University of Petroleum

&

Energy Studies

SCHOOL OF COMPUTER SCIENCE

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Semester: 3

Experiment 10: Create the following views in SQL on the COMPANY database schema presented in Experiment 2.

1. **A view that has the department name, manager name, and manager salary for every department.**

   Input:

```
mysql> USE COMPANY;
Database changed
mysql> CREATE VIEW dept_manager_info AS
    -> SELECT D.Dname AS Department_Name,
    ->        E.Fname AS Manager_Fname,
    ->        E.Lname AS Manager_Lname,
    ->        E.Salary AS Manager_Salary
    -> FROM DEPARTMENT D
    -> JOIN EMPLOYEE E ON D.Mgr_ssn = E.Ssn;
Query OK, 0 rows affected (0.02 sec)
```

   Output:

```
mysql> SELECT * FROM dept_manager_info;
+-----------------+---------------+---------------+----------------+
| Department_Name | Manager_Fname | Manager_Lname | Manager_Salary |
+-----------------+---------------+---------------+----------------+
| Headquarters    | James         | Borg          |       55000.00 |
| Administration  | Jennifer      | Wallace       |       43000.00 |
| Research        | Franklin      | Wong          |       40000.00 |
+-----------------+---------------+---------------+----------------+
3 rows in set (0.01 sec)
```

2. **A view that has the employee's name, supervisor name, and employee salary for each employee who works in the 'Research' department.**

   Input:

```
mysql> CREATE VIEW research_employee_info AS
    -> SELECT E.Fname AS Employee_Fname,
    ->        E.Lname AS Employee_Lname,
    ->        S.Fname AS Supervisor_Fname,
    ->        S.Lname AS Supervisor_Lname,
    ->        E.Salary AS Employee_Salary
    -> FROM EMPLOYEE E
    -> JOIN EMPLOYEE S ON E.Super_ssn = S.Ssn
    -> WHERE E.Dno = 5
    -> ;
Query OK, 0 rows affected (0.02 sec)
```

Output:

```
mysql> SELECT * FROM research_employee_info;
+----------------+----------------+-----------------+-----------------+-----------------+
| Employee_Fname | Employee_Lname | Supervisor_Fname | Supervisor_Lname | Employee_Salary |
+----------------+----------------+-----------------+-----------------+-----------------+
| John           | Smith          | Franklin         | Wong             |        30000.00 |
| Franklin       | Wong           | James            | Borg             |        40000.00 |
| Joyce          | English        | Franklin         | Wong             |        25000.00 |
| Ramesh         | Narayan        | Franklin         | Wong             |        38000.00 |
+----------------+----------------+-----------------+-----------------+-----------------+
4 rows in set (0.00 sec)
```

3. **A view that has the project name, controlling department name, number of employees, and total hours worked per week on the project for each project.**

Input:

```
mysql> CREATE VIEW project_summary AS
    -> SELECT P.Pname AS Project_Name,
    ->        D.Dname AS Department_Name,
    ->        COUNT(W.Essn) AS Number_of_Employees,
    ->        SUM(W.Hours) AS Total_Hours_Worked
    -> FROM PROJECT P
    -> JOIN DEPARTMENT D ON P.Dnum = D.Dnumber
    -> JOIN WORKS_ON W ON P.Pnumber = W.Pno
    -> GROUP BY P.Pname, D.Dname;
Query OK, 0 rows affected (0.01 sec)
```

Output:

```
mysql> SELECT * FROM project_summary;
+-----------------+-----------------+---------------------+---------------------+
| Project_Name    | Department_Name | Number_of_Employees | Total_Hours_Worked |
+-----------------+-----------------+---------------------+---------------------+
| ProductX        | Research        |                   2 |                52.5 |
| ProductY        | Research        |                   3 |                37.5 |
| ProductZ        | Research        |                   2 |                50.0 |
| Computerization | Administration  |                   3 |                55.0 |
| Reorganization  | Headquarters    |                   3 |                25.0 |
| Newbenefits     | Administration  |                   3 |                55.0 |
+-----------------+-----------------+---------------------+---------------------+
6 rows in set (0.01 sec)
```

4. **A view that has the project name, controlling department name, number of employees, and total hours worked per week on the project for each project with more than one employee working on it.**

Input:

```
mysql> CREATE VIEW project_multiple_employees_summary AS
    -> SELECT P.Pname AS Project_Name,
    ->        D.Dname AS Department_Name,
    ->        COUNT(W.Essn) AS Number_of_Employees,
    ->        SUM(W.Hours) AS Total_Hours_Worked
    -> FROM PROJECT P
    -> JOIN DEPARTMENT D ON P.Dnum = D.Dnumber
    -> JOIN WORKS_ON W ON P.Pnumber = W.Pno
    -> GROUP BY P.Pname, D.Dname
    -> HAVING COUNT(W.Essn) > 1;
Query OK, 0 rows affected (0.01 sec)
```

Output:

```
mysql> SELECT * FROM project_multiple_employees_summary;
+-----------------+-----------------+---------------------+---------------------+
| Project_Name    | Department_Name | Number_of_Employees | Total_Hours_Worked |
+-----------------+-----------------+---------------------+---------------------+
| ProductX        | Research        |                   2 |                52.5 |
| ProductY        | Research        |                   3 |                37.5 |
| ProductZ        | Research        |                   2 |                50.0 |
| Computerization | Administration  |                   3 |                55.0 |
| Reorganization  | Headquarters    |                   3 |                25.0 |
| Newbenefits     | Administration  |                   3 |                55.0 |
+-----------------+-----------------+---------------------+---------------------+
6 rows in set (0.00 sec)
```