**Experiment No: 6**

**Title : Study & Implementation of:-**

**• Group by & Having Clause**

**• Order by Clause**

**• Indexing Objective: To learn the concept of group functions**

**LAB PRACTICE ASSIGNMENT:**

Create a relation and implement the following queries.

1. Display total salary spent for each job category.

2. Display lowest paid employee details under each manager.

3. Display number of employees working in each department and their department name.

4. Display the details of employees sorting the salary in increasing order.

5. Show the record of employee earning salary greater than 16000 in each department.

6. Write queries to implement and practice the above clause.

**CODE:-**

mysql> create database Sourish\_CSBS\_Roll09;

Query OK, 1 row affected (0.02 sec)

mysql> use Sourish\_CSBS\_Roll09;

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) REFERENCES 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, 'Manager', 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

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 (0.01 sec)

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 NOT 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)

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)

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)

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)