DBMS WEEK #7

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SECTION: G

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.

```
C:\Program Files\PostgreSQL\12\bin>psql -U postgres
Password for user postgres:
psql (12.8)
WARNING: Console code page (437) differs from Windows code page (1252)
         8-bit characters might not work correctly. See psql reference
         page "Notes for Windows users" for details.
Type "help" for help.

postgres=# \c company
You are now connected to database "company" as user "postgres".
company=# (select distinct Pnumber from Project as p, Department as d, Employee as e where p.Dnum = d.Dnumber and d.Mgr_ssn = e.Ssn and e.Lname = 'Smith')
company-# UNION
company-# (select distinct Pnumber from Project as p, Works_On as w, Employee as e where p.Pnumber = w.Pno and w.Essn = e.Ssn and e.Lname = 'Smith');
 pnumber
---------
       1
       2
(2 rows)
```

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

```
company=# select Fname, Lname from Employee as e
company-# where NOT EXISTS(select * from Dependent as d where e.Ssn = d.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
company-# (select Super_ssn from Employee 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, Pname, Plocation from Project where Dnum=5
company-# INTERSECT
company-# select Pno, Pname, Plocation from Works_On as w, Employee as e, Project as p where p.Pnumber = w.Pno and w.Essn='123456789' and e.Dno=5;
 pnumber |  pname   | plocation
---------+----------+-----------
       1 | ProductX | Bellaire
       2 | ProductY | Sugarland
(2 rows)
```

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

```
company=# select Ssn from Employee where Dno=5
company-# EXCEPT
company-# (select Ssn from Employee where Ssn in (select Essn from Works_on where Pno in (select Pnumber from Project where Plocation = 'Bellaire')));
    ssn
-----------
 666884444
 333445555
(2 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 as d, Employee as e where e.Fname = d.Dependent_name;
 fname
-------
(0 rows)
```