Branch: *MCA (Data Science)*	**Semester:** *2*
Student Name: *Adarsh Mishra*	**UID:** *25MCD10065*
Subject Name: *Technical Training - I*	**Subject Code**: 25CAP-652
Section/Group: *25MCD – 1(A)*	**Date of Performance:** *27 January,2026*

Experiment No. : 3

1. Aim/Overview of the practical:

To implement conditional decision-making logic in PostgreSQL using **IF–ELSE constructs** and **CASE expressions** for classification, validation, and rule-based data processing.

2. Tools Used

PostgreSQL

3. Objective:

- To understand conditional execution in SQL
- To implement decision-making logic using CASE expressions
- To simulate real-world rule validation scenarios
- To classify data based on multiple conditions
- To strengthen SQL logic skills required in interviews and backend systems

4. Code for experiment/Practical:

```
CREATE TABLE dept_violations (
    dept_id SERIAL PRIMARY KEY,
    dept_name VARCHAR(100),
    violation_count INT NOT NULL
);
INSERT INTO dept_violations (dept_name, violation_count)
VALUES
('HR', 0),
```

```
('IT', 2),
('Finance', 5),
('Operations', 1);

--

SELECT
   dept_violations,
   violation_count,
   CASE
      WHEN violation_count = 0 THEN 'No Violation'
      WHEN violation_count BETWEEN 1 AND 2 THEN
'Minor Violation'
      ELSE 'Critical Violation'
   END AS violation_category
FROM dept_violations;

--

ALTER TABLE dept_violations
ADD COLUMN approval_status VARCHAR(50);

--

UPDATE dept_violations
SET approval_status =
   CASE
      WHEN violation_count = 0 THEN 'Approved'
      WHEN violation_count BETWEEN 1 AND 3 THEN
'Under Review'
      ELSE 'Rejected'
   END;

--

Select * from dept_violations;
```

5. Result/Output/Writing Summary

	dept_violations dept_violations	violation_count integer	violation_category text
1	(1,HR,0,Approved)	0	No Violation
2	(2,IT,2,"Under Review")	2	Minor Violation
3	(3,Finance,5,Rejected)	5	Critical Violation
4	(4,Operations,1,"Under Revie...	1	Minor Violation

	dept_id [PK] integer	dept_name character varying (100)	violation_count integer	approval_status character varying (50)
1	1	HR	0	Approved
2	2	IT	2	Under Review
3	3	Finance	5	Rejected
4	4	Operations	1	Under Review

Learning outcomes (What I have learnt):

- Understand how to use **CASE expressions** to classify data
- Learn to apply **conditional logic in SQL** for categorizing and evaluating database records.
- Perform **automated data updates** using CASE inside UPDATE statements.