

**CMPSC 380**  
**Principles of Database Systems**  
**Fall 2016**

**In class participation: SQL Query Practice For Exam 1**

## 1 Introductions

In efforts to get ready for the up-and-coming exam on Friday, we will spend some time to practice some query programming skill over our local database. You are to work with one partner, and to respond to the below queries to answer each question. Each person of the pair is to hand his or her own copy of their work via Bitbucket as noted in Section 2. Remember, these queries will help you to study for the exam. It is therefore important that you complete this participation. Please ask the instructor if you have any questions during your work.

Begin by setting up your database from the file, *setupDB-ii.txt* which contains all tables and data. Your command to create the database is the following,

```
cat setupDB-ii.txt | sqlite3 campus-ii.sqlite3
```

You may use sqlite3 or the SqlBrowser graphical user database to complete this task. Be sure to keep a copy of all queries for your deliverable, noted in Section 2.

## 2 Summary of the Required Deliverables

This activity invites you to submit an electronic version of the following deliverables through Bitbucket. Please create a subdirectory in your “cs380f2016-studentID” directory called “Class-Activity3\_4Oct”. Please also submit one lab response each member of your group of two people. Finally, do not forget to add your name and that of your partner to your typed-up submission which is preferably, written in L<sup>A</sup>T<sub>E</sub>X.

## 3 Submission Materials

### 3.1 Discussion Questions

You are to submit the following typed-up work.

1. A brief reflection of some of the general challenges that you encountered when writing your queries to answer the questions. How could these challenges be avoided during your next query-writing activity?
2. The numbered questions and their SQL queries that you implemented.
3. The output from the queries and a very short justification about why the query is correct, if this is not obvious from the query itself.

### 3.2 Query Questions

1. What are the tables of the database?
2. What is the schema of the database?
3. What courses are listed in both the **department** and **course** tables?
4. List all the instructors and the students with whom they are working.
5. List all the instructors, their departments and the students with whom they are working.
6. Make a view table (called, **iSViewTable**) of the instructors, their departments and the students with whom they are working.
7. Drop this new view table (called, **iSViewTable**).
8. Find the records associated with only the *CS* classes in the **teaches** table.
9. Find the records associated with only the English classes in the **teaches** table.
10. Find the years associated with only the Math classes in the **teaches** table.
11. Find the sections, semesters and years associated with only the CS 1xx classes in the **teaches** table.
12. Find the distinct semesters of all CS 2xx classes.
13. Determine what class “Watson” is currently teaching. Display her salary and department in your output.
14. Determine who are the instructors who have salaries above \$100000.
15. In a single query, determine the department name and its average salaries or each department in the **instructor** table.
16. Select the names, departments and salaries of instructors who have higher salaries than the department averages.
17. In the **student** table, update the studentID of “Beuller” who just graduated. His new ID is “XS5”.
18. The biology instructor “Maximillian” just got a promotion, a new department and a name change. In one query, change his salary to “1000000”, his name to MaxiMillion”, and his new department to “Psychology”.
19. Professor Jenkins just got a promotion. His new salary is \$103000. Update the instructor table to reflect this new information.
20. Select the records of *MaxiMillion* or *Jenkins* to show that their updates have been made.