ORACLE LAB ASSIGNMENT – 11

Trigger Programs

1. Write a trigger that will insert each record in Emp_New table whenever a record is deleted from Employee table.

```
SQL> set serveroutput on
SQL> CREATE OR REPLACE TRIGGER trg_after_delete_employee
  2  AFTER DELETE ON Employee
  3  FOR EACH ROW
  4  BEGIN
  5      INSERT INTO Emp_New (emp_id, emp_name, salary, department, deletion_date)
  6      VALUES (:OLD.emp_id, :OLD.emp_name, :OLD.salary, :OLD.department, SYSDATE);
  7
  8      DBMS_OUTPUT.PUT_LINE('Employee ' || :OLD.emp_name || ' with ID ' || :OLD.emp_id || ' has been deleted and inserted into Emp_New table.');
  9  END;
 10  /

Trigger created.

SQL> DELETE FROM Employee WHERE emp_id = 1;
Employee jay with ID 1 has been deleted and inserted into Emp_New table.

1 row deleted.

SQL> SELECT * FROM Emp_New;

    EMP_ID EMP_NAME                                            SALARY DEPARTMENT                                          DELETION_
---------- -------------------------------------------------- ---------- -------------------------------------------------- ---------
         1 jay                                                 50000 HR                                                 12-NOV-24
```

2. Write a trigger that insert a record in Emp_Old table whenever a record is updated in Employee table.

```
SQL> set serveroutput on
SQL> CREATE OR REPLACE TRIGGER trg_after_update_employee
  2  AFTER UPDATE ON Employee
  3  FOR EACH ROW
  4  BEGIN
  5      INSERT INTO Emp_Old (emp_id, emp_name, salary, department, update_date)
  6      VALUES (:OLD.emp_id, :OLD.emp_name, :OLD.salary, :OLD.department, SYSDATE);
  7
  8      DBMS_OUTPUT.PUT_LINE('Employee ' || :OLD.emp_name || ' with ID ' || :OLD.emp_id || ' has been updated. Old record inserted into Emp_Old table.');
  9  END;
 10  /

Trigger created.

SQL> UPDATE Employee
  2  SET salary = salary + 5000
  3  WHERE emp_id = 1;
Employee jay with ID 1 has been updated. Old record inserted into Emp_Old table.

1 row updated.

SQL> select *from emp_old;

    EMP_ID EMP_NAME                                          SALARY DEPARTMENT                                          UPDATE_DA
---------- -------------------------------------------------- ---------- -------------------------------------------------- ---------
         1 jay                                                 50000 HR                                                 12-NOV-24
```

3. Write a trigger that will insert a record in Employee & Salary table whenever a record is deleted from Emp_Sal table.

Structures of table

Emp_salary

No, name, city, basic, da, hra, pf

Emp

No, name, city

Salary

No, basic, da, hra, pf

```
SQL> set serveroutput on
SQL> CREATE OR REPLACE TRIGGER trg_after_delete_emp_sal
  2  AFTER DELETE ON Emp_Sal
  3  FOR EACH ROW
  4  BEGIN
  5      INSERT INTO Employee (no, name, city)
  6      VALUES (:OLD.no, :OLD.name, :OLD.city);
  7
  8      INSERT INTO Salary (no, basic, da, hra, pf)
  9      VALUES (:OLD.no, :OLD.basic, :OLD.da, :OLD.hra, :OLD.pf);
 10
 11      DBMS_OUTPUT.PUT_LINE('Employee record for ' || :OLD.name || ' has been inserted into Employee table.');
 12      DBMS_OUTPUT.PUT_LINE('Salary record for ' || :OLD.name || ' has been inserted into Salary table.');
 13  END;
 14  /

Trigger created.

SQL> DELETE FROM Emp_Sal WHERE no = 1;
Employee record for jay has been inserted into Employee table.
Salary record for jay has been inserted into Salary table.

1 row deleted.

SQL> SELECT * FROM Employee;

        NO NAME                                               CITY
---------- -------------------------------------------------- --------------------------------------------------
         1 jay                                                rajkot

SQL> SELECT * FROM Salary;

        NO      BASIC         DA        HRA         PF
---------- ---------- ---------- ---------- ----------
         1      50000      10000       8000       3000
```

4. Write a PL/SQL program that will insert a record in Emp_Modify table whenever a records are deleted from emp table.

```
SQL>
SQL> set serveroutput on
SQL> CREATE OR REPLACE TRIGGER trg_after_delete_emp
  2  AFTER DELETE ON employee
  3  FOR EACH ROW
  4  BEGIN
  5      INSERT INTO Emp_Modify (emp_id, emp_name, department, salary, deletion_date)
  6      VALUES (:OLD.emp_id, :OLD.emp_name, :OLD.department, :OLD.salary, SYSDATE);
  7
  8      DBMS_OUTPUT.PUT_LINE('Record for employee ' || :OLD.emp_name || ' with ID ' || :OLD.emp_id || ' has been deleted and inserted into Emp_Modify table.');
  9  END;
 10  /

Trigger created.

SQL> DELETE FROM employee WHERE emp_id = 1;
Record for employee jay with ID 1 has been deleted and inserted into Emp_Modify table.

1 row deleted.

SQL> SELECT * FROM Emp_Modify;

    EMP_ID EMP_NAME                                           DEPARTMENT                                         SALARY DELETION_
---------- -------------------------------------------------- -------------------------------------------------- ---------- ---------
         1 jay                                                HR                                                  50000 12-NOV-24
         1 jay                                                HR                                                  50000 12-NOV-24
```

5. Write a trigger that will insert a record in Emp_Old table whenever a record is deleted from Employee table for those employees who are leaving in ‘Rajkot’.

```
1 row created.

SQL> set serveroutput on
SQL> CREATE OR REPLACE TRIGGER trg_after_delete_emp_rajkot
  2  AFTER DELETE ON Employee
  3  FOR EACH ROW
  4  BEGIN
  5      IF :OLD.city = 'Rajkot' THEN
  6          INSERT INTO Emp_Old (emp_id, emp_name, department, salary, city, deletion_date)
  7          VALUES (:OLD.emp_id, :OLD.emp_name, :OLD.department, :OLD.salary, :OLD.city, SYSDATE);
  8
  9          DBMS_OUTPUT.PUT_LINE('Employee ' || :OLD.emp_name || ' from Rajkot has been deleted and inserted into Emp_Old table.');
 10      END IF;
 11  END;
 12  /

Trigger created.

SQL> DELETE FROM employee WHERE emp_id = 1;
Employee jay from Rajkot has been deleted and inserted into Emp_Old table.

1 row deleted.

SQL> SELECT * FROM Emp_Old;

    EMP_ID EMP_NAME                                           DEPARTMENT                                         SALARY CITY                                               DELETION_
---------- -------------------------------------------------- -------------------------------------------------- ---------- -------------------------------------------------- ---------
         1 jay                                                HR                                                  50000 Rajkot                                             12-NOV-24

SQL>
```

6. Write a trigger that allows inserting record in Employee table if the salary of employees not exceed more then 1, 00,000. If salary exceed, raise exception which restrict to insert a record.

```
Commit complete.

SQL> set serveroutput on
SQL> CREATE OR REPLACE TRIGGER trg_check_salary_before_insert
  2  BEFORE INSERT ON Employee
  3  FOR EACH ROW
  4  BEGIN
  5      IF :NEW.salary > 100000 THEN
  6          RAISE_APPLICATION_ERROR(-20001, 'Salary cannot exceed 100,000');
  7      END IF;
  8  END;
  9  /

Trigger created.

SQL> INSERT INTO Employee VALUES (1, 'jay', 'HR', 50000, 'Rajkot');

1 row created.

SQL> INSERT INTO Employee VALUES (2, 'ajay', 'IT', 150000, 'Surat');
INSERT INTO Employee VALUES (2, 'ajay', 'IT', 150000, 'Surat')
            *
ERROR at line 1:
ORA-20001: Salary cannot exceed 100,000
ORA-06512: at "SYSTEM.TRG_CHECK_SALARY_BEFORE_INSERT", line 3
ORA-04088: error during execution of trigger 'SYSTEM.TRG_CHECK_SALARY_BEFORE_INSERT'
```