DATABASE SYSTEMS

Lab Digital Assignment-4

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Aim: To understand the concept of cursors and triggers in PL/SQL. Execute the following task based on the schema created in the previous sessions.

1. Retrieve the employee details that have no supervisors using cursors

```
SQL> SET SERVEROUTPUT ON;
SQL> DECLARE
  2  CURSOR employee_cursor IS
  3  SELECT emp_id, name
  4  FROM bce3466db;
  5  emp_id bce3466db.emp_id%TYPE;
  6  name bce3466db.name%TYPE;
  7  supervisor_count INTEGER;
  8  BEGIN
  9  OPEN employee_cursor;
 10  LOOP
 11  FETCH employee_cursor INTO emp_id, name;
 12  EXIT WHEN employee_cursor%NOTFOUND;
 13  --Check if the employee has any supervisors
 14  SELECT COUNT(*)
 15  INTO supervisor_count
 16  FROM bce3466db
 17  WHERE ssid = emp_id;
 18  -- If the supervisor count is 0, print the employee details
 19  IF supervisor_count = 0 THEN
 20  DBMS_OUTPUT.PUT_LINE('Employee ID: ' || emp_id || ', Employee Name: ' || name);
 21  END IF;
 22  END LOOP;
 23  CLOSE employee_cursor;
 24  END;
 25  /
Employee ID: 2031, Employee Name: Soumya Mishra
Employee ID: 3420, Employee Name: Aditya Tyagi
Employee ID: 2793, Employee Name: Praneesh Sunder
Employee ID: 3201, Employee Name: Claire Sebastian
Employee ID: 2954, Employee Name: Manish Malhotra
Employee ID: 3003, Employee Name: Amina Faizan
Employee ID: 2980, Employee Name: Samiya Murtaza
Employee ID: 3478, Employee Name: Sundar Pichai
Employee ID: 3120, Employee Name: Hema Manikandan
Employee ID: 3340, Employee Name: Diana Dsouza
Employee ID: 3216, Employee Name: Sweta Mohan
Employee ID: 2432, Employee Name: Harish Gyan

PL/SQL procedure successfully completed.
```

2. Write a cursor program to display manager details for each department

```
SQL> SET SERVEROUTPUT ON;
SQL> DECLARE
  2  CURSOR department_cursor IS
  3  SELECT deptno, dept_name
  4  FROM dept;
  5  dep_no dept.deptno%TYPE;
  6  dep_name dept.dept_name%TYPE;
  7  mgr_id bce3466db.emp_id%TYPE;
  8  mgr_name bce3466db.name%TYPE;
  9  BEGIN
 10  OPEN department_cursor;
 11  LOOP
 12  FETCH department_cursor INTO deptno, dept_name;
 13  EXIT WHEN department_cursor%NOTFOUND;
 14  -- Retrieve the manager details for the current department
 15  SELECT emp_id, name
 16  INTO mgr_id, mgr_name
 17  FROM bce3466db
 18  WHERE dept_no = deptno
 19  AND manager_id IS NULL;
 20  -- Display the manager details for the department
 21  DBMS_OUTPUT.PUT_LINE('Department: || dep_name);
 22  DBMS_OUTPUT. PUT_LINE('Manager
 23  ID:' || mgr_id);
 24  Name: ' || mgr_name);
 25  ---');
 26  DBMS_OUTPUT.PUT_LINE('Manager
 27  DBMS_OUTPUT.PUT_LINE('--
 28  END LOOP;
 29  CLOSE department_cursor;
 30  END;
 31  /
```

```
Department: Sales
Manager ID: 1
Manager Name: jaya
------------------------
Department: Marketing
Manager ID: 3
Manager Name: sachin
------------------------
Department: Finance
Manager ID: 5
Manager Name: manojna
------------------------

PL/SQL procedure successfully completed.
```

3. Create a trigger on EMP table which verify that no record has the Salary greater than Rs. 500000/- of an employee in table Emp.

```
SQL> Create OR REPLACE TRIGGER check_salary_trigger
  2  BEFORE INSERT OR UPDATE ON emp3466
  3  FOR EACH ROW
  4  DECLARE
  5  max_salary NUMBER := 500000;
  6  BEGIN
  7  IF: NEW.SALARY > max_salary THEN
  8  RAISE_APPLICATION_ERROR(-20001, 'Salary cannot exceed Rs. 500000');
  9  END IF;
 10  END;
 11  /
Trigger created.
```

4. Create a trigger on EMP table which verify that updated salary of employee must be greater than his/her previous salary.

```
SQL> CREATE OR REPLACE TRIGGER check_salary_trigger
  2  BEFORE UPDATE ON emp3466
  3  FOR EACH ROW
  4  BEGIN
  5  IF :NEW.SALARY <= :OLD.SALARY THEN
  6  RAISE_APPLICATION_ERROR(-20001, 'New salary must be greater than previous salary');
  7  END IF;
  8  END;
  9  /

Trigger created.
```