SQL LAB – 6

BOOLEAN OPERATOR, AND OPERATOR, OR OPERATOR

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QUESTIONS

1. Add two more columns in 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. 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 AND operator to retrieve details.
2. Imagine you are managing an e-commerce platform, and the holiday season is approaching. To capitalize on the festive spirit and boost sales, you decide 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.
3. 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 employee in each department from the "employee" table.
   Hint: Use AVG() function and GROUP BY clause to create the query.

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.

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

Code;

```
-- Adding columns salary and department to employee table
ALTER TABLE employee
ADD COLUMN Salary int not null,
ADD COLUMN Department varchar(20) not null;

-- Displaying table description
DESC employee;

-- Adding values to salary and department columns
UPDATE employee
SET Salary = 60000, Department = 'Engineering' WHERE emp_id=1;
UPDATE Employee
SET Salary = 55000.00, Department = 'Human Resources' WHERE emp_id = 2;
UPDATE Employee
SET Salary = 70000.00, Department = 'Marketing' WHERE emp_id = 3;
UPDATE Employee
SET Salary = 65000.00, Department = 'Sales' WHERE emp_id = 4;
UPDATE Employee
SET Salary = 55000.00, Department = 'IT' WHERE emp_id = 5;

-- Display rows in the employee table
SELECT * FROM employee;

-- Query to retrieve all employees from the "employee" table who have a salary
-- greater than 50000 and are in the 'IT' department
SELECT * FROM employee WHERE salary > 50000 AND department = 'IT';
```

Output;

Added columns

Field	Type	Null	Key	Default	Extra
emp_id	int	NO	PRI	NULL	
first_name	varchar(20)	NO		NULL	
last_name	varchar(20)	NO		NULL	
age	int	NO		NULL	
email	varchar(255)	NO		NULL	
Salary	int	NO		NULL	
Department	varchar(20)	NO		NULL	

Inserted values

emp_id	first_name	last_name	age	email	Salary	Department
1	John	Doe	29	john.doe@example.com	60000	Engineering
2	Jane	Smith	33	jane.smith@example.com	55000	Human Resources
3	Emily	Jones	24	emily.jones@example.com	70000	Marketing
4	Michael	Brown	41	michael.brown@example.com	65000	Sales
5	David	Davis	37	david.davis@example.com	55000	IT

Query output

emp_id	first_name	last_name	age	email	Salary	Department
5	David	Davis	37	david.davis@example.com	55000	IT

2. Imagine you are managing an e-commerce platform, and the holiday season is approaching. To capitalize on the festive spirit and boost sales, you decide 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.

Code:

```
-- Query to find products from the "product" table that are either in the
-- 'Electronics' category or have a price less than 70000.
SELECT * FROM product WHERE category='Electronics' OR original_price < 70000;
```

Output:

product_id	product_name	category	sub_category	original_price	selling_price	stock
P101	Television	Electronics	phone	70000	55000	100
P102	Chair	Furniture	Chairs	20000	15000	10
P111	Television	Electronics	phone	70000	55000	100
P112	Chair	Furniture	Chairs	1000	800	10
P113	Samsung Galaxy	Electronics	phone	60000	55000	100

3. 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 employee in each department from the "employee" table.

Code;

```
-- Query to Calculate the average salary of employee in each department from the "employee" table
Select Department, avg(salary) as 'Average Salary' FROM employee GROUP BY department;
```

Output:

Department	Average Salary
Engineering	60000.0000
Human Resources	55000.0000
Marketing	70000.0000
Sales	65000.0000
IT	55000.0000

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.

```sql
-- Step 1: Create the Employee table
CREATE TABLE Employee (
    employee_id INT PRIMARY KEY,
    employee_name VARCHAR(100),
    age INT,
    department VARCHAR(50),
    salary DECIMAL(10, 2)
);
```

```sql
-- Step 2: Insert sample records
INSERT INTO Employee (employee_id, employee_name, age, department, salary)
VALUES
(1, 'John Doe', 30, 'Engineering', 60000.00),
(2, 'Jane Smith', 45, 'Human Resources', 55000.00),
(3, 'Alice Johnson', 28, 'Marketing', 70000.00),
(4, 'Bob Brown', 35, 'Sales', 65000.00),
(5, 'Charlie Davis', 40, 'Customer Service', 50000.00),
(6, 'Dave Wilson', 29, 'IT', 52000.00),
(7, 'Eve Taylor', 33, 'Engineering', 58000.00),
(8, 'Frank Miller', 50, 'IT', 63000.00),
(9, 'Grace Lee', 27, 'Marketing', 72000.00),
(10, 'Hank Anderson', 41, 'Human Resources', 54000.00);
```

```sql
-- Step 3: Query to calculate the average age of employees in each department
SELECT department, AVG(age) AS Average_Age
FROM Employee
GROUP BY department;

-- Step 4: Query to calculate the average salary of employees in each department
SELECT department, AVG(salary) AS Average_Salary
FROM Employee
GROUP BY department;
```