UE19CS304 – DBMS LABORATORY

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Week8: SQL - Joins: inner , outer; Sub queries

- Creating database and inserting data:

```
C:\Program Files\PostgreSQL\13\bin>psql -U postgres -f C:\Users\LENOVO\Desktop\companyddl.sql
Password for user postgres:
psql:C:/Users/LENOVO/Desktop/companyddl.sql:1: ERROR:  database "company" does not exist
CREATE DATABASE
You are now connected to database "company" as user "postgres".
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
ALTER TABLE
```

```
C:\Program Files\PostgreSQL\13\bin>psql -U postgres -f C:\Users\LENOVO\Desktop\company_insert.sql
Password for user postgres:
You are now connected to database "company" as user "postgres".
ALTER TABLE
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
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INSERT 0 1
INSERT 0 1
psql:C:/Users/LENOVO/Desktop/company_insert.sql:46: ERROR:  null value in column "hours" of relation "works_on" violates not-null constraint
DETAIL:  Failing row contains (888665555, 20, null).
```

```
postgres=# alter database company rename to ystushar_cs545;
ALTER DATABASE
```

```
postgres=# \c ystushar_cs545;
You are now connected to database "ystushar_cs545" as user "postgres".
```

1. Using nested query retrieve the names of all employees who have two or more dependents.

- Select fname,minit,lname from employee where ssn in (select essn from dependent group by essn having count(essn)>=2);

```
ystushar_cs545=# select fname,minit,lname from employee where ssn in
ystushar_cs545-# (select essn from dependent group by essn having count(essn)>=2);
  fname   | minit | lname
----------+-------+-------
 John     | B     | Smith
 Franklin | T     | Wong
(2 rows)


ystushar_cs545=#
```

2. Using nested query Retrieve the name of each employee who has a dependent with the same first name and is the same sex as the employee.

- select fname,minit,lname from employee where exists (select dependent_name from dependent where dependent_name=fname and dependent.gender = employee.gender and ssn=essn);

```
ystushar_cs545=# select fname,minit,lname from employee
ystushar_cs545-# where exists
ystushar_cs545-# (select dependent_name from dependent where
ystushar_cs545(# dependent_name= fname and dependent.gender=employee.gender and ssn=essn);
 fname | minit | lname
-------+-------+-------
(0 rows)


ystushar_cs545=#
```

3. Using nested query retrieve names of employees whose salary is greater than the salary of all the employees in department 5.

- select fname,minit,lname from employee where salary>(select max(salary) from employee where dno=5);

```
ystushar_cs545=# select fname,minit,lname from employee
ystushar_cs545-# where salary>(select max(salary) from employee where dno=5);
  fname   | minit |  lname
----------+-------+---------
 James    | E     | Borg
 Jennifer | S     | Wallace
(2 rows)


ystushar_cs545=#
```

4. Retrieve the names of employees who have no dependents.(use Exists/Not Exists)

- select fname,minit,lname from employee where not exists (select essn from dependent where ssn=essn);

```
ystushar_cs545=# select fname,minit,lname from employee
ystushar_cs545-# where not exists
ystushar_cs545-# (select essn from dependent where ssn=essn);
 fname  | minit |  lname
--------+-------+---------
 James  | E     | Borg
 Alicia | J     | Zelaya
 Ramesh | K     | Narayan
 Joyce  | A     | English
 Ahmed  | V     | Jabbar
(5 rows)


ystushar_cs545=#
```

5. List the names of managers who have at least one dependent.

- select fname,minit,lname from employee where ssn in (select mgr_ssn from dependent join dependent on mgr_ssn=essn);

```
ystushar_cs545=# select fname,minit,lname from employee
ystushar_cs545-# where ssn in
ystushar_cs545-# (select mgr_ssn from department join dependent on mgr_ssn=essn);
  fname   | minit |  lname
----------+-------+---------
 Franklin | T     | Wong
 Jennifer | S     | Wallace
(2 rows)


ystushar_cs545=#
```

6. Using natural Join retrieve the name and address of every employee who works for the ‘Research’ department.

- select fname,minit,lname,address from employee join department on dno=dnumber where dname=’Research’;

```
ystushar_cs545=# select fname,minit,lname,address from employee
ystushar_cs545-# join department on dno=dnumber where dname='Research';
  fname   | minit |  lname  |         address
----------+-------+---------+-------------------------
 John     | B     | Smith   | 731 Fondren,Houston,TX
 Franklin | T     | Wong    | 638 voss,Houston,TX
 Ramesh   | K     | Narayan | 975 Fire Oak, Humble, TX
 Joyce    | A     | English | 5631 Rice,Houston,TX
(4 rows)


ystushar_cs545=#
```