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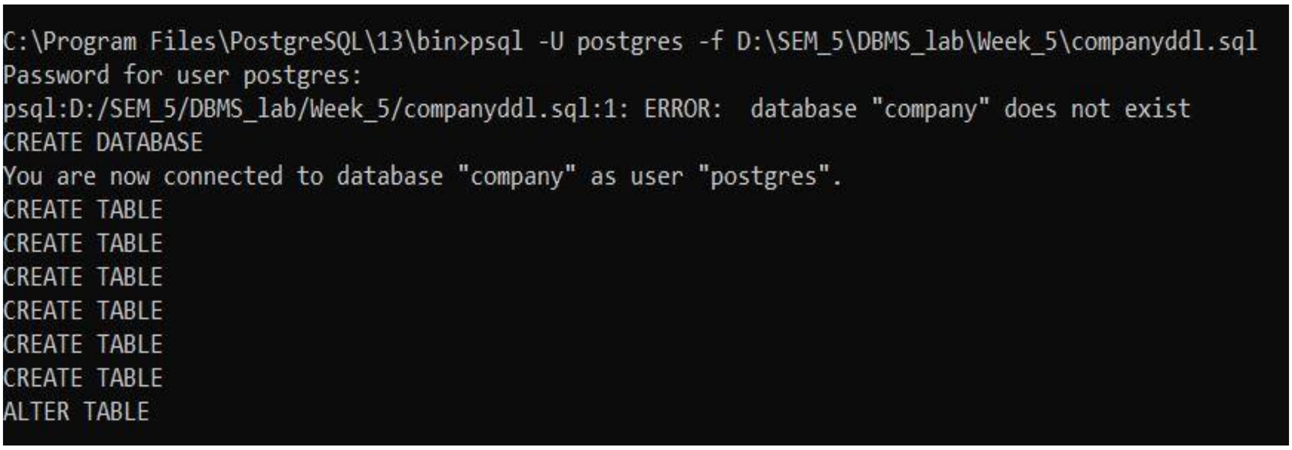
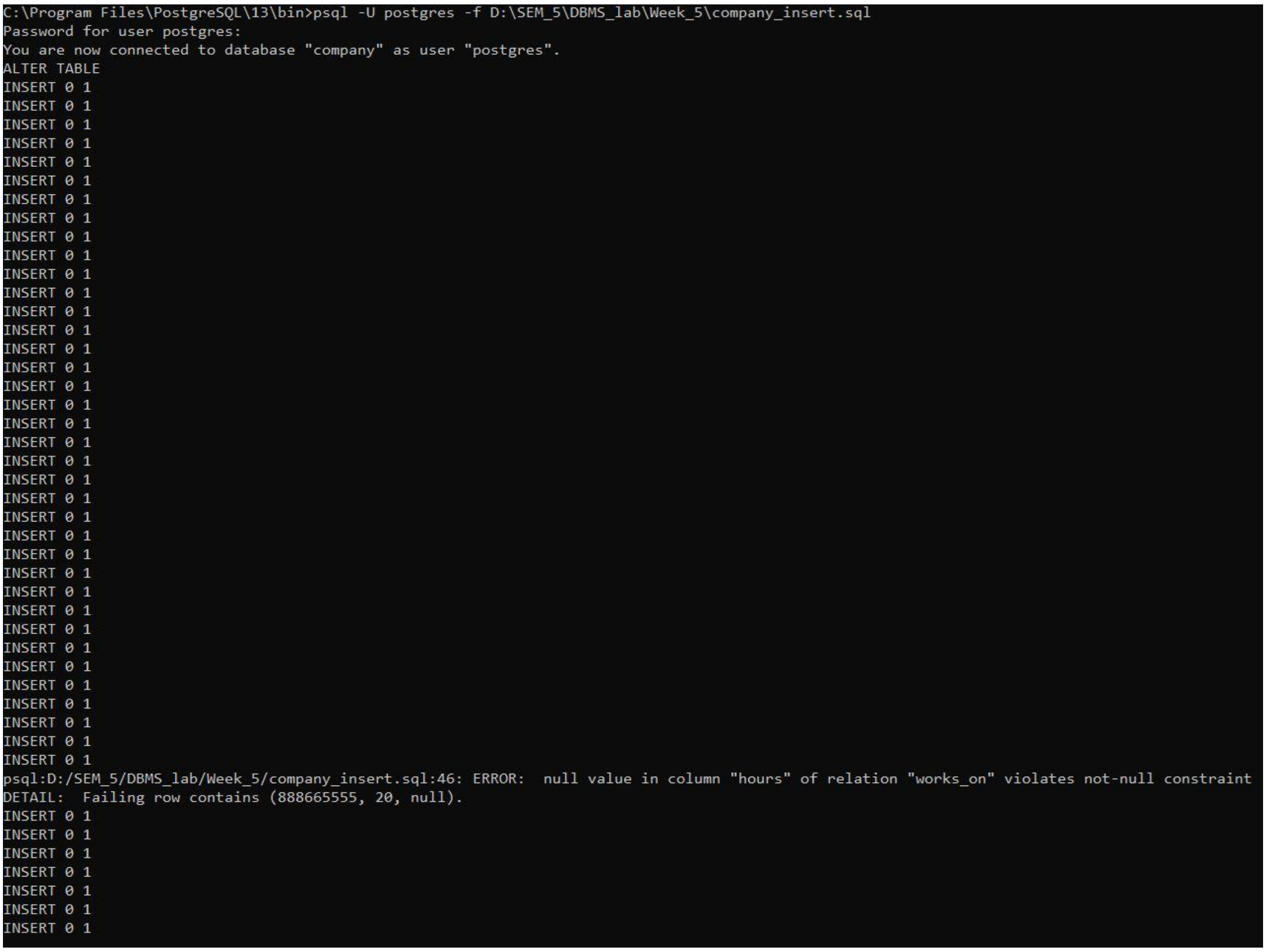
Section: D

WEEK5 -

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



```
C:\Program Files\PostgreSQL\13\bin>psql -U postgres -f D:\SEM_5\DBMS_lab\Week_5\companyddl.sql
Password for user postgres:
psql:D:/SEM_5/DBMS_lab/Week_5/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 D:\SEM_5\DBMS_lab\Week_5\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
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
psql:D:/SEM_5/DBMS_lab/Week_5/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).
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
INSERT 0 1
```
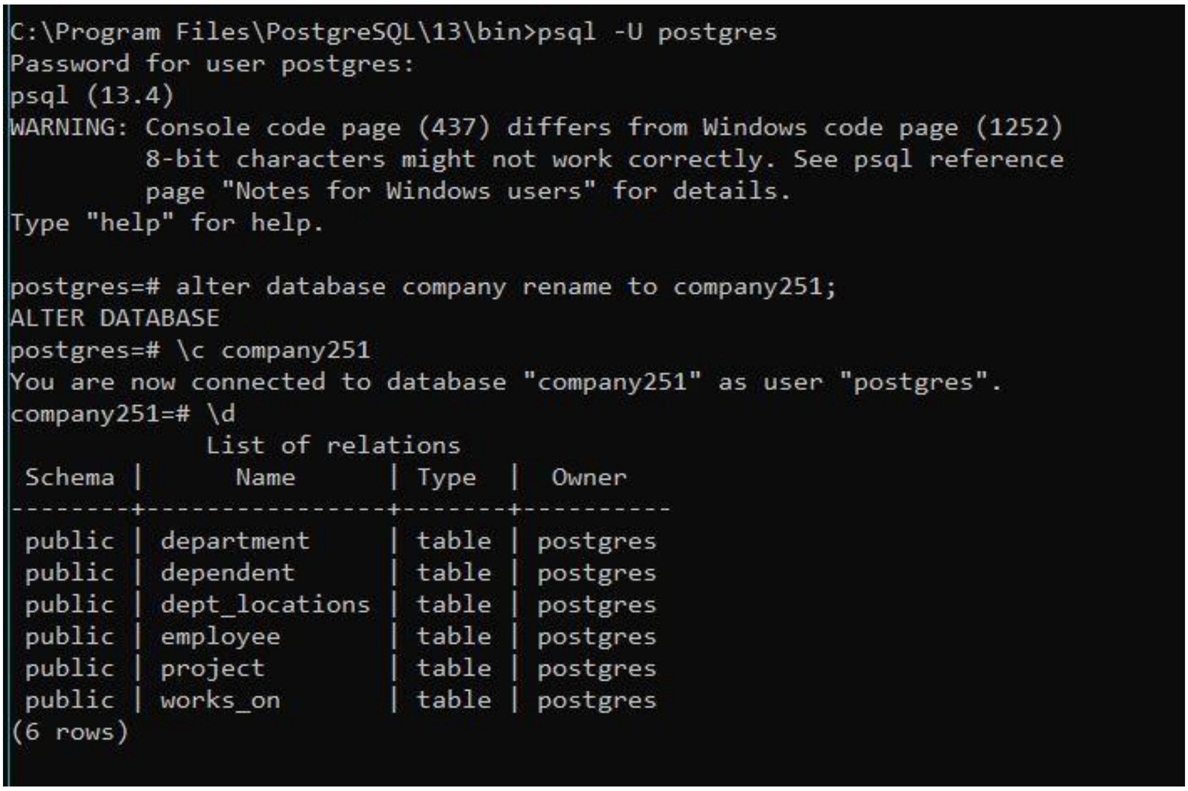
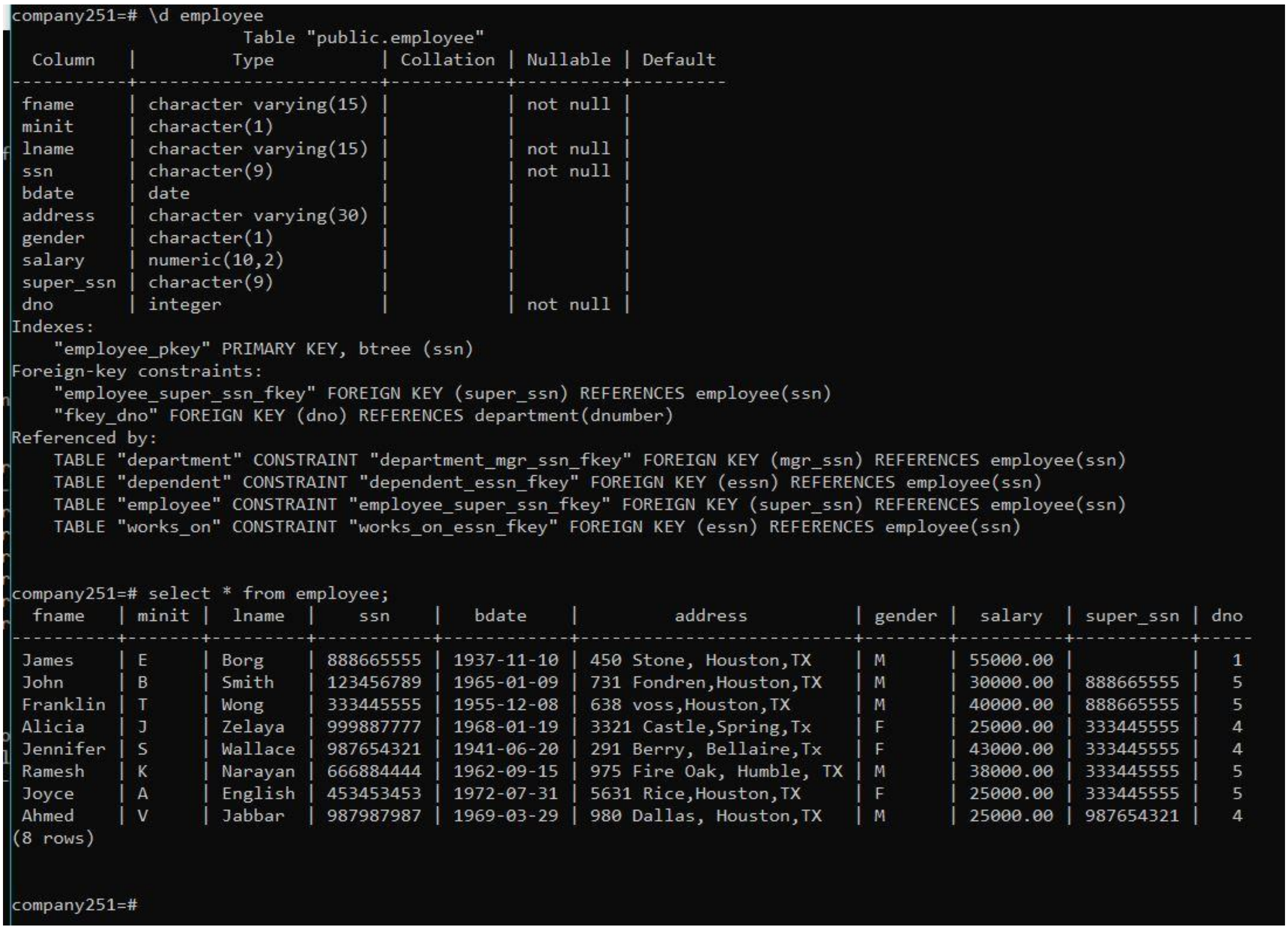



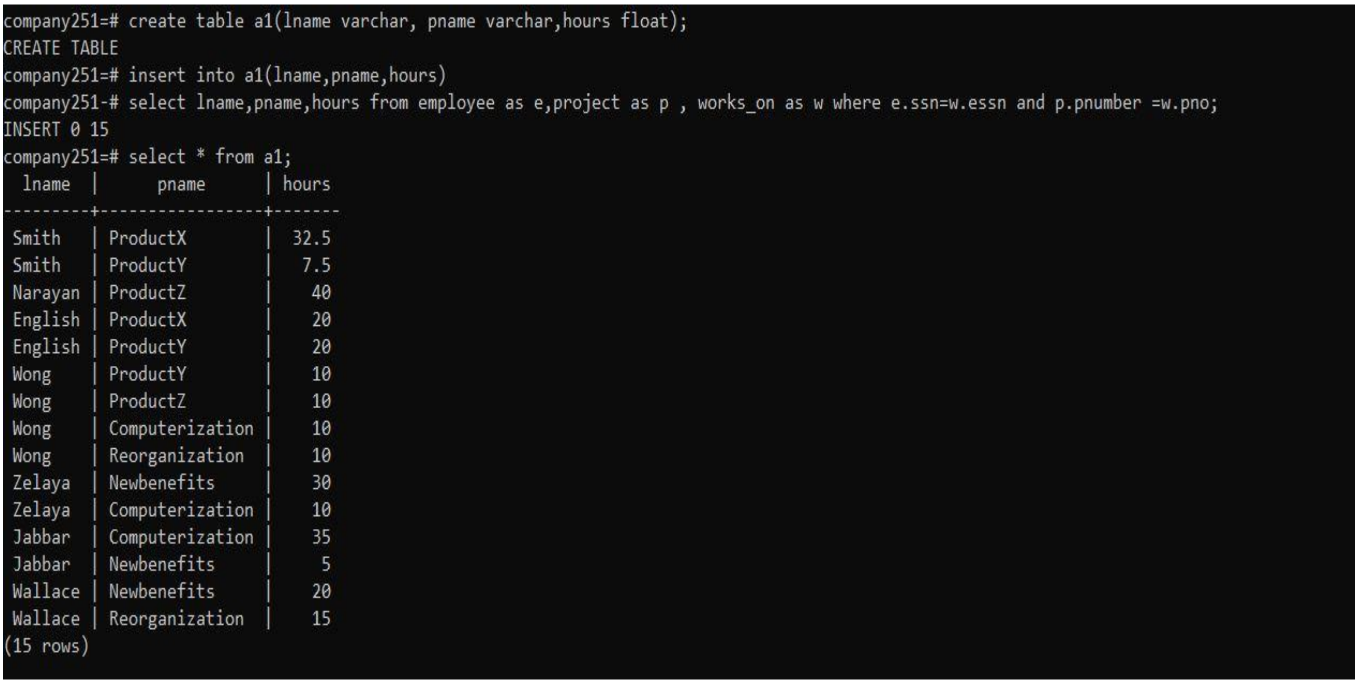
```
C:\Program Files\PostgreSQL\13\bin>psql -U postgres
Password for user postgres:
psql (13.4)
WARNING: Console code page (437) differs from Windows code page (1252)
         8-bit characters might not work correctly. See psql reference
         page "Notes for Windows users" for details.
Type "help" for help.

postgres=# alter database company rename to company251;
ALTER DATABASE
postgres=# \c company251
You are now connected to database "company251" as user "postgres".
company251=# \d
             List of relations
 Schema |      Name       | Type  |  Owner
--------+-----------------+-------+----------
 public | department      | table | postgres
 public | dependent       | table | postgres
 public | dept_locations  | table | postgres
 public | employee        | table | postgres
 public | project         | table | postgres
 public | works_on        | table | postgres
(6 rows)
```



```
company251=# \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:
    "employee_super_ssn_fkey" FOREIGN KEY (super_ssn) REFERENCES employee(ssn)
    "fkey_dno" FOREIGN KEY (dno) REFERENCES department(dnumber)
Referenced by:
    TABLE "department" CONSTRAINT "department_mgr_ssn_fkey" FOREIGN KEY (mgr_ssn) REFERENCES employee(ssn)
    TABLE "dependent" CONSTRAINT "dependent_essn_fkey" FOREIGN KEY (essn) REFERENCES employee(ssn)
    TABLE "employee" CONSTRAINT "employee_super_ssn_fkey" FOREIGN KEY (super_ssn) REFERENCES employee(ssn)
    TABLE "works_on" CONSTRAINT "works_on_essn_fkey" FOREIGN KEY (essn) REFERENCES employee(ssn)


company251=# 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
 John     | B     | Smith   | 123456789 | 1965-01-09 | 731 Fondren,Houston,TX   | M      | 30000.00 | 888665555 |   5
 Franklin | T     | Wong    | 333445555 | 1955-12-08 | 638 voss,Houston,TX      | M      | 40000.00 | 888665555 |   5
 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
 Ramesh   | K     | Narayan | 666884444 | 1962-09-15 | 975 Fire Oak, Humble, TX | M      | 38000.00 | 333445555 |   5
 Joyce    | A     | English | 453453453 | 1972-07-31 | 5631 Rice,Houston,TX     | F      | 25000.00 | 333445555 |   5
 Ahmed    | V     | Jabbar  | 987987987 | 1969-03-29 | 980 Dallas, Houston,TX   | M      | 25000.00 | 987654321 |   4
(8 rows)


company251=#
```

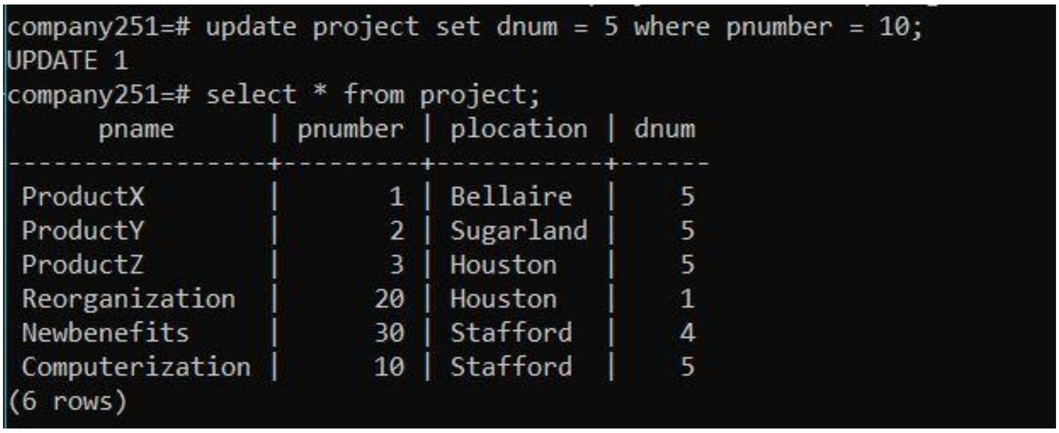
Problem Statement: 1. SQL DML

・Create a temporary table that has the employee last name, project name, and hours per week for each employee working on a project.
Insert the values into the table using insert into with select command.

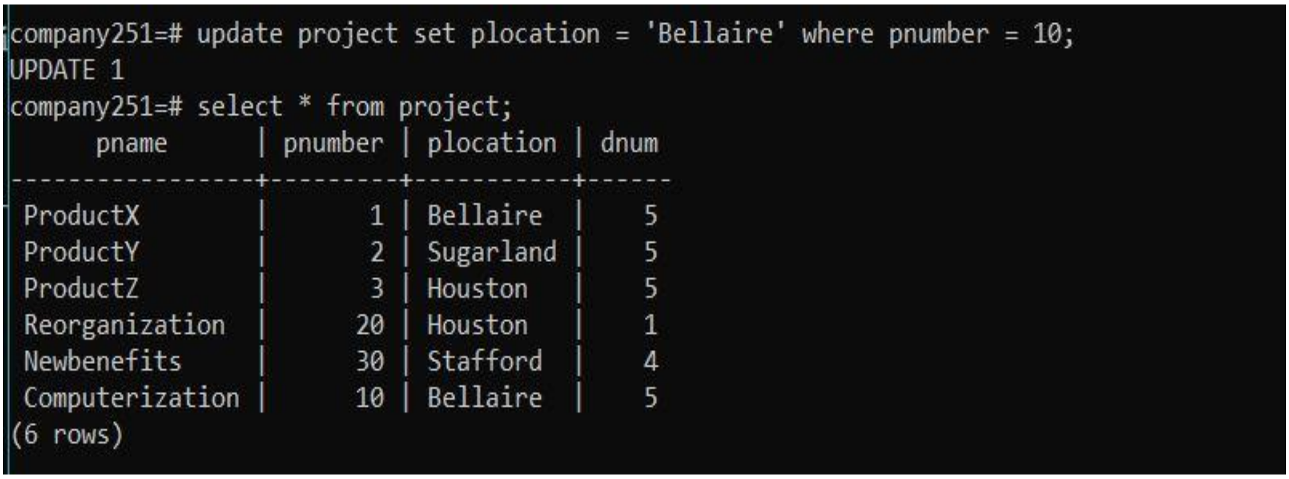


```
company251=# create table a1(lname varchar, pname varchar,hours float);
CREATE TABLE
company251=# insert into a1(lname,pname,hours)
company251-# select lname,pname,hours from employee as e,project as p , works_on as w where e.ssn=w.essn and p.pnumber =w.pno;
INSERT 0 15
company251=# select * from a1;
  lname  |      pname      | hours
---------+-----------------+-------
 Smith   | ProductX        |  32.5
 Smith   | ProductY        |   7.5
 Narayan | ProductZ        |    40
 English | ProductX        |    20
 English | ProductY        |    20
 Wong    | ProductY        |    10
 Wong    | ProductZ        |    10
 Wong    | Computerization |    10
 Wong    | Reorganization  |    10
 Zelaya  | Newbenefits     |    30
 Zelaya  | Computerization |    10
 Jabbar  | Computerization |    35
 Jabbar  | Newbenefits     |     5
 Wallace | Newbenefits     |    20
 Wallace | Reorganization  |    15
(15 rows)
```

· Update the location and controlling department number of project number 10 to ‘Bellaire’ and 5, respectively.

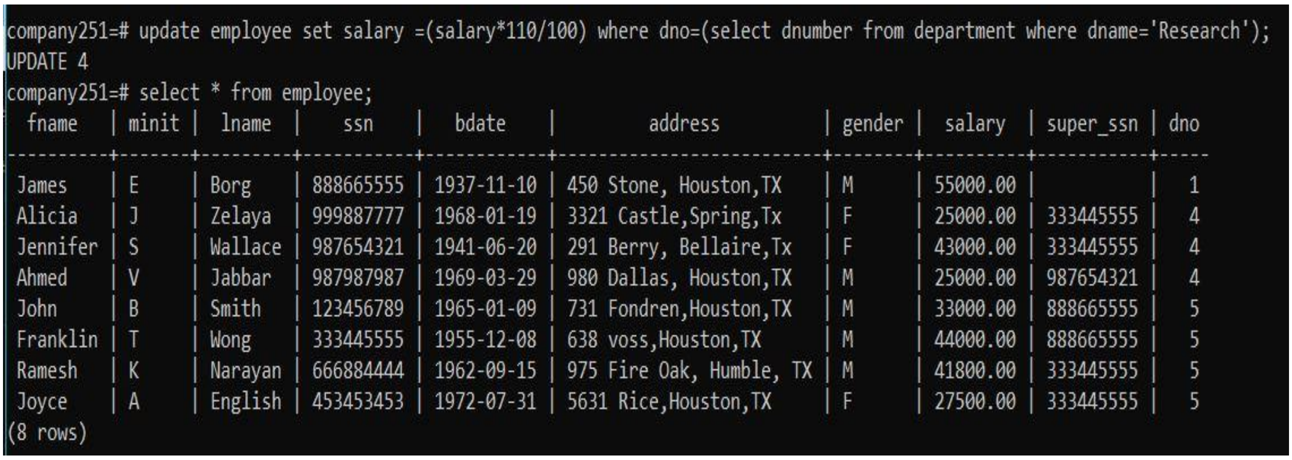


```
company251=# update project set dnum = 5 where pnumber = 10;
UPDATE 1
company251=# select * from project;
      pname      | pnumber | plocation | dnum
-----------------+---------+-----------+------
 ProductX        |       1 | Bellaire  |    5
 ProductY        |       2 | Sugarland |    5
 ProductZ        |       3 | Houston   |    5
 Reorganization  |      20 | Houston   |    1
 Newbenefits     |      30 | Stafford  |    4
 Computerization |      10 | Stafford  |    5
(6 rows)
```



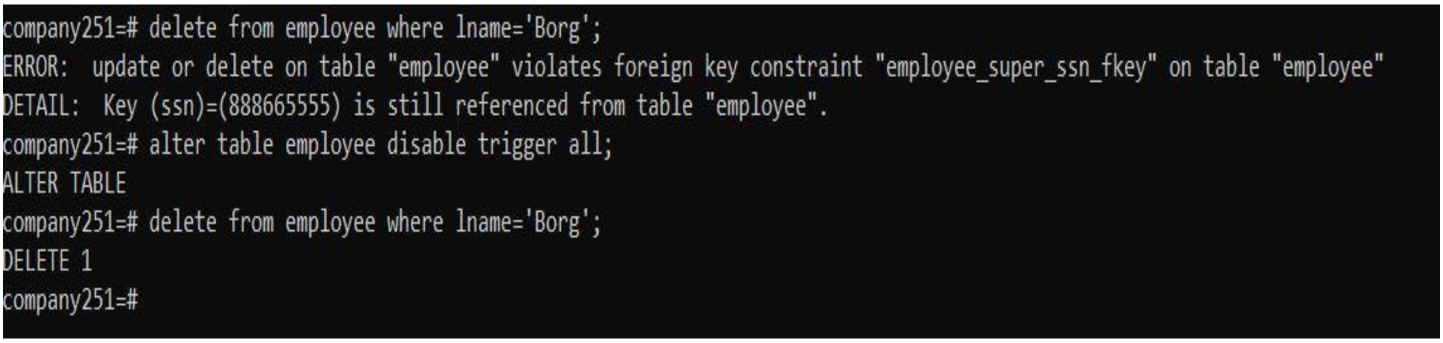
```
company251=# update project set plocation = 'Bellaire' where pnumber = 10;
UPDATE 1
company251=# select * from project;
      pname      | pnumber | plocation | dnum
-----------------+---------+-----------+------
 ProductX        |       1 | Bellaire  |    5
 ProductY        |       2 | Sugarland |    5
 ProductZ        |       3 | Houston   |    5
 Reorganization  |      20 | Houston   |    1
 Newbenefits     |      30 | Stafford  |    4
 Computerization |      10 | Bellaire  |    5
(6 rows)
```

· Give all employees in the ‘Research’ department a 10% raise in salary.



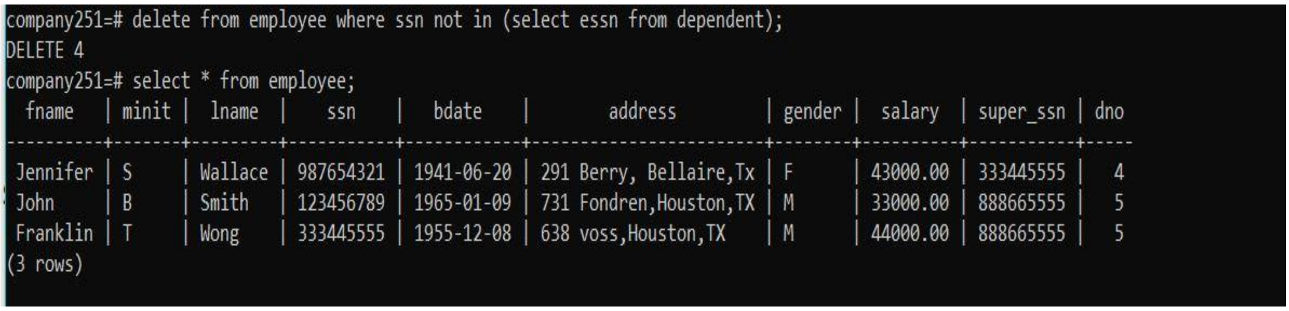
```
company251=# update employee set salary =(salary*110/100) where dno=(select dnumber from department where dname='Research');
UPDATE 4
company251=# select * from employee;
  fname   | minit |  lname  |    ssn    |   bdate    |         address          | gender |  salary  | super_ssn | dno
----------+-------+---------+-----------+------------+--------------------------+--------+----------+-----------+-----
 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)
```

· Delete employee record whose lname =’ Borg’



```
company251=# delete from employee where lname='Borg';
ERROR:  update or delete on table "employee" violates foreign key constraint "employee_super_ssn_fkey" on table "employee"
DETAIL:  Key (ssn)=(888665555) is still referenced from table "employee".
company251=# alter table employee disable trigger all;
ALTER TABLE
company251=# delete from employee where lname='Borg';
DELETE 1
company251=#
```

- Delete all the records of the employee who doesn't have dependent. (use sub query).

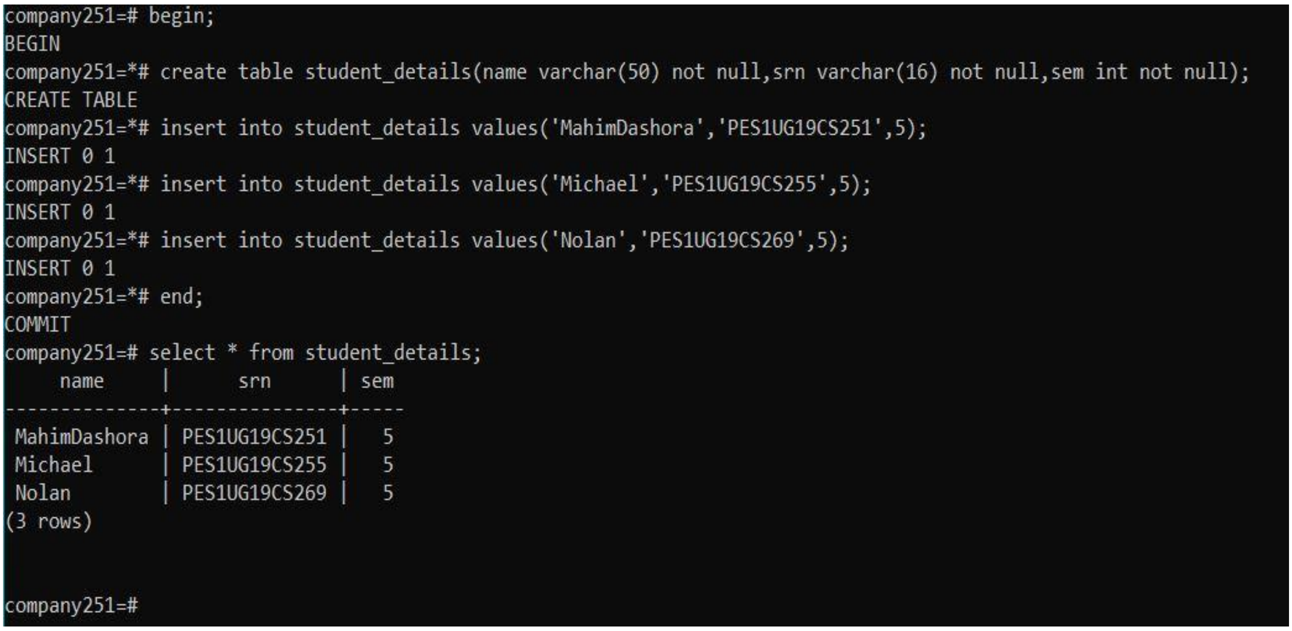


```
company251=# delete from employee where ssn not in (select essn from dependent);
DELETE 4
company251=# select * from employee;
  fname   | minit |  lname  |    ssn    |   bdate    |        address         | gender |  salary  | super_ssn | dno
----------+-------+---------+-----------+------------+------------------------+--------+----------+-----------+-----
 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)
```

2. Transactions 3*5

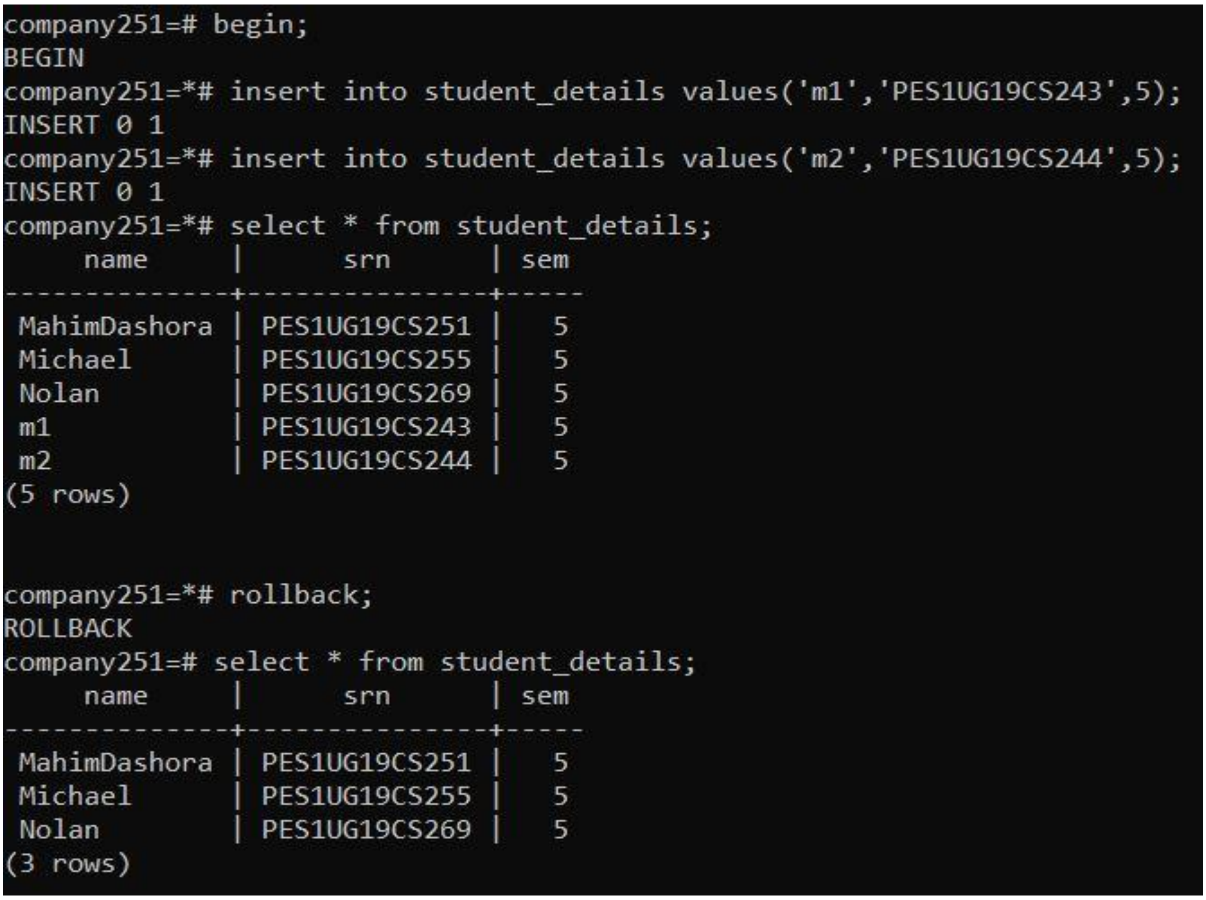
Create a transaction using begin and end commands consisting of the following sql statements.

· 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.



```
company251=# begin;
BEGIN
company251=*# create table student_details(name varchar(50) not null,srn varchar(16) not null,sem int not null);
CREATE TABLE
company251=*# insert into student_details values('MahimDashora','PES1UG19CS251',5);
INSERT 0 1
company251=*# insert into student_details values('Michael','PES1UG19CS255',5);
INSERT 0 1
company251=*# insert into student_details values('Nolan','PES1UG19CS269',5);
INSERT 0 1
company251=*# end;
COMMIT
company251=# select * from student_details;
     name     |      srn      | sem
--------------+---------------+-----
 MahimDashora | PES1UG19CS251 |   5
 Michael      | PES1UG19CS255 |   5
 Nolan        | PES1UG19CS269 |   5
(3 rows)


company251=#
```

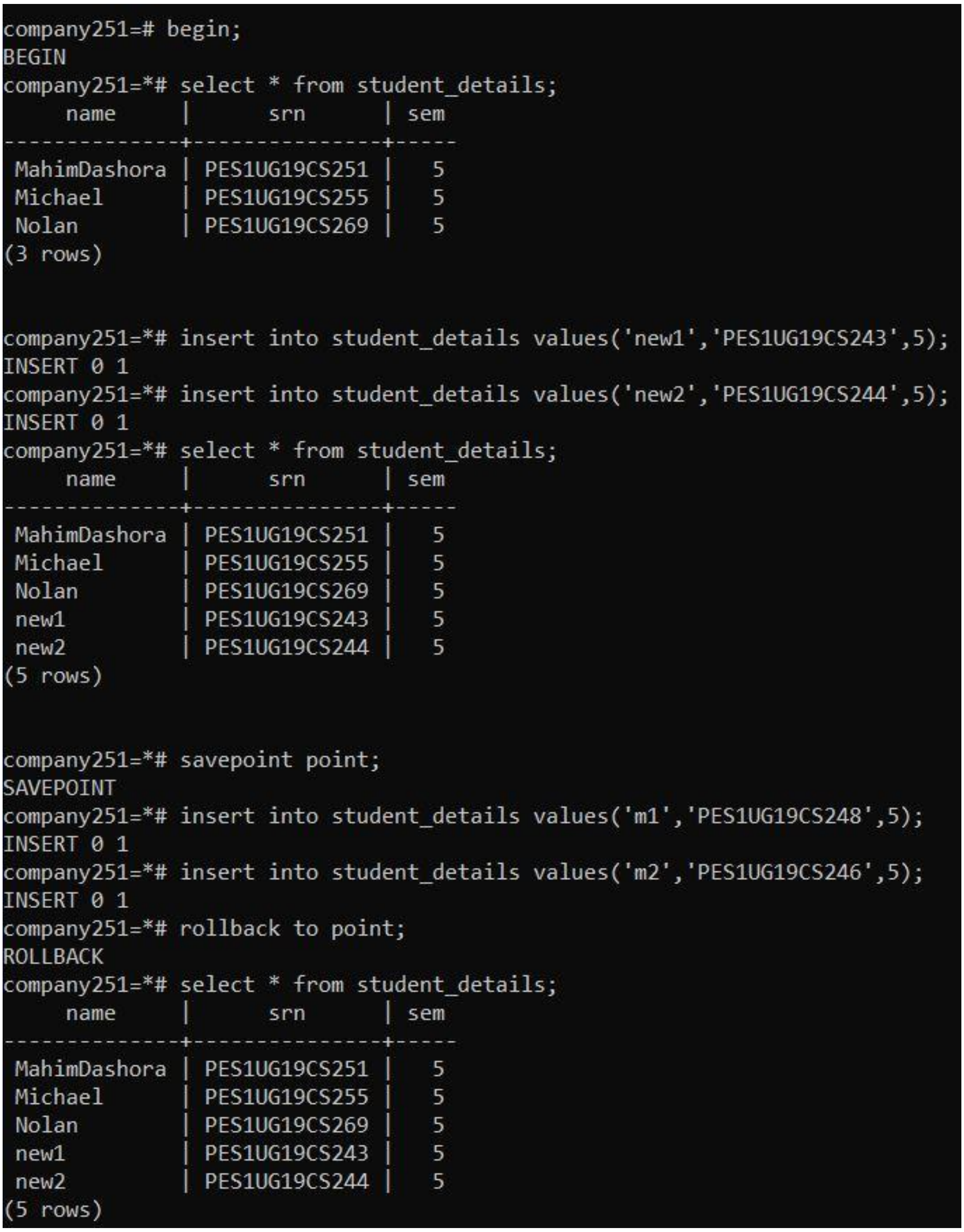
· For the above transaction introduce a roll back after inserting 2 records. The create and insert should not be reflected in the database.



```
company251=# begin;
BEGIN
company251=*# insert into student_details values('m1','PES1UG19CS243',5);
INSERT 0 1
company251=*# insert into student_details values('m2','PES1UG19CS244',5);
INSERT 0 1
company251=*# select * from student_details;
     name     |      srn      | sem
--------------+---------------+-----
 MahimDashora | PES1UG19CS251 |   5
 Michael      | PES1UG19CS255 |   5
 Nolan        | PES1UG19CS269 |   5
 m1           | PES1UG19CS243 |   5
 m2           | PES1UG19CS244 |   5
(5 rows)


company251=*# rollback;
ROLLBACK
company251=# select * from student_details;
     name     |      srn      | sem
--------------+---------------+-----
 MahimDashora | PES1UG19CS251 |   5
 Michael      | PES1UG19CS255 |   5
 Nolan        | PES1UG19CS269 |   5
(3 rows)
```

.

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



```
company251=# begin;
BEGIN
company251=*# select * from student_details;
     name     |      srn       | sem
--------------+----------------+-----
 MahimDashora | PES1UG19CS251 |   5
 Michael      | PES1UG19CS255 |   5
 Nolan        | PES1UG19CS269 |   5
(3 rows)


company251=*# insert into student_details values('new1','PES1UG19CS243',5);
INSERT 0 1
company251=*# insert into student_details values('new2','PES1UG19CS244',5);
INSERT 0 1
company251=*# select * from student_details;
     name     |      srn       | sem
--------------+----------------+-----
 MahimDashora | PES1UG19CS251 |   5
 Michael      | PES1UG19CS255 |   5
 Nolan        | PES1UG19CS269 |   5
 new1         | PES1UG19CS243 |   5
 new2         | PES1UG19CS244 |   5
(5 rows)


company251=*# savepoint point;
SAVEPOINT
company251=*# insert into student_details values('m1','PES1UG19CS248',5);
INSERT 0 1
company251=*# insert into student_details values('m2','PES1UG19CS246',5);
INSERT 0 1
company251=*# rollback to point;
ROLLBACK
company251=*# select * from student_details;
     name     |      srn       | sem
--------------+----------------+-----
 MahimDashora | PES1UG19CS251 |   5
 Michael      | PES1UG19CS255 |   5
 Nolan        | PES1UG19CS269 |   5
 new1         | PES1UG19CS243 |   5
 new2         | PES1UG19CS244 |   5
(5 rows)
```