vfs](#) \* **pVfs**
- u8 **exclusiveMode**
- u8 **journalMode**
- u8 **useJournal**
- u8 **noSync**
- u8 **fullSync**
- u8 **extraSync**
- u8 **ckptSyncFlags**
- u8 **walSyncFlags**
- u8 **syncFlags**
- u8 **tempFile**
- u8 **noLock**
- u8 **readOnly**
- u8 **memDb**
- u8 **eState**
- u8 **eLock**
- u8 **changeCountDone**
- u8 **setMaster**
- u8 **doNotSpill**
- u8 **subJInMemory**
- u8 **bUseFetch**
- u8 **hasHeldSharedLock**
- Pgno **dbSize**
- Pgno **dbOrigSize**
- Pgno **dbFileSize**
- Pgno **dbHintSize**
- int **errCode**
- int **nRec**
- u32 **cksumInit**
- u32 **nSubRec**
- [Bitvec](#) \* **pInJournal**
- [sqlite3\\_file](#) \* **fd**
- [sqlite3\\_file](#) \* **jfd**
- [sqlite3\\_file](#) \* **sjfd**
- i64 **journalOff**
- i64 **journalHdr**
- [sqlite3\\_backup](#) \* **pBackup**
- [PagerSavepoint](#) \* **aSavepoint**
- int **nSavepoint**
- u32 **iDataVersion**
- char **dbFileVers** [16]
- int **nMmapOut**
- [sqlite3\\_int64](#) **szMmap**
- [PgHdr](#) \* **pMmapFreelist**
- u16 **nExtra**
- i16 **nReserve**
- u32 **vfsFlags**
- u32 **sectorSize**
- int **pageSize**
- Pgno **mxPgno**
- i64 **journalSizeLimit**
- char \* **zFilename**
- char \* **zJournal**

- `int(* xBusyHandler )(void *)`
- `void * pBusyHandlerArg`
- `int aStat [3]`
- `void(* xReinit )(DbPage *)`
- `char * pTmpSpace`
- `PCache * pPCache`
- `Wal * pWal`
- `char * zWal`

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

- `sqlite3.c`

## 3.70 PagerSavepoint Struct Reference

Collaboration diagram for PagerSavepoint:

### Public Attributes

- `i64 iOffset`
- `i64 iHdrOffset`
- `Bitvec * pInSavepoint`
- `Pgno nOrig`
- `Pgno iSubRec`
- `u32 aWalData [WAL_SAVEPOINT_NDATA]`

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

- `sqlite3.c`

## 3.71 Parse Struct Reference

Collaboration diagram for Parse:

### Classes

- `struct yColCache`

## Public Attributes

- [sqlite3](#) \* **db**
- char \* **zErrMsg**
- [Vdbe](#) \* **pVdbe**
- int **rc**
- u8 **colNamesSet**
- u8 **checkSchema**
- u8 **nested**
- u8 **nTempReg**
- u8 **isMultiWrite**
- u8 **mayAbort**
- u8 **hasCompound**
- u8 **okConstFactor**
- u8 **disableLookaside**
- u8 **nColCache**
- int **nRangeReg**
- int **iRangeReg**
- int **nErr**
- int **nTab**
- int **nMem**
- int **nOpAlloc**
- int **szOpAlloc**
- int **ckBase**
- int **iSelfTab**
- int **iCacheLevel**
- int **iCacheCnt**
- int **nLabel**
- int \* **aLabel**
- [ExprList](#) \* **pConstExpr**
- [Token](#) **constraintName**
- yDbMask **writeMask**
- yDbMask **cookieMask**
- int **regRowid**
- int **regRoot**
- int **nMaxArg**
- int **nTableLock**
- [TableLock](#) \* **aTableLock**
- [AutoincInfo](#) \* **pAinc**
- [Parse](#) \* **pToplevel**
- [Table](#) \* **pTriggerTab**
- int **addrCrTab**
- u32 **nQueryLoop**
- u32 **oldmask**
- u32 **newmask**
- u8 **eTriggerOp**
- u8 **eOrconf**
- u8 **disableTriggers**
- struct [Parse::yColCache](#) **aColCache** [SQLITE\_N\_COLCACHE]
- int **aTempReg** [8]
- [Token](#) **sNameToken**
- [Token](#) **sLastToken**
- ynVar **nVar**
- int **nzVar**
- u8 **iPkSortOrder**

- u8 **explain**
- u8 **declareVtab**
- int **nVtabLock**
- int **nHeight**
- int **iSelectId**
- int **iNextSelectId**
- char \*\* **azVar**
- [Vdbe](#) \* **pReprepare**
- const char \* **zTail**
- [Table](#) \* **pNewTable**
- [Trigger](#) \* **pNewTrigger**
- const char \* **zAuthContext**
- [Token](#) **sArg**
- [Table](#) \*\* **apVtabLock**
- [Table](#) \* **pZombieTab**
- [TriggerPrg](#) \* **pTriggerPrg**
- [With](#) \* **pWith**
- [With](#) \* **pWithToFree**

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

- `sqlite3.c`

## 3.72 PCache Struct Reference

Collaboration diagram for PCache:

### Public Attributes

- [PgHdr](#) \* **pDirty**
- [PgHdr](#) \* **pDirtyTail**
- [PgHdr](#) \* **pSynced**
- int **nRefSum**
- int **szCache**
- int **szSpill**
- int **szPage**
- int **szExtra**
- u8 **bPurgeable**
- u8 **eCreate**
- int(\* **xStress** )(void \*, [PgHdr](#) \*)
- void \* **pStress**
- `sqlite3_pcache` \* **pCache**

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

- `sqlite3.c`

### 3.73 PCache1 Struct Reference

Collaboration diagram for PCache1:

#### Public Attributes

- [PGroup](#) \* **pGroup**
- int **szPage**
- int **szExtra**
- int **szAlloc**
- int **bPurgeable**
- unsigned int **nMin**
- unsigned int **nMax**
- unsigned int **n90pct**
- unsigned int **iMaxKey**
- unsigned int **nRecyclable**
- unsigned int **nPage**
- unsigned int **nHash**
- [PgHdr1](#) \*\* **apHash**
- [PgHdr1](#) \* **pFree**
- void \* **pBulk**

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

- `sqlite3.c`

### 3.74 PgFreeslot Struct Reference

Collaboration diagram for PgFreeslot:

#### Public Attributes

- [PgFreeslot](#) \* **pNext**

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

- `sqlite3.c`

### 3.75 PgHdr Struct Reference

Collaboration diagram for PgHdr:



### Public Attributes

- [sqlite3\\_pcache\\_page](#) \* **pPage**
- void \* **pData**
- void \* **pExtra**
- [PgHdr](#) \* **pDirty**
- [Pager](#) \* **pPager**
- Pgno **pgno**
- u16 **flags**
- i16 **nRef**
- [PCache](#) \* **pCache**
- [PgHdr](#) \* **pDirtyNext**
- [PgHdr](#) \* **pDirtyPrev**

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

- [sqlite3.c](#)

## 3.76 PgHdr1 Struct Reference

Collaboration diagram for PgHdr1:

### Public Attributes

- [sqlite3\\_pcache\\_page](#) **page**
- unsigned int **iKey**
- u8 **isPinned**
- u8 **isBulkLocal**
- u8 **isAnchor**
- [PgHdr1](#) \* **pNext**
- [PCache1](#) \* **pCache**
- [PgHdr1](#) \* **pLruNext**
- [PgHdr1](#) \* **pLruPrev**

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

- [sqlite3.c](#)

## 3.77 PGroup Struct Reference

Collaboration diagram for PGroup:

### Public Attributes

- [sqlite3\\_mutex](#) \* **mutex**
- unsigned int **nMaxPage**
- unsigned int **nMinPage**
- unsigned int **mxPinned**
- unsigned int **nCurrentPage**
- [PgHdr1](#) **lru**

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

- [sqlite3.c](#)

## 3.78 PmaReader Struct Reference

Collaboration diagram for PmaReader:

### Public Attributes

- i64 **iReadOff**
- i64 **iEof**
- int **nAlloc**
- int **nKey**
- [sqlite3\\_file](#) \* **pFd**
- u8 \* **aAlloc**
- u8 \* **aKey**
- u8 \* **aBuffer**
- int **nBuffer**
- u8 \* **aMap**
- [IncrMerger](#) \* **pIncr**

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

- [sqlite3.c](#)

## 3.79 PmaWriter Struct Reference

Collaboration diagram for PmaWriter:

### Public Attributes

- int **eFWErr**
- u8 \* **aBuffer**
- int **nBuffer**
- int **iBufStart**
- int **iBufEnd**
- i64 **iWriteOff**
- [sqlite3\\_file](#) \* **pFd**

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

- [sqlite3.c](#)

## 3.80 PreUpdate Struct Reference

Collaboration diagram for PreUpdate:

### Public Attributes

- [Vdbe](#) \* **v**
- [VdbeCursor](#) \* **pCsr**
- int **op**
- u8 \* **aRecord**
- [KeyInfo](#) **keyinfo**
- [UnpackedRecord](#) \* **pUnpacked**
- [UnpackedRecord](#) \* **pNewUnpacked**
- int **iNewReg**
- i64 **iKey1**
- i64 **iKey2**
- [Mem](#) \* **aNew**
- [Table](#) \* **pTab**

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

- `sqlite3.c`

## 3.81 PrintfArguments Struct Reference

Collaboration diagram for PrintfArguments:

### Public Attributes

- int **nArg**
- int **nUsed**
- [sqlite3\\_value](#) \*\* **apArg**

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

- `sqlite3.c`

## 3.82 randomPackageEnum Struct Reference

### Public Attributes

- string **fileName**
- unsigned int **population**
- unsigned int **num**
- int **maxAddress**
- unsigned int **maxStreets**
- float **maxWeight**
- float **priority** [3]

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

- `client_test.cpp`

### 3.83 ReusableSpace Struct Reference

#### Public Attributes

- u8 \* **pSpace**
- int **nFree**
- int **nNeeded**

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

- `sqlite3.c`

### 3.84 RowSet Struct Reference

Collaboration diagram for RowSet:

#### Public Attributes

- struct [RowSetChunk](#) \* **pChunk**
- [sqlite3](#) \* **db**
- struct [RowSetEntry](#) \* **pEntry**
- struct [RowSetEntry](#) \* **pLast**
- struct [RowSetEntry](#) \* **pFresh**
- struct [RowSetEntry](#) \* **pForest**
- u16 **nFresh**
- u16 **rsFlags**
- int **iBatch**

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

- `sqlite3.c`

### 3.85 RowSetChunk Struct Reference

Collaboration diagram for RowSetChunk:

#### Public Attributes

- struct [RowSetChunk](#) \* **pNextChunk**
- struct [RowSetEntry](#) **aEntry** [ROWSET\_ENTRY\_PER\_CHUNK]

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

- `sqlite3.c`

## 3.86 RowSetEntry Struct Reference

Collaboration diagram for RowSetEntry:

### Public Attributes

- i64 **v**
- struct RowSetEntry \* **pRight**
- struct RowSetEntry \* **pLeft**

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

- sqlite3.c

## 3.87 SavedModelInfo Struct Reference

### Public Attributes

- int **valid**
- int **mode**
- int **showHeader**
- int **colWidth** [100]

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

- shell.c

## 3.88 Savepoint Struct Reference

Collaboration diagram for Savepoint:

### Public Attributes

- char \* **zName**
- i64 **nDeferredCons**
- i64 **nDeferredImmCons**
- Savepoint \* **pNext**

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

- sqlite3.c

### 3.89 ScanStatus Struct Reference

#### Public Attributes

- int **addrExplain**
- int **addrLoop**
- int **addrVisit**
- int **iSelectID**
- LogEst **nEst**
- char \* **zName**

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

- `sqlite3.c`

### 3.90 Schema Struct Reference

Collaboration diagram for Schema:

#### Public Attributes

- int **schema\_cookie**
- int **iGeneration**
- Hash **tblHash**
- Hash **idxHash**
- Hash **trigHash**
- Hash **fkeyHash**
- Table \* **pSeqTab**
- u8 **file\_format**
- u8 **enc**
- u16 **schemaFlags**
- int **cache\_size**

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

- `sqlite3.c`

### 3.91 FKey::sColMap Struct Reference

#### Public Attributes

- int **iFrom**
- char \* **zCol**

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

- `sqlite3.c`

## 3.92 ScratchFreeslot Struct Reference

Collaboration diagram for ScratchFreeslot:

### Public Attributes

- struct [ScratchFreeslot](#) \* **pNext**

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

- `sqlite3.c`

## 3.93 Select Struct Reference

Collaboration diagram for Select:

### Public Attributes

- [ExprList](#) \* **pEList**
- u8 **op**
- LogEst **nSelectRow**
- u32 **selFlags**
- int **iLimit**
- int **iOffset**
- int **addrOpenEphm** [2]
- [SrcList](#) \* **pSrc**
- [Expr](#) \* **pWhere**
- [ExprList](#) \* **pGroupBy**
- [Expr](#) \* **pHaving**
- [ExprList](#) \* **pOrderBy**
- [Select](#) \* **pPrior**
- [Select](#) \* **pNext**
- [Expr](#) \* **pLimit**
- [Expr](#) \* **pOffset**
- [With](#) \* **pWith**

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

- `sqlite3.c`

## 3.94 SelectDest Struct Reference

Collaboration diagram for SelectDest:

## Public Attributes

- u8 **eDest**
- char \* **zAffSdst**
- int **iSDParm**
- int **iSdst**
- int **nSdst**
- [ExprList](#) \* **pOrderBy**

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

- [sqlite3.c](#)

## 3.95 ShellState Struct Reference

Collaboration diagram for ShellState:

## Public Attributes

- [sqlite3](#) \* **db**
- int **echoOn**
- int **autoExplain**
- int **autoEQP**
- int **statsOn**
- int **scanstatsOn**
- int **countChanges**
- int **backslashOn**
- int **outCount**
- int **cnt**
- FILE \* **out**
- FILE \* **traceOut**
- int **nErr**
- int **mode**
- int **cMode**
- int **normalMode**
- int **writableSchema**
- int **showHeader**
- int **nCheck**
- unsigned **shellFlgs**
- char \* **zDestTable**
- char **zTestcase** [30]
- char **colSeparator** [20]
- char **rowSeparator** [20]
- int **colWidth** [100]
- int **actualWidth** [100]
- char **nullValue** [20]
- char **outfile** [FILENAME\_MAX]
- const char \* **zDbFilename**
- char \* **zFreeOnClose**
- const char \* **zVfs**
- [sqlite3\\_stmt](#) \* **pStmt**



- FILE \* **pLog**
- int \* **aiIndent**
- int **nIndent**
- int **iIndent**

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

- shell.c

## 3.96 SortCtx Struct Reference

Collaboration diagram for SortCtx:

### Public Attributes

- [ExprList](#) \* **pOrderBy**
- int **nOBSat**
- int **iECursor**
- int **regReturn**
- int **labelBkOut**
- int **addrSortIndex**
- int **labelDone**
- u8 **sortFlags**
- u8 **bOrderedInnerLoop**

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

- sqlite3.c

## 3.97 SorterFile Struct Reference

Collaboration diagram for SorterFile:

### Public Attributes

- [sqlite3\\_file](#) \* **pFd**
- i64 **iEof**

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

- sqlite3.c

### 3.98 SorterList Struct Reference

Collaboration diagram for SorterList:

#### Public Attributes

- [SorterRecord](#) \* **pList**
- u8 \* **aMemory**
- int **szPMA**

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

- `sqlite3.c`

### 3.99 SorterRecord Struct Reference

Collaboration diagram for SorterRecord:

#### Public Attributes

- int **nVal**
- union {  
    [SorterRecord](#) \* **pNext**  
    int **iNext**  
} **u**

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

- `sqlite3.c`

### 3.100 SortSubtask Struct Reference

Collaboration diagram for SortSubtask:

#### Public Attributes

- [SQLiteThread](#) \* **pThread**
- int **bDone**
- [VdbeSorter](#) \* **pSorter**
- [UnpackedRecord](#) \* **pUnpacked**
- [SorterList](#) **list**
- int **nPMA**
- SorterCompare **xCompare**
- [SorterFile](#) **file**
- [SorterFile](#) **file2**

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

- `sqlite3.c`

## 3.101 sqlite3 Struct Reference

Collaboration diagram for sqlite3:

### Classes

- struct [sqlite3InitInfo](#)

### Public Attributes

- [sqlite3\\_vfs](#) \* **pVfs**
- struct [Vdbe](#) \* **pVdbe**
- [CollSeq](#) \* **pDfltColl**
- [sqlite3\\_mutex](#) \* **mutex**
- [Db](#) \* **aDb**
- int **nDb**
- int **flags**
- i64 **lastRowid**
- i64 **szMmap**
- unsigned int **openFlags**
- int **errCode**
- int **errMask**
- int **iSysErrno**
- u16 **dbOptFlags**
- u8 **enc**
- u8 **autoCommit**
- u8 **temp\_store**
- u8 **mallocFailed**
- u8 **bBenignMalloc**
- u8 **dfltLockMode**
- signed char **nextAutovac**
- u8 **suppressErr**
- u8 **vtabOnConflict**
- u8 **isTransactionSavepoint**
- u8 **mTrace**
- int **nextPagesize**
- u32 **magic**
- int **nChange**
- int **nTotalChange**
- int **aLimit** [SQLITE\_N\_LIMIT]
- int **nMaxSorterMmap**
- struct [sqlite3::sqlite3InitInfo](#) **init**
- int **nVdbeActive**
- int **nVdbeRead**
- int **nVdbeWrite**
- int **nVdbeExec**
- int **nVDestroy**
- int **nExtension**
- void \*\* **aExtension**
- int(\* **xTrace**)(u32, void \*, void \*, void \*)
- void \* **pTraceArg**
- void(\* **xProfile**)(void \*, const char \*, u64)

- void \* **pProfileArg**
- void \* **pCommitArg**
- int(\* **xCommitCallback** )(void \*)
- void \* **pRollbackArg**
- void(\* **xRollbackCallback** )(void \*)
- void \* **pUpdateArg**
- void(\* **xUpdateCallback** )(void \*, int, const char \*, const char \*, sqlite\_int64)
- int(\* **xWalCallback** )(void \*, [sqlite3](#) \*, const char \*, int)
- void \* **pWalArg**
- void(\* **xCollNeeded** )(void \*, [sqlite3](#) \*, int eTextRep, const char \*)
- void(\* **xCollNeeded16** )(void \*, [sqlite3](#) \*, int eTextRep, const void \*)
- void \* **pCollNeededArg**
- [sqlite3\\_value](#) \* **pErr**
- union {
  - volatile int **isInterrupted**
  - double **notUsed1**
- } **u1**
- [Lookaside](#) **lookaside**
- [sqlite3\\_xauth](#) **xAuth**
- void \* **pAuthArg**
- int(\* **xProgress** )(void \*)
- void \* **pProgressArg**
- unsigned **nProgressOps**
- int **nVTrans**
- [Hash](#) **aModule**
- [VtabCtx](#) \* **pVtabCtx**
- [VTable](#) \*\* **aVTrans**
- [VTable](#) \* **pDisconnect**
- [Hash](#) **aFunc**
- [Hash](#) **aCollSeq**
- [BusyHandler](#) **busyHandler**
- [Db](#) **aDbStatic** [2]
- [Savepoint](#) \* **pSavepoint**
- int **busyTimeout**
- int **nSavepoint**
- int **nStatement**
- i64 **nDeferredCons**
- i64 **nDeferredImmCons**
- int \* **pnBytesFreed**

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

- [sqlite3.c](#)

### 3.102 [sqlite3\\_api\\_routines](#) Struct Reference

Collaboration diagram for [sqlite3\\_api\\_routines](#):

## Public Attributes

- void **(\* aggregate\_context )**(sqlite3\_context \*, int nBytes)
- int **(\* aggregate\_count )**(sqlite3\_context \*)
- int **(\* bind\_blob )**(sqlite3\_stmt \*, int, const void \*, int n, void(\*) (void \*))
- int **(\* bind\_double )**(sqlite3\_stmt \*, int, double)
- int **(\* bind\_int )**(sqlite3\_stmt \*, int, int)
- int **(\* bind\_int64 )**(sqlite3\_stmt \*, int, sqlite\_int64)
- int **(\* bind\_null )**(sqlite3\_stmt \*, int)
- int **(\* bind\_parameter\_count )**(sqlite3\_stmt \*)
- int **(\* bind\_parameter\_index )**(sqlite3\_stmt \*, const char \*zName)
- const char **(\* bind\_parameter\_name )**(sqlite3\_stmt \*, int)
- int **(\* bind\_text )**(sqlite3\_stmt \*, int, const char \*, int n, void(\*) (void \*))
- int **(\* bind\_text16 )**(sqlite3\_stmt \*, int, const void \*, int, void(\*) (void \*))
- int **(\* bind\_value )**(sqlite3\_stmt \*, int, const sqlite3\_value \*)
- int **(\* busy\_handler )**(sqlite3 \*, int(\*) (void \*, int), void \*)
- int **(\* busy\_timeout )**(sqlite3 \*, int ms)
- int **(\* changes )**(sqlite3 \*)
- int **(\* close )**(sqlite3 \*)
- int **(\* collation\_needed )**(sqlite3 \*, void \*, void(\*) (void \*, sqlite3 \*, int eTextRep, const char \*))
- int **(\* collation\_needed16 )**(sqlite3 \*, void \*, void(\*) (void \*, sqlite3 \*, int eTextRep, const void \*))
- const void **(\* column\_blob )**(sqlite3\_stmt \*, int iCol)
- int **(\* column\_bytes )**(sqlite3\_stmt \*, int iCol)
- int **(\* column\_bytes16 )**(sqlite3\_stmt \*, int iCol)
- int **(\* column\_count )**(sqlite3\_stmt \*pStmt)
- const char **(\* column\_database\_name )**(sqlite3\_stmt \*, int)
- const void **(\* column\_database\_name16 )**(sqlite3\_stmt \*, int)
- const char **(\* column\_decltype )**(sqlite3\_stmt \*, int i)
- const void **(\* column\_decltype16 )**(sqlite3\_stmt \*, int)
- double **(\* column\_double )**(sqlite3\_stmt \*, int iCol)
- int **(\* column\_int )**(sqlite3\_stmt \*, int iCol)
- sqlite\_int64 **(\* column\_int64 )**(sqlite3\_stmt \*, int iCol)
- const char **(\* column\_name )**(sqlite3\_stmt \*, int)
- const void **(\* column\_name16 )**(sqlite3\_stmt \*, int)
- const char **(\* column\_origin\_name )**(sqlite3\_stmt \*, int)
- const void **(\* column\_origin\_name16 )**(sqlite3\_stmt \*, int)
- const char **(\* column\_table\_name )**(sqlite3\_stmt \*, int)
- const void **(\* column\_table\_name16 )**(sqlite3\_stmt \*, int)
- const unsigned char **(\* column\_text )**(sqlite3\_stmt \*, int iCol)
- const void **(\* column\_text16 )**(sqlite3\_stmt \*, int iCol)
- int **(\* column\_type )**(sqlite3\_stmt \*, int iCol)
- sqlite3\_value **(\* column\_value )**(sqlite3\_stmt \*, int iCol)
- void **(\* commit\_hook )**(sqlite3 \*, int(\*) (void \*), void \*)
- int **(\* complete )**(const char \*sql)
- int **(\* complete16 )**(const void \*sql)
- int **(\* create\_collation )**(sqlite3 \*, const char \*, int, void \*, int(\*) (void \*, int, const void \*, int, const void \*))
- int **(\* create\_collation16 )**(sqlite3 \*, const void \*, int, void \*, int(\*) (void \*, int, const void \*, int, const void \*))
- int **(\* create\_function )**(sqlite3 \*, const char \*, int, int, void \*, void(\*) (sqlite3\_context \*, int, sqlite3\_value \*\*), void(\*) (sqlite3\_context \*, int, sqlite3\_value \*\*), void(\*) (sqlite3\_context \*))
- int **(\* create\_function16 )**(sqlite3 \*, const void \*, int, int, void \*, void(\*) (sqlite3\_context \*, int, sqlite3\_value \*\*), void(\*) (sqlite3\_context \*, int, sqlite3\_value \*\*), void(\*) (sqlite3\_context \*))
- int **(\* create\_module )**(sqlite3 \*, const char \*, const sqlite3\_module \*, void \*)
- int **(\* data\_count )**(sqlite3\_stmt \*pStmt)
- sqlite3 **(\* db\_handle )**(sqlite3\_stmt \*)
- int **(\* declare\_vtab )**(sqlite3 \*, const char \*)

- `int(* enable_shared_cache )(int)`
- `int(* errcode )(sqlite3 *db)`
- `const char *(* errmsg )(sqlite3 *)`
- `const void *(* errmsg16 )(sqlite3 *)`
- `int(* exec )(sqlite3 *, const char *, sqlite3_callback, void *, char **)`
- `int(* expired )(sqlite3_stmt *)`
- `int(* finalize )(sqlite3_stmt *pStmt)`
- `void(* free )(void *)`
- `void(* free_table )(char **result)`
- `int(* get_autocommit )(sqlite3 *)`
- `void(* get_auxdata )(sqlite3_context *, int)`
- `int(* get_table )(sqlite3 *, const char *, char ***, int *, int *, char **)`
- `int(* global_recover )(void)`
- `void(* interruptx )(sqlite3 *)`
- `sqlite_int64(* last_insert_rowid )(sqlite3 *)`
- `const char *(* libversion )(void)`
- `int(* libversion_number )(void)`
- `void(* malloc )(int)`
- `char *(* mprintf )(const char *,...)`
- `int(* open )(const char *, sqlite3 **)`
- `int(* open16 )(const void *, sqlite3 **)`
- `int(* prepare )(sqlite3 *, const char *, int, sqlite3_stmt **, const char **)`
- `int(* prepare16 )(sqlite3 *, const void *, int, sqlite3_stmt **, const void **)`
- `void(* profile )(sqlite3 *, void*)(void *, const char *, sqlite_uint64, void *)`
- `void(* progress_handler )(sqlite3 *, int, int*)(void *, void *)`
- `void(* realloc )(void *, int)`
- `int(* reset )(sqlite3_stmt *pStmt)`
- `void(* result_blob )(sqlite3_context *, const void *, int, void*)(void *)`
- `void(* result_double )(sqlite3_context *, double)`
- `void(* result_error )(sqlite3_context *, const char *, int)`
- `void(* result_error16 )(sqlite3_context *, const void *, int)`
- `void(* result_int )(sqlite3_context *, int)`
- `void(* result_int64 )(sqlite3_context *, sqlite_int64)`
- `void(* result_null )(sqlite3_context *)`
- `void(* result_text )(sqlite3_context *, const char *, int, void*)(void *)`
- `void(* result_text16 )(sqlite3_context *, const void *, int, void*)(void *)`
- `void(* result_text16be )(sqlite3_context *, const void *, int, void*)(void *)`
- `void(* result_text16le )(sqlite3_context *, const void *, int, void*)(void *)`
- `void(* result_value )(sqlite3_context *, sqlite3_value *)`
- `void(* rollback_hook )(sqlite3 *, void*)(void *, void *)`
- `int(* set_authorizer )(sqlite3 *, int*)(void *, int, const char *, const char *, const char *, const char *), void *`
- `void(* set_auxdata )(sqlite3_context *, int, void *, void*)(void *)`
- `char *(* snprintf )(int, char *, const char *,...)`
- `int(* step )(sqlite3_stmt *)`
- `int(* table_column_metadata )(sqlite3 *, const char *, const char *, const char *, char const **, char const **, int *, int *, int *)`
- `void(* thread_cleanup )(void)`
- `int(* total_changes )(sqlite3 *)`
- `void(* trace )(sqlite3 *, void(*xTrace)(void *, const char *), void *)`
- `int(* transfer_bindings )(sqlite3_stmt *, sqlite3_stmt *)`
- `void(* update_hook )(sqlite3 *, void*)(void *, int, char const *, char const *, sqlite_int64), void *)`
- `void(* user_data )(sqlite3_context *)`
- `const void *(* value_blob )(sqlite3_value *)`
- `int(* value_bytes )(sqlite3_value *)`

- `int(* value_bytes16 )(sqlite3_value *)`
- `double(* value_double )(sqlite3_value *)`
- `int(* value_int )(sqlite3_value *)`
- `sqlite_int64(* value_int64 )(sqlite3_value *)`
- `int(* value_numeric_type )(sqlite3_value *)`
- `const unsigned char *( * value_text )(sqlite3_value *)`
- `const void *( * value_text16 )(sqlite3_value *)`
- `const void *( * value_text16be )(sqlite3_value *)`
- `const void *( * value_text16le )(sqlite3_value *)`
- `int(* value_type )(sqlite3_value *)`
- `char *( * vprintf )(const char *, va_list)`
- `int(* overload_function )(sqlite3 *, const char *zFuncName, int nArg)`
- `int(* prepare_v2 )(sqlite3 *, const char *, int, sqlite3_stmt **, const char **)`
- `int(* prepare16_v2 )(sqlite3 *, const void *, int, sqlite3_stmt **, const void **)`
- `int(* clear_bindings )(sqlite3_stmt *)`
- `int(* create_module_v2 )(sqlite3 *, const char *, const sqlite3_module *, void *, void(*xDestroy)(void *))`
- `int(* bind_zeroblob )(sqlite3_stmt *, int, int)`
- `int(* blob_bytes )(sqlite3_blob *)`
- `int(* blob_close )(sqlite3_blob *)`
- `int(* blob_open )(sqlite3 *, const char *, const char *, const char *, sqlite3_int64, int, sqlite3_blob **)`
- `int(* blob_read )(sqlite3_blob *, void *, int, int)`
- `int(* blob_write )(sqlite3_blob *, const void *, int, int)`
- `int(* create_collation_v2 )(sqlite3 *, const char *, int, void *, int*)(void *, int, const void *, int, const void *, void*)(void *)`
- `int(* file_control )(sqlite3 *, const char *, int, void *)`
- `sqlite3_int64(* memory_highwater )(int)`
- `sqlite3_int64(* memory_used )(void)`
- `sqlite3_mutex *( * mutex_alloc )(int)`
- `void(* mutex_enter )(sqlite3_mutex *)`
- `void(* mutex_free )(sqlite3_mutex *)`
- `void(* mutex_leave )(sqlite3_mutex *)`
- `int(* mutex_try )(sqlite3_mutex *)`
- `int(* open_v2 )(const char *, sqlite3 **, int, const char *)`
- `int(* release_memory )(int)`
- `void(* result_error_nomem )(sqlite3_context *)`
- `void(* result_error_toobig )(sqlite3_context *)`
- `int(* sleep )(int)`
- `void(* soft_heap_limit )(int)`
- `sqlite3_vfs *( * vfs_find )(const char *)`
- `int(* vfs_register )(sqlite3_vfs *, int)`
- `int(* vfs_unregister )(sqlite3_vfs *)`
- `int(* xthreadsafe )(void)`
- `void(* result_zeroblob )(sqlite3_context *, int)`
- `void(* result_error_code )(sqlite3_context *, int)`
- `int(* test_control )(int,...)`
- `void(* randomness )(int, void *)`
- `sqlite3 *( * context_db_handle )(sqlite3_context *)`
- `int(* extended_result_codes )(sqlite3 *, int)`
- `int(* limit )(sqlite3 *, int, int)`
- `sqlite3_stmt *( * next_stmt )(sqlite3 *, sqlite3_stmt *)`
- `const char *( * sql )(sqlite3_stmt *)`
- `int(* status )(int, int *, int *, int)`
- `int(* backup_finish )(sqlite3_backup *)`
- `sqlite3_backup *( * backup_init )(sqlite3 *, const char *, sqlite3 *, const char *)`
- `int(* backup_pagecount )(sqlite3_backup *)`

- `int(* backup_remaining )(sqlite3_backup *)`
- `int(* backup_step )(sqlite3_backup *, int)`
- `const char *(* compileoption_get )(int)`
- `int(* compileoption_used )(const char *)`
- `int(* create_function_v2 )(sqlite3 *, const char *, int, int, void *, void(*xFunc)(sqlite3_context *, int, sqlite3_value **), void(*xStep)(sqlite3_context *, int, sqlite3_value **), void(*xFinal)(sqlite3_context *), void(*xDestroy)(void *))`
- `int(* db_config )(sqlite3 *, int,...)`
- `sqlite3_mutex *(* db_mutex )(sqlite3 *)`
- `int(* db_status )(sqlite3 *, int, int *, int *, int)`
- `int(* extended_errcode )(sqlite3 *)`
- `void(* log )(int, const char *,...)`
- `sqlite3_int64(* soft_heap_limit64 )(sqlite3_int64)`
- `const char *(* sourceid )(void)`
- `int(* stmt_status )(sqlite3_stmt *, int, int)`
- `int(* strnicmp )(const char *, const char *, int)`
- `int(* unlock_notify )(sqlite3 *, void(*) (void **, int), void *)`
- `int(* wal_autocheckpoint )(sqlite3 *, int)`
- `int(* wal_checkpoint )(sqlite3 *, const char *)`
- `void *(* wal_hook )(sqlite3 *, int(*) (void *, sqlite3 *, const char *, int), void *)`
- `int(* blob_reopen )(sqlite3_blob *, sqlite3_int64)`
- `int(* vtab_config )(sqlite3 *, int op,...)`
- `int(* vtab_on_conflict )(sqlite3 *)`
- `int(* close_v2 )(sqlite3 *)`
- `const char *(* db_filename )(sqlite3 *, const char *)`
- `int(* db_readonly )(sqlite3 *, const char *)`
- `int(* db_release_memory )(sqlite3 *)`
- `const char *(* errstr )(int)`
- `int(* stmt_busy )(sqlite3_stmt *)`
- `int(* stmt_readonly )(sqlite3_stmt *)`
- `int(* strcmp )(const char *, const char *)`
- `int(* uri_boolean )(const char *, const char *, int)`
- `sqlite3_int64(* uri_int64 )(const char *, const char *, sqlite3_int64)`
- `const char *(* uri_parameter )(const char *, const char *)`
- `char *(* vsnprintf )(int, char *, const char *, va_list)`
- `int(* wal_checkpoint_v2 )(sqlite3 *, const char *, int, int *, int *)`
- `int(* auto_extension )(void(*) (void))`
- `int(* bind_blob64 )(sqlite3_stmt *, int, const void *, sqlite3_uint64, void(*) (void *))`
- `int(* bind_text64 )(sqlite3_stmt *, int, const char *, sqlite3_uint64, void(*) (void *), unsigned char)`
- `int(* cancel_auto_extension )(void(*) (void))`
- `int(* load_extension )(sqlite3 *, const char *, const char *, char **)`
- `void *(* malloc64 )(sqlite3_uint64)`
- `sqlite3_uint64(* msize )(void *)`
- `void *(* realloc64 )(void *, sqlite3_uint64)`
- `void(* reset_auto_extension )(void)`
- `void(* result_blob64 )(sqlite3_context *, const void *, sqlite3_uint64, void(*) (void *))`
- `void(* result_text64 )(sqlite3_context *, const char *, sqlite3_uint64, void(*) (void *), unsigned char)`
- `int(* strcmp )(const char *, const char *)`
- `sqlite3_value *(* value_dup )(const sqlite3_value *)`
- `void(* value_free )(sqlite3_value *)`
- `int(* result_zeroblob64 )(sqlite3_context *, sqlite3_uint64)`
- `int(* bind_zeroblob64 )(sqlite3_stmt *, int, sqlite3_uint64)`
- `unsigned int(* value_subtype )(sqlite3_value *)`
- `void(* result_subtype )(sqlite3_context *, unsigned int)`
- `int(* status64 )(int, sqlite3_int64 *, sqlite3_int64 *, int)`



- `int(* strlike )(const char *, const char *, unsigned int)`
- `int(* db_cacheflush )(sqlite3 *)`
- `int(* system_errno )(sqlite3 *)`
- `int(* trace_v2 )(sqlite3 *, unsigned, int*)(unsigned, void *, void *, void *), void *)`
- `char *(* expanded_sql )(sqlite3_stmt *)`

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

- `sqlite3.c`
- `sqlite3ext.h`

### 3.103 `sqlite3_backup` Struct Reference

Collaboration diagram for `sqlite3_backup`:

#### Public Attributes

- `sqlite3 * pDestDb`
- `Btree * pDest`
- `u32 iDestSchema`
- `int bDestLocked`
- `Pgno iNext`
- `sqlite3 * pSrcDb`
- `Btree * pSrc`
- `int rc`
- `Pgno nRemaining`
- `Pgno nPagecount`
- `int isAttached`
- `sqlite3_backup * pNext`

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

- `sqlite3.c`

### 3.104 `sqlite3_context` Struct Reference

Collaboration diagram for `sqlite3_context`:

#### Public Attributes

- `Mem * pOut`
- `FuncDef * pFunc`
- `Mem * pMem`
- `Vdbe * pVdbe`
- `int iOp`
- `int isError`
- `u8 skipFlag`
- `u8 fErrorOrAux`
- `u8 argc`
- `sqlite3_value * argv [1]`

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

- `sqlite3.c`

### 3.105 `sqlite3_file` Struct Reference

Collaboration diagram for `sqlite3_file`:

#### Public Attributes

- const struct `sqlite3_io_methods` \* **pMethods**

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

- `sqlite3.c`
- `sqlite3.h`

### 3.106 `sqlite3_index_info::sqlite3_index_constraint` Struct Reference

#### Public Attributes

- int **iColumn**
- unsigned char **op**
- unsigned char **usable**
- int **iTermOffset**

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

- `sqlite3.c`
- `sqlite3.h`

### 3.107 `sqlite3_index_info::sqlite3_index_constraint_usage` Struct Reference

#### Public Attributes

- int **argvIndex**
- unsigned char **omit**

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

- `sqlite3.c`
- `sqlite3.h`

### 3.108 `sqlite3_index_info` Struct Reference

Collaboration diagram for `sqlite3_index_info`:

## Classes

- struct [sqlite3\\_index\\_constraint](#)
- struct [sqlite3\\_index\\_constraint\\_usage](#)
- struct [sqlite3\\_index\\_orderby](#)

## Public Attributes

- int **nConstraint**
- struct [sqlite3\\_index\\_info::sqlite3\\_index\\_constraint](#) \* **aConstraint**
- int **nOrderBy**
- struct [sqlite3\\_index\\_info::sqlite3\\_index\\_orderby](#) \* **aOrderBy**
- struct [sqlite3\\_index\\_info::sqlite3\\_index\\_constraint\\_usage](#) \* **aConstraintUsage**
- int **idxNum**
- char \* **idxStr**
- int **needToFreeIdxStr**
- int **orderByConsumed**
- double **estimatedCost**
- `sqlite3_int64` **estimatedRows**
- int **idxFlags**
- `sqlite3_uint64` **colUsed**

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

- `sqlite3.c`
- `sqlite3.h`

## 3.109 `sqlite3_index_info::sqlite3_index_orderby` Struct Reference

### Public Attributes

- int **iColumn**
- unsigned char **desc**

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

- `sqlite3.c`
- `sqlite3.h`

### 3.110 sqlite3\_io\_methods Struct Reference

#### Public Attributes

- int **iVersion**
- int(\* **xClose**)(sqlite3\_file \*)
- int(\* **xRead**)(sqlite3\_file \*, void \*, int iAmt, sqlite3\_int64 iOfst)
- int(\* **xWrite**)(sqlite3\_file \*, const void \*, int iAmt, sqlite3\_int64 iOfst)
- int(\* **xTruncate**)(sqlite3\_file \*, sqlite3\_int64 size)
- int(\* **xSync**)(sqlite3\_file \*, int flags)
- int(\* **xFFileSize**)(sqlite3\_file \*, sqlite3\_int64 \*pSize)
- int(\* **xLock**)(sqlite3\_file \*, int)
- int(\* **xUnlock**)(sqlite3\_file \*, int)
- int(\* **xCheckReservedLock**)(sqlite3\_file \*, int \*pResOut)
- int(\* **xFFileControl**)(sqlite3\_file \*, int op, void \*pArg)
- int(\* **xSectorSize**)(sqlite3\_file \*)
- int(\* **xDeviceCharacteristics**)(sqlite3\_file \*)
- int(\* **xShmMap**)(sqlite3\_file \*, int iPg, int pgsz, int, void volatile \*\*)
- int(\* **xShmLock**)(sqlite3\_file \*, int offset, int n, int flags)
- void(\* **xShmBarrier**)(sqlite3\_file \*)
- int(\* **xShmUnmap**)(sqlite3\_file \*, int deleteFlag)
- int(\* **xFetch**)(sqlite3\_file \*, sqlite3\_int64 iOfst, int iAmt, void \*\*pp)
- int(\* **xUnfetch**)(sqlite3\_file \*, sqlite3\_int64 iOfst, void \*p)

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

- sqlite3.c
- sqlite3.h

### 3.111 sqlite3\_mem\_methods Struct Reference

#### Public Attributes

- void(\* **xMalloc**)(int)
- void(\* **xFree**)(void \*)
- void(\* **xRealloc**)(void \*, int)
- int(\* **xSize**)(void \*)
- int(\* **xRoundup**)(int)
- int(\* **xInit**)(void \*)
- void(\* **xShutdown**)(void \*)
- void \* **pAppData**

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

- sqlite3.c
- sqlite3.h

## 3.112 sqlite3\_module Struct Reference

### Public Attributes

- int **iVersion**
- int(\* **xCreate**)(sqlite3 \*, void \*pAux, int argc, const char \*const \*argv, sqlite3\_vtab \*\*ppVTab, char \*\*)
- int(\* **xConnect**)(sqlite3 \*, void \*pAux, int argc, const char \*const \*argv, sqlite3\_vtab \*\*ppVTab, char \*\*)
- int(\* **xBestIndex**)(sqlite3\_vtab \*pVTab, sqlite3\_index\_info \*)
- int(\* **xDisconnect**)(sqlite3\_vtab \*pVTab)
- int(\* **xDestroy**)(sqlite3\_vtab \*pVTab)
- int(\* **xOpen**)(sqlite3\_vtab \*pVTab, sqlite3\_vtab\_cursor \*\*ppCursor)
- int(\* **xClose**)(sqlite3\_vtab\_cursor \*)
- int(\* **xFilter**)(sqlite3\_vtab\_cursor \*, int idxNum, const char \*idxStr, int argc, sqlite3\_value \*\*argv)
- int(\* **xNext**)(sqlite3\_vtab\_cursor \*)
- int(\* **xEOF**)(sqlite3\_vtab\_cursor \*)
- int(\* **xColumn**)(sqlite3\_vtab\_cursor \*, sqlite3\_context \*, int)
- int(\* **xRowid**)(sqlite3\_vtab\_cursor \*, sqlite3\_int64 \*pRowid)
- int(\* **xUpdate**)(sqlite3\_vtab \*, int, sqlite3\_value \*\*, sqlite3\_int64 \*)
- int(\* **xBegin**)(sqlite3\_vtab \*pVTab)
- int(\* **xSync**)(sqlite3\_vtab \*pVTab)
- int(\* **xCommit**)(sqlite3\_vtab \*pVTab)
- int(\* **xRollback**)(sqlite3\_vtab \*pVTab)
- int(\* **xFindFunction**)(sqlite3\_vtab \*pVTab, int nArg, const char \*zName, void(\*\*pFunc)(sqlite3\_context \*, int, sqlite3\_value \*\*), void \*\*ppArg)
- int(\* **xRename**)(sqlite3\_vtab \*pVTab, const char \*zNew)
- int(\* **xSavepoint**)(sqlite3\_vtab \*pVTab, int)
- int(\* **xRelease**)(sqlite3\_vtab \*pVTab, int)
- int(\* **xRollbackTo**)(sqlite3\_vtab \*pVTab, int)

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

- sqlite3.c
- sqlite3.h

## 3.113 sqlite3\_mutex Struct Reference

### Public Attributes

- pthread\_mutex\_t **mutex**

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

- sqlite3.c

## 3.114 sqlite3\_mutex\_methods Struct Reference

Collaboration diagram for sqlite3\_mutex\_methods:

## Public Attributes

- `int(* xMutexInit )(void)`
- `int(* xMutexEnd )(void)`
- `sqlite3_mutex *(xMutexAlloc )(int)`
- `void(* xMutexFree )(sqlite3_mutex *)`
- `void(* xMutexEnter )(sqlite3_mutex *)`
- `int(* xMutexTry )(sqlite3_mutex *)`
- `void(* xMutexLeave )(sqlite3_mutex *)`
- `int(* xMutexHeld )(sqlite3_mutex *)`
- `int(* xMutexNotheld )(sqlite3_mutex *)`

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

- `sqlite3.c`
- `sqlite3.h`

## 3.115 sqlite3\_pcache\_methods Struct Reference

### Public Attributes

- `void * pArg`
- `int(* xInit )(void *)`
- `void(* xShutdown )(void *)`
- `sqlite3_pcache *(xCreate )(int szPage, int bPurgeable)`
- `void(* xCachesize )(sqlite3_pcache *, int nCachesize)`
- `int(* xPagecount )(sqlite3_pcache *)`
- `void(* xFetch )(sqlite3_pcache *, unsigned key, int createFlag)`
- `void(* xUnpin )(sqlite3_pcache *, void *, int discard)`
- `void(* xRekey )(sqlite3_pcache *, void *, unsigned oldKey, unsigned newKey)`
- `void(* xTruncate )(sqlite3_pcache *, unsigned iLimit)`
- `void(* xDestroy )(sqlite3_pcache *)`

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

- `sqlite3.c`
- `sqlite3.h`

## 3.116 sqlite3\_pcache\_methods2 Struct Reference

Collaboration diagram for `sqlite3_pcache_methods2`:

**Public Attributes**

- `int iVersion`
- `void * pArg`
- `int(* xInit )(void *)`
- `void(* xShutdown )(void *)`
- `sqlite3_pcache *(* xCreate )(int szPage, int szExtra, int bPurgeable)`
- `void(* xCachesize )(sqlite3_pcache *, int nCachesize)`
- `int(* xPagecount )(sqlite3_pcache *)`
- `sqlite3_pcache_page *(* xFetch )(sqlite3_pcache *, unsigned key, int createFlag)`
- `void(* xUnpin )(sqlite3_pcache *, sqlite3\_pcache\_page *, int discard)`
- `void(* xRekey )(sqlite3_pcache *, sqlite3\_pcache\_page *, unsigned oldKey, unsigned newKey)`
- `void(* xTruncate )(sqlite3_pcache *, unsigned iLimit)`
- `void(* xDestroy )(sqlite3_pcache *)`
- `void(* xShrink )(sqlite3_pcache *)`

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

- `sqlite3.c`
- `sqlite3.h`

**3.117 `sqlite3_pcache_page` Struct Reference****Public Attributes**

- `void * pBuf`
- `void * pExtra`

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

- `sqlite3.c`
- `sqlite3.h`

**3.118 `sqlite3_rtree_geometry` Struct Reference****Public Attributes**

- `void * pContext`
- `int nParam`
- `sqlite3_rtree_dbl * aParam`
- `void * pUser`
- `void(* xDelUser )(void *)`

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

- `sqlite3.c`
- `sqlite3.h`

### 3.119 sqlite3\_rtree\_query\_info Struct Reference

Collaboration diagram for sqlite3\_rtree\_query\_info:

#### Public Attributes

- void \* **pContext**
- int **nParam**
- sqlite3\_rtree\_dbl \* **aParam**
- void \* **pUser**
- void(\* **xDelUser** )(void \*)
- sqlite3\_rtree\_dbl \* **aCoord**
- unsigned int \* **anQueue**
- int **nCoord**
- int **iLevel**
- int **mxLevel**
- sqlite3\_int64 **iRowid**
- sqlite3\_rtree\_dbl **rParentScore**
- int **eParentWithin**
- int **eWithin**
- sqlite3\_rtree\_dbl **rScore**
- [sqlite3\\_value](#) \*\* **apSqlParam**

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

- [sqlite3.c](#)
- [sqlite3.h](#)

### 3.120 sqlite3\_vfs Struct Reference

Collaboration diagram for sqlite3\_vfs:

#### Public Attributes

- int **iVersion**
- int **szOsFile**
- int **mxPathname**
- [sqlite3\\_vfs](#) \* **pNext**
- const char \* **zName**
- void \* **pAppData**
- int(\* **xOpen** )(sqlite3\_vfs \*, const char \*zName, [sqlite3\\_file](#) \*, int flags, int \*pOutFlags)
- int(\* **xDelete** )(sqlite3\_vfs \*, const char \*zName, int syncDir)
- int(\* **xAccess** )(sqlite3\_vfs \*, const char \*zName, int flags, int \*pResOut)
- int(\* **xFullPathname** )(sqlite3\_vfs \*, const char \*zName, int nOut, char \*zOut)
- void(\* **xDIOpen** )(sqlite3\_vfs \*, const char \*zFilename)
- void(\* **xDLError** )(sqlite3\_vfs \*, int nByte, char \*zErrMsg)
- void(\* **xDISym** )(sqlite3\_vfs \*, void \*, const char \*zSymbol))(void)
- void(\* **xDIClose** )(sqlite3\_vfs \*, void \*)
- int(\* **xRandomness** )(sqlite3\_vfs \*, int nByte, char \*zOut)



- int(\* **xSleep** )(sqlite3\_vfs \*, int microseconds)
- int(\* **xCurrentTime** )(sqlite3\_vfs \*, double \*)
- int(\* **xGetLastError** )(sqlite3\_vfs \*, int, char \*)
- int(\* **xCurrentTimeInt64** )(sqlite3\_vfs \*, sqlite3\_int64 \*)
- int(\* **xSetSystemCall** )(sqlite3\_vfs \*, const char \*zName, sqlite3\_syscall\_ptr)
- sqlite3\_syscall\_ptr(\* **xGetSystemCall** )(sqlite3\_vfs \*, const char \*zName)
- const char \*(\* **xNextSystemCall** )(sqlite3\_vfs \*, const char \*zName)

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

- sqlite3.c
- sqlite3.h

## 3.121 sqlite3\_vtab Struct Reference

Collaboration diagram for sqlite3\_vtab:

### Public Attributes

- const [sqlite3\\_module](#) \* **pModule**
- int **nRef**
- char \* **zErrMsg**

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

- sqlite3.c
- sqlite3.h

## 3.122 sqlite3\_vtab\_cursor Struct Reference

Collaboration diagram for sqlite3\_vtab\_cursor:

### Public Attributes

- [sqlite3\\_vtab](#) \* **pVtab**

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

- sqlite3.c
- sqlite3.h

## 3.123 Sqlite3Config Struct Reference

Collaboration diagram for Sqlite3Config:

## Public Attributes

- int **bMemstat**
- int **bCoreMutex**
- int **bFullMutex**
- int **bOpenUri**
- int **bUseCis**
- int **mxStrlen**
- int **neverCorrupt**
- int **szLookaside**
- int **nLookaside**
- int **nStmtSpill**
- [sqlite3\\_mem\\_methods](#) **m**
- [sqlite3\\_mutex\\_methods](#) **mutex**
- [sqlite3\\_pcache\\_methods2](#) **pcache2**
- void \* **pHeap**
- int **nHeap**
- int **mnReq**
- int **mxReq**
- [sqlite3\\_int64](#) **szMmap**
- [sqlite3\\_int64](#) **mxMmap**
- void \* **pScratch**
- int **szScratch**
- int **nScratch**
- void \* **pPage**
- int **szPage**
- int **nPage**
- int **mxParserStack**
- int **sharedCacheEnabled**
- u32 **szPma**
- int **isInit**
- int **inProgress**
- int **isMutexInit**
- int **isMallocInit**
- int **isPCacheInit**
- int **nReflnitMutex**
- [sqlite3\\_mutex](#) \* **plnitMutex**
- void(\* **xLog** )(void \*, int, const char \*)
- void \* **pLogArg**
- int(\* **xTestCallback** )(int)
- int **bLocaltimeFault**
- int **iOnceResetThreshold**

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

- [sqlite3.c](#)

## 3.124 `sqlite3::sqlite3InitInfo` Struct Reference

### Public Attributes

- `int newTnum`
- `u8 iDb`
- `u8 busy`
- `u8 orphanTrigger`
- `u8 imposterTable`

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

- `sqlite3.c`

## 3.125 `SQLiteThread` Struct Reference

### Public Attributes

- `pthread_t tid`
- `int done`
- `void * pOut`
- `void *(* xTask )(void *)`
- `void * pln`

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

- `sqlite3.c`

## 3.126 `SrcCount` Struct Reference

Collaboration diagram for `SrcCount`:

### Public Attributes

- `SrcList * pSrc`
- `int nThis`
- `int nOther`

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

- `sqlite3.c`

### 3.127 SrcList Struct Reference

Collaboration diagram for SrcList:

#### Classes

- struct [SrcList\\_item](#)

#### Public Attributes

- int **nSrc**
- u32 **nAlloc**
- struct [SrcList::SrcList\\_item](#) **a** [1]

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

- `sqlite3.c`

### 3.128 SrcList::SrcList\_item Struct Reference

Collaboration diagram for SrcList::SrcList\_item:

#### Public Attributes

- [Schema](#) \* **pSchema**
- char \* **zDatabase**
- char \* **zName**
- char \* **zAlias**
- [Table](#) \* **pTab**
- [Select](#) \* **pSelect**
- int **addrFillSub**
- int **regReturn**
- int **regResult**
- struct {
  - u8 **jointype**
  - unsigned **notIndexed**:1
  - unsigned **isIndexedBy**:1
  - unsigned **isTabFunc**:1
  - unsigned **isCorrelated**:1
  - unsigned **viaCoroutine**:1
  - unsigned **isRecursive**:1
- u8 **iSelectId**
- int **iCursor**
- [Expr](#) \* **pOn**
- [IdList](#) \* **pUsing**
- Bitmask **colUsed**

- union {  
    char \* **zIndexedBy**  
    [ExprList](#) \* **pFuncArg**  
} **u1**
- [Index](#) \* **pIBIndex**

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

- `sqlite3.c`

## 3.129 Stat4Accum Struct Reference

Collaboration diagram for Stat4Accum:

### Public Attributes

- tRowcnt **nRow**
- tRowcnt **nPSample**
- int **nCol**
- int **nKeyCol**
- int **mxSample**
- [Stat4Sample](#) **current**
- u32 **iPrn**
- [Stat4Sample](#) \* **aBest**
- int **iMin**
- int **nSample**
- int **iGet**
- [Stat4Sample](#) \* **a**
- [sqlite3](#) \* **db**

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

- `sqlite3.c`

## 3.130 Stat4Sample Struct Reference

### Public Attributes

- tRowcnt \* **anEq**
- tRowcnt \* **anDLt**

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

- `sqlite3.c`

### 3.131 StrAccum Struct Reference

Collaboration diagram for StrAccum:

#### Public Attributes

- [sqlite3](#) \* **db**
- char \* **zBase**
- char \* **zText**
- u32 **nChar**
- u32 **nAlloc**
- u32 **mxAlloc**
- u8 **accError**
- u8 **printfFlags**

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

- [sqlite3.c](#)

### 3.132 SubProgram Struct Reference

Collaboration diagram for SubProgram:

#### Public Attributes

- [VdbeOp](#) \* **aOp**
- int **nOp**
- int **nMem**
- int **nCsr**
- void \* **token**
- [SubProgram](#) \* **pNext**

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

- [sqlite3.c](#)

### 3.133 SumCtx Struct Reference

#### Public Attributes

- double **rSum**
- i64 **iSum**
- i64 **cnt**
- u8 **overflow**
- u8 **approx**

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

- [sqlite3.c](#)

## 3.134 Table Struct Reference

Collaboration diagram for Table:

### Public Attributes

- char \* **zName**
- [Column](#) \* **aCol**
- [Index](#) \* **pIndex**
- [Select](#) \* **pSelect**
- [FKey](#) \* **pFKey**
- char \* **zColAff**
- [ExprList](#) \* **pCheck**
- int **tnum**
- i16 **iPKey**
- i16 **nCol**
- u16 **nRef**
- LogEst **nRowLogEst**
- LogEst **szTabRow**
- u8 **tabFlags**
- u8 **keyConf**
- int **addColOffset**
- int **nModuleArg**
- char \*\* **azModuleArg**
- [VTable](#) \* **pVTable**
- [Trigger](#) \* **pTrigger**
- [Schema](#) \* **pSchema**
- [Table](#) \* **pNextZombie**

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

- `sqlite3.c`

## 3.135 TableLock Struct Reference

### Public Attributes

- int **iDb**
- int **iTab**
- u8 **isWriteLock**
- const char \* **zName**

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

- `sqlite3.c`

### 3.136 TabResult Struct Reference

#### Public Attributes

- char \*\* **azResult**
- char \* **zErrMsg**
- u32 **nAlloc**
- u32 **nRow**
- u32 **nColumn**
- u32 **nData**
- int **rc**

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

- `sqlite3.c`

### 3.137 Token Struct Reference

#### Public Attributes

- const char \* **z**
- unsigned int **n**

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

- `sqlite3.c`

### 3.138 TrigEvent Struct Reference

Collaboration diagram for TrigEvent:

#### Public Attributes

- int **a**
- [IdList](#) \* **b**

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

- `sqlite3.c`

### 3.139 Trigger Struct Reference

Collaboration diagram for Trigger:



**Public Attributes**

- char \* **zName**
- char \* **table**
- u8 **op**
- u8 **tr\_tm**
- [Expr](#) \* **pWhen**
- [IdList](#) \* **pColumns**
- [Schema](#) \* **pSchema**
- [Schema](#) \* **pTabSchema**
- [TriggerStep](#) \* **step\_list**
- [Trigger](#) \* **pNext**

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

- [sqlite3.c](#)

## 3.140 TriggerPrg Struct Reference

Collaboration diagram for TriggerPrg:

**Public Attributes**

- [Trigger](#) \* **pTrigger**
- [TriggerPrg](#) \* **pNext**
- [SubProgram](#) \* **pProgram**
- int **orconf**
- u32 **aColmask** [2]

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

- [sqlite3.c](#)

## 3.141 TriggerStep Struct Reference

Collaboration diagram for TriggerStep:

**Public Attributes**

- u8 **op**
- u8 **orconf**
- [Trigger](#) \* **pTrig**
- [Select](#) \* **pSelect**
- char \* **zTarget**
- [Expr](#) \* **pWhere**
- [ExprList](#) \* **pExprList**
- [IdList](#) \* **pIdList**
- [TriggerStep](#) \* **pNext**
- [TriggerStep](#) \* **pLast**

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

- [sqlite3.c](#)

## 3.142 Truck Class Reference

Truck Class.

```
#include <Truck.h>
```

### Public Member Functions

- [Truck](#) (const double)  
*Truck constructor.*
- int [getTruckID](#) () const  
*Getter for Truck ID Number.*
- double [getWeight](#) () const  
*Getter for truck's weight limit.*
- vector< [Package](#) \* > [getPackages](#) () const  
*Getter for package vector.*
- vector< string \* > [getDirections](#) () const  
*Getter for directions vector.*
- void [setDirections](#) (vector< string \* >)  
*Setter for directions vector.*
- void [addPackage](#) ([Package](#) \*)  
*Adds a package to the truck.*
- void [deliverPackage](#) ([Package](#) \*pack)  
*Delivers a package.*
- string [toString](#) () const  
*Returns a string representation of the truck and its contents.*

### Static Public Attributes

- static int [truckCount](#) = 0  
*A count of the total number of trucks on the road.*

### Private Attributes

- const int [truckID](#)  
*This truck's identification number.*
- double [weight](#)  
*This truck's weight limit.*
- double [currentWeight](#) = 0  
*The current weight of the truck's load of packages.*
- vector< [Package](#) \* > [packages](#)  
*Vector storing the truck's current load of packages.*
- vector< string \* > [directions](#)  
*Vector of strings storing the directions for this truck.*

### 3.142.1 Detailed Description

Truck Class.

This [Truck](#) class defines a truck. It is responsible for holding a list of all packages in its delivery queue and a list of instructions for delivering those packages.

### 3.142.2 Constructor & Destructor Documentation

#### 3.142.2.1 Truck::Truck ( const double w )

Truck constructor.

Constructor.

Parameters

|               |                             |
|---------------|-----------------------------|
| <i>weight</i> | Weight limit                |
| <i>w</i>      | Weight limit for this truck |

### 3.142.3 Member Function Documentation

#### 3.142.3.1 void Truck::addPackage ( Package \* pack )

Adds a package to the truck.

Add a package to the truck.

Adds a package to the truck and adds its weight to the current load

Parameters

|             |                  |
|-------------|------------------|
| <i>pack</i> | A package object |
|-------------|------------------|

Adds a package to the truck. If this would go over the weight limit of the truck, then it throws an error. It also adds the weight of the package to the truck if the package fits.

Parameters

|              |                    |
|--------------|--------------------|
| <i>*pack</i> | Pointer to package |
|--------------|--------------------|

#### 3.142.3.2 void Truck::deliverPackage ( Package \* pack )

Delivers a package.

Delivers package.

Removes a package from the truck, subtracts its weight, and sets the package's delivered flag.

sets delivered flag to true if this package is in the vector

#### 3.142.3.3 `vector< string * > Truck::getDirections ( ) const`

Getter for directions vector.

Get directions assigned to this truck.

##### Returns

the vector containing the truck's current list of directions  
`vector<string*>`

#### 3.142.3.4 `vector< Package * > Truck::getPackages ( ) const`

Getter for package vector.

Gets truck's currently loaded packages.

return `vector<Package*>`

#### 3.142.3.5 `int Truck::getTruckID ( ) const`

Getter for [Truck](#) ID Number.

Gets this truck's ID number.

##### Returns

int [Truck](#) ID number

return int

#### 3.142.3.6 `double Truck::getWeight ( ) const`

Getter for truck's weight limit.

Gets truck's weight limit.

##### Returns

double [Truck](#)'s weight limit  
double

#### 3.142.3.7 `void Truck::setDirections ( vector< string * > direct )`

Setter for directions vector.

## Parameters

|                   |  |
|-------------------|--|
| <i>directions</i> | a pointer to a vector containing the truck's assigned directions |
| <i>direct</i>     | pointer to directions vector                                     |

## 3.142.3.8 string Truck::toString ( ) const

Returns a string representation of the truck and its contents.

To string.

## Returns

string A string representation of the truck and its contents

## 3.142.4 Member Data Documentation

## 3.142.4.1 int Truck::truckCount = 0 [static]

A count of the total number of trucks on the road.

Initialize truck count.

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

- Truck.h
- Truck.cpp

## 3.143 unixFile Struct Reference

Collaboration diagram for unixFile:

## Public Attributes

- [sqlite3\\_io\\_methods](#) const \* **pMethod**
- [sqlite3\\_vfs](#) \* **pVfs**
- [unixInodeInfo](#) \* **plnode**
- int **h**
- unsigned char **eFileLock**
- unsigned short int **ctrlFlags**
- int **lastErrno**
- void \* **lockingContext**
- [UnixUnusedFd](#) \* **pUnused**
- const char \* **zPath**
- [unixShm](#) \* **pShm**
- int **szChunk**

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

- sqlite3.c

### 3.144 unixFileId Struct Reference

#### Public Attributes

- dev\_t **dev**
- ino\_t **ino**

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

- sqlite3.c

### 3.145 unixNodeInfo Struct Reference

Collaboration diagram for unixNodeInfo:

#### Public Attributes

- struct [unixFileId](#) **fileId**
- int **nShared**
- unsigned char **eFileLock**
- unsigned char **bProcessLock**
- int **nRef**
- [unixShmNode](#) \* **pShmNode**
- int **nLock**
- [UnixUnusedFd](#) \* **pUnused**
- [unixNodeInfo](#) \* **pNext**
- [unixNodeInfo](#) \* **pPrev**

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

- sqlite3.c

### 3.146 unixShm Struct Reference

Collaboration diagram for unixShm:

#### Public Attributes

- [unixShmNode](#) \* **pShmNode**
- [unixShm](#) \* **pNext**
- u8 **hasMutex**
- u8 **id**
- u16 **sharedMask**
- u16 **exclMask**

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

- sqlite3.c

## 3.147 unixShmNode Struct Reference

Collaboration diagram for unixShmNode:

### Public Attributes

- [unixInodeInfo](#) \* **pInode**
- [sqlite3\\_mutex](#) \* **mutex**
- char \* **zFilename**
- int **h**
- int **szRegion**
- u16 **nRegion**
- u8 **isReadonly**
- char \*\* **apRegion**
- int **nRef**
- [unixShm](#) \* **pFirst**

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

- `sqlite3.c`

## 3.148 UnixUnusedFd Struct Reference

Collaboration diagram for UnixUnusedFd:

### Public Attributes

- int **fd**
- int **flags**
- [UnixUnusedFd](#) \* **pNext**

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

- `sqlite3.c`

## 3.149 UnpackedRecord Struct Reference

Collaboration diagram for UnpackedRecord:

### Public Attributes

- [KeyInfo](#) \* **pKeyInfo**
- [Mem](#) \* **aMem**
- u16 **nField**
- i8 **default\_rc**
- u8 **errCode**
- i8 **r1**
- i8 **r2**
- u8 **eqSeen**

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

- `sqlite3.c`

## 3.150 ValueNewStat4Ctx Struct Reference

Collaboration diagram for ValueNewStat4Ctx:

### Public Attributes

- [Parse](#) \* **pParse**
- [Index](#) \* **pIdx**
- [UnpackedRecord](#) \*\* **ppRec**
- int **iVal**

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

- `sqlite3.c`

## 3.151 Vdbe Struct Reference

Collaboration diagram for Vdbe:



## Public Attributes

- [sqlite3](#) \* **db**
- [Vdbe](#) \* **pPrev**
- [Vdbe](#) \* **pNext**
- [Parse](#) \* **pParse**
- **ynVar** **nVar**
- **ynVar** **nzVar**
- **u32** **magic**
- **int** **nMem**
- **int** **nCursor**
- **u32** **cacheCtr**
- **int** **pc**
- **int** **rc**
- **int** **nChange**
- **int** **iStatement**
- **i64** **iCurrentTime**
- **i64** **nFkConstraint**
- **i64** **nStmtDefCons**
- **i64** **nStmtDeflmmCons**
- [Op](#) \* **aOp**
- [Mem](#) \* **aMem**
- [Mem](#) \*\* **apArg**
- [Mem](#) \* **aColName**
- [Mem](#) \* **pResultSet**
- **char** \* **zErrMsg**
- [VdbeCursor](#) \*\* **apCsr**
- [Mem](#) \* **aVar**
- **char** \*\* **azVar**
- **i64** **startTime**
- **int** **nOp**
- **u16** **nResColumn**
- **u8** **errorAction**
- **u8** **minWriteFileFormat**
- **bft** **expired**:1
- **bft** **doingRerun**:1
- **bft** **explain**:2
- **bft** **changeCntOn**:1
- **bft** **runOnlyOnce**:1
- **bft** **usesStmtJournal**:1
- **bft** **readOnly**:1
- **bft** **blsReader**:1
- **bft** **isPrepareV2**:1
- **yDbMask** **btreeMask**
- **yDbMask** **lockMask**
- **u32** **aCounter** [5]
- **char** \* **zSql**
- **void** \* **pFree**
- [VdbeFrame](#) \* **pFrame**
- [VdbeFrame](#) \* **pDelFrame**
- **int** **nFrame**
- **u32** **expmask**
- [SubProgram](#) \* **pProgram**
- [AuxData](#) \* **pAuxData**

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

- [sqlite3.c](#)

### 3.152 VdbeCursor Struct Reference

Collaboration diagram for VdbeCursor:

#### Public Attributes

- u8 **eCurType**
- i8 **iDb**
- u8 **nullRow**
- u8 **deferredMoveto**
- u8 **isTable**
- Bool **isEphemeral**:1
- Bool **useRandomRowid**:1
- Bool **isOrdered**:1
- Pgeno **pgnoRoot**
- i16 **nField**
- u16 **nHdrParsed**
- union {
  - [BtCursor](#) \* **pCursor**
  - [sqlite3\\_vtab\\_cursor](#) \* **pVCur**
  - int **pseudoTableReg**
  - [VdbeSorter](#) \* **pSorter**
- } **uc**
- [Btree](#) \* **pBt**
- [KeyInfo](#) \* **pKeyInfo**
- int **seekResult**
- i64 **seqCount**
- i64 **movetoTarget**
- [VdbeCursor](#) \* **pAltCursor**
- int \* **aAltMap**
- u32 **cacheStatus**
- u32 **payloadSize**
- u32 **szRow**
- u32 **iHdrOffset**
- const u8 \* **aRow**
- u32 \* **aOffset**
- u32 **aType** [1]

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

- [sqlite3.c](#)

### 3.153 VdbeFrame Struct Reference

Collaboration diagram for VdbeFrame:

### Public Attributes

- [Vdbe](#) \* **v**
- [VdbeFrame](#) \* **pParent**
- [Op](#) \* **aOp**
- i64 \* **anExec**
- [Mem](#) \* **aMem**
- [VdbeCursor](#) \*\* **apCsr**
- void \* **token**
- i64 **lastRowid**
- [AuxData](#) \* **pAuxData**
- int **nCursor**
- int **pc**
- int **nOp**
- int **nMem**
- int **nChildMem**
- int **nChildCsr**
- int **nChange**
- int **nDbChange**

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

- [sqlite3.c](#)

## 3.154 VdbeOp Struct Reference

Collaboration diagram for VdbeOp:

### Classes

- union [p4union](#)

### Public Attributes

- u8 **opcode**
- signed char **p4type**
- u8 **notUsed1**
- u8 **p5**
- int **p1**
- int **p2**
- int **p3**
- union [VdbeOp::p4union](#) **p4**

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

- [sqlite3.c](#)

### 3.155 VdbeOpList Struct Reference

#### Public Attributes

- u8 **opcode**
- signed char **p1**
- signed char **p2**
- signed char **p3**

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

- `sqlite3.c`

### 3.156 VdbeSorter Struct Reference

Collaboration diagram for VdbeSorter:

#### Public Attributes

- int **mnPmaSize**
- int **mxPmaSize**
- int **mxKeysize**
- int **pgsz**
- [PmaReader](#) \* **pReader**
- [MergeEngine](#) \* **pMerger**
- [sqlite3](#) \* **db**
- [KeyInfo](#) \* **pKeyInfo**
- [UnpackedRecord](#) \* **pUnpacked**
- [SorterList](#) **list**
- int **iMemory**
- int **nMemory**
- u8 **bUsePMA**
- u8 **bUseThreads**
- u8 **iPrev**
- u8 **nTask**
- u8 **typeMask**
- [SortSubtask](#) **aTask** [1]

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

- `sqlite3.c`

### 3.157 VtabCtx Struct Reference

Collaboration diagram for VtabCtx:

### Public Attributes

- [VTable](#) \* **pVTable**
- [Table](#) \* **pTab**
- [VtabCtx](#) \* **pPrior**
- int **bDeclared**

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

- `sqlite3.c`

## 3.158 VTable Struct Reference

Collaboration diagram for VTable:

### Public Attributes

- [sqlite3](#) \* **db**
- [Module](#) \* **pMod**
- [sqlite3\\_vtab](#) \* **pVtab**
- int **nRef**
- u8 **bConstraint**
- int **iSavepoint**
- [VTable](#) \* **pNext**

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

- `sqlite3.c`

## 3.159 vxworksFileId Struct Reference

Collaboration diagram for vxworksFileId:

### Public Attributes

- struct [vxworksFileId](#) \* **pNext**
- int **nRef**
- int **nName**
- char \* **zCanonicalName**

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

- `sqlite3.c`

### 3.160 Wal Struct Reference

Collaboration diagram for Wal:

#### Public Attributes

- [sqlite3\\_vfs](#) \* **pVfs**
- [sqlite3\\_file](#) \* **pDbFd**
- [sqlite3\\_file](#) \* **pWalFd**
- u32 **iCallback**
- i64 **mxWalSize**
- int **nWiData**
- int **szFirstBlock**
- volatile u32 \*\* **apWiData**
- u32 **szPage**
- i16 **readLock**
- u8 **syncFlags**
- u8 **exclusiveMode**
- u8 **writeLock**
- u8 **ckptLock**
- u8 **readOnly**
- u8 **truncateOnCommit**
- u8 **syncHeader**
- u8 **padToSectorBoundary**
- [WallIndexHdr](#) **hdr**
- u32 **minFrame**
- u32 **iReCksum**
- const char \* **zWalName**
- u32 **nCkpt**

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

- [sqlite3.c](#)

### 3.161 WalCkptInfo Struct Reference

#### Public Attributes

- u32 **nBackfill**
- u32 **aReadMark** [WAL\_NREADER]
- u8 **aLock** [SQLITE\_SHM\_NLOCK]
- u32 **nBackfillAttempted**
- u32 **notUsed0**

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

- [sqlite3.c](#)

## 3.162 WalIndexHdr Struct Reference

### Public Attributes

- u32 **iVersion**
- u32 **unused**
- u32 **iChange**
- u8 **isInit**
- u8 **bigEndCksum**
- u16 **szPage**
- u32 **mxFrame**
- u32 **nPage**
- u32 **aFrameCksum** [2]
- u32 **aSalt** [2]
- u32 **aCksum** [2]

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

- `sqlite3.c`

## 3.163 WalIterator Struct Reference

Collaboration diagram for WalIterator:

### Classes

- struct [WalSegment](#)

### Public Attributes

- int **iPrior**
- int **nSegment**
- struct [WalIterator::WalSegment](#) **aSegment** [1]

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

- `sqlite3.c`

## 3.164 Walker Struct Reference

Collaboration diagram for Walker:

### Public Attributes

- [Parse](#) \* **pParse**
- int(\* **xExprCallback** )(Walker \*, Expr \*)
- int(\* **xSelectCallback** )(Walker \*, Select \*)
- void(\* **xSelectCallback2** )(Walker \*, Select \*)
- int **walkerDepth**
- u8 **eCode**
- union {
  - [NameContext](#) \* **pNC**
  - int **n**
  - int **iCur**
  - [SrcList](#) \* **pSrcList**
  - struct [SrcCount](#) \* **pSrcCount**
  - struct CCurHint \* **pCCurHint**
  - int \* **aiCol**
  - struct [IdxCover](#) \* **pIdxCover**
- } **u**

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

- [sqlite3.c](#)

## 3.165 WalIterator::WalSegment Struct Reference

### Public Attributes

- int **iNext**
- ht\_slot \* **aIndex**
- u32 \* **aPgno**
- int **nEntry**
- int **iZero**

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

- [sqlite3.c](#)

## 3.166 WalWriter Struct Reference

Collaboration diagram for WalWriter:

### Public Attributes

- [Wal](#) \* **pWal**
- [sqlite3\\_file](#) \* **pFd**
- sqlite3\_int64 **iSyncPoint**
- int **syncFlags**
- int **szPage**

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

- [sqlite3.c](#)



## 3.167 WhereAndInfo Struct Reference

Collaboration diagram for WhereAndInfo:

### Public Attributes

- [WhereClause](#) **wc**

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

- `sqlite3.c`

## 3.168 WhereClause Struct Reference

Collaboration diagram for WhereClause:

### Public Attributes

- [WhereInfo](#) \* **pWInfo**
- [WhereClause](#) \* **pOuter**
- **u8 op**
- **int nTerm**
- **int nSlot**
- [WhereTerm](#) \* **a**
- [WhereTerm](#) **aStatic** [8]

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

- `sqlite3.c`

## 3.169 WhereInfo Struct Reference

Collaboration diagram for WhereInfo:

## Public Attributes

- [Parse](#) \* **pParse**
- [SrcList](#) \* **pTabList**
- [ExprList](#) \* **pOrderBy**
- [ExprList](#) \* **pDistinctSet**
- **LogEst** **iLimit**
- **int** **aiCurOnePass** [2]
- **int** **iContinue**
- **int** **iBreak**
- **int** **savedNQueryLoop**
- **u16** **wctrlFlags**
- **u8** **nLevel**
- **i8** **nOBSat**
- **u8** **sorted**
- **u8** **eOnePass**
- **u8** **untestedTerms**
- **u8** **eDistinct**
- **u8** **bOrderedInnerLoop**
- **int** **iTop**
- [WhereLoop](#) \* **pLoops**
- **Bitmask** **revMask**
- **LogEst** **nRowOut**
- [WhereClause](#) **sWC**
- [WhereMaskSet](#) **sMaskSet**
- [WhereLevel](#) **a** [1]

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

- `sqlite3.c`

## 3.170 WhereLevel Struct Reference

Collaboration diagram for WhereLevel:

## Public Attributes

- **int** **iLeftJoin**
- **int** **iTabCur**
- **int** **ildxCur**
- **int** **addrBrk**
- **int** **addrNxt**
- **int** **addrSkip**
- **int** **addrCont**
- **int** **addrFirst**
- **int** **addrBody**
- **u32** **iLikeRepCntr**
- **int** **addrLikeRep**
- **u8** **iFrom**
- **u8** **op**
- **u8** **p3**

- u8 **p5**
  - int **p1**
  - int **p2**
  - union {
    - struct {
      - int **nIn**
      - struct **InLoop** {
        - int **iCur**
        - int **addrInTop**
        - u8 **eEndLoopOp**
      - alnLoop**
    - in**
    - [Index](#) \* **pCovidx**
  - u**
- struct [WhereLoop](#) \* **pWLoop**
- Bitmask **notReady**

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

- [sqlite3.c](#)

## 3.171 WhereLoop Struct Reference

Collaboration diagram for WhereLoop:

### Public Attributes

- Bitmask **prereq**
  - Bitmask **maskSelf**
  - u8 **iTab**
  - u8 **iSortIdx**
  - LogEst **rSetup**
  - LogEst **rRun**
  - LogEst **nOut**
  - union {
    - struct {
      - u16 **nEq**
      - u16 **nBtm**
      - u16 **nTop**
      - [Index](#) \* **pIndex**
    - btree**
    - struct {
      - int **idxNum**
      - u8 **needFree**
      - i8 **isOrdered**
      - u16 **omitMask**
      - char \* **idxStr**
    - vtab**
  - u**
- u32 **wsFlags**

- u16 **nLTerm**
- u16 **nSkip**
- u16 **nLSlot**
- [WhereTerm](#) \*\* **aLTerm**
- [WhereLoop](#) \* **pNextLoop**
- [WhereTerm](#) \* **aLTermSpace** [3]

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

- `sqlite3.c`

### 3.172 WhereLoopBuilder Struct Reference

Collaboration diagram for WhereLoopBuilder:

#### Public Attributes

- [WhereInfo](#) \* **pWInfo**
- [WhereClause](#) \* **pWC**
- [ExprList](#) \* **pOrderBy**
- [WhereLoop](#) \* **pNew**
- [WhereOrSet](#) \* **pOrSet**

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

- `sqlite3.c`

### 3.173 WhereMaskSet Struct Reference

#### Public Attributes

- int **n**
- int **ix** [BMS]

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

- `sqlite3.c`

### 3.174 WhereOrCost Struct Reference

#### Public Attributes

- Bitmask **prereq**
- LogEst **rRun**
- LogEst **nOut**

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

- `sqlite3.c`

## 3.175 WhereOrInfo Struct Reference

Collaboration diagram for WhereOrInfo:

### Public Attributes

- [WhereClause](#) **wc**
- Bitmask **indexable**

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

- `sqlite3.c`

## 3.176 WhereOrSet Struct Reference

Collaboration diagram for WhereOrSet:

### Public Attributes

- u16 **n**
- [WhereOrCost](#) **a** [N\_OR\_COST]

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

- `sqlite3.c`

## 3.177 WherePath Struct Reference

Collaboration diagram for WherePath:

### Public Attributes

- Bitmask **maskLoop**
- Bitmask **revLoop**
- LogEst **nRow**
- LogEst **rCost**
- LogEst **rUnsorted**
- i8 **isOrdered**
- [WhereLoop](#) \*\* **aLoop**

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

- `sqlite3.c`

### 3.178 WhereScan Struct Reference

Collaboration diagram for WhereScan:

#### Public Attributes

- [WhereClause](#) \* **pOrigWC**
- [WhereClause](#) \* **pWC**
- const char \* **zCollName**
- [Expr](#) \* **pIdxExpr**
- char **idxaff**
- unsigned char **nEquiv**
- unsigned char **iEquiv**
- u32 **opMask**
- int **k**
- int **aiCur** [11]
- i16 **aiColumn** [11]

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

- `sqlite3.c`

### 3.179 WhereTerm Struct Reference

Collaboration diagram for WhereTerm:

#### Public Attributes

- [Expr](#) \* **pExpr**
- [WhereClause](#) \* **pWC**
- LogEst **truthProb**
- u16 **wtFlags**
- u16 **eOperator**
- u8 **nChild**
- u8 **eMatchOp**
- int **iParent**
- int **leftCursor**
- int **iField**
- union {
  - int **leftColumn**
  - [WhereOrInfo](#) \* **pOrInfo**
  - [WhereAndInfo](#) \* **pAndInfo**
 } **u**
- Bitmask **prereqRight**
- Bitmask **prereqAll**

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

- `sqlite3.c`

## 3.180 With Struct Reference

Collaboration diagram for With:

### Classes

- struct [Cte](#)

### Public Attributes

- int **nCte**
- [With](#) \* **pOuter**
- struct [With::Cte](#) **a** [1]

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

- `sqlite3.c`

## 3.181 Parse::yColCache Struct Reference

### Public Attributes

- int **iTable**
- i16 **iColumn**
- u8 **tempReg**
- int **iLevel**
- int **iReg**
- int **lru**

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

- `sqlite3.c`

## 3.182 YYMINORTYPE Union Reference

Collaboration diagram for YYMINORTYPE:

**Public Attributes**

- int **yyinit**
- sqlite3ParserTOKENTYPE **yy0**
- [Expr](#) \* **yy72**
- [TriggerStep](#) \* **yy145**
- [ExprList](#) \* **yy148**
- [SrcList](#) \* **yy185**
- [ExprSpan](#) **yy190**
- int **yy194**
- [Select](#) \* **yy243**
- [IdList](#) \* **yy254**
- [With](#) \* **yy285**
- struct [TrigEvent](#) **yy332**
- struct [LimitVal](#) **yy354**
- struct {
  - int **value**
  - int **mask**
 } **yy497**

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

- sqlite3.c

**3.183 yyParser Struct Reference**

Collaboration diagram for yyParser:

**Public Attributes**

- [yyStackEntry](#) \* **yytos**
- sqlite3ParserARG\_SDECL [yyStackEntry](#) **yystack** [YYSTACKDEPTH]

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

- sqlite3.c

**3.184 yyStackEntry Struct Reference**

Collaboration diagram for yyStackEntry:

**Public Attributes**

- YYACTIONTYPE **stateno**
- YYCODETYPE **major**
- [YYMINORTYPE](#) **minor**

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

- sqlite3.c



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