University of Windsor

School of Computer Science
Faculty of Science
COMP-3150: Database Management System (Fall 2022)

Lab#	Date	Title	Due Date	Grade Release Date
Lab1	Week 01	**Setup and Project Specification**	One-Week Lab September 21, 2022, Wednesday Midnight EDT	September 26, 2022

The objectives of the first lab are to set up the working environment, specifically to have SQLite installed and functioning on your desktop or laptop computer. In addition, you will be working on the specification of the project that you will be gradually completing throughout this term.

Step 1. Environment Setup

To avoid the heavy need for setting up the environment to deal with backend databases, we will use SQLite in this course. SQLite is a lightweight database system that has the advantage of requiring almost no setup. You just download a binary and work it like most other scripting languages. Using this, you'll be able to learn SQL databases without having to deal with the details of administering a database server.

Installing SQLite3 is easy:
- Either go to the download page at www.sqlite.org/download.html and grab the binary for your platform. Look for *"Precompiled Binaries for X"* with X being your operating system of choice.
- Or use your operating system's package manager to install it. If you're on Linux, then you know what that means. If you're on OSX then first go get a package manager and then use it to install SQLite.

When you've got it installed, make sure you can start up a command line and run it. Here's a quick test:

```
$ sqlite3 Test.db
SQLite version 3.8.5 2014-08-15 22:37:57
Enter ".help" for instructions
sqlite>
```

Then look to see that the Test.db file is there right next to where your sqlite3 files are in the directory structure or in the directory you run the sqlite3 program:

```
$ ls
sqldiff.exe  sqlite3.exe  sqlite3_analyzer.exe  Test.db
```

Enter SQL statements terminated with a ";"

```
sqlite> CREATE TABLE TestTable(Id);
sqlite> .quit
```

If that works, then you're all set. If you need a step-by-step guide for installing SQLite, the following link would be ideal for you: http://www.tutorialspoint.com/sqlite/sqlite_installation.htm

Step 2. Project Specification

In this course, we will be working gradually through one project that will be completed in each lab and will be finalized by the end of the term. The beauty of this approach is that you will have a chance to experience most of the course material put into practice and see your own development skills put to use.

As a part of the first lab, you will need to decide what project you would like to work on and come up with a concrete and precise description of the project. Of course, many of the minute details of the project will be finalized in the various steps of the course as you learn and master the technology. However, at this point, we will be clearly defining what the project will produce and what is used for in practice.

I will be defining a *sample* project here as a guideline for you. It is expected that your project will be in the same size in terms of complexity and size.

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What? My objective is to build an application that maintains a database of movies. My application stores information related to a movie, including who the director is, in which year it was built, where it was filmed, who the actors are and other pertinent information to the movie.

Why? I have a passion for movies so I would like to be able to track which movies I have watched so far, what I thought about them, what were the memorable moments of each movie for me and also to be able to provide my own ranking to each movie. I think such a movie collection system will help me organize all the information I have about movies into one unified environment that I can use to later share with my friends.

Use Case? Once I have built this movie database, I would like to (1) store, (2) update, or (3) delete information about movies, directors, actors and actresses, my reviews, etc. I would also like to (4) retrieve many forms of information from the database, including answers to questions such as:

- *How many movies did I watch in a certain year or certain month of a year?*
- *What were the highest-rated movies or lowest-rated movies that I watched?*
- *Who were the actors in the movies that I really enjoyed?*
- *...*
"

The description should be at least 500 words long including a list of <u>at least 10 queries</u> that your system will answer after it is built. <u>Overly short descriptions (less than 400 words) will receive 0.</u>

Final Step. Deliverables

You should complete the steps described above and submit the following items in one single `zip` file `Lab1_uwinid.zip`:

- (90%) `Lab1_uwinid.zip`
  - (20%) `Test.jpg` → Screenshot of the SQLite installed with the `Test.db` file created and shown.

  - (70%) `Report.pdf` → Lab report including your name, student id, and project description.

  - (Optional) `ReadMe.txt` → Optional additional information that helps lab instructor or grader to evaluate.

- (10%) Files Naming and Formats

<u>Please follow the naming convention as you lose marks otherwise.</u> Instead of `uwinid`, use your own account name, e.g., mine is hfani@uwindsor.ca, so, `Lab1_hfani.zip`