UE19CS304 – DBMS LABORATORY

SRN: PES1UG19CS545

Name: Tushar Y S

Week5: SQL DML- Insert (using select) Update and delete, Transactions commit rollback and savepoint .

Task1: SQL DML

1.1:

- Creating tables using given companyddl file.

```
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
```

- Inserting values using given company_insert file.

```
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
INSERT 0 1
INSERT 0 1
INSERT 0 1
```

- Creating table and inserting values into it.

```
company=# create table Tushar_545(last_name text,project_name text,hours_week DECIMAL(3,1));
CREATE TABLE
company=# insert into Tushar_545 select lname,pname,hours from works_on as w,project as p,employee as e where e.ssn=w.essn and p.pnumber=w.pno;
INSERT 0 15
company=# select *from Tushar_545;
 last_name |  project_name   | hours_week
-----------+-----------------+------------
 Smith     | ProductX        |       32.5
 Smith     | ProductY        |        7.5
 Narayan   | ProductZ        |       40.0
 English   | ProductX        |       20.0
 English   | ProductY        |       20.0
 Wong      | ProductY        |       10.0
 Wong      | ProductZ        |       10.0
 Wong      | Computerization |       10.0
 Wong      | Reorganization  |       10.0
 Zelaya    | Newbenefits     |       30.0
 Zelaya    | Computerization |       10.0
 Jabbar    | Computerization |       35.0
 Jabbar    | Newbenefits     |        5.0
 Wallace   | Newbenefits     |       20.0
 Wallace   | Reorganization  |       15.0
(15 rows)
```

1.2:

- Updating the location and controlling department number of project number 10 to 'Bellaire' and 5, respectively.

```
company=# UPDATE PROJECT set Plocation='Bellaire',Dnum=5 where Pnumber=10;
UPDATE 1
company=# SELECT * from PROJECT;
      pname      | pnumber | plocation | dnum
-----------------+---------+-----------+------
 ProductX        |       1 | Bellaire  |    5
 ProductY        |       2 | Sugarland |    5
 ProductZ        |       3 | Houston   |    5
 Reorganization  |      20 | Houston   |    1
 Newbenefits     |      30 | Stafford  |    4
 Computerization |      10 | Bellaire  |    5
(6 rows)


company=#
```

1.3:

- Giving all employees in 'Research' department a 10% raise in salary.

```
company=# UPDATE Employee SET Salary=1.1*Salary where Dno in (select Dnumber from DEPARTMENT where Dname='Research');
UPDATE 4
company=# SELECT * from Employee;
  fname   | minit |  lname  |    ssn    |   bdate    |          address          | gender |  salary  | super_ssn | dno
----------+-------+---------+-----------+------------+---------------------------+--------+----------+-----------+-----
 James    | E     | Borg    | 888665555 | 1937-11-10 | 450 Stone, Houston,TX     | M      | 55000.00 |           |   1
 Alicia   | J     | Zelaya  | 999887777 | 1968-01-19 | 3321 Castle,Spring,Tx     | F      | 25000.00 | 333445555 |   4
 Jennifer | S     | Wallace | 987654321 | 1941-06-20 | 291 Berry, Bellaire,Tx    | F      | 43000.00 | 333445555 |   4
 Ahmed    | V     | Jabbar  | 987987987 | 1969-03-29 | 980 Dallas, Houston,TX    | M      | 25000.00 | 987654321 |   4
 John     | B     | Smith   | 123456789 | 1965-01-09 | 731 Fondren,Houston,TX    | M      | 33000.00 | 888665555 |   5
 Franklin | T     | Wong    | 333445555 | 1955-12-08 | 638 voss,Houston,TX       | M      | 44000.00 | 888665555 |   5
 Ramesh   | K     | Narayan | 666884444 | 1962-09-15 | 975 Fire Oak, Humble, TX  | M      | 41800.00 | 333445555 |   5
 Joyce    | A     | English | 453453453 | 1972-07-31 | 5631 Rice,Houston,TX      | F      | 27500.00 | 333445555 |   5
(8 rows)
```

1.4:

- Delete employee record whose lname='Brown'

```
company=# DELETE FROM Employee where Lname='Brown';
DELETE 0
company=#
```

1.5:

- Delete all the records of the employee who doesn't have dependent.

```
company=# alter table employee drop constraint employee_super_ssn_fkey;
ALTER TABLE
company=# alter table department drop constraint department_mgr_ssn_fkey;
ALTER TABLE
company=# alter table dependent drop constraint dependent_essn_fkey;
ALTER TABLE
company=# alter table works_on drop constraint works_on_essn_fkey;
ALTER TABLE
company=# select *from employee;
  fname   | minit |  lname  |    ssn    |   bdate    |          address          | gender |  salary  | super_ssn | dno
----------+-------+---------+-----------+------------+---------------------------+--------+----------+-----------+-----
 James    | E     | Borg    | 888665555 | 1937-11-10 | 450 Stone, Houston,TX     | M      | 55000.00 |           |   1
 Alicia   | J     | Zelaya  | 999887777 | 1968-01-19 | 3321 Castle,Spring,Tx     | F      | 25000.00 | 333445555 |   4
 Jennifer | S     | Wallace | 987654321 | 1941-06-20 | 291 Berry, Bellaire,Tx    | F      | 43000.00 | 333445555 |   4
 Ahmed    | V     | Jabbar  | 987987987 | 1969-03-29 | 980 Dallas, Houston,TX    | M      | 25000.00 | 987654321 |   4
 John     | B     | Smith   | 123456789 | 1965-01-09 | 731 Fondren,Houston,TX    | M      | 33000.00 | 888665555 |   5
 Franklin | T     | Wong    | 333445555 | 1955-12-08 | 638 voss,Houston,TX       | M      | 44000.00 | 888665555 |   5
 Ramesh   | K     | Narayan | 666884444 | 1962-09-15 | 975 Fire Oak, Humble, TX  | M      | 41800.00 | 333445555 |   5
 Joyce    | A     | English | 453453453 | 1972-07-31 | 5631 Rice,Houston,TX      | F      | 27500.00 | 333445555 |   5
(8 rows)
```

```
company=# \d employee;
                    Table "public.employee"
   Column   |         Type          | Collation | Nullable | Default
------------+-----------------------+-----------+----------+---------
 fname      | character varying(15) |           | not null |
 minit      | character(1)          |           |          |
 lname      | character varying(15) |           | not null |
 ssn        | character(9)          |           | not null |
 bdate      | date                  |           |          |
 address    | character varying(30) |           |          |
 gender     | character(1)          |           |          |
 salary     | numeric(10,2)         |           |          |
 super_ssn  | character(9)          |           |          |
 dno        | integer               |           | not null |
Indexes:
    "employee_pkey" PRIMARY KEY, btree (ssn)
Foreign-key constraints:
    "fkey_dno" FOREIGN KEY (dno) REFERENCES department(dnumber)
```

```
company=# delete from employee where ssn not in(select distinct essn from dependent);
DELETE 5
company=# select * from employee;
  fname   | minit | lname  |    ssn    |   bdate    |         address        | gender | salary   | super_ssn | dno
----------+-------+--------+-----------+------------+------------------------+--------+----------+-----------+-----
 Jennifer | S     | Wallace| 987654321 | 1941-06-20 | 291 Berry, Bellaire,Tx | F      | 43000.00 | 333445555 |   4
 John     | B     | Smith  | 123456789 | 1965-01-09 | 731 Fondren,Houston,TX | M      | 33000.00 | 888665555 |   5
 Franklin | T     | Wong   | 333445555 | 1955-12-08 | 638 voss,Houston,TX    | M      | 44000.00 | 888665555 |   5
(3 rows)
```

```
company=# select * from dependent;
    essn    | dependent_name | gender |   bdate    | relationship
------------+----------------+--------+------------+--------------
 333445555  | Alice          | F      | 1986-04-05 | Daughter
 333445555  | Theodore       | M      | 1983-10-25 | Son
 333445555  | Joy            | F      | 1958-05-03 | Spouse
 987654321  | Abner          | M      | 1942-02-28 | Spouse
 123456789  | Michael        | F      | 1988-01-04 | Son
 123456789  | Alice          | F      | 1988-12-30 | Daughter
 123456789  | Elizabeth      | F      | 1967-05-05 | Spouse
(7 rows)
```

Task2: Transactions

2.1:

- Create a transaction consisting of a create table and multiple insert statements. After End transaction the changes should be committed and can be checked using select statement.

```
company=# begin;
BEGIN
company=*# create table tush_cs545(name varchar(30),id int);
CREATE TABLE
company=*# insert into tush_cs545 values('Tushar',1);
INSERT 0 1
company=*# insert into tush_cs545 values('Virat',2);
INSERT 0 1
company=*# commit;
COMMIT
company=# select * from tush_cs545;
  name  | id
--------+----
 Tushar |  1
 Virat  |  2
(2 rows)


company=#
```

2.2:

- For the above transaction introduce a roll back after inserting 2 records. The create and insert should not be reflected in the database.

```
company=# begin;
BEGIN
company=*# create table tushar_cs545(name varchar(30),id int);
CREATE TABLE
company=*# insert into tushar_cs545 values('Dhoni',3);
INSERT 0 1
company=*# insert into tushar_cs545 values('Rahul',4);
INSERT 0 1
company=*# rollback;
ROLLBACK
company=# select * from tushar_cs545;
ERROR:  relation "tushar_cs545" does not exist
LINE 1: select * from tushar_cs545;
                      ^
company=#
```

2.3:

- For the first transaction introduce a save point after inserting 2 records and insert 2 more records and rollback to savepoint . They database should reflect only first 2 insert.

```
company=# begin;
BEGIN
company=*# create table tush2_cs545(name varchar(30),id int);
CREATE TABLE
company=*# insert into tush2_cs545 values('Warner',5);
INSERT 0 1
company=*# insert into tush2_cs545 values('Kane',6);
INSERT 0 1
company=*# savepoint s1;
SAVEPOINT
company=*# insert into tush2_cs545 values('Roy',7);
INSERT 0 1
company=*# insert into tush2_cs545 values('Chahal',8);
INSERT 0 1
company=*# rollback to savepoint s1;
ROLLBACK
company=*# commit;
COMMIT
company=# select * from tush2_cs545;
  name  | id
--------+----
 Warner |  5
 Kane   |  6
(2 rows)


company=#
```