Department of Computer Science and Engineering

Course Code:CSE370	Credits: 1.5
Course Name: Database Systems	

Lab 04
Database Challenge 01

I.   **Topic Overview:**
In this lab, students will be given a new scenario. Given this scenario, Students will have to design a database table and perform some queries on the table. The idea of this lab is to test the Students problem solving skills and basic knowledge of MySQL. The challenge scenario will focus on basic SQL queries, such as insert, delete, update, alter and simple select.

II. **Lesson Fit:**
Students should have an understanding of the following:
1. Basic SQL syntax
2. Creating tables and inserting data
3. Basic data manipulation and retrieval

III. **Learning Outcome:**
After this Challenge, the students will:
   a. Strengthen their understanding of basic SQL queries
   b. Learn how to formulate simple SQL queries for novel scenarios.

IV. **Anticipated Challenges and Possible Solutions**
Students might face problems in understanding how to retrieve the year or month or day information from a Date.
Solutions: Teachers will explain the built-in functions Year(), Month() etc.

V.   **Acceptance and Evaluation**
Students are expected to complete all tasks during the class. This lab will be graded. No home assignment is allowed for the lab.

VI. **Activity Detail**

Hour: 1

Students will be explained the rules of the Challenge and they will setup the MySQL server and confirm that it is working. Teachers will explain the given Scenario to the Students and discuss all new concepts that were not covered in Lab 01- 03.

Hour: 2

Students will get 1 hour to complete the Challenge.

Hour: 3

Lab instructors will check individual Students tasks and grade them.

Lab 4 Activity List

Suggestions for this Lab:

- Use a **Text editor** such as Note Pad to type and save your program.
- **Copy** and **Paste** your program from the Text editor to the command line. If the program works, save the program. Otherwise, fix the error and save it.
- Save your text file regularly.

Task 1

Create a database named **"The_Office".**

Task 2

Use that database and create table **"Employee_Info"** to record details of the Employees in the Office. The table structure is provided in Task 3. [Carefully consider what data types are required for each attribute].

Task 3

Insert values from the table below in **"Employee"**

Emp_ID	Name	Age	Role	Salary	Joining_Date
E001	Michael Scott	40	Manager	100000	1999-09-20
E002	Jim Harper	30	Sales Executive	60000	2004-09-30
E003	Pam Beesly	28	Receptionist	25000	2003-09-30
E004	Angela Martin	33	Accountant	65000	2005-09-28
E005	Dwight Shrute	32	Assistant Manager	60000	2003-09-30
E006	Kelly Kapoor	29	Marketing Executive	45000	2003-09-30
E007	Andrew Bernard	30	Sales Executive	50000	2007-05-10
E008	Kevin Malone	28	Accountant	60000	2004-10-30
E009	Toby Flender	35	HR Manager	70000	2004-09-30

| E010 | Phyllis Vance | 40 | Sales Executive | 61000 | 1999-09-20 |
| E011 | Creed Bratton | 50 | Sales Executive | 80000 | 1980-06-01 |

Task 4

Complete all tasks below:

    a. Find the name and role of employees whose name starts with "a" or ends with "e"
    b. Find the details of Employees who have salary between 40000 and 60000
    c. Find the details of employees who have joined before the year 2000.
    d. There will be 5% raise in salary for all sales executives, as they have done an excellent job last year. Update the table with the new raised salary. Check if the salary was updated.
    e. Michael Scott will get a bonus of 20% on his salary for excellent leadership initiatives in last year. Calculate his bonus and use alias ("Michael_Bonus") for the column header. [Note: You should **not** update his salary. Only show the bonus]
    f. Show the details of all employees according to their salary sorted from higher to lower.
    g. Show the details of all employees according to their age sorted from lower to higher.
    h. Show details of employees whose age is more than 35 and who joined before 2003.
    i. Turns out Creed Bratton has been lying about his age, he is actually 80 years old. So he should retire. Delete him from the table.
    j. Find the details of employees who have the word "executive" in their role.
    k. Change the attribute "Name" to "Employee_Name"
    l. Add attribute "Bonus" to the employee table.
    m. Delete attribute "Bonus" from the table.
    n. List the names of different job roles in the office. There should not be any repetition in your list.