# Experiment 7

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**Subject Name: ADBMS** **Subject Code: 23CSP-333**

## 1. Aim:

a) To design a trigger on the student table that prints the inserted or deleted row to the console whenever an insert or delete operation occurs.

b) To design a trigger on the tbl_employee table that logs every insertion or deletion into an audit table tbl_employee_audit with a message containing employee name and timestamp.

## 2. DBMS script and output:

**Q1:**

```
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 ('Riya', 18, 10);
DELETE FROM student WHERE name = 'Riya';
```

**Q2:**

```
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:

```
DROP TABLE
CREATE TABLE
CREATE FUNCTION
CREATE TRIGGER
INSERT 0 1
DELETE 1
DROP TABLE
CREATE TABLE
DROP TABLE
CREATE TABLE
CREATE FUNCTION
CREATE TRIGGER
INSERT 0 1
DELETE 1
 sno |                              message
-----+-----------------------------------------------------------------------
   1 | Employee name Aman has been added at 2025-10-06 18:08:01.836971+00
   2 | Employee name Aman has been deleted at 2025-10-06 18:08:01.838896+00
(2 rows)


psql:commands.sql:9: NOTICE:  table "student" does not exist, skipping
psql:commands.sql:47: NOTICE:  Inserted Row -> ID: 1, Name: Riya, Age: 18, Class: 10
psql:commands.sql:48: NOTICE:  Deleted Row -> ID: 1, Name: Riya, Age: 18, Class: 10
psql:commands.sql:57: NOTICE:  table "tbl_employee" does not exist, skipping
psql:commands.sql:65: NOTICE:  table "tbl_employee_audit" does not exist, skipping
```