SQLite

Nov 18, 2009

http://www.sqlite.org/
http://www.sqlite.org/docs.html
What is it?

SQLite is a software library that implements a self-contained, serverless, zero-configuration, transactional SQL database engine. SQLite is the most widely deployed SQL database engine in the world. The source code for SQLite is in the public domain.

from http://www.sqlite.org/

• What does all that mean?
MySQL vs SQLite
Server vs Serverless

• When to use each?

• Strengths of MySQL

• Strengths of SQLite
SQL

- http://www.sqlite.org/syntaxdiagrams.html
- create-table-stmt

```
CREATE TABLE (column-def) AS select-stmt
```

- column-def:
Command Line

chadd@zeus:~> sqlite3 movies.db

SQLite version 3.6.14
Enter "help" for instructions
Enter SQL statements terminated with a ";;"

sqlite> CREATE TABLE Movies
       (...> (MovieID INTEGER NOT NULL,
       (...> Title TEXT(512) NOT NULL,
       (...> PRIMARY KEY(MovieID) ) ;

sqlite> insert into Movies Values (1, "Star Wars");
sqlite> insert into Movies Values (2, "Empire");
sqlite> select * from Movies;
1|Star Wars
2|Empire

sqlite> .quit
<?php
    if ($db = sqlite_open('database')) {

        $query = sqlite_query($db,
            'SELECT ZoneName, ZoneID FROM ZoneTypes
             WHERE CommissionRate > .7');

        while( $row = $q->sqlite_fetch_array($query)) {
            print $row['ZoneName']. " " . $row['ZoneID'];
        }

        sqlite_close($db);
    }
?>

#include <sqlite3.h>

sqlite3 *psDB;
sqlite3_stmt *psStmt;

sqlite3_open_v2(..., &psDB, ...); // open the DB

sqlite3_prepare_v2(..., &psStmt, ...); // build a Query

sqlite3_bind_int(psStmt, ...); // set a parameter

while ( sqlite3_step(psStmt) == SQLITE_ROW ) // retrieve one row
{
    sqlite3_column_int(psStmt, ...); //retrieve one column
    sqlite3_column_text(psStmt, ...); //retrieve one column

    // do something useful
}

sqlite3_finalize(psStmt);

sqlite3_close(psDB);
Java/Android


```
package android.database.sqlite

Classes | Description

Contains the SQLite database management classes that an application would use to manage its own private database.

more...

Interfaces

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQLiteCursorDriver</td>
<td>A driver for SQLiteCursors that is used to create them and gets notified by the cursors it creates.</td>
</tr>
<tr>
<td>SQLiteDatabase.CursorFactory</td>
<td>Used to allow returning sub-classes of Cursor when calling query.</td>
</tr>
<tr>
<td>SQLiteTransactionListener</td>
<td>A listener for transaction events.</td>
</tr>
</tbody>
</table>

Classes

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<tr>
<td>SQLiteClosable</td>
<td>An object create from a SQLiteDatabase that can be closed.</td>
</tr>
<tr>
<td>SQLiteCursor</td>
<td>A Cursor implementation that exposes results from a query on a SQLiteDatabase.</td>
</tr>
<tr>
<td>SQLiteDatabase</td>
<td>Exposes methods to manage a SQLite database.</td>
</tr>
<tr>
<td>SQLiteOpenHelper</td>
<td>A helper class to manage database creation and version management.</td>
</tr>
<tr>
<td>SQLiteProgram</td>
<td>A base class for compiled SQLite programs.</td>
</tr>
<tr>
<td>SQLiteQuery</td>
<td>A SQLite program that represents a query that reads the resulting rows into a CursorWindow.</td>
</tr>
<tr>
<td>SQLiteQueryBuilder</td>
<td>This is a convience class that helps build SQL queries to be sent to SQLiteDatabase objects.</td>
</tr>
</tbody>
</table>
```
Other DB connection techniques

- Open Database Connectivity
  - ODBC
  - JDBC
  - Each database may have their own set of connectors
  - http://dev.mysql.com/downloads/#drivers-connectors