EXPERIMENT - 7

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Section/Group: KRG_1-B
Semester: 5th
Date of Performance: 28/10/2025
Subject Name: ADBMS
Subject Code: 23CSP-333

1. Aim:

--- Medium Level Problem ---

a) **REQUIREMENTS: DESIGN A TRIGGER WHICH:**

1. WHENEVER THERE IS A INSERTION ON STUDENT TABLE THEN, THE CURRENTLY INSERTED OR DELETED ROW SHOULD BE PRINTED AS IT AS ON THE OUTPUT CONSOLE WINDOW.

--- Hard Level Problem ---

b) **DESIGN A PORSTGRESQL TRIGGERS THAT:**

1. Whenever a new employee is inserted in tbl_employee, a record should be added to tbl_employee_audit like:
   "Employee name <emp_name> has been added at <current_time>"
2. Whenever an employee is deleted from tbl_employee, a record should be added to tbl_employee_audit like:
   "Employee name <emp_name> has been deleted at <current_time>"
3. The solution must use PostgreSQL triggers.

2. Platform Used:

Microsoft SQL Server Management Studio

3. SQL Code:

a)
```
CREATE TABLE student (
   id SERIAL PRIMARY KEY,
   name VARCHAR(50),
   age INT,
   class VARCHAR(20)
);

CREATE OR REPLACE FUNCTION fn_student_audit()
RETURNS TRIGGER
LANGUAGE plpgsql
AS
$$
BEGIN
   IF TG_OP = 'INSERT' THEN
      RAISE NOTICE 'Inserted Row -> ID: %, Name: %, Age: %, Class: %',
            NEW.id, NEW.name, NEW.age, NEW.class;
      RETURN NEW;

   ELSIF TG_OP = 'DELETE' THEN
      RAISE NOTICE 'Deleted Row -> ID: %, Name: %, Age: %, Class: %',
            OLD.id, OLD.name, OLD.age, OLD.class;
      RETURN OLD;
   END IF;

   RETURN NULL;
END;
$$;

CREATE TRIGGER trg_student_audit
AFTER INSERT OR DELETE
ON student
FOR EACH ROW
EXECUTE FUNCTION fn_student_audit();

INSERT INTO student (name, age, class)
VALUES ('Amit Sharma', 20, 'BCA');
```

```
INSERT INTO student (name, age, class)
VALUES ('Priya Singh', 21, 'BSc');

DELETE FROM student WHERE name = 'Amit Sharma';
```

OUTPUT-

```
NOTICE:  Inserted Row -> ID: 1, Name: Amit Sharma, Age: 20, Class: BCA
NOTICE:  Inserted Row -> ID: 2, Name: Priya Singh, Age: 21, Class: BSc
NOTICE:  Deleted Row -> ID: 1, Name: Amit Sharma, Age: 20, Class: BCA
```

b)

```
CREATE TABLE tbl_employee (
   emp_id SERIAL PRIMARY KEY,
   emp_name VARCHAR(100) NOT NULL,
   emp_salary NUMERIC
);

CREATE TABLE tbl_employee_audit (
   sno SERIAL PRIMARY KEY,
   message TEXT
);

CREATE OR REPLACE FUNCTION audit_employee_changes()
RETURNS TRIGGER
LANGUAGE plpgsql
AS
$$
BEGIN
   IF TG_OP = 'INSERT' THEN
      INSERT INTO tbl_employee_audit(message)
      VALUES ('Employee name ' || NEW.emp_name || ' has been added at ' || NOW());
      RETURN NEW;
   ELSIF TG_OP = 'DELETE' THEN
```

```
        INSERT INTO tbl_employee_audit(message)
        VALUES ('Employee name ' || OLD.emp_name || ' has been deleted at ' || NOW());
        RETURN OLD;
    END IF;
    RETURN NULL;
END;
$$;

CREATE TRIGGER trg_employee_audit
AFTER INSERT OR DELETE
ON tbl_employee
FOR EACH ROW
EXECUTE FUNCTION audit_employee_changes();

INSERT INTO tbl_employee(emp_name, emp_salary) VALUES ('Aman', 50000);
DELETE FROM tbl_employee WHERE emp_name = 'Aman';
SELECT * FROM tbl_employee_audit;
```

OUTPUT-

```
 sno |                                message
-----+-----------------------------------------------------------------------
   1 | Employee name Aman has been added at 2025-11-04 03:52:10.326481+00
   2 | Employee name Aman has been deleted at 2025-11-04 03:52:10.329438+00
(2 rows)
```