SQLite in Visual Studio Code: Detailed Installation & Usage Guide

1. Install the SQLite Extension in VS Code

a. Open Visual Studio Code.
b. Click on the Extensions icon on the left sidebar (or press `Ctrl+Shift+X`).
c. In the search bar, type "SQLite" and look for the extension named **SQLite** by alexcvzz.
d. Click "Install" to add it to your VS Code environment.

2. Create and Configure a SQL File

a. Open a folder or workspace in VS Code where you want to work with SQLite.
b. Create a new file with a `.sql` extension (e.g., `myscript.sql`).
c. Write your SQL code inside this file.

Example SQL Code:

```
CREATE TABLE horses (id INTEGER, breed TEXT);
INSERT INTO horses (id, breed) VALUES (1, 'Arabian');
INSERT INTO horses (id, breed) VALUES (2, 'Quarter Horse');
INSERT INTO horses (id, breed) VALUES (3, 'Thoroughbred');
INSERT INTO horses (id, breed) VALUES (4, 'Clysdale');
SELECT * FROM horses;

ALTER TABLE horses ADD COLUMN rating INTEGER;
UPDATE horses SET rating = 8 WHERE id=4;
SELECT * FROM horses;
```

3. Run SQL Queries in VS Code

a. Right-click anywhere inside the `.sql` file.
b. From the context menu, select **"Run Query"**.
c. The results will appear in a tab called "SQLite" at the bottom or side of the editor.

Note: If no database is connected yet, you'll be prompted to create or open one.

4. Working with SQLite Databases

a. Open the SQLite Explorer from the left sidebar.
b. Click on the "+" icon to open or create a new `.db` file.
c. Once connected, you can browse tables, run queries, and view results.

5. Alternative: Running SQLite in Google Colab

If you prefer running SQL in a notebook format:

a. Use the following Python code in Google Colab:

```
import sqlite3
import pandas as pd

conn = sqlite3.connect(':memory:')
cursor = conn.cursor()

cursor.execute("CREATE TABLE horses (id INTEGER, breed TEXT);")
cursor.execute("INSERT INTO horses (id, breed) VALUES (1, 'Mustang');")
cursor.execute("INSERT INTO horses (id, breed) VALUES (4, 'Clysdale');")

df = pd.read_sql_query("SELECT * FROM horses;", conn)
print(df)
```

Note: - Use triple quotes (`'''`) to define multi-line SQL commands in Colab. - Execute one command at a time to avoid errors.

6. Additional Resources

- The SQLite extension for VS Code: https://marketplace.visualstudio.com/items?itemName=alexcvzz.vscode-sqlite
- SQLite documentation: https://www.sqlite.org/docs.html

Happy querying!

7. Optional: Install SQLite3 Editor by yy0931

Another useful extension for working with SQLite databases is **SQLite3 Editor** by yy0931.

To install:

a. Open the Extensions tab in VS Code (Ctrl+Shift+X).
b. Search for "SQLite3 Editor" by yy0931.
c. Click "Install".

Why Use SQLite3 Editor?

- It provides an **interactive interface** for viewing and editing database tables.
- Allows you to browse databases without writing SQL.
- Lets you **add, edit, and delete** table contents via a spreadsheet-like interface.
- Especially helpful for beginners who want to **visualize data** or debug queries.

How to Use:

1. Open or create an SQLite database file (`.db`) in your workspace.
2. Open the Command Palette (Ctrl+Shift+P) and type `SQLite3 Editor`.
3. Select `SQLite3 Editor: Open Database` and choose your `.db` file.
4. Click on a table to view or edit its contents.

This is a great complement to the main SQLite extension for those who prefer GUI interactions.