SCC201 Databases: *Using SQLite*

SQLite is a server-less Relational DBMS, which means there's no need to go through an installation process, you just have to run one relatively small program that does everything.

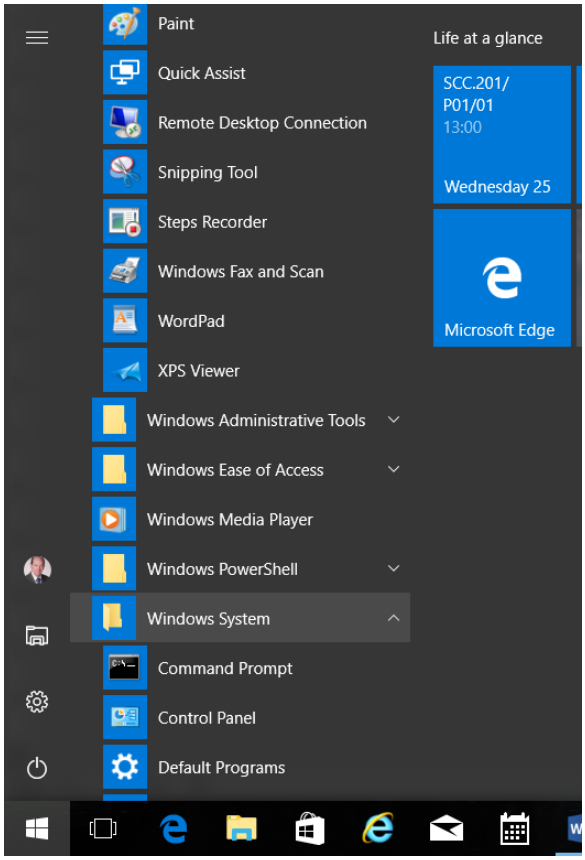
Running SQLite

You should find a link to the *sqlite3.exe* executable on the Moodle page along with links to comprehensive documentation. You are advised to create a new directory/ folder for your databases and download the sqlite3 executable into this directory.

Once you've downloaded a copy of the executable you can run it from a *Command Prompt* window.

The Command Prompt

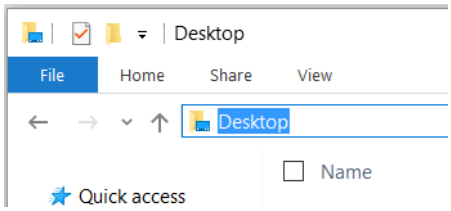
If a link to the Command Prompt isn't on your toolbar you should be able to find it under Windows System: Click on the Windows icon at the bottom left of the screen and scroll down to, and click on, Windows System as shown below:



Navigating the filesystem

Within the Command Prompt you can navigate to folders/ directories using the path and the cd (change directory) command, for example, *cd C:\Users\Andrew\OneDrive\Documents*

If you don't know the path for a folder, click on the icon at the left of the address bar (see below) and the full path should be displayed – simply copy this with *Ctrl-C* and then paste it into the *Command Prompt* window by right clicking in the window.



SQLite

SQL is started by simply typing:

```
sqlite3.exe myDatabase.db
```

Where *myDatabase.db* is the name of the database we want to query. Once running you should be able to issue SQL statements. SQLite commands that are not part of SQL start with a dot, for example, to quit SQLite type:

```
.quit
```

To avoid having to repeatedly type lots of SQL statements it is easier to develop your solutions in a text file and run SQLite in *batch* mode. For example, to run a set of SQL queries in a text file called *myQueries.sql* and get the results in a file called *results.txt* you could use the command:

```
sqlite3.exe myDatabase.db < myQueries.sql > results.txt
```

While the file extensions .db, .sql, and .txt aren't strictly necessary, following this convention can really help when you have a few databases, query sets, etc. in the same folder.

Don't forget to have .quit as the last line of your file containing the SQL queries.

Formatting SQL output

By default, the output from SQL queries is unformatted and can be difficult to read. To tidy up the output you can use the SQLite commands:

```
.mode column
.header on
```

We recommend that you get into the habit of including these lines at the start of each file containing a set of queries. You can set the default column width with:

```
.width 10
```

…or specify the width of each column individually with, for example:

```
.width 10, 20, 10
```