

SQL DML- Insert (using select)

Update and delete, Transactions

commit rollback and savepoint

Week #5

1. SQL DML

(5*3-15 marks)

- 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.
- Update the location and controlling department number of project number 10 to 'Bellaire' and 5, respectively.
- Give all employees in the 'Research' department a 10% raise in salary.
- Delete employee record whose lname ='Brown'
- Delete all the records of the employee who doesn't have dependent. (use sub query).

Ans:

- ❖ Create a database - company.

```
E:\PostgreSQL\9.6\bin>psql -U pes1ug19cs380 -f C:\Users\RNP\Desktop\companyddl.sql
Password for user pes1ug19cs380:
psql:C:/Users/RNP/Desktop/companyddl.sql:1: ERROR:  database "company" does not exist
CREATE DATABASE
You are now connected to database "company" as user "pes1ug19cs380".
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
CREATE TABLE
ALTER TABLE
```

- ❖ Insert records in the tables.

```
E:\PostgreSQL\9.6\bin>psql -U pes1ug19cs380 -f C:\Users\RNP\Desktop\company_insert.sql
Password for user pes1ug19cs380:
You are now connected to database "company" as user "pes1ug19cs380".
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
```

- ❖ Tables created:

```
pes1ug19cs380=> \c company
You are now connected to database "company" as user "pes1ug19cs380".
company=> \dt
```

| List of relations | | | |
|-------------------|----------------|-------|---------------|
| Schema | Name | Type | Owner |
| public | department | table | pes1ug19cs380 |
| public | dependent | table | pes1ug19cs380 |
| public | dept_locations | table | pes1ug19cs380 |
| public | employee | table | pes1ug19cs380 |
| public | project | table | pes1ug19cs380 |
| public | works_on | table | pes1ug19cs380 |

(6 rows)

- ❖ Create a temporary table that has the employee last name, project name, and hours per week for each employee working on a project.

```
company=> create table temp_380(lname varchar, pname varchar, hr_per_week float);
CREATE TABLE
```

- ❖ Insert the values into the table using insert into with select command.

```
company=> insert into temp_380 select lname, pname, hours from employee as e, project as p, works_on as w where w.pno=p.pnumber and e.ssn=w.essn;
INSERT 0 15
company=> table temp_380
company-> ;
```

| lname | pname | hr_per_week |
|---------|-----------------|-------------|
| 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

```
company=> table project;
```

| pname | pnumber | plocation | dnum |
|-----------------|---------|-----------|------|
| ProductX | 1 | Bellaire | 5 |
| ProductY | 2 | Sugarland | 5 |
| ProductZ | 3 | Houston | 5 |
| Computerization | 10 | Stafford | 4 |
| Reorganization | 20 | Houston | 1 |
| Newbenefits | 30 | Stafford | 4 |

(6 rows)

```
company=> update project set plocation='Bellaire', dnum= 5 where pnumber = 10;
UPDATE 1
company=> table 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=> 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)

```
company=> update employee set salary= salary*1.1 where dno=5;
UPDATE 4
company=> \dt employee;
```

| Schema | Name | Type | Owner |
|--------|----------|-------|---------------|
| public | employee | table | pes1ug19cs380 |

(1 row)

```
company=> table 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 |

- ❖ Delete employee record whose lname ='Brown' [no employee exists with that name, hence no records are deleted]

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

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

```
company=# set session_replication_role='replica';
SET
company=# delete from employee where employee.ssn not in (select essn from dependent);
DELETE 5
company=# table 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=# set session_replication_role='origin';
SET
```

2. Transactions

(5*3-15 marks)

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

Ans:

- ❖ 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 the select statement.

```
company=# begin;
BEGIN
company=# create table transaction_380(sender varchar(15), receiver varchar(15), amount int);
CREATE TABLE
company=# insert into transaction_380 values ('Person', 'Woman', 6000);
INSERT 0 1
company=# insert into transaction_380 values ('Person2', 'Woman2', 16000);
INSERT 0 1
company=# insert into transaction_380 values ('Pers', 'Man', 10000);
INSERT 0 1
company=# insert into transaction_380 values ('Pers1', 'Man2', 10000);
INSERT 0 1
company=# end transaction;
COMMIT
company=# select * from transaction_380;
 sender | receiver | amount
-----+-----+-----
 Person | Woman   |    6000
 Person2 | Woman2  |   16000
  Pers   | Man     |   10000
 Pers1   | Man2    |   10000
(4 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
company=# ;
BEGIN
company=# create table transaction_380(sender varchar(15), receiver varchar(15), amount int);
ERROR: relation "transaction_380" already exists
company=# create table transaction_380_2(sender varchar(15), receiver varchar(15), amount int);
ERROR: current transaction is aborted, commands ignored until end of transaction block
company=# end transaction;
ROLLBACK
company=# begin;
BEGIN
company=# create table transaction_380_2(sender varchar(15), receiver varchar(15), amount int);
CREATE TABLE
company=# insert into transaction_380_2 values ('Person', 'Woman', 6000);
INSERT 0 1
company=# insert into transaction_380_2 values ('Person1', 'Woman2', 16000);
INSERT 0 1
company=# rollback;
ROLLBACK
company=# select * from transaction_380_2;
ERROR: relation "transaction_380_2" does not exist
LINE 1: select * from transaction_380_2;
```

- ❖ 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 the first 2 insert

```
company=# begin;
BEGIN
company=# create table transaction_380_3(sender varchar(15), receiver varchar(15), amount int);
CREATE TABLE
company=# insert into transaction_380_3 values ('Person', 'Woman', 6000);
INSERT 0 1
company=# insert into transaction_380_3 values ('Person2', 'Woman2', 16000);
INSERT 0 1
company=# savepoint s;
SAVEPOINT
company=# insert into transaction_380_3 values ('Pen2', 'Wo2', 86000);
INSERT 0 1
company=# insert into transaction_380_3 values ('Pers1', 'Man2', 10000);
INSERT 0 1
company=# rollback to s;
ROLLBACK
company=# select * from transaction_380_3;
 sender | receiver | amount 
-----+-----+-----
 Person | Woman    |    6000
 Person2 | Woman2   |   16000
(2 rows)

company=#
```