Experiment No: 6

Title: Study & Implementation of

- Group by & Having Clause
- Order by Clause
- Indexing

LAB PRACTICE ASSIGNMENT:

- Creating Tables and inserting data

```
mysql> use gourav;
Database changed
mysql> CREATE TABLE Department (DeptID INT PRIMARY KEY, DeptName VARCHAR(50));
Query OK, 0 rows affected (0.08 sec)

mysql> CREATE TABLE Employee (EmpID INT PRIMARY KEY, EmpName VARCHAR(50), Salary DECIMAL(10, 2), JobCategory VARCHAR(50), ManagerID INT, DeptID INT, FOREIGN KEY (DeptID) REF
Department(DeptID));
Query OK, 0 rows affected (0.09 sec)

mysql> INSERT INTO Department (DeptID, DeptName) VALUES (1, 'HR'), (2, 'Finance'), (3, 'Engineering');
Query OK, 3 rows affected (0.02 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> INSERT INTO Employee (EmpID, EmpName, Salary, JobCategory, ManagerID, DeptID) VALUES (1, 'Alice', 20000, 'Manager', NULL, 1), (2, 'Bob', 15000, 'HR', 1, 1), (3, 'Charlie', 18000, 'Mar
NULL, 2), (4, 'David', 16000, 'Finance', 3, 2), (5, 'Eve', 17000, 'Engineer', 3, 3), (6, 'Frank', 12000, 'Engineer', 3, 3), (7, 'Grace', 9000, 'Intern', 1, 1);
Query OK, 7 rows affected (0.02 sec)
Records: 7  Duplicates: 0  Warnings: 0
```

- Display Total Salary Spent for Each Job Category

```
mysql> SELECT JobCategory, SUM(Salary) AS TotalSalary FROM Employee GROUP BY JobCategory;
+-------------+-------------+
| JobCategory | TotalSalary |
+-------------+-------------+
| Manager     |    38000.00 |
| HR          |    15000.00 |
| Finance     |    16000.00 |
| Engineer    |    29000.00 |
| Intern      |     9000.00 |
+-------------+-------------+
5 rows in set (0.00 sec)
```

- Display Lowest Paid Employee Details Under Each Manager

```
mysql> SELECT e1.EmpID, e1.EmpName, e1.Salary, e1.JobCategory, e1.ManagerID FROM Employee e1 JOIN (SELECT ManagerID, MIN(Salary) AS MinSalary FROM Employee WHERE ManagerID IS
NULL GROUP BY ManagerID) e2 ON e1.ManagerID = e2.ManagerID AND e1.Salary = e2.MinSalary;
+-------+---------+----------+-------------+-----------+
| EmpID | EmpName | Salary   | JobCategory | ManagerID |
+-------+---------+----------+-------------+-----------+
|     6 | Frank   | 12000.00 | Engineer    |         3 |
|     7 | Grace   |  9000.00 | Intern      |         1 |
+-------+---------+----------+-------------+-----------+
2 rows in set (0.00 sec)
```

- Display Number of Employees Working in Each Department and Their Department Name

```
mysql> SELECT * FROM Employee ORDER BY Salary ASC;
+-------+---------+----------+-------------+-----------+--------+
| EmpID | EmpName | Salary   | JobCategory | ManagerID | DeptID |
+-------+---------+----------+-------------+-----------+--------+
|     7 | Grace   |  9000.00 | Intern      |         1 |      1 |
|     6 | Frank   | 12000.00 | Engineer    |         3 |      3 |
|     2 | Bob     | 15000.00 | HR          |         1 |      1 |
|     4 | David   | 16000.00 | Finance     |         3 |      2 |
|     5 | Eve     | 17000.00 | Engineer    |         3 |      3 |
|     3 | Charlie | 18000.00 | Manager     |      NULL |      2 |
|     1 | Alice   | 20000.00 | Manager     |      NULL |      1 |
+-------+---------+----------+-------------+-----------+--------+
7 rows in set (0.00 sec)
```

- Display Details of Employees Sorting the Salary in Increasing Order

```
mysql> SELECT d.DeptName, COUNT(e.EmpID) AS EmployeeCount FROM Department d LEFT JOIN Employee e ON d.DeptID = e.DeptID GROUP BY d.DeptName;
+-------------+---------------+
| DeptName    | EmployeeCount |
+-------------+---------------+
| HR          |             3 |
| Finance     |             2 |
| Engineering |             2 |
+-------------+---------------+
3 rows in set (0.00 sec)
```

- Show Records of Employees Earning Salary Greater Than 16000 in Each Department

```
mysql> SELECT e.EmpID, e.EmpName, e.Salary, d.DeptName FROM Employee e JOIN Department d ON e.DeptID = d.DeptID WHERE e.Salary > 16000;
+-------+---------+----------+-------------+
| EmpID | EmpName | Salary   | DeptName    |
+-------+---------+----------+-------------+
|     1 | Alice   | 20000.00 | HR          |
|     3 | Charlie | 18000.00 | Finance     |
|     5 | Eve     | 17000.00 | Engineering |
+-------+---------+----------+-------------+
3 rows in set (0.00 sec)
```