IS 456 Database System Management

HOP01A – Preparation

Dec/7/2021 Developed by Wenzhi Xu

School of Technology & Computing (STC)

City University of Seattle (CityU)

Before starting the Exercises:

1. Download the exercise file and the db folder from github and save it on your computer
2. In SQLiteStudio, click on Databases ----add database…and select the **exercise file**…..select the **db** folder, choose the **album** and click ok…do this step to choose **test** and **world**, as well.
3. Click on **SQL editor** on SQLiteStudio.
4. In your computer, go to the **exercise file**, and click on **chapters**, and go to **sql-chap02** (as the first HOP), open the file and follow the command's instructions.

We will review this in the class meeting.

Good Luck 😊

Introduction to SQLite

09/25/2020 Created by Smita Dutta

May/7/2022 Reviewed by Wenzhi Xu

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City University of Seattle (CityU)

Center for Information Assurance (CIAE) @City University of Seattle (CityU)

Before You Start

- The directory path shown in screenshots may be different from yours.
- Some steps might not be explained in the tutorial. If you are not sure what to do:
  - Consult the resources listed below.
  - If you cannot solve the problem after a few tries, ask a TA for help.

Learning Outcomes

- How to work with SQLite Studio
- Download and setting up of SQLite Studio

Resources

- SQLite Studio Documentation: https://sqlitestudio.pl/features/

Working with SQLite Studio

Download and Setup

In order to follow along with the exercises there's a couple of things you'll need to do. You'll need a compatible database system. We will use SQLite in this. SQLite is a simple compact standards-compatible

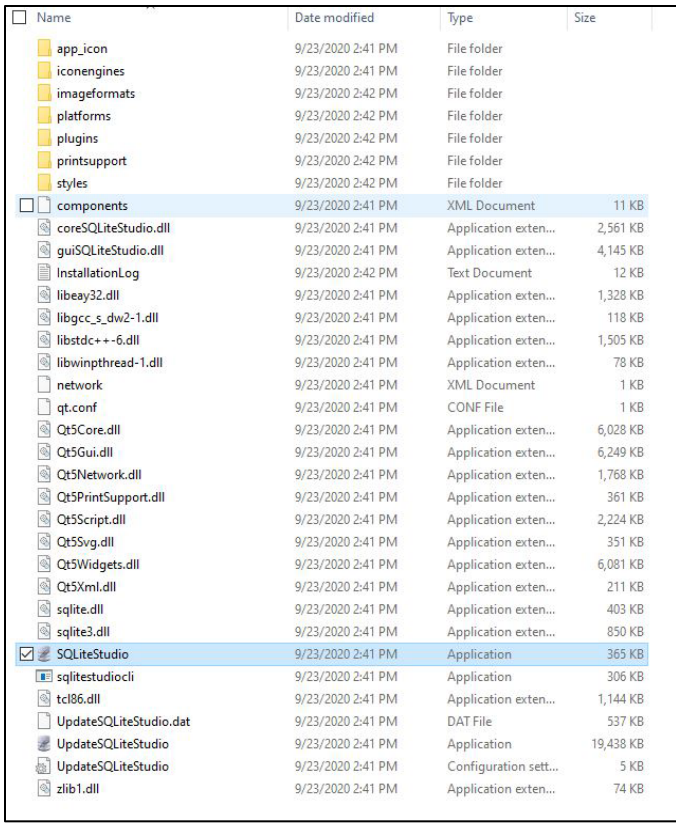
database management system that's easy to install and cross-platform compatible. The SQLite studio package includes the database along with a management environment. You can download it at www.sqlitestudio.pl

Platform	Status	Binaries provided
Windows (32bit)	Supported	Yes
Windows (64bit)	Supported	Yes
Linux (32bit)	Supported	Yes
Linux (64bit)	Supported	Yes
Mac OS X (ix86 64bit)	Supported	Yes
Mac OS X (ix86 32bit)	Not supported	No
Mac OS X (PowerPC)	Not supported	No
FreeBSD	Should work, not tested	No
Solaris	Should work, not tested	No
Other operating system	Not supported	No

You'll also need a plain text editor. A plain text editor is different than a word processor. A word processor is designed for writing documents, and includes a lot of formatting information along with the text. That formatting information will actually interfere with the SQL code in the example files. So, a word processor will not work for this purpose.

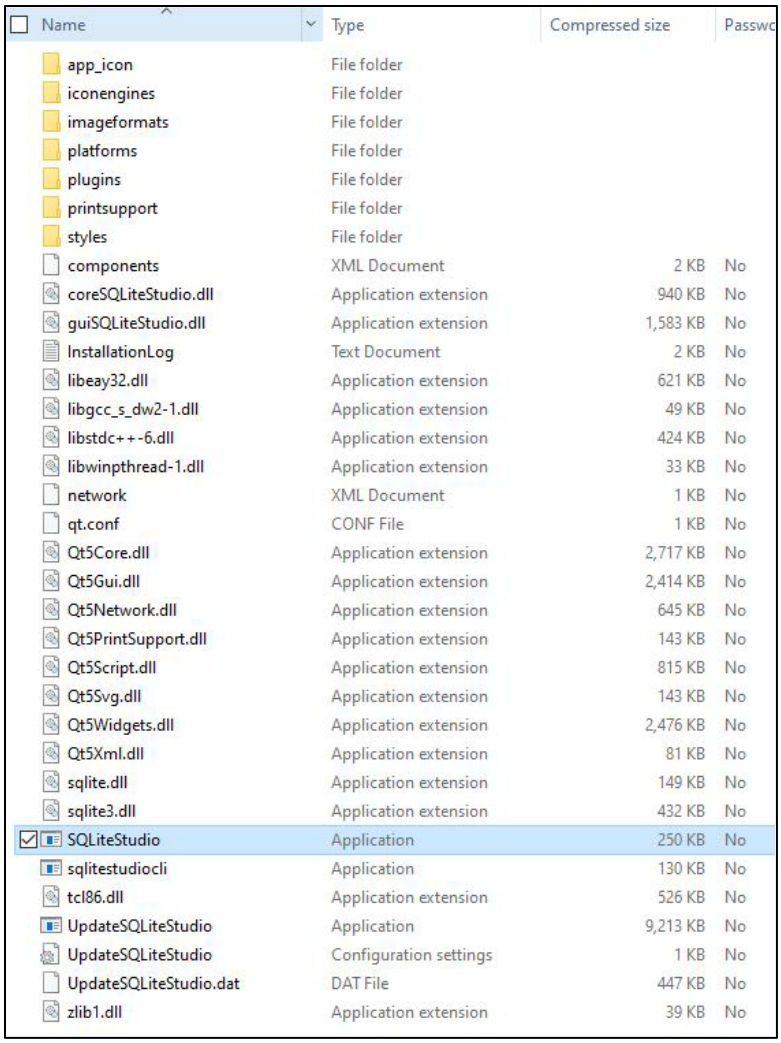
I recommend you to install Visual Studio Code to support your work. Please follow this link https://cityuseattle.github.io/docs/tools/vscode/ to install it.

After downloading SQLite Studio from the link, go ahead and double-click on the installer, and select Next, Welcome to the Setup Wizard, select Next, and accept all of the defaults. We're going to register these file extensions, and create a Start menu entry.



Name	Date modified	Type	Size
app_icon	9/23/2020 2:41 PM	File folder	
iconengines	9/23/2020 2:41 PM	File folder	
imageformats	9/23/2020 2:42 PM	File folder	
platforms	9/23/2020 2:42 PM	File folder	
plugins	9/23/2020 2:42 PM	File folder	
printsupport	9/23/2020 2:42 PM	File folder	
styles	9/23/2020 2:42 PM	File folder	
components	9/23/2020 2:41 PM	XML Document	11 KB
coreSQLiteStudio.dll	9/23/2020 2:41 PM	Application exten...	2,561 KB
guiSQLiteStudio.dll	9/23/2020 2:41 PM	Application exten...	4,145 KB
InstallationLog	9/23/2020 2:42 PM	Text Document	12 KB
libeay32.dll	9/23/2020 2:41 PM	Application exten...	1,328 KB
libgcc_s_dw2-1.dll	9/23/2020 2:41 PM	Application exten...	118 KB
libstdc++-6.dll	9/23/2020 2:41 PM	Application exten...	1,505 KB
libwinpthread-1.dll	9/23/2020 2:41 PM	Application exten...	78 KB
network	9/23/2020 2:41 PM	XML Document	1 KB
qt.conf	9/23/2020 2:41 PM	CONF File	1 KB
Qt5Core.dll	9/23/2020 2:41 PM	Application exten...	6,028 KB
Qt5Gui.dll	9/23/2020 2:41 PM	Application exten...	6,249 KB
Qt5Network.dll	9/23/2020 2:41 PM	Application exten...	1,768 KB
Qt5PrintSupport.dll	9/23/2020 2:41 PM	Application exten...	361 KB
Qt5Script.dll	9/23/2020 2:41 PM	Application exten...	2,224 KB
Qt5Svg.dll	9/23/2020 2:41 PM	Application exten...	351 KB
Qt5Widgets.dll	9/23/2020 2:41 PM	Application exten...	6,081 KB
Qt5Xml.dll	9/23/2020 2:41 PM	Application exten...	211 KB
sqlite.dll	9/23/2020 2:41 PM	Application exten...	403 KB
sqlite3.dll	9/23/2020 2:41 PM	Application exten...	850 KB
SQLiteStudio	9/23/2020 2:41 PM	Application	365 KB
sqlitestudiocli	9/23/2020 2:41 PM	Application	306 KB
tcl86.dll	9/23/2020 2:41 PM	Application exten...	1,144 KB
UpdateSQLiteStudio.dat	9/23/2020 2:41 PM	DAT File	537 KB
UpdateSQLiteStudio	9/23/2020 2:41 PM	Application	19,438 KB
UpdateSQLiteStudio	9/23/2020 2:41 PM	Configuration sett...	5 KB
zlib1.dll	9/23/2020 2:41 PM	Application exten...	74 KB

For Windows users:



Name	Type	Compressed size	Passwo
app_icon	File folder		
iconengines	File folder		
imageformats	File folder		
platforms	File folder		
plugins	File folder		
printsupport	File folder		
styles	File folder		
components	XML Document	2 KB	No
coreSQLiteStudio.dll	Application extension	940 KB	No
guiSQLiteStudio.dll	Application extension	1,583 KB	No
InstallationLog	Text Document	2 KB	No
libeay32.dll	Application extension	621 KB	No
libgcc_s_dw2-1.dll	Application extension	49 KB	No
libstdc++-6.dll	Application extension	424 KB	No
libwinpthread-1.dll	Application extension	33 KB	No
network	XML Document	1 KB	No
qt.conf	CONF File	1 KB	No
Qt5Core.dll	Application extension	2,717 KB	No
Qt5Gui.dll	Application extension	2,414 KB	No
Qt5Network.dll	Application extension	645 KB	No
Qt5PrintSupport.dll	Application extension	143 KB	No
Qt5Script.dll	Application extension	815 KB	No
Qt5Svg.dll	Application extension	143 KB	No
Qt5Widgets.dll	Application extension	2,476 KB	No
Qt5Xml.dll	Application extension	81 KB	No
sqlite.dll	Application extension	149 KB	No
sqlite3.dll	Application extension	432 KB	No
SQLiteStudio	Application	250 KB	No
sqlitestudiocli	Application	130 KB	No
tcl86.dll	Application extension	526 KB	No
UpdateSQLiteStudio	Application	9,213 KB	No
UpdateSQLiteStudio	Configuration settings	1 KB	No
UpdateSQLiteStudio.dat	DAT File	447 KB	No
zlib1.dll	Application extension	39 KB	No

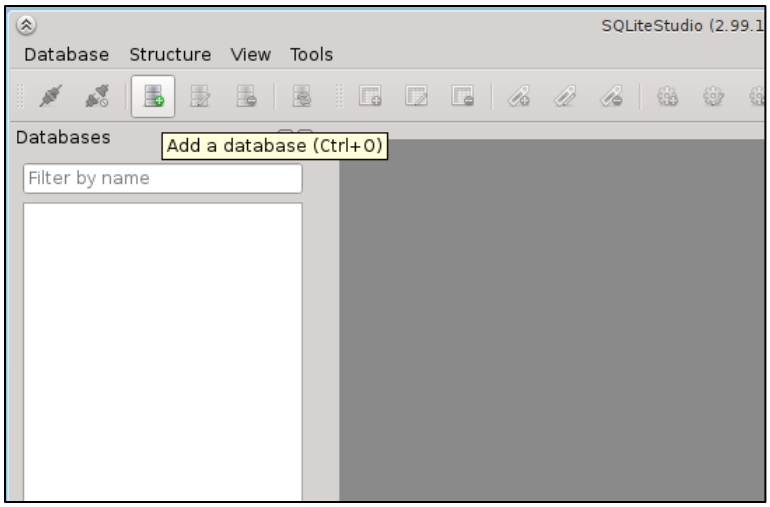
If you see the following pictures, double click the high-lighted SQLite Studio and follow the two images.

Double click on that and select the language. It's basically installing the entire package and we may not need all of these bits but none of them take up much space and it doesn't really hurt us. So, we're just going to accept all of the defaults, and select Next. Now it says it's ready, and so we'll select Install. If you get the User Account Control dialog, select Yes. Run it and select Finish. Choose a language, and there we have it.

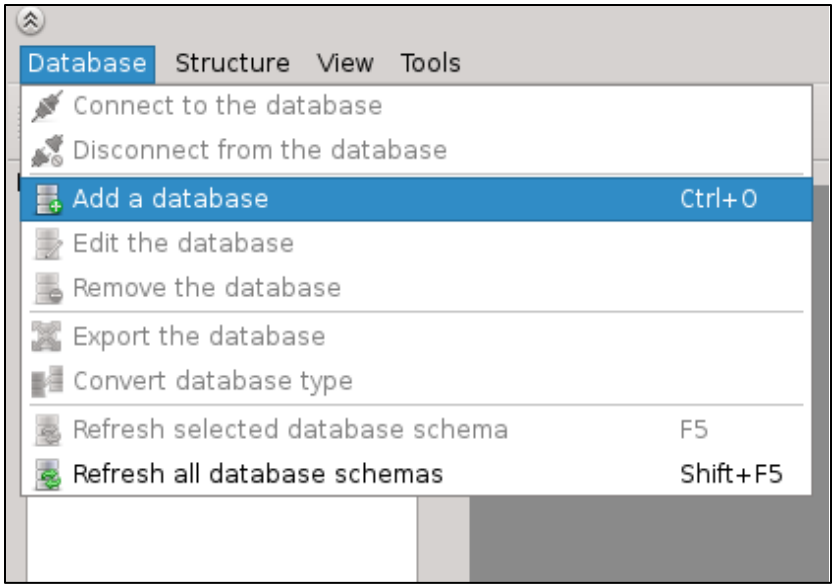
Creating new database

You can create new database by following the instructions:

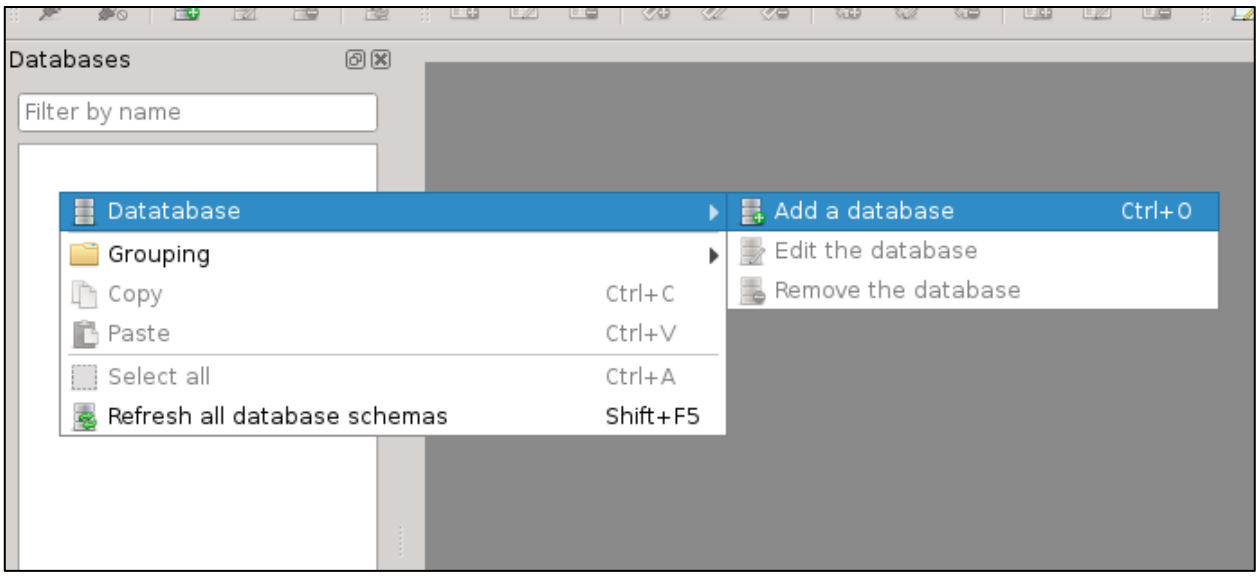
1. Click on toolbar button:



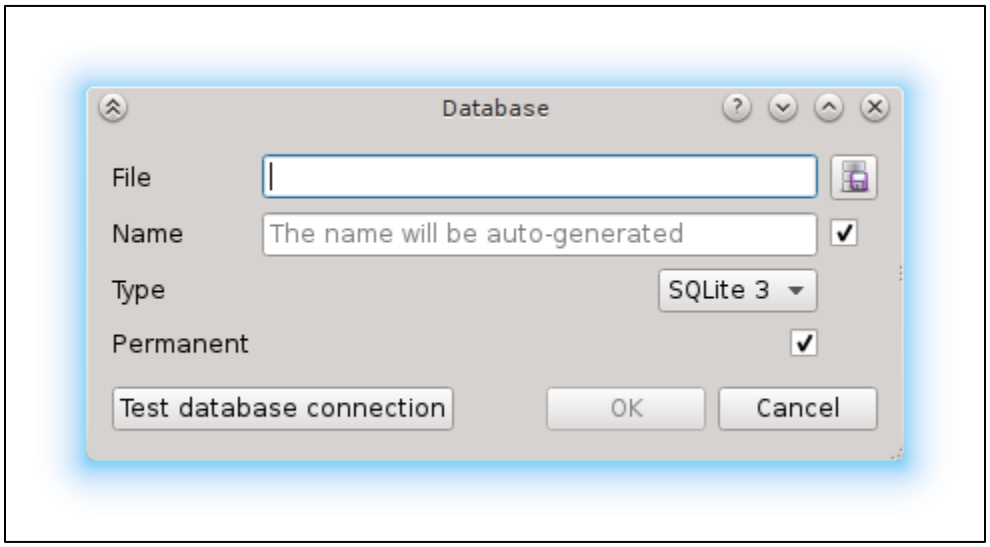
2. Click on main menu entry:



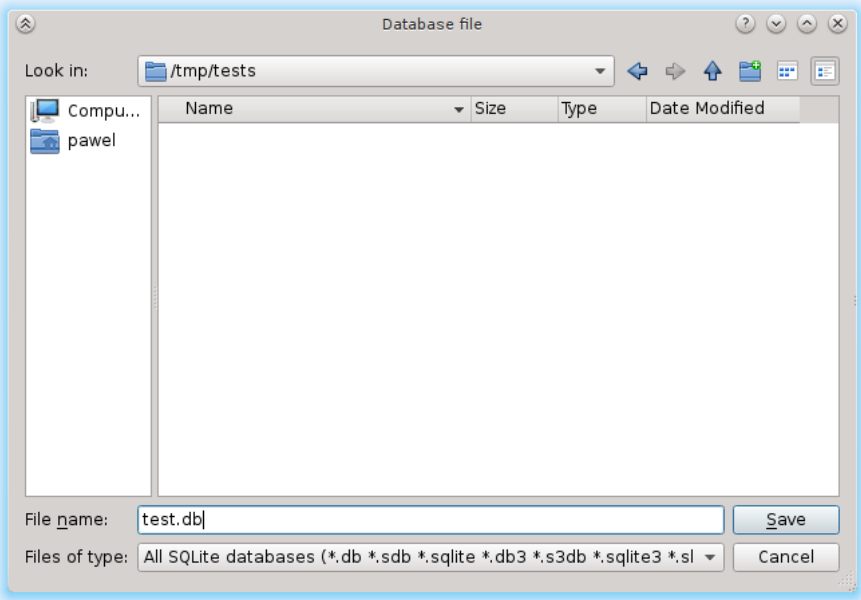
3. Right-click on database list and pick entry from context menu:

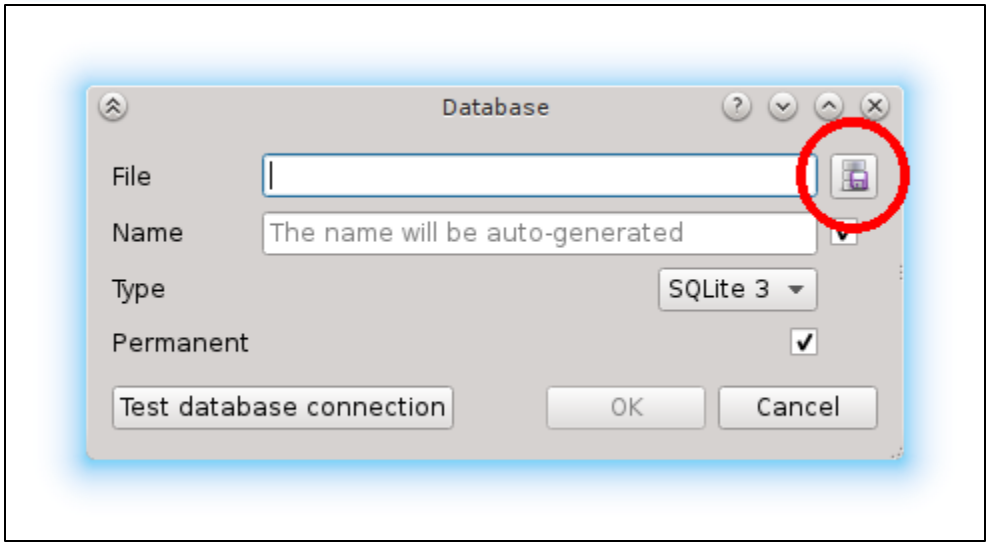
4. 

Then the database dialog will appear:



Click on the browse button:



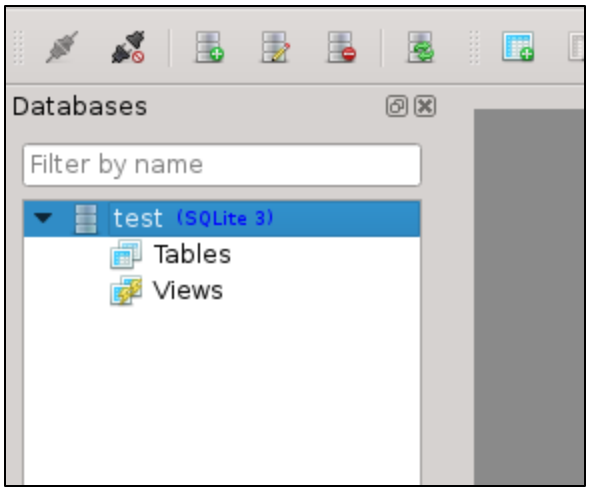


You will see filesystem browsing dialog (this may look different on various operating systems):

In this dialog go to directory where you want to create your database and type in the file name for your database (on the image above it's "test.db"). Click "Save". Now the database dialog has file name and database name filled in. You can change the name to whatever you want (in which case you have to disable the checkbox on the right hand side), or just leave it as it is.

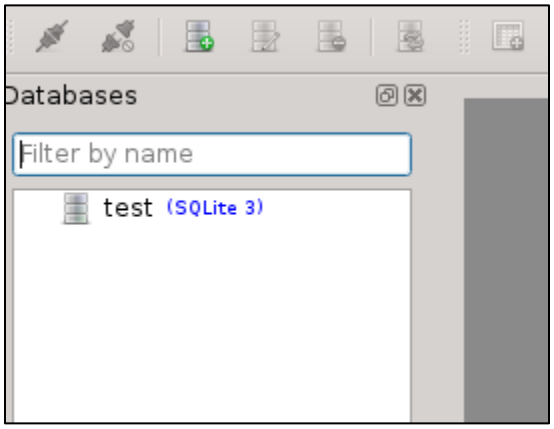
The database name is just symbolic name, an alias used by SQLiteStudio to present database in the list. You can pick any name you want, it just has be unique in context of databases already added to SQLiteStudio.

You can press "Test connection" to make sure that your database file can be created in specified localisation (in regards of directory permissions, free space, etc). If everything is okay, than you will see green icon next to it:

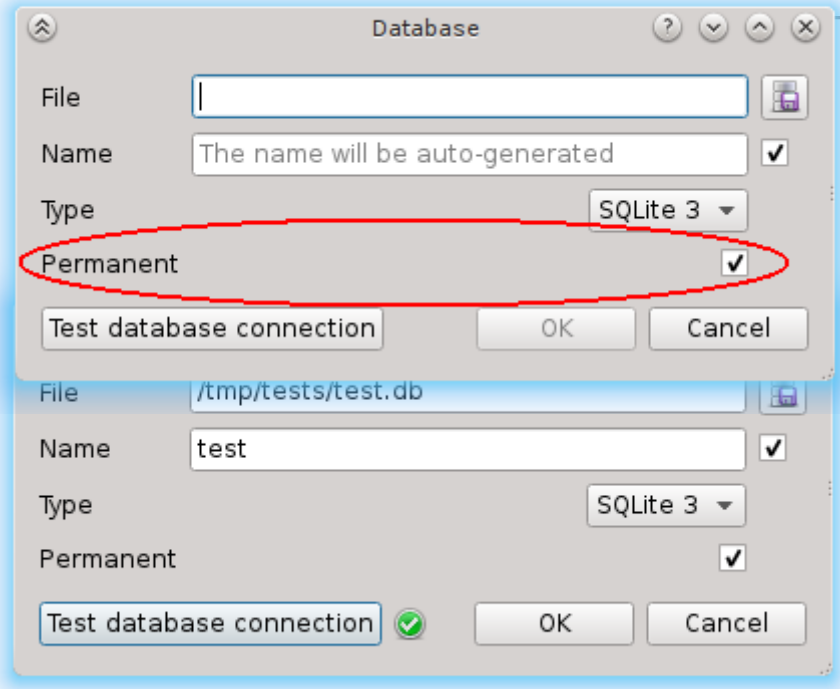


If there was any problem, the red icon will appear.

You can now press "Ok" to create the database. You will see it in the databases list on the left:



Double-click to open it:



Permanent vs transient database

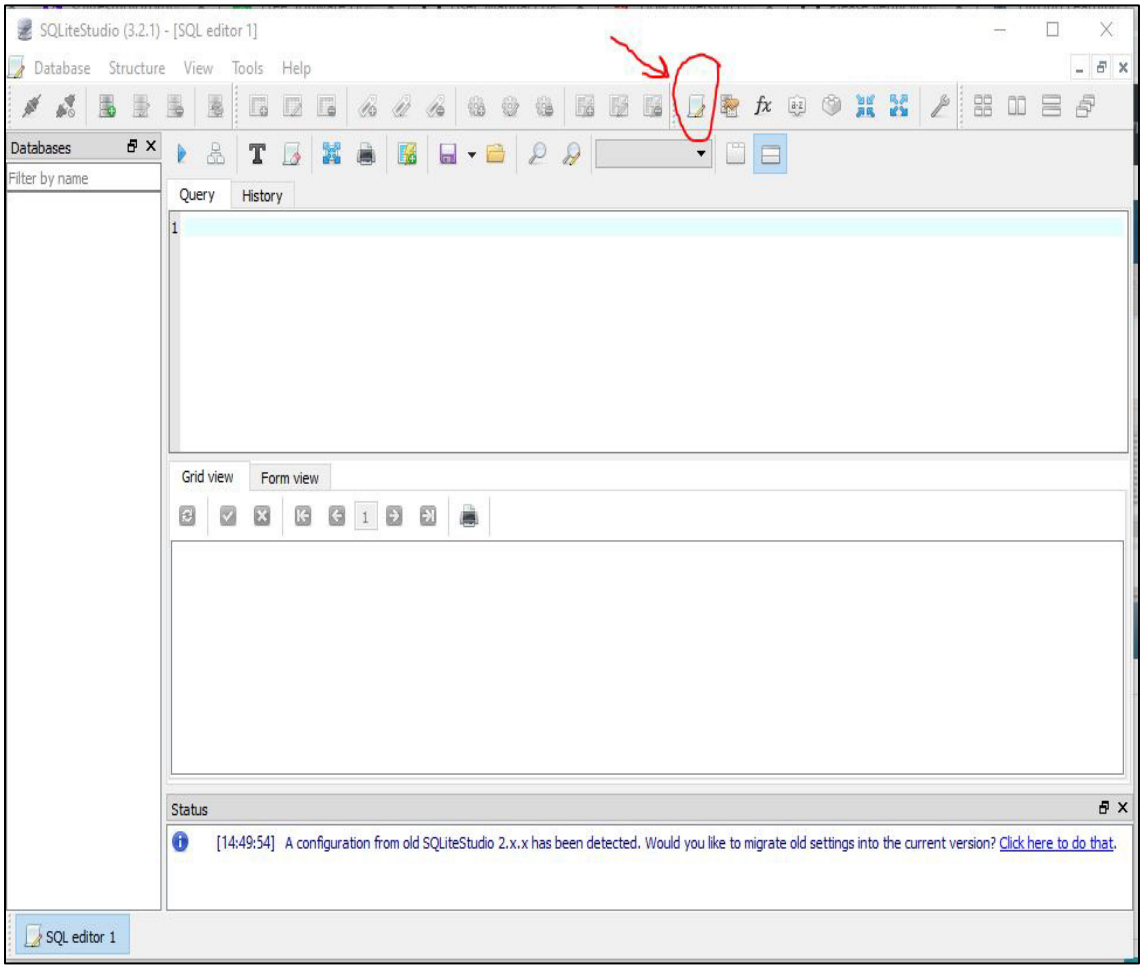
You may have noticed the "Permanent" check in the database dialog:

When this option is checked, then the database is added permanently to SQLiteStudio. This means that when you close SQLiteStudio and start it again, the database will remain on the list.

If this option is not checked, then the databases will disappear from the list after SQLiteStudio was restarted.

Now SQLite Studio has many capabilities for working with tables and databases with SQLite. For our purposes we're going to be using the SQL editor. Select the SQL editor or use the Alt + E key to open it by pressing on that icon there that looks like a piece of paper with a pencil.

In SQLite Studio, go to Tools, Open configuration dialog. And under Look & Feel here, and in Fonts, you can adjust the font size or color, but I recommend to not change if it is not necessary.



And this will allow us to type SQL directly into the management system here and execute that SQL in the database system.