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CSE A1 SECTION
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# DBMS LAB 11 - CURSORS

## AIM :

To show the implementation of cursors in PL/SQL

## THEORY:

**Cursors**

1. Cursor is a private SQL workgroup area allocated temporarily
2. The required amount of memory space will be allocated in cursor name
3. A cursor holds the records written by select statement
4. There are two types of cursors
    - Implicit Cursors
    - Explicit Cursors

| S.No | Attribute & Description |
|---|---|
| 1 | %FOUND<br>Returns TRUE if an INSERT, UPDATE, or DELETE statement affected one or more rows or a SELECT INTO statement returned one or more rows. Otherwise, it returns FALSE. |
| 2 | %NOTFOUND<br>The logical opposite of %FOUND. It returns TRUE if an INSERT, UPDATE, or DELETE statement affected no rows, or a SELECT INTO statement returned no rows. Otherwise, it returns FALSE. |
| 3 | %ISOPEN<br>Always returns FALSE for implicit cursors, because Oracle closes the SQL cursor automatically after executing its associated SQL statement. |
| 4 | %ROWCOUNT<br>Returns the number of rows affected by an INSERT, UPDATE, or DELETE statement, or returned by a SELECT INTO statement. |

# SOURCE CODE :

## 1.DISPLAYING COLUMNS FROM EMP TABLE(explicit cursor)

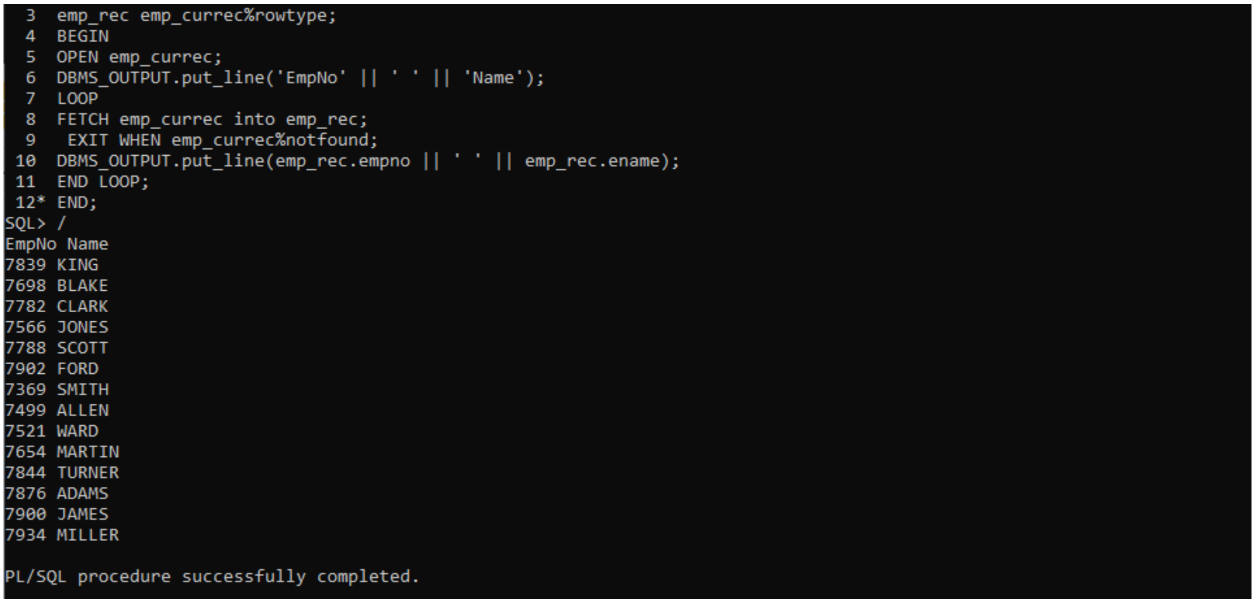
```
DECLARE
CURSOR emp_currec is SELECT empno, ename FROM emp;
emp_rec emp_currec%rowtype;
BEGIN
OPEN emp_currec;
DBMS_OUTPUT.put_line('EmpNo' || ' ' || 'Name');
LOOP
FETCH emp_currec into emp_rec;
 EXIT WHEN emp_currec%notfound;
DBMS_OUTPUT.put_line(emp_rec.empno || ' ' || emp_rec.ename);
END LOOP;
END;
```

## 2.UPDATING SALARY IN EMP TABLE (implicit cursor)

```
DECLARE
  total_rows number(2);
BEGIN
  UPDATE emp
  SET sal = sal + 500;
  IF sql%notfound THEN
    dbms_output.put_line('no customers selected');
  ELSIF sql%found THEN
    total_rows := sql%rowcount;
    dbms_output.put_line( total_rows || ' customers selected ');
  END IF;
END;
```

# SCREENSHOTS :

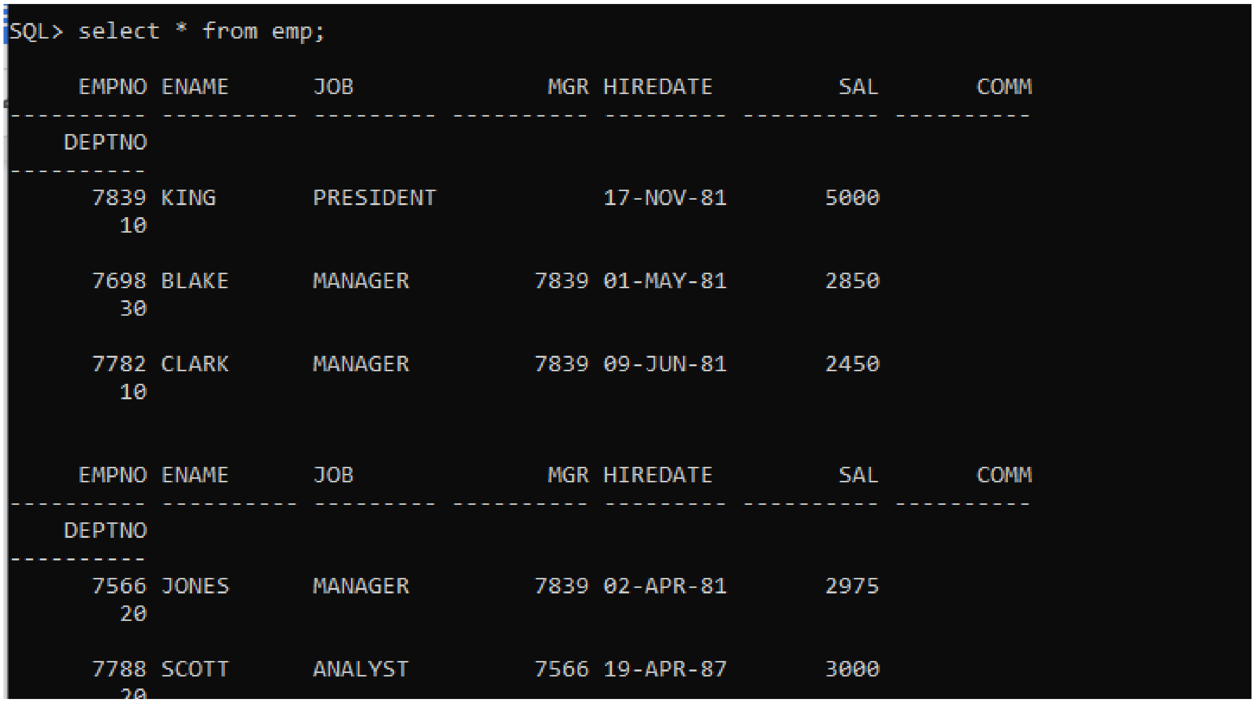
## 1.DISPLAYING COLUMNS FROM EMP TABLE



```
emp_rec emp_currec%rowtype;
BEGIN
OPEN emp_currec;
DBMS_OUTPUT.put_line('EmpNo' || ' ' || 'Name');
LOOP
FETCH emp_currec into emp_rec;
 EXIT WHEN emp_currec%notfound;
DBMS_OUTPUT.put_line(emp_rec.empno || ' ' || emp_rec.ename);
END LOOP;
END;
SQL> /
EmpNo Name
7839 KING
7698 BLAKE
7782 CLARK
7566 JONES
7788 SCOTT
7902 FORD
7369 SMITH
7499 ALLEN
7521 WARD
7654 MARTIN
7844 TURNER
7876 ADAMS
7900 JAMES
7934 MILLER

PL/SQL procedure successfully completed.
```

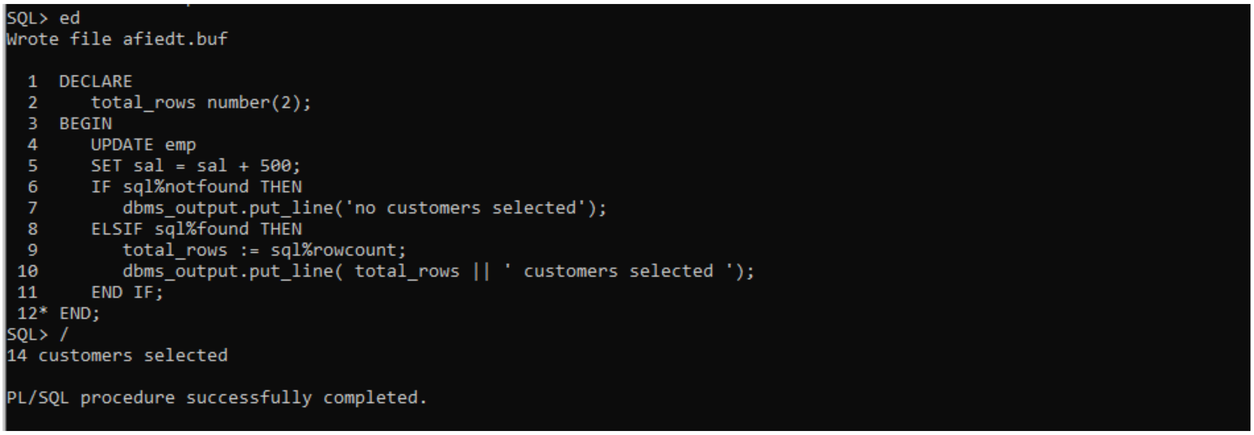
## 2.UPDATING SALARY IN EMP TABLE

## Table with old salary :



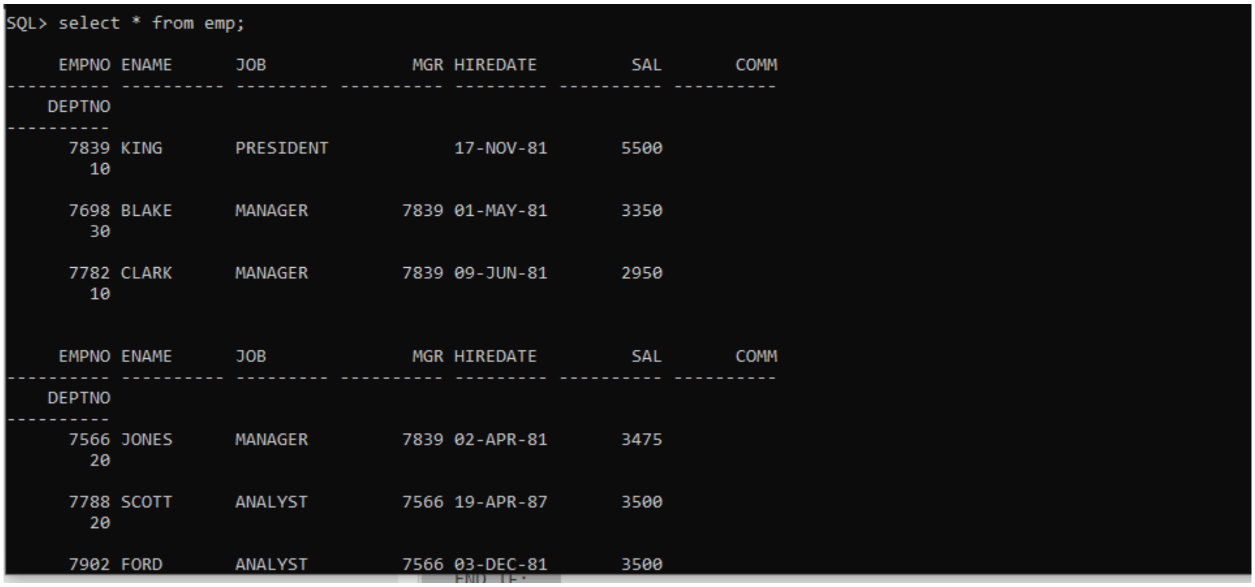
```
SQL> select * from emp;

     EMPNO ENAME      JOB              MGR HIREDATE         SAL       COMM
---------- ---------- --------- ---------- --------- ---------- ----------
    DEPTNO
----------
      7839 KING       PRESIDENT            17-NOV-81       5000
        10

      7698 BLAKE      MANAGER         7839 01-MAY-81       2850
        30

      7782 CLARK      MANAGER         7839 09-JUN-81       2450
        10


     EMPNO ENAME      JOB              MGR HIREDATE         SAL       COMM
---------- ---------- --------- ---------- --------- ---------- ----------
    DEPTNO
----------
      7566 JONES      MANAGER         7839 02-APR-81       2975
        20

      7788 SCOTT      ANALYST         7566 19-APR-87       3000
        20
```

## Implicit cursor program :



```
SQL> ed
Wrote file afiedt.buf

  DECLARE
     total_rows number(2);
  BEGIN
     UPDATE emp
     SET sal = sal + 500;
     IF sql%notfound THEN
        dbms_output.put_line('no customers selected');
     ELSIF sql%found THEN
        total_rows := sql%rowcount;
        dbms_output.put_line( total_rows || ' customers selected ');
     END IF;
  END;
SQL> /
14 customers selected

PL/SQL procedure successfully completed.
```

**New table with updated salary :**



```
SQL> select * from emp;

     EMPNO ENAME      JOB              MGR HIREDATE         SAL       COMM
---------- ---------- --------- ---------- --------- ---------- ----------
    DEPTNO
----------
      7839 KING       PRESIDENT            17-NOV-81       5500
        10

      7698 BLAKE      MANAGER         7839 01-MAY-81       3350
        30

      7782 CLARK      MANAGER         7839 09-JUN-81       2950
        10


     EMPNO ENAME      JOB              MGR HIREDATE         SAL       COMM
---------- ---------- --------- ---------- --------- ---------- ----------
    DEPTNO
----------
      7566 JONES      MANAGER         7839 02-APR-81       3475
        20

      7788 SCOTT      ANALYST         7566 19-APR-87       3500
        20

      7902 FORD       ANALYST         7566 03-DEC-81       3500
```

# RESULTS :

Thus we have successfully shown the implementation of cursors in PL/SQL.