Course Name: DBMS Lab

Course Code: CSEG2146

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Submitted By:

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Experiment 7:

Title: Use of Inbuilt functions and relational algebra operation

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

Write and execute the following queries using the Relational Algebra on the COMPANY database schema.

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

```
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.H
ours>10;
+-------+---------+
| FNAME | LNAME   |
+-------+---------+
| John  | Smith   |
| Joyce | English |
+-------+---------+
2 rows in set (0.01 sec)
```

2. List all employees with 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 WHER
E 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 (0.01 sec)
```

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

```
mysql> SELECT E.FNAME, E.LNAME FROM EMPLOYEE E WHERE(SELECT COUNT(DISTINCT P.PNUMBER
) FROM PROJECT P)=(SELECT COUNT(W.PNO) FROM WORKS_ON W WHERE W.ESSN=E.SSN);
Empty set (0.01 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.ESSN IS NULL;
Empty set (0.01 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 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 |
| Ahmad    | Jabbar  | 980 Dallas Houston TX |
+----------+---------+----------------------+
2 rows in set (0.01 sec)
```

7. Retrieve the last names of all department managers without dependents.

```
mysql> SELECT E.LNAME FROM EMPLOYEE E JOIN DEPARTMENT D ON E.SSN=D.MGR_SSN LEFT JOIN
 DEPENDENT DE ON E.SSN=DE.ESSN WHERE DE.ESSN IS NULL;
+-------+
| LNAME |
+-------+
| Borg  |
+-------+
1 row in set (0.01 sec)
```