SQL MODULE

LAB - 5

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Questions

Lab 1:

Database Schema Already we have created an employee table in day 2 lab, let's utilize this.

```
mysql> describe employee;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| emp_id    | int         | NO   | PRI | NULL    |       |
| firstname | varchar(30) | NO   |     | NULL    |       |
| lastname  | varchar(30) | NO   |     | NULL    |       |
| age       | int         | NO   |     | NULL    |       |
| email     | varchar(30) | NO   | UNI | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

Task: Add two more columns to the Employee table named Salary and Department and add data into it. Now Imagine you work for a company with various departments, and there is a need to analyze employee salaries within the IT department.

```
mysql> ALTER TABLE employee
    -> ADD Salary DECIMAL(10,2),
    -> ADD department VARCHAR(20);
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> describe employee;
+------------+---------------+------+-----+---------+-------+
| Field      | Type          | Null | Key | Default | Extra |
+------------+---------------+------+-----+---------+-------+
| emp_id     | int           | NO   | PRI | NULL    |       |
| firstname  | varchar(30)   | NO   |     | NULL    |       |
| lastname   | varchar(30)   | NO   |     | NULL    |       |
| age        | int           | NO   |     | NULL    |       |
| email      | varchar(30)   | NO   | UNI | NULL    |       |
| Salary     | decimal(10,2) | YES  |     | NULL    |       |
| department | varchar(20)   | YES  |     | NULL    |       |
+------------+---------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

```
mysql> select * from employee;
+--------+-----------+----------+-----+-------------------------+----------+------------+
| emp_id | firstname | lastname | age | email                   | Salary   | department |
+--------+-----------+----------+-----+-------------------------+----------+------------+
|      1 | sukanya   | N        |  20 | sukanyammu21@gmail.com  | 55000.00 | IT         |
|      2 | Monika    | S        |  23 | monika19@gmail.com      | 52000.50 | Marketing  |
|      3 | Dayana    | S R      |  23 | puttidayana13@gmail.com | 80000.75 | Sales      |
+--------+-----------+----------+-----+-------------------------+----------+------------+
3 rows in set (0.00 sec)
```

Write a query to retrieve all employees from the "employee" table who have a salary greater than 50000 and are in the 'IT' department

Hint: Use the AND operator to retrieve details.

```
mysql> SELECT *
    -> FROM employee
    -> WHERE department = 'IT' AND salary >50000;
+--------+-----------+----------+-----+-------------------------+----------+------------+
| emp_id | firstname | lastname | age | email                   | Salary   | department |
+--------+-----------+----------+-----+-------------------------+----------+------------+
|      1 | sukanya   | N        |  20 | sukanyammu21@gmail.com  | 55000.00 | IT         |
+--------+-----------+----------+-----+-------------------------+----------+------------+
1 row in set (0.00 sec)
```

Submission:

Create an SQL script file containing your solutions for the task.

Name the file "lab_assignment1.sql" Provide comments above the query to indicate the query's purpose.

Lab 2: Database Schema Use our database E-commerce to complete the task.

```
mysql> use ecommerce;
Database changed
```

Task: Imagine you are managing an e-commerce platform, and the holiday season is approaching. To capitalize on the festive spirit and boost sales, you have decided to organize a special seasonal sale featuring electronics. The goal is to offer discounts on electronics and include products with a price less than rs. 70,000 in the promotion. Write a query to find products from the "product" table that are either in the 'Electronics' category or have a price less than 70000.

Hint: Use Or operator to retrieve product details.

```
mysql> SELECT name, category, price, price * 0.1 AS discount_price
    -> FROM product
    -> WHERE category = 'Electronics' OR price < 70000;
+------------------+-------------+----------+----------------+
| name             | category    | price    | discount_price |
+------------------+-------------+----------+----------------+
| Laptop X         | Electronics | 59999.99 |       5999.999 |
| Smart TV Y       | Electronics | 34999.99 |       3499.999 |
| Headphones Z     | Electronics |  7999.99 |        799.999 |
| Running shoes A  | Clothing    |  2999.99 |        299.999 |
| Dress B          | Clothing    |  4999.99 |        499.999 |
| Wireless mouse M | Electronics |   999.99 |         99.999 |
| Fitness tracker W | Electronics |  3999.99 |        399.999 |
+------------------+-------------+----------+----------------+
7 rows in set (0.01 sec)
```

Submission: Create an SQL script file containing your solutions for the task.

Name the file "lab_assignment2.sql" Provide comments above the query to indicate the query's purpose.

Lab 3. Task: Imagine you are an HR analyst responsible for conducting a comprehensive analysis of average salaries across different departments within a company. The goal is to understand and compare the average salaries of employees in various departments. Write a query to Calculate the average salary of employees in each department from the "employee" table.

Hint: Use the AVG () function and GROUP BY clause to create the query.

Submission: Create an SQL script file containing your solutions for the task.

Name the file "lab_assignment3.sql" Provide comments above the query to indicate the query's purpose.

```
mysql> CREATE TABLE employee (
    -> employee_id INT PRIMARY KEY,
    -> name VARCHAR(255) NOT NULL,
    -> department VARCHAR(50) NOT NULL,
    -> salary DECIMAL(10,2) NOT NULL
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> describe employee;
```

```
mysql> select * from employee;
+-------------+-------------+-----------------+----------+
| employee_id | name        | department      | salary   |
+-------------+-------------+-----------------+----------+
|           1 | Sushi       | Engineering     | 75000.00 |
|           2 | Teja        | Marketing       | 68000.50 |
|           3 | Sai Krishna | Sales           | 82000.75 |
|           4 | Rosy        | Human Resources | 65000.00 |
|           5 | Suman       | Engineering     | 80000.25 |
|           6 | Rakesh      | Marketing       | 62000.90 |
|           7 | Monika      | Sales           | 78000.10 |
|           8 | Anil        | Human Resources | 59000.50 |
|           9 | Aparna      | Engineering     | 85000.00 |
|          10 | Venu        | Marketing       | 60000.75 |
+-------------+-------------+-----------------+----------+
10 rows in set (0.00 sec)

mysql> SELECT department,
    -> AVG(salary) AS average_salary
    -> FROM employee
    -> GROUP BY department;
+-----------------+----------------+
| department      | average_salary |
+-----------------+----------------+
| Engineering     |   80000.083333 |
| Marketing       |   63334.050000 |
| Sales           |   80000.425000 |
| Human Resources |   62000.250000 |
+-----------------+----------------+
4 rows in set (0.01 sec)
```

ChatGPT Exercise

Using ChatGPT generates SQL queries of the below problem.

Scenario 1: Determine the average age of employees in each department from the "employees" table.

We have an "Employee" table with the following columns: employee_id, employee_name, department, and salary and you want to find the average salary for each department. Generate the ChatGPT prompt for the above scenario.

```
mysql> select * from employee;
+-------------+--------------------+-----------------+----------+-----+
| employee_id | name               | department      | salary   | age |
+-------------+--------------------+-----------------+----------+-----+
|           1 | John Doe           | Engineering     | 75000.00 |  30 |
|           2 | Jane Smith         | Marketing       | 68000.50 |  28 |
|           3 | Michael Lee        | Sales           | 82000.75 |  35 |
|           4 | Olivia Jones       | Human Resources | 65000.00 |  27 |
|           5 | William Brown      | Engineering     | 80000.25 |  32 |
|           6 | Sophia Garcia      | Marketing       | 62000.90 |  29 |
|           7 | David Miller       | Sales           | 78000.10 |  34 |
|           8 | Jennifer Hernandez | Human Resources | 59000.50 |  26 |
|           9 | Robert Davis       | Engineering     | 85000.00 |  38 |
|          10 | Ashley Young       | Marketing       | 60000.75 |  25 |
+-------------+--------------------+-----------------+----------+-----+
10 rows in set (0.00 sec)
```

```
mysql> SELECT department,
    -> AVG(age) AS average_age
    -> FROM employee
    -> GROUP BY department;
+-----------------+--------------------+
| department      | average_age        |
+-----------------+--------------------+
| Engineering     | 33.333333333333336 |
| Marketing       | 27.333333333333332 |
| Sales           |               34.5 |
| Human Resources |               26.5 |
+-----------------+--------------------+
4 rows in set (0.00 sec)
```

```
mysql> SELECT department, AVG(salary) AS average_salary
    -> FROM employee
    -> GROUP BY department;
+-----------------+----------------+
| department      | average_salary |
+-----------------+----------------+
| Engineering     |   80000.083333 |
| Marketing       |   63334.050000 |
| Sales           |   80000.425000 |
| Human Resources |   62000.250000 |
+-----------------+----------------+
4 rows in set (0.00 sec)
```