School of Computer Science, UPES, Dehradun.

A

LABORATORY FILE

On

DATABASE MANAGEMENT SYSTEM (DBMS) LAB

B.TECH. -III Semester

AUG. – NOV.- 2024.

Submitted by:
Name: Mehul Sangwan
SAP ID: 500120255
Roll No: R2142230033
Batch: 2

EXEPERIMENT – 15

To understand the concepts of implicit and explicit cursor.

Objective: Students will be able to implement the concept of implicit and explicit cursor.

1. Table Creation and Population

Code-

```
CREATE TABLE EMPLOYEES (
   EMPLOYEE_ID NUMBER PRIMARY KEY,
   LAST_NAME VARCHAR2(50),
   SALARY NUMBER
);

INSERT INTO EMPLOYEES (EMPLOYEE_ID, LAST_NAME, SALARY) VALUES
(101, 'Smith', 2000);
INSERT INTO EMPLOYEES (EMPLOYEE_ID, LAST_NAME, SALARY) VALUES
(102, 'Johnson', 3000);
INSERT INTO EMPLOYEES (EMPLOYEE_ID, LAST_NAME, SALARY) VALUES
(103, 'Williams', 2500);
INSERT INTO EMPLOYEES (EMPLOYEE_ID, LAST_NAME, SALARY) VALUES
(104, 'Brown', 4000);
INSERT INTO EMPLOYEES (EMPLOYEE_ID, LAST_NAME, SALARY) VALUES
(105, 'Jones', 3500);
INSERT INTO EMPLOYEES (EMPLOYEE_ID, LAST_NAME, SALARY) VALUES
(106, 'Garcia', 1500);
INSERT INTO EMPLOYEES (EMPLOYEE_ID, LAST_NAME, SALARY) VALUES
(107, 'Martinez', 2800);
INSERT INTO EMPLOYEES (EMPLOYEE_ID, LAST_NAME, SALARY) VALUES
(108, 'Davis', 2700);
INSERT INTO EMPLOYEES (EMPLOYEE_ID, LAST_NAME, SALARY) VALUES
(109, 'Rodriguez', 2200);
INSERT INTO EMPLOYEES (EMPLOYEE_ID, LAST_NAME, SALARY) VALUES
(110, 'Hernandez', 3100);

SELECT * FROM EMPLOYEES;
```

Output-

EMPLOYEE_ID	LAST_NAME	SALARY
103	Williams	3327.5
101	Smith	2662
102	Johnson	3993
104	Brown	5324
106	Garcia	1996.5
107	Martinez	3726.8
109	Rodriguez	2928.2
108	Davis	3593.7
110	Hernandez	4126.1
105	Jones	4658.5

10 rows returned in 0.00 seconds Download

2. Using implicit cursor update the salary by an increase of 10% for all the records in EMPLOYEES table, and finally display how many records have been updated. If no records exist display the message "**No Change**".

Code-

```
DECLARE
   rows_updated NUMBER;
BEGIN
   UPDATE EMPLOYEES
   SET SALARY = SALARY * 1.1;
   rows_updated := SQL%ROWCOUNT;
   IF rows_updated > 0 THEN
      DBMS_OUTPUT.PUT_LINE(rows_updated || ' records
updated.');
   ELSE
      DBMS_OUTPUT.PUT_LINE('No Change');
   END IF;
END;
```

Output-

```
10 records updated.

1 row(s) updated.


0.01 seconds
```

3. Using explicit cursor fetch the employee name, employee_id and salary of all the records from EMPLOYEES table.

Code-

```
DECLARE
```

```
    CURSOR emp_cursor IS
      SELECT EMPLOYEE_ID, LAST_NAME, SALARY FROM
EMPLOYEES;
    v_employee_id EMPLOYEES.EMPLOYEE_ID%TYPE;
    v_last_name EMPLOYEES.LAST_NAME%TYPE;
    v_salary EMPLOYEES.SALARY%TYPE;
BEGIN
    OPEN emp_cursor;
    LOOP
      FETCH emp_cursor INTO v_employee_id, v_last_name,
v_salary;
      EXIT WHEN emp_cursor%NOTFOUND;
      DBMS_OUTPUT.PUT_LINE('Employee ID: ' ||
v_employee_id || ', Name: ' || v_last_name || ', Salary: ' || v_salary);
    END LOOP;
    CLOSE emp_cursor;
END;
```

Output-

```
Employee ID: 103, Name: Williams, Salary: 2750
Employee ID: 101, Name: Smith, Salary: 2200
Employee ID: 102, Name: Johnson, Salary: 3300
Employee ID: 104, Name: Brown, Salary: 4400
Employee ID: 106, Name: Garcia, Salary: 1650
Employee ID: 107, Name: Martinez, Salary: 3080
Employee ID: 109, Name: Rodriguez, Salary: 2420
Employee ID: 108, Name: Davis, Salary: 2970
Employee ID: 110, Name: Hernandez, Salary: 3410
Employee ID: 105, Name: Jones, Salary: 3850

Statement processed.
```

4. Using explicit cursor Insert the records from EMPLOYEES table for the columns employee_id, Last_Name and salary for those records whose salary exceeds 2500 into a new table TEMP_EMP

Code-

```
CREATE TABLE TEMP_EMP (
    EMPLOYEE_ID NUMBER PRIMARY KEY,
    LAST_NAME VARCHAR2(50),
    SALARY NUMBER
);

DECLARE
    CURSOR emp_high_salary IS
```

```
        SELECT EMPLOYEE_ID, LAST_NAME, SALARY FROM
EMPLOYEES
        WHERE SALARY > 2500;
    v_employee_id EMPLOYEES.EMPLOYEE_ID%TYPE;
    v_last_name EMPLOYEES.LAST_NAME%TYPE;
    v_salary EMPLOYEES.SALARY%TYPE;
BEGIN
    OPEN emp_high_salary;
    LOOP
        FETCH emp_high_salary INTO v_employee_id,
v_last_name, v_salary;
        EXIT WHEN emp_high_salary%NOTFOUND;
        INSERT INTO TEMP_EMP (EMPLOYEE_ID,
LAST_NAME, SALARY)
        VALUES (v_employee_id, v_last_name, v_salary);
    END LOOP;
    CLOSE emp_high_salary;
    DBMS_OUTPUT.PUT_LINE('Records inserted into
TEMP_EMP where salary > 2500.');
END;
```

Output-