

Database Management Systems (USCS304)

Practical -07: Trigger

Learning Objectives:

Students will be able to:

Content:

- Learn about how to create trigger

Process:

- Write a function using SQL queries.

Prior Knowledge:

- Basic syntax of trigger

Trigger:

Triggers are stored programs, which are automatically executed or fired when some event occurs.

Syntax:

```
CREATE [OR REPLACE] TRIGGER trigger_name
{BEFORE | AFTER | INSTEAD OF}
{INSERT [OR] | UPDATE [OR] | DELETE} [OF col_name]
ON table_name
[REFERENCING OLD AS o NEW AS n]
[FOR EACH ROW]
WHEN (condition)
DECLARE
Declaration-statements
BEGIN
Executable-statements
EXCEPTION
Exception-handling-statements
END;
/
```

Delete trigger:

```
drop trigger trigger_name;
```

Q.1 Write a program to create a row level trigger for the CUSTOMERS<RollNo> Table that would fire for UPDATE operations performed on the CUSTOMERS<RollNo> table. This trigger should display the salary difference between the old values and new values. (Use BEFORE Clause).

FileName: p_07_q1_janhavi.sql

```
CREATE OR REPLACE TRIGGER display_salary_changes_15
BEFORE UPDATE
ON customers
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;
/
set serveroutput on;
DECLARE
total_rows NUMBER(2);
BEGIN
UPDATE customers
SET salary = salary + 5000;
IF SQL%NOTFOUND THEN
    DBMS_OUTPUT.PUT_LINE('no customers update');
ELSIF SQL%FOUND THEN
total_rows := SQL%ROWCOUNT;
DBMS_OUTPUT.PUT_LINE(total_rows || ' customers updated ');
END IF;
END;
/
Execute: @'C:\dbmspracs\p_07_q1_janhavi.sql';
```

Output:

```
SQL> @'C:\dbmspracs\p_07_q1_janhavi.sql';  
  
Trigger created.  
  
Old salary: 25000  
New salary: 30000  
Salary difference: 5000  
Old salary: 27000  
New salary: 32000  
Salary difference: 5000  
Old salary: 29000  
New salary: 34000  
Salary difference: 5000  
Old salary: 31000  
New salary: 36000  
Salary difference: 5000  
Old salary: 33000  
New salary: 38000  
Salary difference: 5000  
Old salary: 35000  
New salary: 40000  
Salary difference: 5000  
6 customers updated  
  
PL/SQL procedure successfully completed.  
  
SQL>
```

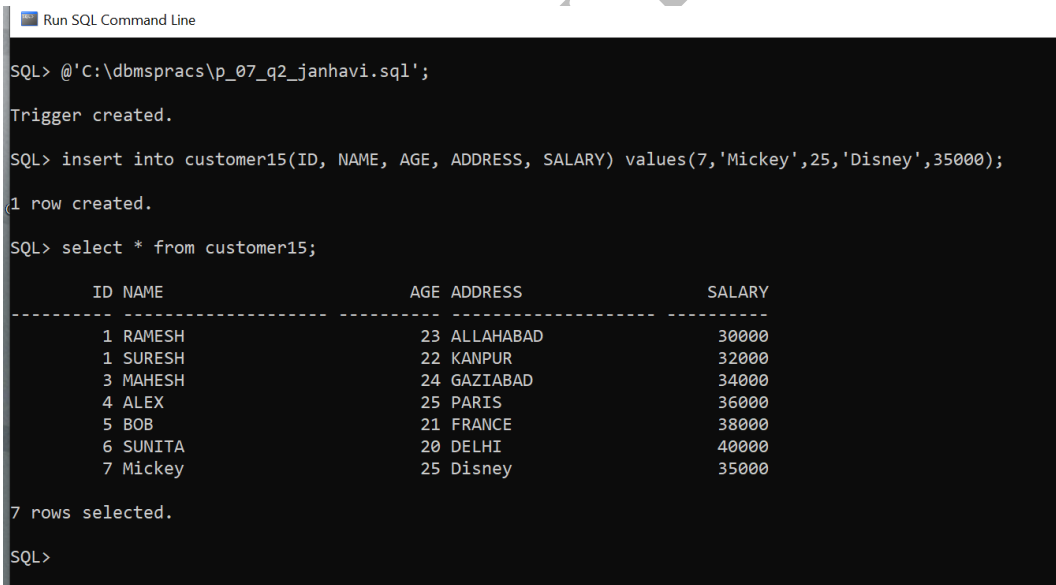
Q.2 Write a program to create a row level trigger for the CUSTOMERS<RollNo> Table that would fire for INSERT operations performed on the CUSTOMERS<RollNo> table. This trigger should insert [100, Mickey, 25, Disney, 35000] new record in CUSTOMERS<RollNo> table. (Use AFTER Clause)

FileName: p_07_q2_janhavi.sql

```
CREATE OR REPLACE TRIGGER after_insert_t
Before insert ON customer15
for each row
BEGIN
INSERT INTO customer15(ID, Name, Age, Address, Salary) VALUES (:NEW.id,
:NEW.name, :NEW.age,
:NEW.address, :NEW.salary);
END;
/
```

Execute: @'C:\dbmspracs\p_07_q2_janhavi.sql';

Output:



```
Run SQL Command Line

SQL> @'C:\dbmspracs\p_07_q2_janhavi.sql';

Trigger created.

SQL> insert into customer15(ID, NAME, AGE, ADDRESS, SALARY) values(7,'Mickey',25,'Disney',35000);

1 row created.

SQL> select * from customer15;

   ID NAME          AGE ADDRESS          SALARY
-----
1  RAMESH          23 ALLAHABAD          30000
1  SURESH           22 KANPUR              32000
3  MAHESH           24 GAZIABAD           34000
4  ALEX              25 PARIS               36000
5  BOB               21 FRANCE              38000
6  SUNITA            20 DELHI               40000
7  Mickey            25 Disney              35000

7 rows selected.

SQL>
```

Q.3 Write a program to create a row level trigger for the CUSTOMERS<RollNo> Table that would fire for DELETE operations performed on the CUSTOMERS<RollNo> table. This trigger will delete the record from the table (Use AFTER Clause).

FileName: p_07_q3_janhavi.sql

```
CREATE OR REPLACE trigger custtrigger
after delete on customers
for each row
begin
if Deleting then
insert into cust_15 values('Delete command fired');
END IF;
END;
/
```

Execute: @'C:\dbmspracs\p_07_q3_janhavi.sql';

Output:

```
SQL> CREATE TABLE cust_15(TEXT VARCHAR2(20)) ;
Table created.

SQL> @'C:\dbmspracs\p_07_q3_janhavi.sql';
Trigger created.

SQL> DELETE FROM customers WHERE ID=7;
1 row deleted.

SQL> select * from cust_15;

TEXT
-----
Delete command fired

SQL> _
```

Smt. Chandibai Himathmal Mansukhani College

Date: 30-08-2021

Teachers Signature: _____

CHMCS/SEM III/2021-2022

Batch: B2

/ Roll No: _____