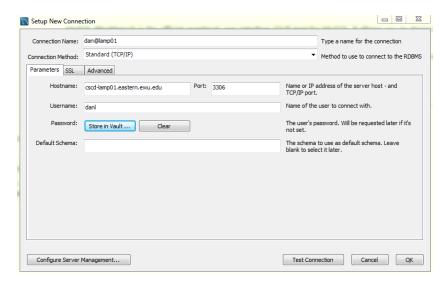# CSCD 327 Lab #1 (16 points)

Section 1 - Basic Concepts:

1. (3 points)
   a. Explain the following terms in the context of the relational data model. Use Employee-Department database from Appendix 1 (at the end of this handout) to provide examples of each term.
      - Relation
      - Attribute
      - Domain
      - Tuple
      - Degree
      - Cardinality

2. (3 points)
   a. Explain the following terms in the context of the relational data model. Use the Employee-Department database from Appendix 1 to provide examples of each term.
      - Candidate Key
      - Primary Key
      - Foreign Key

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: cscd-lamp01.eastern.ewu.edu

DB Username: w19*YourLastName* (all in lower case)

DB Password: 1234

Port: 3306 (the default number)

Note: To access the server off-campus, you need to first connect to Eastern student VPN network (https://support.ewu.edu/support/solutions/articles/10000020118-how-do-i-connect-to-vpn-)

Maybe the first thing you want to do is to change your password. In SQL editor, enter the following statement to re-set your password:

> **set password = PASSWORD('new_password');**

Now, create your first database named as *YourUsername*_DDL:

> **create database *YourUsername*_DDL;**

NOTE: The bottom left corner of MySQL Workbench shows the databases associated with your account. After you execute the above command, you can click on the (small) refresh button above the bottom left corner window and it should list your newly created database. Once you have the database created, you need to select this database (double click) to make sure the following operations will be applied to this database. Any time you add a database or tables to a database, clicking the refresh button should display the results of your operation.

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 *YourUsername_1*:

create database *YourUsername_1*;

9. (2 points) Use appropriate DDL to create two new tables *EMP* and *DEPT* (the info for these tables is in Appendix 1 at the end of this document). 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 listed in Appendix 1 into *DEPT* table.
       (**Include your DDL statements in your submission.**)

Section 4 – Get Ready for Future Labs:

11. (1 point) Let's create four more databases and tables for future use. Name these four databases as *YourUsername_2*, *YourUsername_3*, *YourUsername_4*, and *YourUsername_5*. Now import four databases from the script files posted on Canvas:
    a. Import ***database2.sql*** file into ***YourDatabase_2***. Five tables will be added to your *YourUsername_2* 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 ***database3.sql*** file into ***YourDatabase_3***. Eight tables will be added to your *YourUsername_3* 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 ***database4.sql*** file into ***YourDatabase_4***. Eleven tables will be added to your *YourUsername_4* 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 ***database5.sql*** file into ***YourDatabase_5***. Seven tables will be added to your *YourUsername_5* 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).

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
```