**CS 33007 Introduction to Database System Design, Spring 2020**

**Homework2**

**Total Points: 80**

**Deadline: February 19th, Wednesday, 11:59 PM**

**Supporting materials:**

S1. We have not discussed ‘limit’ in the class. For some of the queries, you might find ‘limit’ useful. The ‘limit’ allows you to control the number of records to be returned from the result of a query.

Select \* from instructor

//The above query is to get all the records from the instructor table. If you add limit as shown below then you will see only the top two records from the result of the query.

Select \* from instructor limit 2

S2. <https://www.w3schools.com/sql/sql_foreignkey.asp>

……………………………………………Questions……………………… ……………………

1. Submit the DDL queries for the followings,
   1. You need to create a movie database. Then create three tables, one for actors(AID, name), one for movies(MID, title) and one for actor\_role(MID, AID, rolename). Use appropriate data types for each of the attributes, and add appropriate primary. **Do not add any foreign key constraints when you are creating the table.** **10 points**
   2. Now modify the schemas as follow, **10 points**
      1. Add a new column called “rating” in the movies table. The rating is a numerical value.
      2. Add the necessary foreign key references. [examples queries can be found in S2]
2. Write the DQL queries on the university database that you have created on your computer for the following sentences,
   1. Find the names of instructors with the salary between 70000 and 100000. **5 points**
   2. Find All departments with the budget greater than the budget of the Physics *department*. **5 points**
   3. Find the instructors with exactly four characters in their names. **5 Points**
   4. Find the ID and name of the instructor with the highest salary **5 Points**
   5. Find the ID and name of the instructor who has the highest salary in the Department of Computer Science. **5 Points**
   6. In the university database, each course section is associated with a classroom number. So, each classroom is assigned multiple times for multiple courses over the years. Find the number of courses scheduled in a room each year. **5 Points**
   7. From the answer to the previous question, can you find the classroom with the highest schedules over the years? Also, show the year. **5 Points**
   8. Find the ***ID*** of the instructors who have taught at least two courses. **5 Points**
   9. Find the ***ID and name*** of the instructors who have taught at least two courses. **5 Points**
3. Write the DML queries for the following questions
   1. Insert at least two records in the *takes* table. Display the *takes* table before and after the insertions.  **5 points**
   2. Update the budget of the Music department by 10%. Show the department table before and after the update.  **5 points**
   3. Delete the classrooms with the capacity less than 15. Show the classroom table before and after the deletion. **5 points**