



EXPERIMENT - 8

Student Name: Devjot Singh

Branch: BE-CSE

Semester: 5th

Subject Name: ADBMS

UID: 23BCS10864

Section/Group: KRG_1-B

Date of Performance: 28/10/2025

Subject Code: 23CSP-333

1. Aim:

--- Hard Level Problem ---

Design a robust PostgreSQL transaction system for the students table where multiple student records are inserted in a single transaction.

If any insert fails due to invalid data, only that insert should be rolled back while preserving the previous successful inserts using savepoints.

The system should provide clear messages for both successful and failed insertions, ensuring data integrity and controlled error handling.

HINT: YOU HAVE TO USE SAVEPOINTS

2. Platform Used:

Microsoft SQL Server Management Studio

3. SQL Code:

```
a) CREATE TABLE students (  
    id SERIAL PRIMARY KEY,  
    name VARCHAR(50) UNIQUE,  
    age INT,  
    class INT  
);  
  
DO $$  
DECLARE  
    student_data RECORD;  
BEGIN  
    FOR student_data IN  
        SELECT * FROM (VALUES  
            ('Anisha', 16, 8),  
            ('Neha', 17, 8),  
            ('Mayank', 19, 9),  
            ('Anisha', 18, 9) -- duplicate  
        ) AS t(name, age, class)  
    LOOP  
        BEGIN  
            INSERT INTO students(name, age, class)  
            VALUES (student_data.name, student_data.age, student_data.class);  
            RAISE NOTICE 'Inserted student: %', student_data.name;  
        EXCEPTION WHEN unique_violation THEN  
            RAISE NOTICE 'Failed to insert student: % (Duplicate Name)', student_data.name;  
        WHEN others THEN  
            RAISE NOTICE 'Failed to insert student: % (Other Error)', student_data.name;  
        END;  
    END LOOP;  
  
    RAISE NOTICE 'Transaction completed with individual error handling.';  
END;  
$$;  
  
SELECT * FROM students;
```



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

Output:

```
NOTICE:  Inserted student: Anisha
NOTICE:  Inserted student: Neha
NOTICE:  Inserted student: Mayank
NOTICE:  Failed to insert student: Anisha (Duplicate Name)
NOTICE:  Transaction completed with individual error handling.
```

id	name	age	class
1	Anisha	16	8
2	Neha	17	8
3	Mayank	19	9

(3 rows)