WEEK 7

SQL – Set Operations-Union, intersect and minus

Problem Statement:

Write the SQL query using appropriate set operations(Union, Intersect and Except) for the following.

1. Make a list of all project numbers for projects that involve an employee whose last name is 'Smith', either as a worker or as a manager of the department that controls the project.

```
company=# (SELECT DISTINCT PNUMBER FROM PROJECT, DEPARTMENT, EMPLOYEE WHERE DNUM = DNUMBER AND mgr_ssn = SSN AND LNAME = 'Smith')UNION(SELECT DISTINCT PNUMBER FROM PROJECT,
 WORKS_ON, EMPLOYEE WHERE PNUMBER = PNO AND ESSN = SSN AND LNAME = 'Smith');
 pnumber
---------
       1
       2
(2 rows)
```

2. Retrieve the names of the employee who does not have dependents.

```
company=# select fname,lname
company-# from employee
company-# where not exists (select * from dependent where ssn=essn);
 fname  |  lname
--------+---------
 James  | Borg
 Alicia | Zelaya
 Ramesh | Narayan
 Joyce  | English
 Ahmed  | Jabbar
(5 rows)
```

3. Retrieve the Social Security numbers of all employees who either work in department 5 or directly supervise an employee who works in department 5.

```
company=# select ssn from employee where dno=5
company-# union select super_ssn from employee
company-# where dno=5;
    ssn
-----------
 123456789
 333445555
 453453453
 666884444
 888665555
(5 rows)
```

4. Using Intersect find all projects controlled by the department 5 and has employee ssn 123456789 working in that project.

```
company=# select pnumber from project where dnum=5
company-# intersect
company-# select pno from works_on where essn='123456789';
 pnumber
---------
       1
       2
(2 rows)
```

5. Using Except find all ssn of employees who works in department 5 but not in Bellaire location

```
company=# select ssn
company-# from employee
company-# where dno=5
company-# except
company-# (select dlocation from dept_locations where dlocation='bellaire');
    ssn
-----------
 453453453
 666884444
 333445555
 123456789
(4 rows)
```

6. Find the name of the employee who has the same name as the dependent of any employee (use intersect ).

```
company=# select fname from employee
company-# intersect
company-# select dependent_name from dependent;
 fname
-------
(0 rows)
```