CSCD 327 Lab #1 (14 points)
Due: 11:59pm on October 1st, 2020

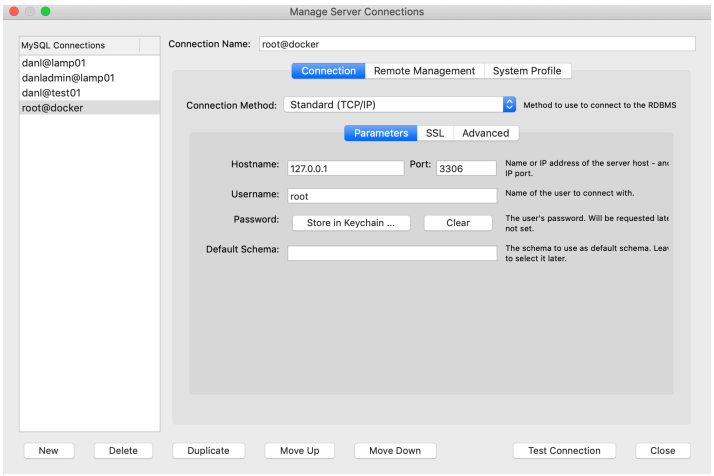
Section 1 - Basic Concepts:

1. (2 points)
   a. Explain the following terms in the context of the relational data model.
      - Relation
      - Attribute
      - Domain
      - Tuple
      - Degree
      - Cardinality
   b. Use Employee-Department database from Appendix 1 (at the end of this handout) to provide examples of each term.

2. (2 points)
   a. Explain the following terms in the context of the relational data model.
      - Candidate Key
      - Primary Key
      - Foreign Key
   b. Use the Employee-Department database from Appendix 1 to provide examples of each term.

Section 2 - Warm-up Exercise:

Open up ***MySQL Workbench***, create a new connection, and fill in the form with the correct hostname, username, password, etc. You may want to save the connection for future use.



DB Host: 127.0.0.1 (that's your local host IP address)
DB Username: root (unless you have created other users)
DB Password: the one you've changed when setting up the environment (don't ask me!)
Port: 3306 (the default number)

Create your first database named as ddlExercise:

create database ddlExercise;

Once you have the database created, you need to select this database to make sure the following operations will be applied to this database.

3. (1 point) Use appropriate DDL to create a new table containing the category code and description for the categories of books sold by a bookstore. The table should be called *CATEGORY*, and the columns should be *CatCode* and *CatDesc*. The *CatCode* column should store a maximum of 2 characters, and the *CatDesc* column should store a maximum of 10 characters. **(Include your DDL statements in your submission.)**
4. (1 point) Use appropriate DDL to create a new table containing these four columns: *Emp_num*, *Lastname*, *Firstname*, and *Job_class*. The table name should be *EMPLOYEES*. The *Job_class* column should be able to store character strings up to a maximum lenth of four. The *Emp_num* column contains a numeric ID and should allow a five-digit number. Use column sizes you consider suitable for the *Firstname* and *Lastname* columns. **(Include your DDL statements in your submission.)**
5. (1 point) Use appropriate DDL to add two columns to the *EMPLOYEES* table. One column, named *EmpDate*, contains the date of employment for each employee. The second column, named *EndDate*, contains employees' date of termination. **(Include your DDL statements in your submission.)**
6. (1 point) Use appropriate DDL to modify the *Job_class* column of the *EMPLOYEES* table so that it allows storing a maximum width of two characters. **(Include your DDL statements in your submission.)**
7. (1 point) Use appropriate DDL to delete the *EndDate* column from the *EMPLOYEES* table. **(Include your DDL statements in your submission.)**
8. (1 point) Use appropriate DDL to rename the *EMPLOYEES* table as *JL_EMPS*. **(Include your DDL statements in your submission.)**

Section 3 – More Exercises:

Create a new database named as *employeeDB*:

create database *employeeDB*;

9. (2 points) Use appropriate DDL to create two new tables *EMP* and *DEPT*. Please make sure to choose appropriate data type for each attribute, and **also add a primary key to each table**. **(Include your DDL statements in your submission.)**
10. (1 point) Now you are ready to add new tuples into your tables.
    a. Insert all 14 tuples listed in Appendix 1 into *EMP* table.

b. Insert all 4 tuples lisetd in Appendix 1 into *DETP* table.
c. **Include the screen copies of these two tables in your submission after you have successfully added the tuples.**

Section 4 – Get Ready for Future:

11. (1 point) Let's create four more databases and tables for future use. Name these four databases as *salesDB*, *booksDB*, *universityDB*, and *productsDB*. Now import four databases from the script files posted on Canvas:
    a. Import ***salesDB.sql*** file into ***salesDB***. Five tables will be added to your ***salesDB*** database (you can either copy the contents of the script file to the SQL editor and then execute the script, or you can use "Data Import" from "Server" menu).
    b. Import ***booksDB.sql*** file into ***booksDB***. Eight tables will be added to your ***booksDB*** database (you can either copy the contents of the script file to the SQL editor and then execute the script, or you can use "Data Import" from "Server" menu).
    c. Import ***universityDB.sql*** file into ***universityDB***. Eleven tables will be added to your ***universityDB*** database (you can either copy the contents of the script file to the SQL editor and then execute the script, or you can use "Data Import" from "Server" menu).
    d. Import ***productsDB.sql*** file into ***productsDB***. Seven tables will be added to your ***productsDB*** database (you can either copy the contents of the script file to the SQL editor and then execute the script, or you can use "Data Import" from "Server" menu).
    e. **Include the screen copies of the above four databases in your submission after you have successfully imported the data.**

Appendix 1

Employee - Department Database

EMP

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	1980-12-17	800		20
7499	ALLEN	SALESMAN	7698	1981-02-20	1600	300	30
7521	WARD	SALESMAN	7698	1981-02-22	1250	500	30
7566	JONES	MANAGER	7839	1981-04-02	2975		20
7654	MARTIN	SALESMAN	7698	1981-09-28	1250	1400	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850		30
7782	CLARK	MANAGER	7839	1981-06-09	2450		10
7788	SCOTT	ANALYST	7566	1982-12-09	3000		20
7839	KING	PRESIDENT		1981-11-17	5000		10
7844	TURNER	SALESMAN	7698	1981-09-08	1500	0	30
7876	ADAMS	CLERK	7788	1983-01-12	1100		20
7900	JAMES	CLERK	7698	1981-12-03	950		30
7902	FORD	ANALYST	7566	1981-12-03	3000		20
7934	MILLER	CLERK	7782	1982-01-23	1300		10

DEPT

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON