University of Petroleum

&

Energy Studies

SCHOOL OF COMPUTER SCIENCE

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BATCH: 1

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Semester: 3

Experiment 7: Use of Inbuilt functions and relational algebra operation

Objective: To understand the use of inbuilt function and relational algebra with sql query.

1. **Retrieve the names of all employees in department 5 who work more than 10 hours per week on the 'ProductX' project.**

```
mysql> USE COMPANY;
Database changed
mysql> SELECT E.Fname, E.Lname
    -> FROM EMPLOYEE E
    -> JOIN WORKS_ON W ON E.Ssn = W.Essn
    -> JOIN PROJECT P ON W.Pno = P.Pnumber
    -> WHERE E.Dno = 5 AND P.Pname = 'ProductX' AND W.Hours > 10;
+-------+---------+
| Fname | Lname   |
+-------+---------+
| John  | Smith   |
| Joyce | English |
+-------+---------+
2 rows in set (0.03 sec)
```

2. **List the names of all employees who have a dependent with the same first name as themselves.**

```
mysql> SELECT E.Fname, E.Lname
    -> FROM EMPLOYEE E
    -> JOIN DEPENDENT D ON E.Ssn = D.Essn
    -> WHERE E.Fname = D.Dependent_name;
Empty set (0.01 sec)
```

3. **Find the names of employees who are directly supervised by 'Franklin Wong'.**

```
mysql> SELECT E.Fname, E.Lname
    -> FROM EMPLOYEE E
    -> JOIN EMPLOYEE S ON E.Super_ssn = S.Ssn
    -> WHERE S.Fname = 'Franklin' AND S.Lname = 'Wong';
+--------+---------+
| Fname  | Lname   |
+--------+---------+
| John   | Smith   |
| Joyce  | English |
| Ramesh | Narayan |
+--------+---------+
3 rows in set (0.00 sec)
```

4. **Retrieve the names of employees who work on every project.**

```
mysql> SELECT E.Fname, E.Lname
    -> FROM EMPLOYEE E
    -> WHERE NOT EXISTS (
    ->     SELECT P.Pnumber
    ->     FROM PROJECT P
    ->     WHERE NOT EXISTS (
    ->         SELECT W.Essn
    ->         FROM WORKS_ON W
    ->         WHERE W.Pno = P.Pnumber AND W.Essn = E.Ssn
    ->     )
    -> );
Empty set (0.00 sec)
```

5. **Retrieve the names of employees who do not work on any project.**

```
mysql> SELECT E.Fname, E.Lname
    -> FROM EMPLOYEE E
    -> LEFT JOIN WORKS_ON W ON E.Ssn = W.Essn
    -> WHERE W.Pno IS NULL;
Empty set (0.00 sec)
```

6. **Retrieve the names and addresses of all employees who work on at least one project located in Houston but whose department has no location in Houston.**

```
mysql> SELECT DISTINCT E.Fname, E.Lname, E.Address
    -> FROM EMPLOYEE E
    -> JOIN WORKS_ON W ON E.Ssn = W.Essn
    -> JOIN PROJECT P ON W.Pno = P.Pnumber
    -> WHERE P.Plocation = 'Houston'
    -> AND E.Dno NOT IN (
    ->     SELECT D.Dnumber
    ->     FROM DEPT_LOCATIONS D
    ->     WHERE D.Dlocation = 'Houston'
    -> );
+----------+---------+-------------------------+
| Fname    | Lname   | Address                 |
+----------+---------+-------------------------+
| Jennifer | Wallace | 291 Berry, Bellaire TX  |
+----------+---------+-------------------------+
1 row in set (0.01 sec)
```

7. **Retrieve the last names of all department managers who have no dependents.**

```
mysql> SELECT E.Lname
    -> FROM EMPLOYEE E
    -> JOIN DEPARTMENT D ON E.Ssn = D.Mgr_ssn
    -> WHERE NOT EXISTS (
    ->     SELECT *
    ->     FROM DEPENDENT DEP
    ->     WHERE DEP.Essn = E.Ssn
    -> );
+-------+
| Lname |
+-------+
| Borg  |
+-------+
1 row in set (0.01 sec)
```