Database Systems Lab - 14CS2012

REGISTER NO: UR14CS228

DATE: 24-10-2016

EXPERIMENT-NO 7

Video Link : https://youtu.be/VqU3vLtdLzg

AIM:

To Create Triggers based on different questions.

DESCRIPTION:

A database trigger is procedural code that is automatically executed in response to certain events on a particular table or view in a database. The trigger is mostly used for maintaining the integrity of the information on the database.

Program:

1.Create a simple Trigger that does not allow delete operations on the Supplier table

```
 CREATE OR REPLACE TRIGGER trigger1
    BEFORE DELETE ON supplier
    FOR EACH ROW
   BEGIN
    IF deleting THEN
    RAISE_APPLICATION_ERROR(-20101,'Deletion is not enabled');
    END IF;
    END;
     /
delete supplier Where S_ID='ur3';
```

2. Create a Trigger that raises an User Defined Error Message and does not allow updating the order table.

```
CREATE OR REPLACE TRIGGER trigger2
    BEFORE UPDATE ON order1
    FOR EACH ROW
   BEGIN
   IF inserting OR updating THEN
   RAISE_APPLICATION_ERROR(-20101,'Updation is not allowed');
   END IF;
   END;
   /
update order1 SET customer_id=10 WHERE order_id=1000;
```

3. Create a trigger to implement referential integrity policy “on delete set NULL” in the order_quantity table. That is when an order-id is deleted in the order table, set NULL for deleted order-id in the order_quantity table.

```
 CREATE OR REPLACE TRIGGER trigger3
   BEFORE DELETE ON order1
   FOR EACH ROW
   BEGIN
   UPDATE orderquantity SET order_id=NULL WHERE
order_id=:old.ORDER_ID;
   END;
    /

delete order1 where ORDER_ID=1000;
```

4. Create a trigger to update the order table whenever the customer id is updated in the customer table.

```
CREATE OR REPLACE TRIGGER trigger4
   BEFORE UPDATE ON customer
   FOR EACH ROW
   BEGIN
   UPDATE order1 SET customer_id=:new.customer_id WHERE
customer_id=:old.customer_id;

   END;

 /

 update customer set CUSTOMER_ID=40 where
CUSTOMER_NAME='john';
```

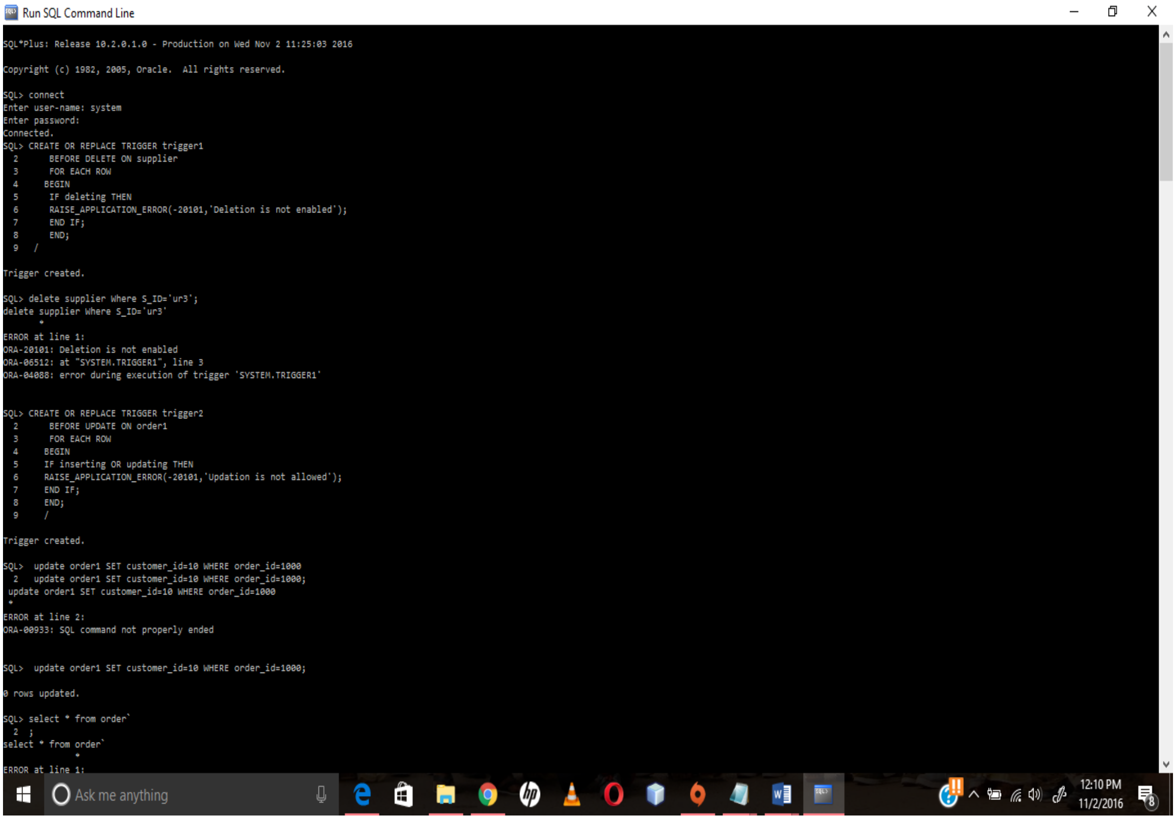
5. Create a trigger for customer table that inserts a newly inserted values in the customer_audit table. The structure of the customer_audit table is (cus_id, cus_name, city).

```
CREATE OR REPLACE TRIGGER trigger5

    AFTER INSERT ON customer

    FOR EACH ROW

    BEGIN

    INSERT INTO customer_audit
VALUES(:new.customer_id,:new.customer_name,:new.city);

    END;

    /

INSERT INTO customer VALUES (70, 'Reuben', 'Mulund', 'Mulund',
'Maharashtra','641114');
```

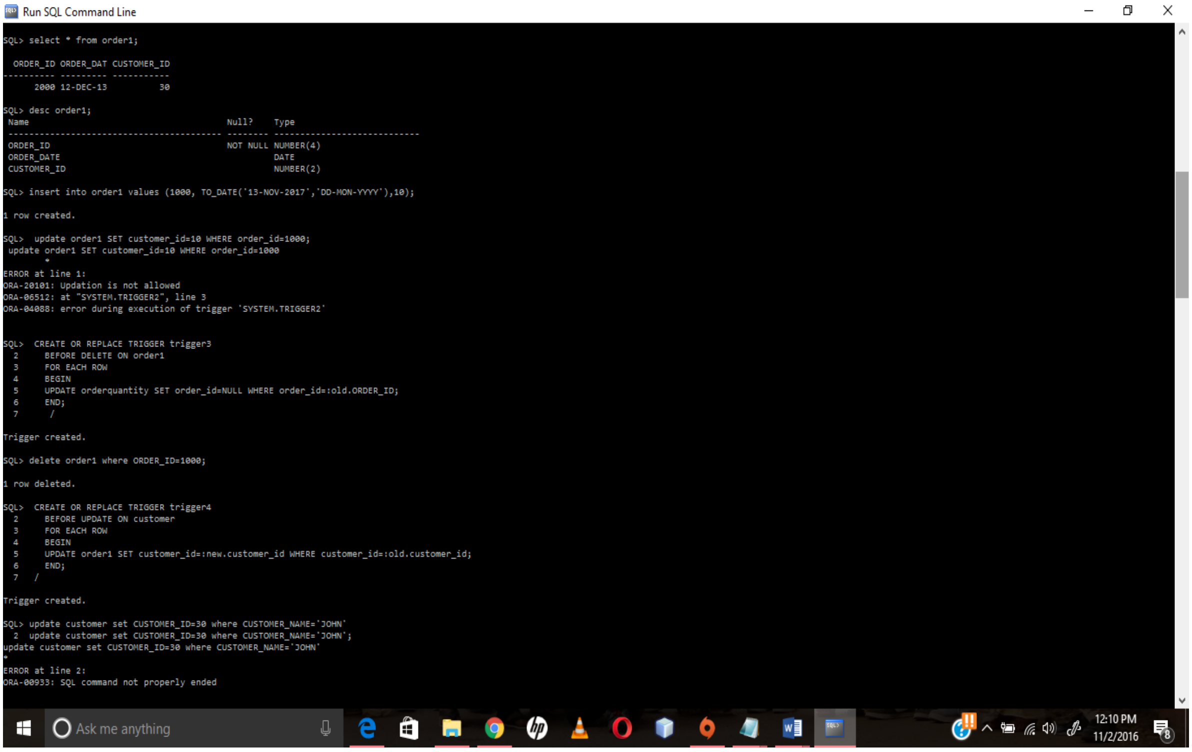
6. Create a Trigger that raises an User Defined Error Message and does not allow updating the supplier table if the supplied date is greater than the current date

```
CREATE OR REPLACE TRIGGER trigger6

    BEFORE INSERT ON supplier

    FOR EACH ROW

    BEGIN

    IF :new.s_date > SYSDATE THEN

    RAISE_APPLICATION_ERROR(-20101,'Supplied date is after
today');

    END IF;

    END;

   /

INSERT INTO supplier VALUES (80, 'subbu','r',TO_DATE('13-NOV-
2017','DD-MON-YYYY'),6000);
```

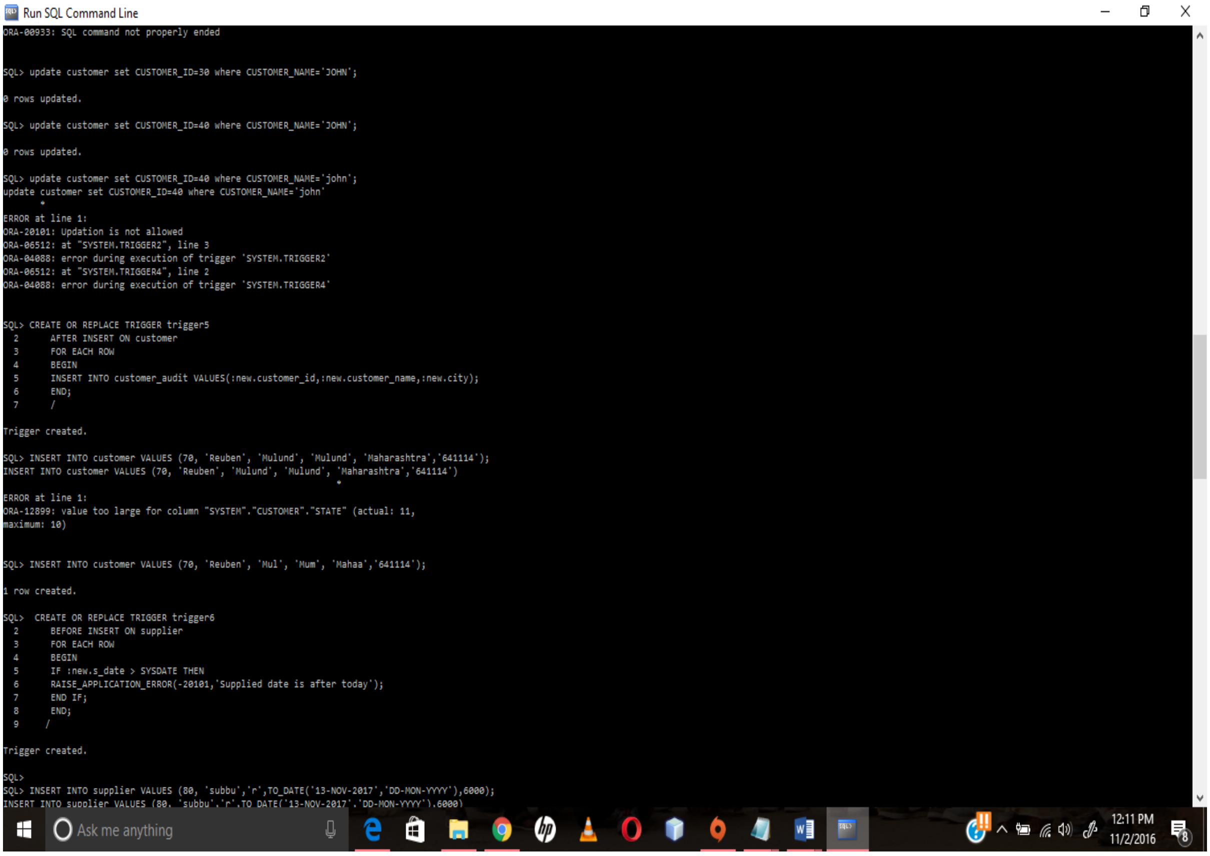
Output:



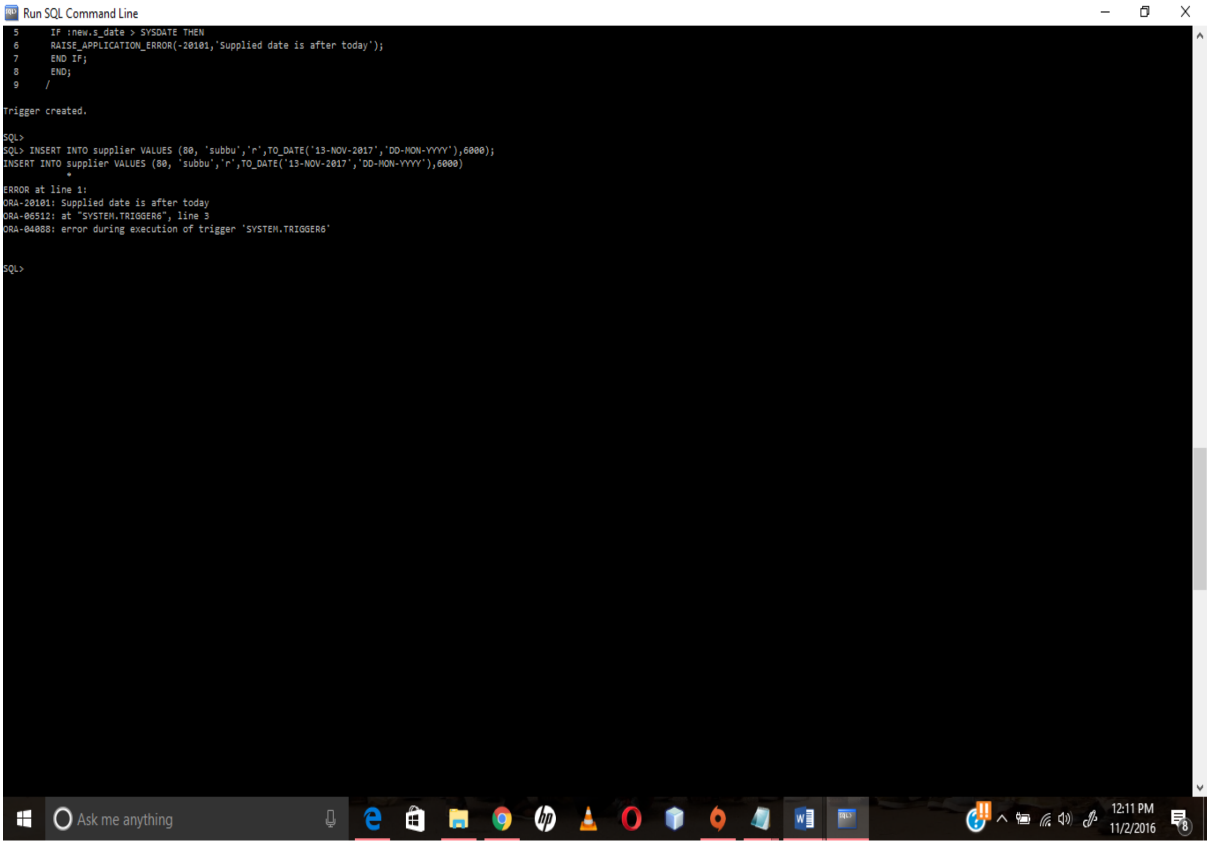
```
SQL*Plus: Release 10.2.0.1.0 - Production on Wed Nov 2 11:25:03 2016

Copyright (c) 1982, 2005, Oracle.  All rights reserved.

SQL> connect
Enter user-name: system
Enter password:
Connected.
SQL> CREATE OR REPLACE TRIGGER trigger1
  2      BEFORE DELETE ON supplier
  3      FOR EACH ROW
  4     BEGIN
  5      IF deleting THEN
  6      RAISE_APPLICATION_ERROR(-20101,'Deletion is not enabled');
  7      END IF;
  8      END;
  9   /

Trigger created.

SQL> delete supplier Where S_ID='ur3';
delete supplier Where S_ID='ur3'
       *
ERROR at line 1:
ORA-20101: Deletion is not enabled
ORA-06512: at "SYSTEM.TRIGGER1", line 3
ORA-04088: error during execution of trigger 'SYSTEM.TRIGGER1'


SQL> CREATE OR REPLACE TRIGGER trigger2
  2      BEFORE UPDATE ON order1
  3      FOR EACH ROW
  4     BEGIN
  5     IF inserting OR updating THEN
  6     RAISE_APPLICATION_ERROR(-20101,'Updation is not allowed');
  7     END IF;
  8     END;
  9     /

Trigger created.

SQL>  update order1 SET customer_id=10 WHERE order_id=1000
  2   update order1 SET customer_id=10 WHERE order_id=1000;
 update order1 SET customer_id=10 WHERE order_id=1000
 *
ERROR at line 2:
ORA-00933: SQL command not properly ended


SQL>  update order1 SET customer_id=10 WHERE order_id=1000;

0 rows updated.

SQL> select * from order`
  2  ;
select * from order`
             *
ERROR at line 1:
```



```
SQL> select * from order1;

  ORDER_ID ORDER_DAT CUSTOMER_ID
---------- --------- -----------
      2000 12-DEC-13          30

SQL> desc order1;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ORDER_ID                                  NOT NULL NUMBER(4)
 ORDER_DATE                                         DATE
 CUSTOMER_ID                                        NUMBER(2)

SQL> insert into order1 values (1000, TO_DATE('13-NOV-2017','DD-MON-YYYY'),10);

1 row created.

SQL>  update order1 SET customer_id=10 WHERE order_id=1000;
 update order1 SET customer_id=10 WHERE order_id=1000
       *
ERROR at line 1:
ORA-20101: Updation is not allowed
ORA-06512: at "SYSTEM.TRIGGER2", line 3
ORA-04088: error during execution of trigger 'SYSTEM.TRIGGER2'


SQL>  CREATE OR REPLACE TRIGGER trigger3
  2     BEFORE DELETE ON order1
  3     FOR EACH ROW
  4     BEGIN
  5     UPDATE orderquantity SET order_id=NULL WHERE order_id=:old.ORDER_ID;
  6     END;
  7      /

Trigger created.

SQL> delete order1 where ORDER_ID=1000;

1 row deleted.

SQL>  CREATE OR REPLACE TRIGGER trigger4
  2     BEFORE UPDATE ON customer
  3     FOR EACH ROW
  4     BEGIN
  5     UPDATE order1 SET customer_id=:new.customer_id WHERE customer_id=:old.customer_id;
  6     END;
  7   /

Trigger created.

SQL> update customer set CUSTOMER_ID=30 where CUSTOMER_NAME='JOHN'
  2  update customer set CUSTOMER_ID=30 where CUSTOMER_NAME='JOHN';
update customer set CUSTOMER_ID=30 where CUSTOMER_NAME='JOHN'
*
ERROR at line 2:
ORA-00933: SQL command not properly ended
```



```
ORA-00933: SQL command not properly ended


SQL> update customer set CUSTOMER_ID=30 where CUSTOMER_NAME='JOHN';

0 rows updated.

SQL> update customer set CUSTOMER_ID=40 where CUSTOMER_NAME='JOHN';

0 rows updated.

SQL> update customer set CUSTOMER_ID=40 where CUSTOMER_NAME='john';
update customer set CUSTOMER_ID=40 where CUSTOMER_NAME='john'
       *
ERROR at line 1:
ORA-20101: Updation is not allowed
ORA-06512: at "SYSTEM.TRIGGER2", line 3
ORA-04088: error during execution of trigger 'SYSTEM.TRIGGER2'
ORA-06512: at "SYSTEM.TRIGGER4", line 2
ORA-04088: error during execution of trigger 'SYSTEM.TRIGGER4'


SQL> CREATE OR REPLACE TRIGGER trigger5
  2      AFTER INSERT ON customer
  3      FOR EACH ROW
  4      BEGIN
  5      INSERT INTO customer_audit VALUES(:new.customer_id,:new.customer_name,:new.city);
  6      END;
  7      /

Trigger created.

SQL> INSERT INTO customer VALUES (70, 'Reuben', 'Mulund', 'Mulund', 'Maharashtra','641114');
INSERT INTO customer VALUES (70, 'Reuben', 'Mulund', 'Mulund', 'Maharashtra','641114')
                                                               *
ERROR at line 1:
ORA-12899: value too large for column "SYSTEM"."CUSTOMER"."STATE" (actual: 11,
maximum: 10)


SQL> INSERT INTO customer VALUES (70, 'Reuben', 'Mul', 'Mum', 'Mahaa','641114');

1 row created.

SQL>  CREATE OR REPLACE TRIGGER trigger6
  2      BEFORE INSERT ON supplier
  3      FOR EACH ROW
  4      BEGIN
  5      IF :new.s_date > SYSDATE THEN
  6      RAISE_APPLICATION_ERROR(-20101,'Supplied date is after today');
  7      END IF;
  8      END;
  9     /

Trigger created.

SQL>
SQL> INSERT INTO supplier VALUES (80, 'subbu','r',TO_DATE('13-NOV-2017','DD-MON-YYYY'),6000);
INSERT INTO supplier VALUES (80, 'subbu','r',TO_DATE('13-NOV-2017','DD-MON-YYYY'),6000)
```



```
  5      IF :new.s_date > SYSDATE THEN
  6      RAISE_APPLICATION_ERROR(-20101,'Supplied date is after today');
  7      END IF;
  8      END;
  9     /

Trigger created.

SQL>
SQL> INSERT INTO supplier VALUES (80, 'subbu','r',TO_DATE('13-NOV-2017','DD-MON-YYYY'),6000);
INSERT INTO supplier VALUES (80, 'subbu','r',TO_DATE('13-NOV-2017','DD-MON-YYYY'),6000)
            *
ERROR at line 1:
ORA-20101: Supplied date is after today
ORA-06512: at "SYSTEM.TRIGGER6", line 3
ORA-04088: error during execution of trigger 'SYSTEM.TRIGGER6'


SQL>
```

Result:

Triggers were successfully created and tested for all the different situations