What is Sqlite?

- Sqlite is a RDBMS
- It is serverless SQL database. It is the one database, which is zero-configured, that means like other database you do not need to configure it in your system.
- SQLite is the most widely used SQL database engine in the world.
- The source code for SQLite is in publicly available
- SQLite is a popular choice as embedded database software for local/client storage in application software
- It is written in C
- It creates a database file on local disk. This file stores all data. This file can be copied to any other machine to access its data.

Why Sqlite is used with different programming language as a backend database?

- SQLite does not require a separate server process or system to operate(serverless).
- SQLite comes with zero-configuration, which means no setup or administration needed.
- A complete SQLite database is stored in a single cross-platform disk file.
- SQLite is very small and light weight, it requires less than 400KB fully configuration
- SQLite is self-contained, which means no external dependencies.
- SQLite transactions are fully ACID-compliant, allowing safe access from multiple processes
- SQLite supports all SQL queries, like Insert,Update,Delete,Select ,Join etc.
- SQLite is written in ANSI-C and provides simple and easy-to-use API.
- SQLite is available on Linux, Android, iOS and Windows .

Programming languages support with Sqlite

- Python
- PHP
- Perl
- Java
- R Programming
- Ruby
- Swift

- C,C++ ,C#

How to install Sqlite3 on windows

1. Download Sqlite3 for windows (**sqlite-shell-win64 or win32**). Source file will contain sqllite3.dll and Sqlite.exe(setup file)
2. Copy sqlite3.dll into ***C:/windows/System32***
3. Copy sqlite3.exe into C: drive
4. Run sqlite3.exe for installation

Import sqlite3 into python (Sqlite3 is compatible with Python)

>>> ***Import sqlite3***

Now you can use sqlite3 with python........................

How to work with sqlite3 database

1. **Create sqlite3 database into RAM.**

   Syntax: sqlite3.connect(:memory:)

   Above statement will opens a connection to the SQLite database file. This will open a database connection to a database that resides in RAM instead of on local disk.

   Example:

   db=sqlite3.connect(:memory:)

   here db is connection object
2. **Create and connect sqlite3 database file on your local disk(Hard Disk)**

   Syntax: sqlite3.connect(localdatabasefile)

   create database file on local disk with path.

   Example:

   db=sqlite3.connect(e:\mydatabase)

   here **mydatabase** file will be created in **E: drive** of your local disk. This file will store your sqlite3 database tables. This file can be copied to other computer also for use.
3. **Create a cursor to perform operation on sqlite3 database.**

   Syntax: connection.cursor()

Example: **cursor=db.cursor()**

Here cursor is opened for **db** connection object.

4. **How to execute queries using cursor**

   Execute method is used to execute query.

Syntax:cursor.execute(“your query”)

Example:

```
cursor.execute('''create table sinfo(sname varchar(10),branch varchar(15),semester varchar(5))''')
```

5. **Save query result**

   Use commit method to save or commit the query result.

   Example: db.commit()

Create Sqlite3 database table using python.

```
import sqlite3                          // import sqlite3  in python file
db = sqlite3.connect(':memory:')  //Create a database in RAM
db = sqlite3.connect('e:\mydatabase')  //Create or opens a file called mydatabse with a SQLite3 Database
cursor = db.cursor()
cursor.execute('''create table sinfo(sname varchar(10),branch varchar(15),semester varchar(5))''')
db.commit()
print 'New Table created...'
```

Insert a record into above created table

```
import sqlite3
db = sqlite3.connect(':memory:')  // Create a database in RAM
db = sqlite3.connect('e:\mydatabase') // Create or opens a file called mydb with a SQLite3 Database
cursor = db.cursor()
name1 ='pvp'
branch1 ='bda'
sem1= 'four'
cursor.execute('''INSERT INTO sinfo VALUES(?,?,?)''', (name1,branch1,sem1))
```

```
db.commit()
print('Student inserted')
```