



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

## Experiment No. : 2

### **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),
```

--

```
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.