



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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EXPERIMENT - 8

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Semester: 5th
Subject Name: ADBMS

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Section/Group: KRG_1-B
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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.

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)