

DBMS LAB WEEK 4

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SRN: PES1UG20CS806

SECTION: “D”

SEMESTER: 5th

SOLUTION:

Employee Table:

```
week4_pes1ug20cs806=# CREATE TABLE EMPLOYEE (  
week4_pes1ug20cs806(# Fname VARCHAR(16) NOT NULL,  
week4_pes1ug20cs806(# Minit VARCHAR(16),  
week4_pes1ug20cs806(# Lname VARCHAR(16) NOT NULL,  
week4_pes1ug20cs806(# Ssn VARCHAR(6) NOT NULL,  
week4_pes1ug20cs806(# Bdate DATE CHECK (Bdate< '1985-01-01'),  
week4_pes1ug20cs806(# Address VARCHAR(30),  
week4_pes1ug20cs806(# Sex CHAR(7),  
week4_pes1ug20cs806(# Salary DECIMAL(10,2),  
week4_pes1ug20cs806(# Super_ssn VARCHAR(10),  
week4_pes1ug20cs806(# Dno INT,  
week4_pes1ug20cs806(# PRIMARY KEY (Ssn),  
week4_pes1ug20cs806(# FOREIGN KEY (Super_ssn) REFERENCES EMPLOYEE (Ssn) );  
CREATE TABLE
```

```
week4_pes1ug20cs806=# insert into EMPLOYEE values ('amit','k','singh','101','1962-12-30','oak forest','M','37000','101','11111' );  
INSERT 0 1  
week4_pes1ug20cs806=# insert into EMPLOYEE values ('rahul','R','kumar','102','1966-05-30','Pune','M','55000','102','22222' );  
INSERT 0 1  
week4_pes1ug20cs806=# SELECT * FROM EMPLOYEE;  
  fname |  minit |  lname |  ssn |   bdate   | address | sex | salary | super_ssn | dno  
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----  
  amit  | k      | singh  | 101 | 1962-12-30 | oak forest | M   | 37000.00 | 101       | 11111  
  rahul | R      | kumar  | 102 | 1966-05-30 | Pune      | M   | 55000.00 | 102       | 22222  
(2 rows)
```

Department Table:

```
week4_pes1ug20cs806=# CREATE TABLE DEPARTMENT(  
week4_pes1ug20cs806(# Dname VARCHAR(20) NOT NULL,  
week4_pes1ug20cs806(# Dnumber INT NOT NULL,  
week4_pes1ug20cs806(# Mgr_ssn CHAR(10) NOT NULL,  
week4_pes1ug20cs806(# Mgr_start_date DATE,  
week4_pes1ug20cs806(# PRIMARY KEY (Dnumber),  
week4_pes1ug20cs806(# UNIQUE (Dname) );  
CREATE TABLE
```

```
week4_pes1ug20cs806=# ALTER TABLE DEPARTMENT ADD FOREIGN KEY(Mgr_ssn) REFERENCES EMPLOYEE(Ssn);  
ALTER TABLE  
week4_pes1ug20cs806=#
```

```

week4_pes1ug20cs806=# INSERT INTO DEPARTMENT VALUES ( 'Testing','11111','201','1992-08-11' );
INSERT 0 1
week4_pes1ug20cs806=# INSERT INTO DEPARTMENT VALUES ( 'DevOps','22222','202','2001-11-03' );
INSERT 0 1
week4_pes1ug20cs806=# SELECT * FROM DEPARTMENT;
  dname  | dnumber | mgr_ssn | mgr_start_date
-----+-----+-----+-----
 Testing |    1111 |    201  | 1992-08-11
  DevOps |    2222 |    202  | 2001-11-03
(2 rows)

week4_pes1ug20cs806=#

```

Dept Locations:

```

week4_pes1ug20cs806=# CREATE TABLE DEPT_LOCATIONS(
week4_pes1ug20cs806(# Dnumber INT NOT NULL,
week4_pes1ug20cs806(# Dlocation VARCHAR(20) NOT NULL,
week4_pes1ug20cs806(# PRIMARY KEY (Dnumber, Dlocation),
week4_pes1ug20cs806(# FOREIGN KEY (Dnumber) REFERENCES DEPARTMENT(Dnumber) );
CREATE TABLE
week4_pes1ug20cs806=#

```

```

week4_pes1ug20cs806=# INSERT INTO DEPT_LOCATIONS VALUES ( '11111','UK' );
INSERT 0 1
week4_pes1ug20cs806=# INSERT INTO DEPT_LOCATIONS VALUES ( '22222','US' );
INSERT 0 1
week4_pes1ug20cs806=# SELECT * FROM DEPT_LOCATIONS;
  dnumber | dlocation
-----+-----
    11111 | UK
    22222 | US
(2 rows)

```

Project:

```

week4_pes1ug20cs806=# CREATE TABLE PROJECT (
week4_pes1ug20cs806(# Pname VARCHAR(20) NOT NULL DEFAULT 'Testing',
week4_pes1ug20cs806(# Pnumber INT NOT NULL,
week4_pes1ug20cs806(# Plocation VARCHAR(30),
week4_pes1ug20cs806(# Dnum INT NOT NULL,
week4_pes1ug20cs806(# PRIMARY KEY (Pnumber),
week4_pes1ug20cs806(# UNIQUE (Pname),
week4_pes1ug20cs806(# FOREIGN KEY (Dnum) REFERENCES DEPARTMENT(Dnumber) );
CREATE TABLE
week4_pes1ug20cs806=#

```


Works On:

```
week4_pes1ug20cs806=# CREATE TABLE WORKS_ON (  
week4_pes1ug20cs806(# Essn CHAR(10) NOT NULL,  
week4_pes1ug20cs806(# Pno INT NOT NULL,  
week4_pes1ug20cs806(# Hours DECIMAL(4,2) NOT NULL,  
week4_pes1ug20cs806(# PRIMARY KEY (Essn, Pno),  
week4_pes1ug20cs806(# FOREIGN KEY (Essn) REFERENCES EMPLOYEE(Ssn),  
week4_pes1ug20cs806(# FOREIGN KEY (Pno) REFERENCES PROJECT(Pnumber) );  
CREATE TABLE  
week4_pes1ug20cs806=#
```

Dependent:

```
week4_pes1ug20cs806=# CREATE TABLE DEPENDENT (  
week4_pes1ug20cs806(# Essn VARCHAR(10) NOT NULL,  
week4_pes1ug20cs806(# Dependent_name VARCHAR(40) NOT NULL,  
week4_pes1ug20cs806(# Sex CHAR(5),  
week4_pes1ug20cs806(# Bdate DATE CHECK (Bdate< '1985-01-01'),  
week4_pes1ug20cs806(# Relationship VARCHAR(30) NOT NULL DEFAULT'parent',  
week4_pes1ug20cs806(# PRIMARY KEY (Essn, Dependent_name),  
week4_pes1ug20cs806(# FOREIGN KEY (Essn) REFERENCES EMPLOYEE (Ssn) );  
CREATE TABLE  
week4_pes1ug20cs806=#
```

```
week4_pes1ug20cs806=# INSERT INTO DEPENDENT VALUES ( '101','Vikas','M','1954-11-12' );  
INSERT 0 1  
week4_pes1ug20cs806=# INSERT INTO DEPENDENT VALUES ( '102','Suman','F','1964-12-16' );  
INSERT 0 1  
week4_pes1ug20cs806=# SELECT * FROM DEPENDENT;  
  essn | dependent_name | sex |   bdate   | relationship  
-----+-----+----+-----+-----  
  101  | Vikas          | M   | 1954-11-12 | parent  
  102  | Suman          | F   | 1964-12-16 | parent  
(2 rows)  
  
week4_pes1ug20cs806=#
```

2. Perform the following operations on the table

a. Drop and truncate

```
week4_pes1ug20cs806=# SELECT * FROM EMPLOYEE;
  fname | minit | lname | ssn | bdate | address | sex | super_ssn | dno | salary
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
(0 rows)
```

```
week4_pes1ug20cs806=# DROP table EMPLOYEE;
DROP TABLE
week4_pes1ug20cs806=# SELECT * FROM EMPLOYEE;
ERROR:  relation "employee" does not exist
```

```
week4_pes1ug20cs806=# SELECT * FROM EMPLOYEE;
  fname | minit | lname | ssn | bdate | address | sex | super_ssn | dno | salary
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
  amit | k     | singh | 101 | 1962-12-30 | oak forest | M | 101 | 11111 |
  rahul | R     | kumar | 102 | 1966-05-30 | Pune | M | 102 | 22222 |
(2 rows)
```

```
week4_pes1ug20cs806=# TRUNCATE TABLE EMPLOYEE;
TRUNCATE TABLE
week4_pes1ug20cs806=# SELECT * FROM EMPLOYEE;
  fname | minit | lname | ssn | bdate | address | sex | super_ssn | dno | salary
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
(0 rows)
```

```
week4_pes1ug20cs806=#
```

b. Create views and Drop views

```
week4_pes1ug20cs806=# SELECT * FROM EMPLOYEE;
  fname | minit | lname | ssn | bdate | address | sex | super_ssn | dno | salary
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
  amit | k     | singh | 101 | 1962-12-30 | oak forest | M | 101 | 11111 |
  rahul | R     | kumar | 102 | 1966-05-30 | Pune | M | 102 | 22222 |
(2 rows)
```

```
week4_pes1ug20cs806=# create view my_view as select Fname, Minit, Lname, Sex from EMPLOYEE;
CREATE VIEW
week4_pes1ug20cs806=# SELECT * FROM my_view;
  fname | minit | lname | sex
-----+-----+-----+-----
  amit | k     | singh | M
  rahul | R     | kumar | M
(2 rows)
```

```
week4_pes1ug20cs806=# SELECT * FROM my_view;
  fname | minit | lname | sex
-----+-----+-----+-----
  amit | k     | singh | M
  rahul | R     | kumar | M
(2 rows)
```

```
week4_pes1ug20cs806=# DROP view my_view;
DROP VIEW
week4_pes1ug20cs806=# SELECT * FROM my_view;
ERROR:  relation "my_view" does not exist
```

c. Create user and grant and revoke privileges on the table

- Grant select for emp table for user 1

```
week4_pes1ug20cs806=# CREATE user user1 with password '12345' createdb;
CREATE ROLE
week4_pes1ug20cs806=# grant select on EMPLOYEE to user1;
GRANT
week4_pes1ug20cs806=#
```

```
C:\Windows\System32\cmd.exe - psql -U user1 -d week4_pes1ug20cs806

C:\Program Files (x86)\PostgreSQL\10\bin>psql -U user1 -d week4_pes1ug20cs806
Password for user user1:
psql (10.18)
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.

week4_pes1ug20cs806=> SELECT * FROM EMPLOYEE;
'more' is not recognized as an internal or external command,
operable program or batch file.
week4_pes1ug20cs806=> \pset pager off
Pager usage is off.
week4_pes1ug20cs806=> SELECT * FROM EMPLOYEE;
 fname |  minit | lname |  ssn |   bdate   | address | sex | salary | super_ssn |  dno
-----+-----+-----+-----+-----+-----+---+-----+-----+-----
 amit  |  k     | singh |  101 | 1962-12-30 | oak forest | M   | 37000.00 | 101       | 11111
 rahul |  R     | kumar |  102 | 1966-05-30 | Pune      | M   | 55000.00 | 102       | 22222
(2 rows)

week4_pes1ug20cs806=>
```

- Grant all privileges on all the table for user 3

```
week4_pes1ug20cs806=# \dt
          List of relations
 Schema |      Name      | Type  | Owner
-----+-----+-----+-----
 public | department     | table | postgres
 public | dependent      | table | postgres
 public | dept_locations | table | postgres
 public | project        | table | postgres
 public | works_on       | table | postgres
(5 rows)

week4_pes1ug20cs806=# GRANT ALL ON ALL TABLES IN SCHEMA "public" TO user3;
GRANT
week4_pes1ug20cs806=#
```



```
C:\Windows\System32\cmd.exe - psql -U user3 -d week4_pes1ug20cs806
```

```
C:\Program Files (x86)\PostgreSQL\10\bin>psql -U user3 -d week4_pes1ug20cs806
Password for user user3:
psql (10.18)
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.

week4_pes1ug20cs806=> \pset pager off
Pager usage is off.
week4_pes1ug20cs806=> SELECT * FROM DEPENDENT;
   essn | dependent_name | sex |   bdate   | relationship 
-----+-----+----+-----+-----
   101  | vikram         | M   | 1954-11-12 | parent
   102  | vikram         | F   | 1964-12-16 | parent
(2 rows)

week4_pes1ug20cs806=> UPDATE DEPENDENT SET Dependent_name='Sona' WHERE Essn='102';
UPDATE 1
week4_pes1ug20cs806=> SELECT * FROM DEPENDENT;
   essn | dependent_name | sex |   bdate   | relationship 
-----+-----+----+-----+-----
   101  | vikram         | M   | 1954-11-12 | parent
   102  | Sona           | F   | 1964-12-16 | parent
(2 rows)

week4_pes1ug20cs806=>
```

- Grant alter, delete, update on dependent and project table for user4

```
week4_pes1ug20cs806=# CREATE user user4 with password '12345' createdb;
CREATE ROLE
```

```
week4_pes1ug20cs806=# GRANT DELETE,UPDATE on DEPENDENT to user4;
GRANT
week4_pes1ug20cs806=#
```

```
C:\Windows\System32\cmd.exe - psql -U postgres
```

```
week4_pes1ug20cs806=# SELECT * FROM DEPENDENT;
   essn | dependent_name | sex |   bdate   | relationship 
-----+-----+----+-----+-----
   101  | vikram         | M   | 1954-11-12 | parent
   102  | vikram         | F   | 1964-12-16 | parent
(2 rows)

week4_pes1ug20cs806=#
```


d. Using alter table commands add column, delete column

```
week4_pes1ug20cs806=# SELECT * FROM EMPLOYEE;
fname | minit | lname | ssn | bdate | address | sex | salary | super_ssn | dno
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
amit | k | singh | 101 | 1962-12-30 | oak forest | M | 37000.00 | 101 | 11111
rahul | R | kumar | 102 | 1966-05-30 | Pune | M | 55000.00 | 102 | 22222
(2 rows)
```

```
week4_pes1ug20cs806=# ALTER TABLE EMPLOYEE DROP COLUMN Salary;
ALTER TABLE
```

```
week4_pes1ug20cs806=# SELECT * FROM EMPLOYEE;
fname | minit | lname | ssn | bdate | address | sex | super_ssn | dno
-----+-----+-----+-----+-----+-----+-----+-----+-----
amit | k | singh | 101 | 1962-12-30 | oak forest | M | 101 | 11111
rahul | R | kumar | 102 | 1966-05-30 | Pune | M | 102 | 22222
(2 rows)
```

```
week4_pes1ug20cs806=#
```

```
week4_pes1ug20cs806=# ALTER TABLE EMPLOYEE ADD COLUMN Salary DECIMAL(10,2);
ALTER TABLE
```

```
week4_pes1ug20cs806=# SELECT * FROM EMPLOYEE;
fname | minit | lname | ssn | bdate | address | sex | super_ssn | dno | salary
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
amit | k | singh | 101 | 1962-12-30 | oak forest | M | 101 | 11111 |
rahul | R | kumar | 102 | 1966-05-30 | Pune | M | 102 | 22222 |
(2 rows)
```

```
week4_pes1ug20cs806=#
```