Lab 1 – Setup and Project Specification

This is a one-week lab

The objectives of the first lab will be for you to setup the working environment, specifically to have SQLite installed and functioning on your local drive in the lab or on your own 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

In order 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 complete 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 (http://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, then make sure you can start up a command line and run it. Here's a quick test for you to try:

$ sqlite3 test.db

SQLite version 3.8.5 2014-08-15 22:37:57

Enter ".help" for instructions

Enter SQL statements terminated with a ";"

sqlite> create table test (id);

sqlite> .quit

Then look to see that the test.db file is there right next to where your sqlite3 file is in the directory structure. 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, much 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 the same size in terms of complexity and size.

My objective is to build an application that maintains a database of movies and director information. I would like my application to be able to store all information related to a movie including the information about 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.

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 to also 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.

Once I have built this movie database, I would like to be able retrieve many forms of information from the database. This would include answer 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 of the movies that I really enjoyed?
* Where there actors that appeared in all the movies that I really liked or disliked?

**Deliverables**

You should complete the two steps described above. Then, you will prepare and submit the results in one single zip file (**YourName\_Lab1.zip**) containing the following two items:

* A screenshot of the SQLite application installed on your or lab machine with the test.db file created and shown.
* A lab report document: The lab report should be prepared using a word processor, and should be stored as a single PDF file. This PDF document should be named as follows: **YourName\_Lab1\_Report.pdf**. This is what should be included in your pdf file:

1. Your name and student number
2. The description of the project that you will be working on this term. The description should be approximately 500 words long. Overly short descriptions (less than 400 words) will not receive marks.
3. A list of queries that you would like your system to be able to answer after it is built. I have listed 4 sample queries; you will need to include at least 10 queries in your report.