

# DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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## EXPERIMENT - 8

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**Branch:** BE-CSE  
**Semester:** 5<sup>th</sup>  
**Subject Name:** ADBMS

**UID:** 23BCS13532  
**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.**

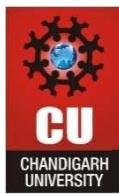
**If any insert fails due to invalid data, only that insert should be rolled back while preserving the previous successful inserts using savepoints.**

**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



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### 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 uniqueViolation 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;
```



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## 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)