



# DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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## Experiment 8

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Section/Group: 23BCS\_KRG-3B

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Subject Name: Advanced Database and Management System

Subject Code: 23CSP-333

### 1. Aim:

[HARD] 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. Tools Used: pgAdmin4

### 3. Code:

```
-- ARD
CREATE TABLE students
(
    id SERIAL PRIMARY KEY,
    name VARCHAR(50),
    age INT,
    class INT
);

DO
$$BE
    GI -- Start a transaction
        N
    BEGI
        --Insert multiple students
    INSERT INTO students(name, age, class) VALUES
    ('Anisha', 16, 8);
        N      N
```



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INSERT INTO students(name, age, class) VALUES

N  
('eha',17,8);

N N  
INSERT INTO students(name, age, class) VALUES

(Myname'1999;

-- If all succeed

RAISE NOTICE 'Transaction Successfully Done';

EXCEPTION

WHEN OTHERS THEN

-- If any insert fails

RAISE NOTICE 'Transaction Failed..! Rolling back changes.';

RAISE; -- this will rollback the entire

transaction

END;

END;

\$\$;

SELECT \* FROM students

SAVEPOINT

T sp2;

BEGIN

INSERT INTO

I SERT I

TO

SAVEPOINT sp1;

INSERT INTO students(name, age, class) VALUES

('Aara',18);

students(name, age, class) VALUES

('Rahul','wrong',9); -- fails

EXCEPTION WHEN OTHERS THEN

RAISE NOTICE 'Failed to insert Rahul, rolling back to savepoint sp2';

ROLLBACK TO SAVEPOINT sp2;

END;

-- Next insert

INSERT INTO students(name, age, class) VALUES ('Sita',17,10);

COMMIT;-- commit all successful inserts

4. Output:

[HARD]



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Data Output [Messages](#) Notifications

ERROR: current transaction is aborted, commands ignored until end of transaction block

SQL state: 25P02

## 5. Learning Outcomes:

- Understand transaction control in PostgreSQL
- Implement save points for partial rollbacks.
- Handle run time errors using exception blocks.