

## 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
S101	Ananya	Sector 64 New Delhi	Female
S102	Shruthi	Thane Mumbai	Female
S103	Das	Agra Delhi	Male
S104	Joe	Agra Delhi	Male
S105	Jaya	Indira road Mumbai	Female

SSN	NAME	ADDRESS	SEX
S101	Ananya	Sector 64 New Delhi	Female
S102	Shruthi	Thane Mumbai	Female
S103	Das	Agra Delhi	Male
S104	Joe	Agra Delhi	Male
S105	Jaya	Indira road Mumbai	Female

SSN	NAME	ADDRESS	SEX
S101	Ananya	Sector 64 New Delhi	Female
S102	Shruthi	Thane Mumbai	Female
S103	Das	Agra Delhi	Male
S104	Joe	Agra Delhi	Male
S105	Jaya	Indira road Mumbai	Female

**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

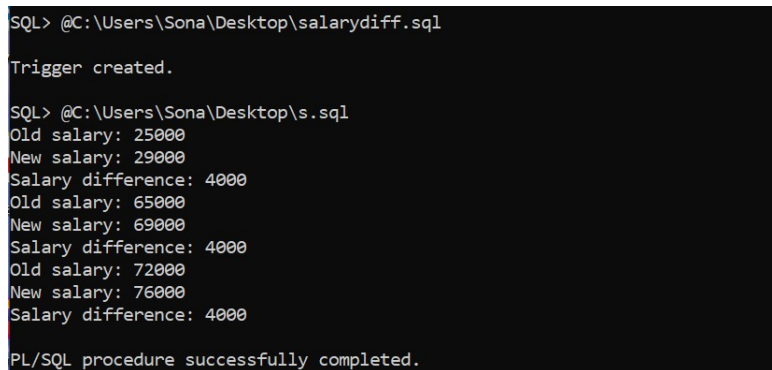
Write PL/SQL trigger program to display the salary differences between the old values and new values in the table employee as per the schema

### 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

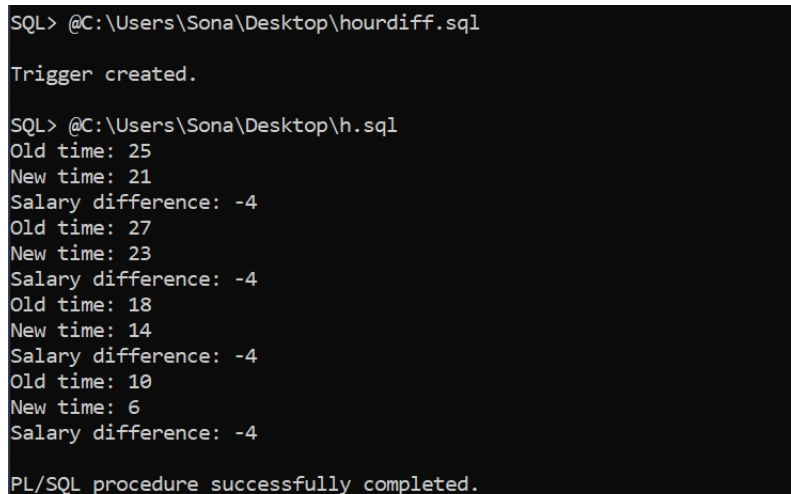
PL/SQL procedure successfully completed.
```

**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.
```