

## **Practical 9**

**Name:** Shivam Tawari

**Roll Number:** A-58

**Aim:** Exercise 5: Transaction processing and Views.

### **Theory:**

Transaction processing is used to maintain database integrity by ensuring that batches of SQL operations execute completely or not at all.

### **Syntax:**

#### **SQL CREATE OR REPLACE VIEW Syntax**

```
CREATE view_name AS  
OR REPLACE VIEW view_name AS
```

```
SELECT column1, column2, ...  
FROM table_name  
WHERE condition;
```

#### **SQL UPDATE VIEW Syntax**

```
UPDATE view_name  
SET column = ...  
WHERE ...;
```

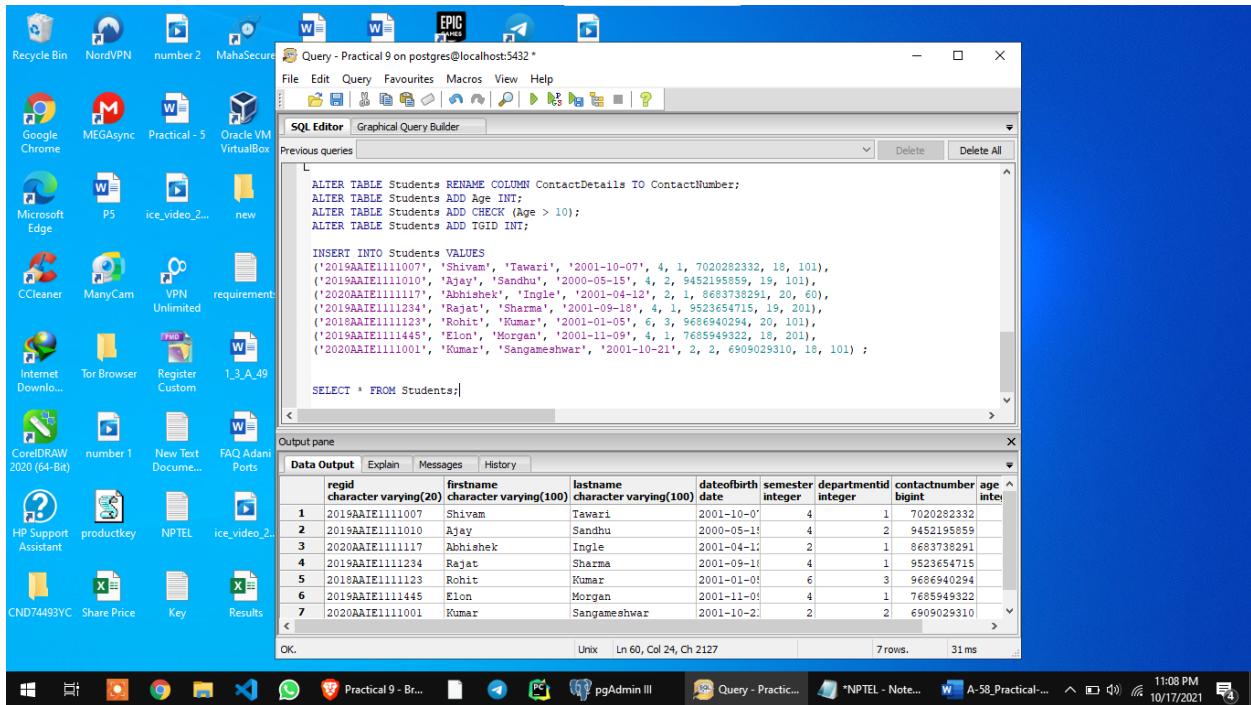
#### **SQL DROP VIEW Syntax**

```
DROP VIEW view_name;
```

### **Program/Queries:**

## **TABLE 1- STUDENTS**

**QUERY 1- SELECT \* FROM Students;**



```
ALTER TABLE Students RENAME COLUMN ContactDetails TO ContactNumber;
ALTER TABLE Students ADD Age INT;
ALTER TABLE Students ADD CHECK (Age > 10);
ALTER TABLE Students ADD TGID INT;

INSERT INTO Students VALUES
('2019AAIE1111007', 'Shivam', 'Tawari', '2001-10-07', 4, 1, 7020282332, 18, 101),
('2019AAIE1111010', 'Ajay', 'Sandhu', '2000-05-15', 4, 2, 9452195859, 19, 101),
('2020AAIE1111117', 'Abhishek', 'Ingle', '2001-04-12', 2, 1, 8683738291, 20, 60),
('2019AAIE1111234', 'Rajat', 'Sharma', '2001-09-18', 4, 1, 9523654715, 19, 201),
('2019AAIE111123', 'Rohit', 'Kumar', '2001-01-05', 6, 3, 9686940294, 20, 101),
('2019AAIE1111445', 'Elon', 'Morgan', '2001-11-09', 4, 1, 7685949322, 18, 201),
('2020AAIE1111001', 'Kumar', 'Sangameshwar', '2001-10-21', 2, 2, 6909029310, 18, 101);

SELECT * FROM Students;
```

regid	firstname	lastname	dateofbirth	semester	departmentid	contactnumber	age
1	Shivam	Tawari	2001-10-07	4	1	7020282332	18
2	Ajay	Sandhu	2000-05-15	4	2	9452195859	19
3	Abhishek	Ingle	2001-04-12	2	1	8683738291	60
4	Rajat	Sharma	2001-09-18	4	1	9523654715	19
5	Rohit	Kumar	2001-01-05	6	3	9686940294	20
6	Elon	Morgan	2001-11-09	4	1	7685949322	18
7	Kumar	Sangameshwar	2001-10-21	2	2	6909029310	18

**QUERY 2-**

```
CREATE VIEW STUDENT_VIEW AS
SELECT FirstName, LastName, ContactNumber
FROM Students;
SELECT * FROM STUDENT_VIEW;
```

```

Query - Practical 9 on postgres@localhost:5432 *
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries Delete Delete All
INSERT INTO Students VALUES
('2019AAIE1111007', 'Shivam', 'Tawari', '2001-10-07', 4, 1, 7020282332, 18, 101),
('2019AAIE1111010', 'Ajay', 'Sandhu', '2000-05-15', 4, 2, 9452195859, 19, 101),
('2020AAIE11111117', 'Abhishek', 'Ingle', '2001-04-12', 2, 1, 8683738291, 20, 60),
('2019AAIE11111234', 'Rajat', 'Sharma', '2001-09-18', 4, 1, 9523654715, 19, 201),
('2018AAIE1111123', 'Rohit', 'Kumar', '2001-01-05', 6, 3, 9686940294, 20, 101),
('2019AAIE11111445', 'Elon', 'Morgan', '2001-11-09', 4, 1, 7685949322, 18, 201),
('2020AAIE1111001', 'Kumar', 'Sangameshwar', '2001-10-21', 2, 2, 6909029310, 18, 101);

SELECT * FROM Students;

CREATE VIEW STUDENT_VIEW AS
SELECT FirstName, LastName, ContactNumber
FROM Students;
SELECT * FROM STUDENT_VIEW;

```

Output pane

firstname	lastname	contactnumber
character varying(100)	character varying(100)	bigint
1	Shivam	7020282332
2	Ajay	9452195859
3	Abhishek	8683738291
4	Rajat	9523654715
5	Rohit	9686940294
6	Elon	7685949322
7	Kumar	6909029310

OK. Unix Ln 65, Col 28, Ch 2241 7 rows. 63 ms

### QUERY 3-

```

UPDATE STUDENT_VIEW
SET ContactNumber = 7020282222
WHERE RegID = '2019AAIE1111007';
SELECT * FROM STUDENT_VIEW;

```

```

Query - Practical 9 on postgres@localhost:5432 *
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries Delete Delete All
('2019AAIE11111234', 'Rajat', 'Sharma', '2001-09-18', 4, 1, 9523654715, 19, 201),
('2018AAIE1111123', 'Rohit', 'Kumar', '2001-01-05', 6, 3, 9686940294, 20, 101),
('2019AAIE11111445', 'Elon', 'Morgan', '2001-11-09', 4, 1, 7685949322, 18, 201),
('2020AAIE1111001', 'Kumar', 'Sangameshwar', '2001-10-21', 2, 2, 6909029310, 18, 101);

SELECT * FROM Students;

CREATE VIEW STUDENT_VIEW AS
SELECT FirstName, LastName, ContactNumber
FROM Students;
SELECT * FROM STUDENT_VIEW;

UPDATE STUDENT_VIEW
SET ContactNumber = 7020282222
WHERE firstname = 'Shivam';
SELECT * FROM STUDENT_VIEW;

```

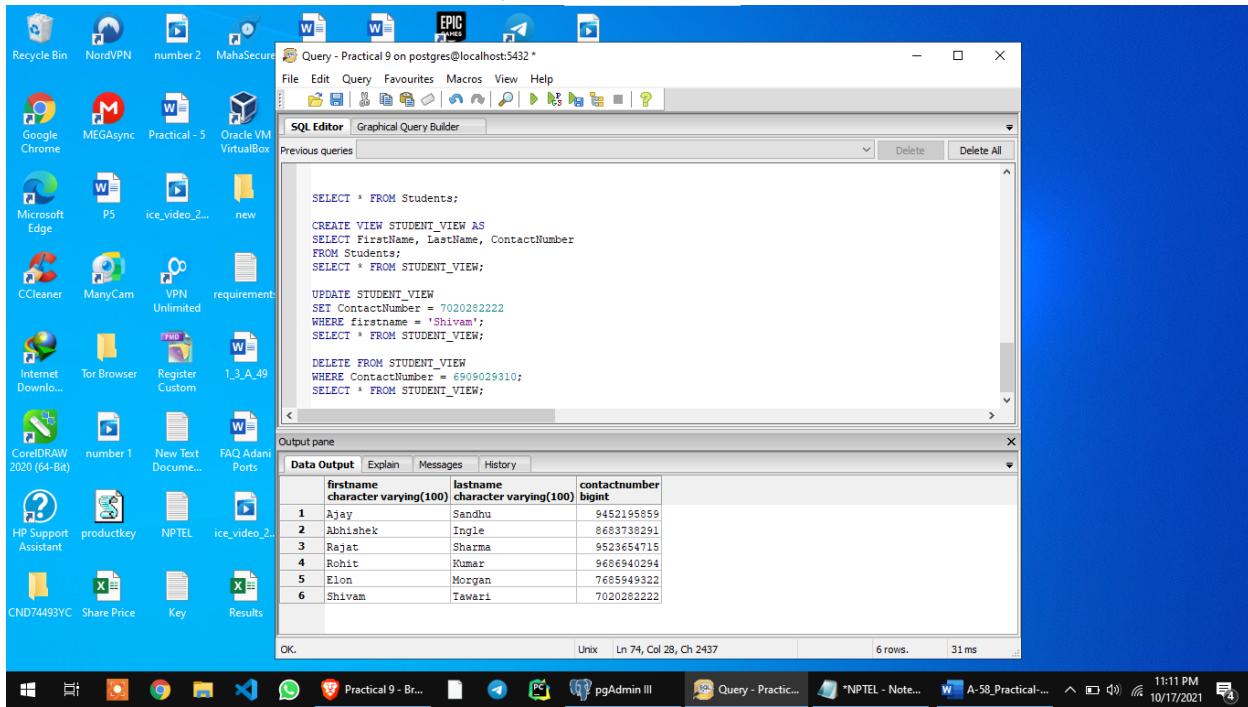
Output pane

firstname	lastname	contactnumber
character varying(100)	character varying(100)	bigint
1	Ajay	9452195859
2	Abhishek	8683738291
3	Rajat	9523654715
4	Rohit	9686940294
5	Elon	7685949322
6	Kumar	6909029310
7	Shivam	7020282222

OK. Unix Ln 70, Col 28, Ch 2349 7 rows. 79 ms

## QUERY 4-

```
DELETE FROM STUDENT_VIEW WHERE ContactNumber = 6909029310;  
SELECT * FROM STUDENT_VIEW;
```



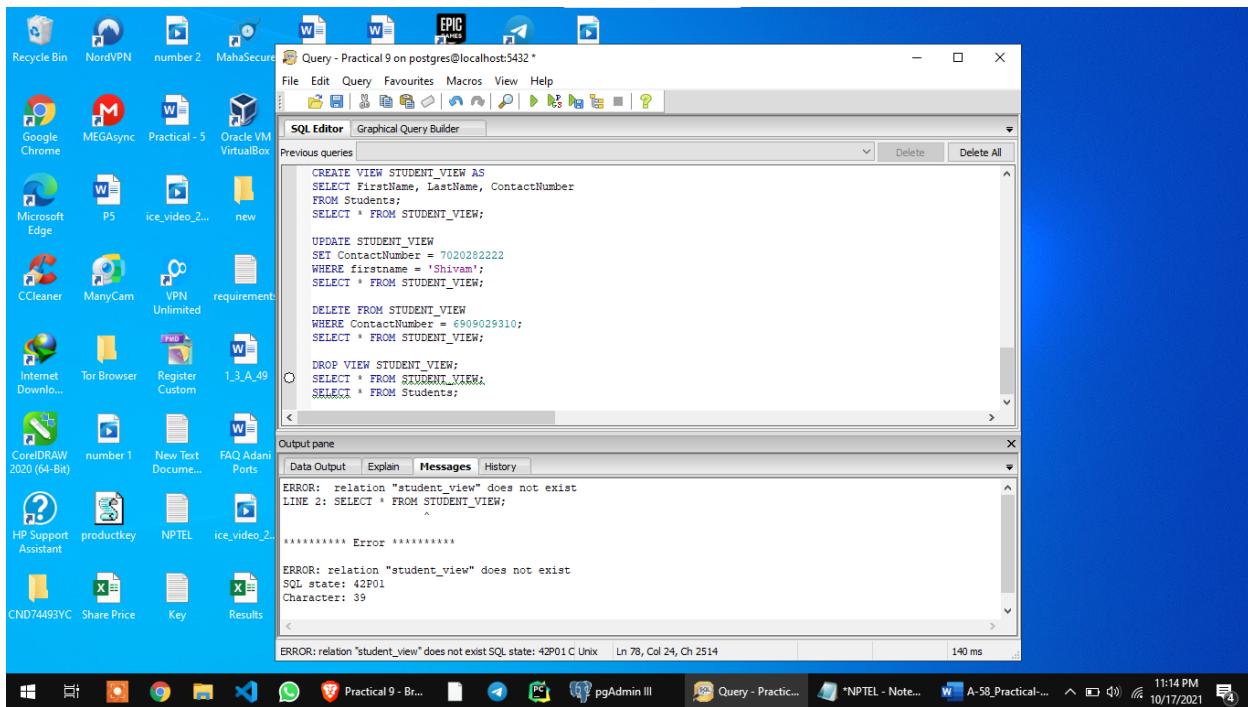
```
Query - Practical 9 on postgres@localhost:5432 *  
File Edit Query Favourites Macros View Help  
SQL Editor Graphical Query Builder  
Previous queries  
  
SELECT * FROM Students;  
  
CREATE VIEW STUDENT_VIEW AS  
SELECT FirstName, LastName, ContactNumber  
FROM Students;  
SELECT * FROM STUDENT_VIEW;  
  
UPDATE STUDENT_VIEW  
SET ContactNumber = 7020282222  
WHERE firstname = 'Shivam';  
SELECT * FROM STUDENT_VIEW;  
  
DELETE FROM STUDENT_VIEW  
WHERE ContactNumber = 6909029310;  
SELECT * FROM STUDENT_VIEW;  
  
Output pane  
Data Output Explain Messages History  


|   | firstname              | lastname               | contactnumber |
|---|------------------------|------------------------|---------------|
|   | character varying(100) | character varying(100) | bigint        |
| 1 | Ajay                   | Sandhu                 | 9452195859    |
| 2 | Abhishek               | Ingle                  | 8683738291    |
| 3 | Rajat                  | Sharma                 | 9523654715    |
| 4 | Rohit                  | Kumar                  | 9686940294    |
| 5 | Elon                   | Morgan                 | 7685949322    |
| 6 | Shivam                 | Tawari                 | 7020282222    |

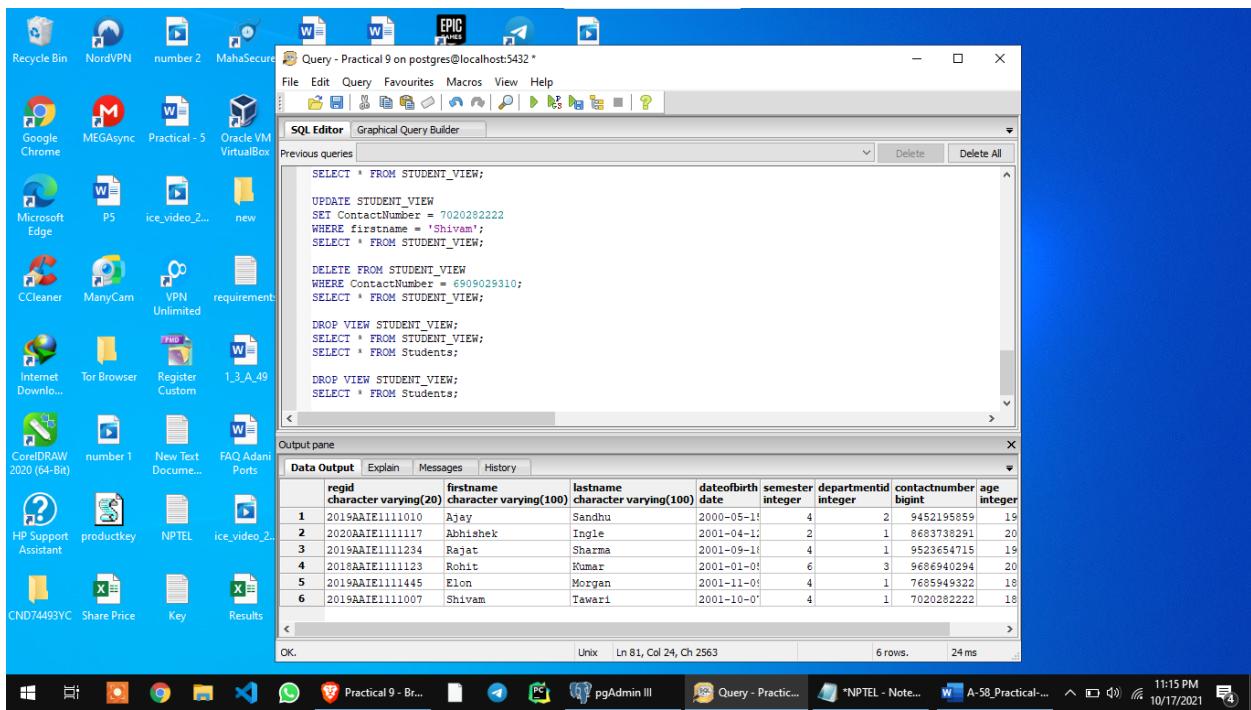
  
OK. Unix Ln 74, Col 28, Ch 2437 6 rows. 31ms
```

## QUERY 5-

```
DROP VIEW STUDENT_VIEW;  
SELECT * FROM STUDENT_VIEW;
```



```
Query - Practical 9 on postgres@localhost:5432 *  
File Edit Query Favourites Macros View Help  
SQL Editor Graphical Query Builder  
Previous queries  
  
CREATE VIEW STUDENT_VIEW AS  
SELECT FirstName, LastName, ContactNumber  
FROM Students;  
SELECT * FROM STUDENT_VIEW;  
  
UPDATE STUDENT_VIEW  
SET ContactNumber = 7020282222  
WHERE firstname = 'Shivam';  
SELECT * FROM STUDENT_VIEW;  
  
DELETE FROM STUDENT_VIEW  
WHERE ContactNumber = 6909029310;  
SELECT * FROM STUDENT_VIEW;  
  
DROP VIEW STUDENT_VIEW;  
SELECT * FROM STUDENT_VIEW;  
SELECT * FROM Students;  
  
Output pane  
Data Output Explain Messages History  
  
ERROR: relation "student_view" does not exist  
LINE 2: SELECT * FROM STUDENT_VIEW;  
^  
***** Error *****  
  
ERROR: relation "student_view" does not exist  
SQL state: 42P01  
Character: 39  
  
ERROR: relation "student_view" does not exist SQL state: 42P01 C Unix Ln 78, Col 24, Ch 2514 140 ms
```



**TABLE 2- FACULTIES**

**QUERY 1-**

SELECT \* FROM Faculties;

```

Query - Practical 9 on postgres@localhost:5432 *
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries Delete Delete All
UPDATE STUDENT_VIEW
SET ContactNumber = 7020282222
WHERE firstname = 'Shivam';
SELECT * FROM STUDENT_VIEW;

DELETE FROM STUDENT_VIEW
WHERE ContactNumber = 6909029310;
SELECT * FROM STUDENT_VIEW;

DROP VIEW STUDENT_VIEW;
SELECT * FROM STUDENT_VIEW;
SELECT * FROM Students;

DROP VIEW STUDENT_VIEW;
SELECT * FROM Students;

SELECT * FROM Faculties;

```

	techid	deptid	firstname	lastname	contactno	dateofjoin
1	101	1	Durgesh	Sharma	152718349	2021-01-0
2	60	1	Achamma	Thomas	137363525	2010-03-0
3	65	2	Dipti	Theng	137829191	2013-01-0
4	200	3	Praveen	Ghatode	165342791	2012-01-0
5	201	4	Gopal	Sakarkar	187772901	2014-01-0

OK. Unix Ln 83, Col 25, Ch 2589 5 rows. 31ms

## QUERY 2-

```

CREATE VIEW FACULTY_VIEW AS
SELECT DeptID, FirstName, LastName, ContactNo FROM Faculties;
SELECT * FROM FACULTY_VIEW;

```

```

Query - Practical 9 on postgres@localhost:5432 *
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries Delete Delete All
DELETE FROM STUDENT_VIEW
WHERE ContactNumber = 6909029310;
SELECT * FROM STUDENT_VIEW;

DROP VIEW STUDENT_VIEW;
SELECT * FROM STUDENT_VIEW;
SELECT * FROM Students;

DROP VIEW STUDENT_VIEW;
SELECT * FROM Students;

SELECT * FROM Faculties;

CREATE VIEW FACULTY_VIEW AS
SELECT DeptID, FirstName, LastName, ContactNo
FROM Faculties;
SELECT * FROM FACULTY_VIEW;

```

	deptid	firstname	lastname	contactno
1	1	Durgesh	Sharma	745271834
2	1	Achamma	Thomas	983736352
3	2	Dipti	Theng	645378291
4	3	Praveen	Ghatode	987653427
5	4	Gopal	Sakarkar	1887772901

OK. Unix Ln 88, Col 28, Ch 2708 5 rows. 31ms

## QUERY 3-

```

UPDATE FACULTY_VIEW
SET ContactNo = 9878675675
WHERE firstname = 'Dipti' AND lastname='Theng';
SELECT * FROM FACULTY_VIEW;

```

The screenshot shows a Windows desktop environment. On the left is a pinned icons bar with various applications like Google Chrome, Microsoft Edge, CCleaner, Internet Download Manager, CorelDRAW, HP Support Assistant, and others. The main window is a PostgreSQL client titled "Query - Practical 9 on postgres@localhost:5432". It contains a SQL Editor tab with the following code:

```

SELECT * FROM Students;
DROP VIEW STUDENT_VIEW;
SELECT * FROM Students;

SELECT * FROM Faculties;

CREATE VIEW FACULTY_VIEW AS
SELECT DeptID, FirstName, LastName, ContactNo
FROM Faculties;
SELECT * FROM FACULTY_VIEW;

UPDATE FACULTY_VIEW
SET ContactNo = 9878675675
WHERE firstname = 'Dipti' AND lastname='Theng';
SELECT * FROM FACULTY_VIEW;

```

The Output pane shows the results of the last SELECT statement:

deptid	firstname	lastname	contactno	bignit
1	Durgesh	Sharma	745271834	
2	Achamma	Thomas	983736352	
3	Praveen	Ghatode	987653421	
4	Gopal	Sakarkar	788777290	
5	Dipti	Theng	9878675675	

The taskbar at the bottom shows several open windows including "Practical 9 - Br..", "pgAdmin III", "Query - Practic...", "NPTEL - Note...", "A-58\_Practical-...", and system icons.

#### QUERY 4-

```

DELETE FROM FACULTY_VIEW
WHERE deptid = 4;
SELECT * FROM FACULTY_VIEW;

```

Query - Practical 9 on postgres@localhost:5432 \*

```
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries Delete Delete All
SELECT * FROM Students;
SELECT * FROM Faculties;
CREATE VIEW FACULTY_VIEW AS
SELECT DeptID, FirstName, LastName, ContactNo
FROM Faculties;
SELECT * FROM FACULTY_VIEW;
UPDATE FACULTY_VIEW
SET ContactNo = 9878675675
WHERE firstname = 'Dipti' AND lastname='Theng';
SELECT * FROM FACULTY_VIEW;
DELETE FROM FACULTY_VIEW
WHERE deptid = 4;
SELECT * FROM FACULTY_VIEW;
```

Output pane

	deptid	firstname	lastname	contactno
1	1	Durgesh	Sharma	745271834
2	1	Archamma	Thomas	983736352
3	3	Praveen	Ghatode	987653421
4	2	Dipti	Theng	9878675675

OK. Unix Ln 97, Col 28, Ch 2904 4 rows. 31ms

11:18 PM 10/17/2021

## QUERY 5-

```
DROP VIEW FACULTY_VIEW;
SELECT * FROM FACULTY_VIEW;
SELECT * FROM Faculties;
```

Query - Practical 9 on postgres@localhost:5432 \*

```
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries Delete Delete All
CREATE VIEW FACULTY_VIEW AS
SELECT DeptID, FirstName, LastName, ContactNo
FROM Faculties;
SELECT * FROM FACULTY_VIEW;
UPDATE FACULTY_VIEW
SET ContactNo = 9878675675
WHERE firstname = 'Dipti' AND lastname='Theng';
SELECT * FROM FACULTY_VIEW;
DELETE FROM FACULTY_VIEW
WHERE deptid = 4;
SELECT * FROM FACULTY_VIEW;
DROP VIEW FACULTY_VIEW;
SELECT * FROM FACULTY_VIEW;
SELECT * FROM Faculties;
```

Output pane

ERROR: relation "faculty\_view" does not exist  
LINE 2: SELECT \* FROM FACULTY\_VIEW;  
^  
\*\*\*\*\* Error \*\*\*\*\*  
ERROR: relation "faculty\_view" does not exist  
SQL state: 42P01  
Character: 39

ERROR: relation "faculty\_view" does not exist SQL state: 42P01 Ch Unix Ln 100, Col 15, Ch 2944 31ms

11:21 PM 10/17/2021

```

Query - Practical 9 on postgres@localhost:5432 *
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries Delete Delete All
SELECT * FROM FACULTY_VIEW;

UPDATE FACULTY_VIEW
SET ContactNo = 9878675675
WHERE firstname = 'Dipti' AND lastname='Theng';

SELECT * FROM FACULTY_VIEW;

DELETE FROM FACULTY_VIEW
WHERE deptid = 4;
SELECT * FROM FACULTY_VIEW;

DROP VIEW FACULTY_VIEW;
SELECT * FROM FACULTY_VIEW;
SELECT * FROM Faculties;

DROP VIEW FACULTY_VIEW;
SELECT * FROM Faculties;

Output pane
Data Output Explain Messages History

```

	techid	deptid	firstname	lastname	contactno	dateofjoin
1	101	1	Durgesh	Sharma	152718349	2021-01-01
2	60	1	Achamma	Thomas	137363525	2010-03-01
3	200	3	Praveen	Ghatode	165342791	2012-01-01
4	65	2	Dipti	Theng	178675675	2013-01-01

OK. Unix Ln 104, Col 25, Ch 3032 4 rows. 31ms

**TABLE 3- Departments**

### QUERY 1-

SELECT \* FROM Departments;

```

Query - Practical 9 on postgres@localhost:5432 *
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries Delete Delete All
UPDATE FACULTY_VIEW
SET ContactNo = 9878675675
WHERE firstname = 'Dipti' AND lastname='Theng';
SELECT * FROM FACULTY_VIEW;

DELETE FROM FACULTY_VIEW
WHERE deptid = 4;
SELECT * FROM FACULTY_VIEW;

DROP VIEW FACULTY_VIEW;
SELECT * FROM FACULTY_VIEW;
SELECT * FROM Faculties;

DROP VIEW FACULTY_VIEW;
SELECT * FROM Faculties;

SELECT * FROM Departments;]

Output pane
Data Output Explain Messages History

```

	deptid	deptname	deptest	headofdept
1	1	Artificial Intelli	2019-01	A. Thomas
2	2	Computer Science	2010-01	Snehlata Dongre
3	3	Information Techno	2009-01	Mahendra Gaikwad
4	4	Data Science	2021-01	A. Thomas
5	5	Electrical Enginee	2005-01	Prema Daigavane

OK. Unix Ln 106, Col 27, Ch 3060 5 rows. 32 ms

## QUERY 2-

```
CREATE VIEW DEPT_VIEW AS
SELECT DeptID, DeptName, HeadOfDept
FROM Departments;
SELECT * FROM DEPT_VIEW;
```

```
Query - Practical 9 on postgres@localhost:5432 *
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries
DELETE FROM FACULTY_VIEW
WHERE deptid = 4;
SELECT * FROM FACULTY_VIEW;

DROP VIEW FACULTY_VIEW;
SELECT * FROM FACULTY_VIEW;
SELECT * FROM Faculties;

DROP VIEW FACULTY_VIEW;
SELECT * FROM Faculties;

SELECT * FROM Departments;

CREATE VIEW DEPT_VIEW AS
SELECT DeptID, DeptName, HeadOfDept
FROM Departments;
SELECT * FROM DEPT_VIEW;|
```

deptid	deptname	headofdept
integer	character varying(30)	character varying(30)
1	Artificial Intelli	A. Thomas
2	Computer Science	Snehlata Dongre
3	Information Techno	Mahendra Gaikwad
4	Data Science	A. Thomas
5	Electrical Enginee	Prema Daigavane

## QUERY 3-

```
UPDATE DEPT_VIEW
SET headofdept = 'Achamma Thomas'
WHERE headofdept = 'A. Thomas';
SELECT * FROM DEPT_VIEW;
```

```

Query - Practical 9 on postgres@localhost:5432 *
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries Delete Delete All
SELECT * FROM FACULTY_VIEW;
SELECT * FROM Faculties;

DROP VIEW FACULTY_VIEW;
SELECT * FROM Faculties;

SELECT * FROM Departments;

CREATE VIEW DEPT_VIEW AS
SELECT DeptID, DeptName, HeadOfDept
FROM Departments;
SELECT * FROM DEPT_VIEW;

UPDATE DEPT_VIEW
SET headofdept = 'Achamma Thomas'
WHERE headofdept = 'A. Thomas';
SELECT * FROM DEPT_VIEW;

```

deptid	deptname	headofdept
1	Computer Science	Snehlata Dongre
2	Information Techno	Mahendra Gaikwad
3	Electrical Enginee	Prema Daigavane
4	Artificial Intelli	Achamma Thomas
5	Data Science	Achamma Thomas

OK. Unix Ln 116, Col 25, Ch 3274 5 rows. 21ms

## QUERY 4-

```

DELETE FROM DEPT_VIEW
WHERE deptname = 'Computer Science';
SELECT * FROM DEPT_VIEW;

```

```

Query - Practical 9 on postgres@localhost:5432 *
File Edit Query Favourites Macros View Help
SQL Editor Graphical Query Builder
Previous queries Delete Delete All
SELECT * FROM Faculties;
SELECT * FROM Departments;

CREATE VIEW DEPT_VIEW AS
SELECT DeptID, DeptName, HeadOfDept
FROM Departments;
SELECT * FROM DEPT_VIEW;

UPDATE DEPT_VIEW
SET headofdept = 'Achamma Thomas'
WHERE headofdept = 'A. Thomas';
SELECT * FROM DEPT_VIEW;

DELETE FROM DEPT_VIEW
WHERE deptname = 'Computer Science';
SELECT * FROM DEPT_VIEW;

```

deptid	deptname	headofdept
1	Information Techno	Mahendra Gaikwad
2	Electrical Enginee	Prema Daigavane
3	Artificial Intelli	Achamma Thomas
4	Data Science	Achamma Thomas

OK. Unix Ln 120, Col 25, Ch 3359 4 rows. 17ms

## QUERY 5-

```
DROP VIEW DEPT_VIEW;
SELECT * FROM DEPT_VIEW;
SELECT * FROM Departments;
```

deptid	deptname	deptest	headofdept
1	Information Techno	2009-01-01	Mahendra Gaikwad
2	Electrical Enginee	2005-01-01	Prema Daigavane
3	Artificial Intelli	2019-01-01	Achamma Thomas
4	Data Science	2021-01-01	Achamma Thomas

**Conclusion:** Hence, we have learnt and performed view creation and dropping of views.