

[illegible]

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.

- (SELECT DISTINCT Pnumber from PROJECT,DEPARTMENT,EMPLOYEE where Dnum=Dnumber AND Ssn=Mgr_ssn AND Lname='Smith') UNION (SELECT DISTINCT Pno from WORKS_ON where Essn IN (SELECT Ssn from EMPLOYEE WHERE Lname='Smith'))

```
postgres=# \c tusharys_cs545;
You are now connected to database "tusharys_cs545" as user "postgres".
tusharys_cs545=# (SELECT DISTINCT Pnumber
tusharys_cs545=# from PROJECT,DEPARTMENT,EMPLOYEE
tusharys_cs545=# where Dnum= Dnumber AND Ssn=Mgr_ssn AND Lname='Smith')
tusharys_cs545=# UNION
tusharys_cs545=# (SELECT DISTINCT Pno
tusharys_cs545=# from WORKS_ON
tusharys_cs545=# where Essn IN (SELECT Ssn from EMPLOYEE WHERE Lname = 'Smith'));
 pnumber
-----
      1
      2
(2 rows)
```

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

- SELECT Fname, Lname from EMPLOYEE where not exists (SELECT * FROM DEPENDENT WHERE Ssn=Essn);

```
tusharys_cs545=# SELECT Fname, Lname
tusharys_cs545=# from EMPLOYEE
tusharys_cs545=# 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.

- (SELECT Ssn from EMPLOYEE WHERE Dno=5) UNION (SELECT Super_ssn FROM EMPLOYEE WHERE Dno=5);

```

tusharys_cs545=# (SELECT Ssn
tusharys_cs545(# from EMPLOYEE
tusharys_cs545(# WHERE Dno=5)
tusharys_cs545-# UNION
tusharys_cs545-# (SELECT Super_ssn
tusharys_cs545(# FROM EMPLOYEE
tusharys_cs545(# 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.

- (SELECT Pname from PROJECT where Dnum=5) INTERSECT (SELECT Pname FROM PROJECT,WORKS_ON where Pno=Pnumber AND Essn IN (SELECT Ssn from EMPLOYEE where Ssn='123456789'));

```

tusharys_cs545=# (SELECT Pname
tusharys_cs545(# from PROJECT
tusharys_cs545(# where Dnum=5)
tusharys_cs545-# INTERSECT
tusharys_cs545-# (SELECT Pname
tusharys_cs545(# FROM PROJECT, WORKS_ON
tusharys_cs545(# where Pno=Pnumber AND Essn IN (SELECT Ssn from EMPLOYEE where Ssn='123456789'));
      pname
-----
ProductY
ProductX
(2 rows)

```

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

- (SELECT Ssn from EMPLOYEE where Dno=5) EXCEPT (SELECT Essn from WORKS_ON,PROJECT where Pno=Pnumber AND Ploaction='Bellaire');

```

tusharys_cs545=# (SELECT Ssn
tusharys_cs545=# from EMPLOYEE
tusharys_cs545=# where Dno=5)
tusharys_cs545=# EXCEPT
tusharys_cs545=# (SELECT Essn
tusharys_cs545=# from WORKS_ON,PROJECT
tusharys_cs545=# where Pno=Pnumber AND 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).

- (SELECT Fname FROM EMPLOYEE) INTERSECT (SELECT Dependent_name from DEPENDENT);

```

tusharys_cs545=# (SELECT Fname
tusharys_cs545=# FROM EMPLOYEE)
tusharys_cs545=# INTERSECT
tusharys_cs545=# (SELECT Dependent_name
tusharys_cs545=# from DEPENDENT);
      fname
-----
(0 rows)

```