

DBMS Lab 7 - Set Operations

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PES1UG19CS213

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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 the manager of the department that controls the project.

```
pes1ug19cs213@pes1ug19cs213: ~  
company=# (select pnumber from  
project as p_213, department as d_213, employee as e_213  
where d_213.Mgr_ssn = e_213.Ssn and p_213.Dnum = d_213.Dnumber  
and e_213.Lname = 'Smith')  
UNION  
(select pnumber from  
project as p_213, works_on as w_213, employee as e_213  
where w_213.Essn = e_213.Ssn and p_213.Pnumber = w_213.Pno  
and e_213.Lname = 'Smith');  
pnumber  
-----  
1  
2  
(2 rows)
```

2. Retrieve the names of the employees who do not have dependents.

```
pes1ug19cs213@pes1ug19c...  
company=# select Fname, Lname from employee as e_213  
company-# where not exists  
company-# (select * from dependent as d_213  
company(# where d_213.Essn = e_213.Ssn);  
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.

```
pes1ug19cs213@pes1ug19cs...  
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)
```

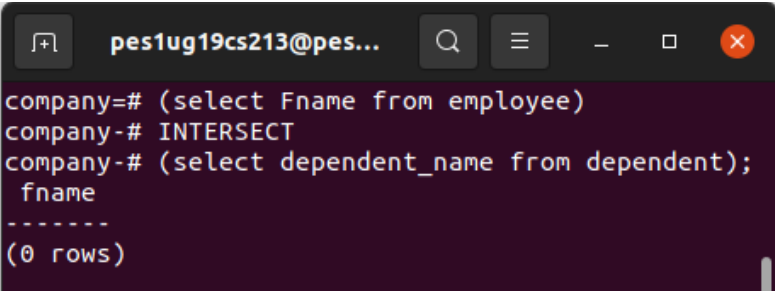
4. Using Intersect, find all projects that are controlled by department 5, and have employee SSN 123456789 working in that project.

```
pes1ug19cs213@pes1ug19cs2...  
company=# (select pnumber from project where dnum = 5)  
INTERSECT  
(select pno from works_on where Essn = '123456789');  
      pnumber  
-----  
1  
2  
(2 rows)
```

5. Using Except, find the SSNs of all employees who work in department 5, but not the Bellaire location.

```
pes1ug19cs213@pes1ug19cs213: ~  
company=# select distinct Essn from works_on where Pno in  
(select Pnumber from project where Dnum = 5  
EXCEPT  
select Pnumber from project where Plocation = 'Bellaire');  
      essn  
-----  
123456789  
333445555  
453453453  
666884444  
(4 rows)
```

6. Find the name of the employee who has the same name as the dependent of another employee (use Intersect).

A terminal window with a dark background and light-colored text. The window title bar shows a file icon, the text 'pes1ug19cs213@pes...', and standard window controls (search, menu, zoom, and close). The terminal displays the output of an SQL query using the INTERSECT operator. The query compares the 'Fname' column from the 'employee' table with the 'dependent_name' column from the 'dependent' table. The output shows a header 'fname' followed by a separator line '-----' and then '(0 rows)', indicating that no employees have the same name as their dependent.

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