

## WEEK5

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Class – 5B

SRN – PES2UG19CS076

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

Problem Statement:

### 1. SQL DML

5\*3-15 marks

```
C:\Program Files\PostgreSQL\14\bin>psql -U postgres -f D:\5th_sem\DBMS_lab\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
```

```
C:\Program Files\PostgreSQL\14\bin>psql -U postgres -h localhost
Password for user postgres:
psql (14.0)
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=# \list
          List of databases
  Name | Owner | Encoding | Collate | Ctype | Access privileges
-----+-----+-----+-----+-----+-----
company | postgres | UTF8 | English_India.1252 | English_India.1252 | 
hotel_management | postgres | UTF8 | English_India.1252 | English_India.1252 | 
postgres | postgres | UTF8 | English_India.1252 | English_India.1252 | 
template0 | postgres | UTF8 | English_India.1252 | English_India.1252 | =c/postgres +
template1 | postgres | UTF8 | English_India.1252 | English_India.1252 | postgres=Ctc/postgres
=c/postgres +
postgres=Ctc/postgres
(5 rows)
```

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

- Create a temporary table that has the employee's 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.

```
company=# create table temptable_076(
company(# lname varchar(255),
company(# pname varchar(255),
company(# hours numeric(3,1)
company(# );
CREATE TABLE
company=# insert into temptable_076
company-# select lname, pname, hours from employee, project, works_on
company-# where ssn=essn and pnumber=pno;
INSERT 0 15
company=# select* from temptable_076;
```

lname	pname	hours
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)

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

```
Command Prompt - psql -U postgres -h localhost
Wallace | Reorganization | 15.0
(15 rows)

company=# update project
company-# set plocation='Bellaire'
company-# where pnumber=10;
UPDATE 1
company=# update project
company-# set dnum=5
company-# 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)

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

```
company=# update employee
company=# set salary=salary*(1.1)
company=# from department
company=# where dno=dnumber and 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)

- Delete employee record whose lname ='Brown'

```
company=# delete from employee where lname='Brown';
DELETE 0
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)

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

```
Command Prompt - psql -U postgres -h localhost

company=# alter table works_on
company=# drop constraint works_on_essn_fkey;
ALTER TABLE
company=# with emp_dep as (select distinct ssn from employee, dependent where ssn=essn)
company=# delete from employee where employee.ssn not in (select ssn from emp_dep);
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".
company=# delete from employee where ssn not in (select essn from dependent);
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".
company=# with emp_dep as (select distinct ssn from employee, dependent where ssn=essn) delete from employee where employee.ssn not in (select ssn from emp_dep);
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".
company=# alter table works_on drop constraint works_on_essn_fkey;
ERROR: constraint "works_on_essn_fkey" of relation "works_on" does not exist
company=# delete from employee where ssn not in (select essn from dependent);
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".
company=# alter table works_on drop constraint department_mgr_ssn_fkey;
ERROR: constraint "department_mgr_ssn_fkey" of relation "works_on" does not exist
company=# alter table employee drop constraint employee_super_ssn_fkey;
ALTER TABLE
company=# delete from employee where ssn not in (select essn from dependent);
ERROR: update or delete on table "employee" violates foreign key constraint "department_mgr_ssn_fkey" on table "department"
DETAIL: Key (ssn)=(888665555) is still referenced from table "department".
company=# alter table works_on drop constraint works_on_essn_fkey;
ERROR: constraint "works_on_essn_fkey" of relation "works_on" does not exist
company=# alter table department drop constraint department_mgr_ssn_fkey;
ALTER TABLE
company=# delete from employee where ssn not in (select essn from dependent);
DELETE 5
company=#
```

## 2. Transactions

3\*5 -15marks

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.

```
company=# begin
company=# ;
BEGIN
company=# create table student_pesug076(name varchar,srn varchar,department varchar,bdate date,primary key(srn));
CREATE TABLE
company=# insert into student_pesug076 values('ajay','pes037','cse','05/05/2001');
INSERT 0 1
company=# insert into student_pesug076 values('aditi','pes031','cse','01/01/2001');
INSERT 0 1
company=# insert into student_pesug076 values('aditya','pes034','cse','05/01/2001');
INSERT 0 1
company=# end transaction;
COMMIT
company=# select* from student_pesug076;
   name | srn   | department | bdate
-----+-----+-----+-----
ajay    | pes037 | cse        | 2001-05-05
aditi   | pes031 | cse        | 2001-01-01
aditya  | pes034 | cse        | 2001-01-05
(3 rows)
```

- 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=# insert into student_pesug076 values('mishika','pes454','cse','05/01/2001');
INSERT 0 1
company=# insert into student_pesug076 values('dhyani','pes654','cse','05/01/2001');
INSERT 0 1
company=# rollback;
ROLLBACK
company=# select* from student_pesug076;
   name | srn   | department | bdate
-----+-----+-----+-----
ajay    | pes037 | cse        | 2001-05-05
aditi   | pes031 | cse        | 2001-01-01
aditya  | pes034 | cse        | 2001-01-05
(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 inserts.

```

company=# begin;
BEGIN
company=# insert into student_pesug076 values('varun','pes123','cse','05/01/2001');
INSERT 0 1
company=# insert into student_pesug076 values('lahari','pes193','cse','05/01/2001');
INSERT 0 1
company=# savepoint pescs076;
SAVEPOINT
company=# insert into student_pesug076 values('shreya','pes103','cse','05/01/2001');
INSERT 0 1
company=# insert into student_pesug076 values('mehul','pes803','cse','05/01/2001');
INSERT 0 1
company=# rollback to pescs076;
ROLLBACK
company=# select* from student_pesug076;
   name | srn  | department | bdate
-----+-----+-----+-----
ajay    | pes037 | cse        | 2001-05-05
aditi   | pes031 | cse        | 2001-01-01
aditya  | pes034 | cse        | 2001-01-05
varun   | pes123 | cse        | 2001-01-05
lahari  | pes193 | cse        | 2001-01-05
(5 rows)

company=#

```