

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

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),
```

*('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 Review")	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.