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SRN-PES2UG19CS013

WEEK 7 SQL – Set Operations-Union, intersect and minus

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=# CREATE TABLE Set1 as (
company(#    SELECT Pnumber AS Pnumero FROM PROJECT WHERE Dnum = (
company(#        SELECT Dnumber FROM DEPARTMENT WHERE Mgr_ssn=(
company(#            SELECT Ssn FROM Employee WHERE Lname='Smith'
company(#            )
company(#        )
company(# );
SELECT 0
company=# CREATE TABLE Set2 as (
company(#     SELECT Pno FROM WORKS_ON WHERE Essn = (
company(#         SELECT Ssn FROM Employee WHERE Lname='Smith'
company(#     )
company(# );
SELECT 2
company=# SELECT Pname,Pnumero AS Pnumber FROM PROJECT,Set1 WHERE Pnumber=Pnumero
company-# UNION
company-# SELECT Pname,Pnumber FROM PROJECT,Set2 WHERE Pnumber=Pno;
  pname   | pnumber
----------+---------
 ProductX |       1
 ProductY |       2
(2 rows)
```

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

```
company=# SELECT Fname,Minit,Lname FROM Employee WHERE (SELECT COUNT(*) FROM
company(# DEPENDENT WHERE Essn=Ssn)>=0
company-# EXCEPT
company-# SELECT Fname,Minit,Lname FROM Employee WHERE (SELECT COUNT(*) FROM
company(# DEPENDENT WHERE Essn=Ssn)>=1;
 fname  | minit |  lname
--------+-------+---------
 Alicia | J     | Zelaya
 Ahmed  | V     | Jabbar
 Ramesh | K     | Narayan
 Joyce  | A     | English
 James  | E     | Borg
(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=# DROP TABLE IF EXISTS Set1;
DROP TABLE
company=# DROP TABLE IF EXISTS Set2;
DROP TABLE
company=# CREATE TABLE Set1 AS(
company(#     SELECT Pnumber AS Pnumero FROM PROJECT WHERE Dnum=5
company(# );
SELECT 3
company=# CREATE TABLE Set2 AS(
company(#     SELECT Pno FROM WORKS_ON WHERE Essn='123456789'
company(# );
SELECT 2
company=# SELECT Pname,Pnumero AS Pnumber FROM PROJECT,Set1 WHERE Pnumber=Pnumero
company-# INTERSECT
company-# SELECT Pname,Pnumber FROM PROJECT,Set2 WHERE Pnumber=Pno ORDER BY Pnumber;
  pname   | pnumber
----------+---------
 ProductX |       1
 ProductY |       2
(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 Essn FROM WORKS_ON WHERE Pno=(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;
 fname
-------
(0 rows)
```