SQL Queries for Employee and Sales Analysis

MySQL Queries for Employee and Sales Data Analysis

1. Create Employee Table:

```
-------------------------
CREATE TABLE emp_details (
    Name VARCHAR(50),
    Age INT,
    Sex CHAR(1),
    DOJ DATE,
    City VARCHAR(50),
    Salary DECIMAL(10,2)
);
```

2. Select Employees Older than 30 and Female:

```
-----------------------------------------------
SELECT * FROM emp_details
WHERE Age > 30 AND Sex = 'F';
```

3. Calculate Total Salary by Gender:

```
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SELECT Sex, SUM(Salary) AS total_salary
FROM emp_details
GROUP BY Sex;
```

4. String Functions:

```
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SELECT REPEAT('@', 10);
SELECT LOWER('Nandhini');
SELECT UPPER('india') AS upper_case;
SELECT LOWER('india') AS lower_case;
SELECT CHARACTER_LENGTH('india');
SELECT CONCAT('India', ' is ', 'in Asia') AS merged;
```

5. Sorting and Trimming Functions:

```
---------------------------------
SELECT LCASE('INDUA') AS lower_case;
SELECT LENGTH('    india     ');
SELECT LENGTH(LTRIM('     india    '));
SELECT LENGTH(RTRIM('     india    '));
```

6. Searching & ASCII Functions:

```
SELECT POSITION('fruit' IN 'orange is a fruit') AS position;
SELECT ASCII('4');
```

Lesson 3: GROUP BY & HAVING

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1. Create Employees Table:

```
CREATE TABLE employees (
    EmpID INT PRIMARY KEY,
    EmpName VARCHAR(50),
    Age INT,
    Gender CHAR(1),
    DOJ DATE,
    Dept VARCHAR(50),
    City VARCHAR(50),
    Salary DECIMAL(10,2)
);
```

2. Select Distinct Departments:

```
SELECT DISTINCT Dept FROM employees;
```

3. Calculate Average Age for All Employees:

```
SELECT AVG(Age) FROM employees;
```

4. Calculate Average Age by Department:

```
SELECT Dept, AVG(Age) AS avg_age
FROM employees
GROUP BY Dept;
```

5. Select Employees Grouped by Department Having More than 2 Employees:

```
SELECT Dept, COUNT(*) AS emp_count
FROM employees
GROUP BY Dept
HAVING COUNT(*) > 2;
```

Lesson 4: Sales Data Analysis

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1. Create Sales Table:

```
CREATE TABLE sales (
    ProductID INT,
    SellPrice FLOAT,
    Quantity INT,
    State VARCHAR(50)
);
```

2. Insert Data into Sales Table:

```
INSERT INTO sales VALUES
(121, 320.0, 3, 'California'),
(121, 320.06, 2, 'Texas'),
(121, 320.0, 4, 'Alaska'),
(123, 290.0, 2, 'Texas'),
(123, 290.00, 7, 'California'),
(123, 290.00, 4, 'Washington'),
(121, 320.0, 7, 'Ohio'),
(121, 320.0, 2, 'Arizona'),
(123, 290.00, 8, 'Colorado');
```

3. Calculate Total Revenue Per Product:

```
SELECT ProductID, SUM(SellPrice * Quantity) AS revenue
FROM sales
GROUP BY ProductID;
```

4. Create Cost Product Table:

```
CREATE TABLE c_product (
    ProductID INT,
    CostPrice FLOAT
);
```

5. Calculate Profit Per Product:

```
SELECT s.ProductID, SUM(s.SellPrice - c.CostPrice) * s.Quantity AS profit
FROM sales AS s
INNER JOIN c_product AS c
ON s.ProductID = c.ProductID
GROUP BY s.ProductID;
```

6. Grouping and Having in SQL:

```
SELECT COUNT(EmpID), City
FROM employees
GROUP BY City
HAVING COUNT(EmpID) > 2;

SELECT Dept, AVG(Salary) AS avg_salary
FROM employees
GROUP BY Dept
HAVING AVG(Salary) > 75000;

SELECT City, SUM(Salary) AS total_salary
FROM employees
HAVING SUM(Salary) > 20000;

SELECT Dept, COUNT(*) AS emp_count
FROM employees
GROUP BY Dept
HAVING COUNT(*) > 2;
```