

## Assignment #2

### COMP 440 - Spring 2020

**Deadline: Thursday, 3/05 by 2:00 PM**

MySQL Tutorial: <http://www.mysqltutorial.org/>

Employee		
EmployeeID	LastName	DeptID
1	Rafferty	31
2	Jones	33
3	Heisenberg	33
4	Robinson	34
5	Smith	34
6	Williams	NULL
7	Brown	NULL

Department	
DepartmentID	DepartmentName
31	Sales
33	Engineering
34	Clerical
35	Marketing

#### Table Structures:

##### Employee

Field Name	Data Type	Constraint	Key
<i>EmployeeID</i>	int	not null	Primary
<i>LastName</i>	varchar(25)	not null	
<i>DeptID</i>	int		Foreign (DepartmentID in Department)

##### Department

Field Name	Data Type	Constraint	Key
<i>DepartmentID</i>	int	not null	Primary
<i>DepartmentName</i>	varchar(25)	not null, unique	

**Problem 1):** Consider the above tables.

1) Write SQL statement to **create** the above tables in MySQL DBMS.

(Identify the primary key(s), foreign key(s), not null and unique constraints). (5 pts)

2) Write SQL Statement to **insert** the values into each table (5 pts).

3) Write SQL statement to **add** the *FirstName* column into the Employee table and add the following first names. The structure of the *FirstName* is similar to the *LastName* column (varchar(25), not null) (5 pts).

EmployeeID	FirstName
1	John
2	Mary
3	David
4	Bob
5	Peter
6	Alice
7	Heather

4) Write the following join for them (deliver both SQL statements as well as the table result) (5 pts):

- a. Cross Join
- b. Inner Join
- c. Left Join
- d. Right Join

5) Delete the employee(s) with no department (Use only ONE SQL statement) (5 pts).

6) Delete the Sales department. If you are not able to delete this record, explain why? And how you can solve the problem (5 pts).

### **Problem 2)**

For all the below queries (1-8) write the SQL statement (chapter 3-6). Consider the University database schema (The ER diagram is attached to this assignment if needed):

**Query 1)** Find all instructors earning the salary higher than the average salary (10 pts).

**Query 2)** Find the minimum, maximum, and average salary for each department (10 pts).

**Query 3)** Find all the students who take credits between 30 and 100 and order them alphabetically by name (10 pts).

**Query 4)** Find all the instructors with their department name and department building (10 pts).

**Query 5)** Find all the students with their taken courses and grades (10 pts).

**Query 6)** Find the instructor(s) who earns the second highest salary (10 pts).

**Query 7)** Increase all credits by 1 for those courses that are taught in semester Fall 2010 (10 pts).

**Query 8)** Delete those instructors who have never taught (10 pts).

**Bonus:** You will get 20 extra credits if you write equivalent SQL queries for TWO of the above queries (Queries 1-8).

