

Data Science Mastery Series: Python for Data Science

Five Steps to SQLite !

Data Scientist is also expected to have good data skills and when you talk about good data skills we cannot ignore databases can we !!.

SQLite is a widely used lightweight database – used in embedded systems (like with Mobile phones, applications etc.). It is a C-library that implements a fast, self-contained, full-featured SQL database engine.

For our learning course, we will learn how to source data from a database into a DataFrame and then let DataFrame magic continue. We will use a sample database that comes with SQLite for the same. I know this course will be taken by many participants with variety of background – their systems may or may not be powerful enough to run regular enterprise databases like Oracle or SQLServer. So chose a lightweight database system.

1. Installing SQLite – for windows

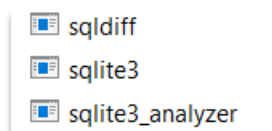
- Open the download page <https://www.sqlite.org/download.html>
- Download precompiled binaries from Windows section (or your platform).

Precompiled Binaries for Windows

sqlite-dll-win32-x86-3290000.zip (474.63 KiB)	32-bit DLL (x86) for SQLite version 3.29.0. (sha1: 00435a36f5e6059287cde2cebb2882669cdba3a5)
sqlite-dll-win64-x64-3290000.zip (788.61 KiB)	64-bit DLL (x64) for SQLite version 3.29.0. (sha1: c88204328d6ee3ff49ca0d58cbbec05243172c3a)
sqlite-tools-win32-x86-3290000.zip (1.71 MiB)	A bundle of command-line tools for managing SQLite database files, including the command-line shell program, the sqldiff.exe program, and the sqlite3_analyzer.exe program. (sha1: f009ff42b8c22886675005e3e57c94d62bca12b3)

The downloaded file is in the ZIP format and its size is quite small.

- Create a new folder name C:\sqlite.
- Second, extract the content of the file that you downloaded in the previous section to the C:\sqlite folder.
- You should see three programs in the C:\sqlite folder as shown below:



2. Working with the Sample Database :

- **Database :** chinook
- **Tables :** There are 11 tables in the chinook sample database

Table Name	Summary / Key column
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employees	<ul style="list-style-type: none"> • Employees data such as employee id, last name etc. • ReportsTo to specify who reports to whom.
Customers	<ul style="list-style-type: none"> • Stores Customers data
Artists	<ul style="list-style-type: none"> • Stores Artist data : id and name
Albums	<ul style="list-style-type: none"> • Stores data about list of tracks • One artist can have many albums
Genres	<ul style="list-style-type: none"> • Stores music types like rock, jazz, metal
Invoices	<ul style="list-style-type: none"> • Invoice data – Header information
Invoice_items	<ul style="list-style-type: none"> • Invoice line items

- Download the Sample db : from the tutorial site.
<https://cdn.sqlitetutorial.net/wp-content/uploads/2018/03/chinook.zip>

sample database file is ZIP format, therefore, you need to extract it to a folder, for example, C:\sqlite\db

You should see a folder named chinook and a database within the folder names chinook.db

3. Starting with SQLite

- Open Command prompt (type cmd in start)
- Navigate to C:\sqlite.

```
c:\sqlite>sqlite3 c:\sqlite\db\chinook\chinook.db
```

```
o sqlite3 c:\sqlite\db\chinook\chinook.db
```

- Next type .tables to see list of tables

```
sqlite> .tables
albums          employees       invoices        playlists
artists         genres         media_types     tracks
customers       invoice_items  playlist_track
sqlite> _
```

Now you should be good to go.

4. Sql Statements : Few examples

- Type select count(*) from artists
 - o Should give you 275 rows
- Type select count(*) from customers
 - o Should give you 59 rows

Sqlite3 shell is good. However if you want a User Interface (GUI) the you can try SQLiteStudio.