# EXPERIMENT - 10

**Title:** Create the following views in SQL on the COMPANY database schema presented in Experiment 2.

1.
```sql
CREATE VIEW DepartmentManager AS
SELECT D.Dname AS DepartmentName,
       E.Name AS ManagerName,
       E.Salary AS ManagerSalary
FROM Department D
JOIN Employee E ON D.Mgr_ssn = E.Ssn;
```

2.
```sql
CREATE VIEW ResearchDepartmentEmployees AS
SELECT E.Name AS EmployeeName,
       S.Name AS SupervisorName,
       E.Salary AS EmployeeSalary
FROM Employee E
JOIN Employee S ON E.Supervisor_ssn = S.Ssn
JOIN Department D ON E.Dno = D.Dnumber
WHERE D.Dname = 'Research';
```

3.

```sql
CREATE VIEW ProjectDetails AS
SELECT P.Pname AS ProjectName,
       D.Dname AS ControllingDepartmentName,
       COUNT(W.Essn) AS NumberOfEmployees,
       SUM(W.Hours) AS TotalHoursPerWeek
FROM Project P
JOIN Department D ON P.Dnum = D.Dnumber
JOIN WorksOn W ON P.Pnumber = W.Pno
GROUP BY P.Pname, D.Dname;
```

4.

```sql
CREATE VIEW MultiEmployeeProjects AS
SELECT P.Pname AS ProjectName,
       D.Dname AS ControllingDepartmentName,
       COUNT(W.Essn) AS NumberOfEmployees,
       SUM(W.Hours) AS TotalHoursPerWeek
FROM Project P
JOIN Department D ON P.Dnum = D.Dnumber
JOIN WorksOn W ON P.Pnumber = W.Pno
GROUP BY P.Pname, D.Dname
HAVING COUNT(W.Essn) > 1;
```

# EXPERIMENT - 11

**Title: To understand the concepts of Index.**

**Objective:** Students will be able to implement the concept of index.

```
CREATE INDEX employee_idx ON EMPLOYEES (Last_Name, Department_id);
```

**Output**

SQL query successfully executed. However, the result set is empty.

1.

```sql
CREATE UNIQUE INDEX emp_id_unique_idx ON EMPLOYEES (Employee_id);
```

**Output**

SQL query successfully executed. However, the result set is empty.

2.

```sql
CREATE INDEX emp_reverse_idx ON EMPLOYEES (Employee_id) REVERSE;
```

3.

4.

```sql
CREATE UNIQUE INDEX emp_composite_idx ON EMPLOYEES (Employee_id, Department_id);
```

5.

```sql
CREATE INDEX emp_lastname_upper_idx ON EMPLOYEES (UPPER(Last_Name));
CREATE INDEX emp_lastname_lower_idx ON EMPLOYEES (LOWER(Last_Name));
```

CREATE UNIQUE INDEX emp_composite_idx ON EMPLOYEES (Employee_id, Department_id);

6.

```
DROP INDEX emp_lastname_upper_idx;
```