CURSOR

AIM

Develop PL/SQL program to implement Cursor

Questions : 1

Write a PL/SQL cursor program to update the salary of each employee of department number D001 in the Employee table as per the schema

QUERY

```
SQL>create table Emptable(SSN varchar(10),Name char(20),Address char(30),Sex char(8),
Salary integer,SuperSSN varchar(10),DNo varchar(10),Age integer);
Table created.

SQL> insert into Emptable values('S101','Ananya','Sector 64 New Delhi','Female',10000,
'SN1','D001',25);
1 row created.

SQL> insert into Emptable values('S102','Shruthi','Thane Mumbai','Female',25000,
'SN2','D002',28);
1 row created.

SQL> insert into Emptable values('S103','Das','Agra Delhi','Male',15000,
'SN3','D003',38);
1 row created.

SQL> insert into Emptable values('S104','Joe','Agra Delhi','Male',16500,
'SN4','D004',20);
1 row created.

SQL> insert into Emptable values('S105','Jaya','Indira road Mumbai','Female',45500,
'SN5','D005',24);
1 row created.

SQL> Declare
  2  cursor employee_cur is
  3  select SSN,Salary from Emptable where DNo = 'D001'
  4  for update;
  5  incr_sal number;
  6  begin
```

```
 7  for employee_rec in employee_cur loop
 8  if employee_rec.Salary<2000 then
 9  incr_sal := .15;
10  else
11  incr_sal := .10;
12  end if;
13  update Emptable set Salary = Salary+Salary*incr_sal where current of employee_cur;
14  end loop;
15  end;
16   /
```

```
PL/SQL procedure successfully completed.
```

DATABASE TABLES

```
SSN        NAME                ADDRESS                        SEX
---------- ------------------- ------------------------------ --------
    SALARY SUPERSSN   DNO               AGE
---------- ---------- ---------- ----------
S101       Ananya              Sector 64 New Delhi            Female
     10000 SN1        D001              25

S102       Shruthi             Thane Mumbai                   Female
     25000 SN2        D002              28

S103       Das                 Agra Delhi                     Male
     15000 SN3        D003              38


SSN        NAME                ADDRESS                        SEX
---------- ------------------- ------------------------------ --------
    SALARY SUPERSSN   DNO               AGE
---------- ---------- ---------- ----------
S104       Joe                 Agra Delhi                     Male
     16500 SN4        D004              20

S105       Jaya                Indira road Mumbai             Female
     45500 SN5        D005              24
```

```
SSN        NAME                ADDRESS                        SEX
---------- ------------------- ------------------------------ --------
    SALARY SUPERSSN   DNO               AGE
---------- ---------- ---------- ----------
S101       Ananya              Sector 64 New Delhi            Female
     11000 SN1        D001              25

S102       Shruthi             Thane Mumbai                   Female
     25000 SN2        D002              28

S103       Das                 Agra Delhi                     Male
     15000 SN3        D003              38


SSN        NAME                ADDRESS                        SEX
---------- ------------------- ------------------------------ --------
    SALARY SUPERSSN   DNO               AGE
---------- ---------- ---------- ----------
S104       Joe                 Agra Delhi                     Male
     16500 SN4        D004              20

S105       Jaya                Indira road Mumbai             Female
     45500 SN5        D005              24
```

Questions : 2

Write a PL/SQL cursor program to retrieve Dno and DName from Department table as per the schema

QUERY

```
SQL> create table Departable(DNo varchar(10),DName char(20),MgrSSN varchar(10),
MgrStartDate varchar(20));

SQL> insert into Departable values('D001','HR','M0101','05-01-2022');
1 row created.

SQL> insert into Departable values('D002','Sales','M0102','19-04-2022');
1 row created.

SQL> insert into Departable values('D003','Finance','M0103','25-03-2022');
1 row created.

SQL> insert into Departable values('D004','Management','M0104','27-05-2022');
1 row created.

SQL> insert into Departable values('D005','Marketing','M0105','30-04-2022');
1 row created.

SQL> create table temp(DNo varchar(20),Dname varchar(20));

Table created.

SQL> Declare
  2  Department_name varchar(25);
  3  Dep_number varchar(10);
  4  cursor dep_cursor is
  5  select DNo,DName from Departable;
  6  begin
  7  open dep_cursor;
  8  for i in 1..5 loop
  9  fetch dep_cursor into Dep_number,Department_name;
 10  insert into temp values(Dep_number,Department_name);
 11  commit;
 12  end loop;
 13  close dep_cursor;
```

```
 14  end;
 15  /

PL/SQL procedure successfully completed.
```

DATABASE TABLES

```
SQL> select * from Departable;

DNO                  DNAME
-------------------- ------------------------------
MGRSSN                         MGRSTARTDATE
------------------------------ --------------------
D001                 HR
M0101                          2022-05-12

D002                 Sales
M0102                          2022-03-25

D003                 Management
M0103                          2022-04-19


DNO                  DNAME
-------------------- ------------------------------
MGRSSN                         MGRSTARTDATE
------------------------------ --------------------
D004                 Finance
M0104                          2022-05-27

D005                 Marketing
M0105                          2022-04-30
```

```
SQL>
SQL> select * from temp;

DNO                  DNAME
-------------------- --------------------
D001                 HR
D002                 Sales
D003                 Management
D004                 Finance
D005                 Marketing
```

TRIGGER

AIM

Develop and execute a Trigger before and after Update/Delete/Insert operations on a table

Questions : 1

Write PL/SQL trigger program to display the salary differences between the old values and new values in the table employee as per the schema

QUERY

```
CREATE OR REPLACE TRIGGER display_salary_changes
BEFORE DELETE OR INSERT OR UPDATE ON employeetable
FOR EACH ROW
WHEN (NEW.ID > 0)
DECLARE
   sal_diff number;
BEGIN
   sal_diff := :NEW.Salary  - :OLD.Salary;
   dbms_output.put_line('Old salary: ' || :OLD.salary);
   dbms_output.put_line('New salary: ' || :NEW.salary);
   dbms_output.put_line('Salary difference: ' || sal_diff);
END;
/
Trigger created.

DECLARE
BEGIN
UPDATE employeetable
SET Salary = Salary + 4000;
END;
/
```

DATABASE TABLES

```
SQL> @C:\Users\Sona\Desktop\salarydiff.sql

Trigger created.

SQL> @C:\Users\Sona\Desktop\s.sql
Old salary: 25000
New salary: 29000
Salary difference: 4000
Old salary: 65000
New salary: 69000
Salary difference: 4000
Old salary: 72000
New salary: 76000
Salary difference: 4000

PL/SQL procedure successfully completed.
```

Questions : 2

Write PL/SQL trigger program to display the hour differences between the old values and new values in the table Works_on as per the schema

QUERY

```
CREATE OR REPLACE TRIGGER display_hour_changes
BEFORE DELETE OR INSERT OR update on Work_on
for each row
when (NEW.HOURS > 0)
DECLARE
    hour_diff number;
BEGIN
    hour_diff := :NEW.HOURS - :OLD.HOURS;
    dbms_output.put_line('Old time: ' || :OLD.HOURS);
    dbms_output.put_line('New time: ' || :NEW.HOURS);
    dbms_output.put_line('Salary difference: ' || hour_diff);
END;
/
Trigger created.
DECLARE
BEGIN
UPDATE Works_on
SET HOURS = HOURS - 4;
END;
/
```

DATABASE TABLES

```
SQL> @C:\Users\Sona\Desktop\hourdiff.sql

Trigger created.

SQL> @C:\Users\Sona\Desktop\h.sql
Old time: 25
New time: 21
Salary difference: -4
Old time: 27
New time: 23
Salary difference: -4
Old time: 18
New time: 14
Salary difference: -4
Old time: 10
New time: 6
Salary difference: -4

PL/SQL procedure successfully completed.
```