

UCS1412 – DBMS Lab
Assignment – 7

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Title: Triggers

Spool File:

```
-- Write a PL/SQL Trigger for the following:  
-- 1. The combination of Flavor and Food determines the product id. Hence, while  
-- inserting a new instance into the Products relation, ensure that the same combination  
-- of Flavor and Food is not already available.
```

```
SQL>  
SQL> SET SERVEROUTPUT ON;  
SQL>  
SQL> CREATE OR REPLACE TRIGGER BEFORE_PRODUCT_INSERT  
2 BEFORE INSERT ON PRODUCTS FOR EACH ROW  
3 DECLARE  
4     CT NUMBER:=0;  
5     CURSOR PROCURSOR IS SELECT * FROM PRODUCTS  
6     WHERE FOOD=:NEW.FOOD AND FLAVOR=:NEW.FLAVOR;  
7     RECORD PROCURSOR%ROWTYPE;  
8 BEGIN  
9     OPEN PROCURSOR;  
10    FETCH PROCURSOR INTO RECORD;  
11    IF PROCURSOR%NOTFOUND THEN  
12        CT:=1;  
13    END IF;  
14    CLOSE PROCURSOR;  
15    IF CT=0 THEN  
16        RAISE_APPLICATION_ERROR(-20000,'COMBINATION ALREADY AVAILABLE');  
17    END IF;  
18 END;  
19 /
```

Trigger created.

```
SQL>  
SQL> INSERT INTO PRODUCTS  
2 VALUES ('20-BC', 'CHOCOLATE', 'CAKE', 8.95);  
  
1 row created.
```

```

SQL>
SQL> INSERT INTO PRODUCTS
  2 VALUES ('20-BC', 'CHOCOLATE', 'CAKE', 8.95);
INSERT INTO PRODUCTS
      *
ERROR at line 1:
ORA-20000: COMBINATION ALREADY AVAILABLE
ORA-06512: at "1049.BEFORE_PRODUCT_INSERT", line 14
ORA-04088: error during execution of trigger '1049.BEFORE_PRODUCT_INSERT'

```

-- 2. While entering an item into the item_list relation, update the amount in Receipts with
 -- the total amount for that receipt number.

```

SQL>
SQL> SAVEPOINT SAVE1;

```

Savepoint created.

```

SQL> ALTER TABLE RECEIPTS
  2 ADD AMT NUMBER;

```

Table altered.

```

SQL>
SQL> SELECT * FROM RECEIPTS
  2 WHERE RNO=51991;

```

RNO	RDATE	CID	AMT
51991	17-OCT-07	14	

```

SQL>
SQL> CREATE OR REPLACE TRIGGER ITEM_LIST_ITEMS_AMOUNT
  2 BEFORE INSERT ON ITEM_LIST FOR EACH ROW
  3 BEGIN
  4     UPDATE RECEIPTS
  5     SET AMT=(SELECT SUM(PRICE) FROM ITEM_LIST, PRODUCTS
  6     WHERE RNO=:NEW.RNO AND PID=ITEM) WHERE RNO=:NEW.RNO;
  7     UPDATE RECEIPTS
  8     SET AMT=AMT+(SELECT PRICE FROM PRODUCTS
  9     WHERE PID=:NEW.ITEM) WHERE RNO=:NEW.RNO;
 10 END;
 11 /

```

Trigger created.

```

SQL>
SQL> INSERT INTO ITEM_LIST VALUES(51991,5,'45-VA');

```

1 row created.

```
SQL> SELECT * FROM RECEIPTS
2 WHERE RNO=51991;
```

RNO	RDATE	CID	AMT
51991	17-OCT-07	14	31.45

```
-- 3. Implement the following constraints for Item_list relation:
-- a. A receipt can contain a maximum of five items only.
-- b. A receipt should not allow an item to be purchased more than thrice.
```

```
SQL>
SQL> SAVEPOINT SAVE1;
```

Savepoint created.

```
SQL>
SQL> CREATE OR REPLACE TRIGGER MAX_CONST_ITEMS
2 BEFORE INSERT ON ITEM_LIST FOR EACH ROW
3 DECLARE
4     CURSOR RNOCOUNT IS SELECT COUNT(*) AS COUNT1 FROM ITEM_LIST
5     WHERE RNO=:NEW.RNO;
6     CURSOR RNO_ITEM_COUNT IS SELECT COUNT(*) AS COUNT2 FROM ITEM_LIST
7     WHERE RNO=:NEW.RNO AND ITEM=:NEW.ITEM;
8     RNO_ROW RNOCOUNT%ROWTYPE;
9     RNO_ITEM_ROW RNO_ITEM_COUNT%ROWTYPE;
10 BEGIN
11     OPEN RNOCOUNT;
12     OPEN RNO_ITEM_COUNT;
13     FETCH RNOCOUNT INTO RNO_ROW;
14     FETCH RNO_ITEM_COUNT INTO RNO_ITEM_ROW;
15     IF RNO_ROW.COUNT1>=5 AND RNO_ITEM_ROW.COUNT2>=3 THEN
16         RAISE_APPLICATION_ERROR(-20001,'THE RECEIPT ALREADY HAS 5 ITEMS AND THE ITEM
IS PURCHASED THRICE');
17     ELSIF RNO_ROW.COUNT1>=5 THEN
18         RAISE_APPLICATION_ERROR(-20002,'THE RECEIPT ALREADY HAS 5 ITEMS');
19     ELSIF RNO_ITEM_ROW.COUNT2>=3 THEN
20         RAISE_APPLICATION_ERROR(-20003,'THE ITEM IS PURCHASED THRICE');
21     END IF;
22     CLOSE RNO_ITEM_COUNT;
23     CLOSE RNOCOUNT;
24 END;
25 /
```

Trigger created.

```
SQL>
SQL> INSERT INTO ITEM_LIST VALUES(52761,6,'90-ALM-I');
INSERT INTO ITEM_LIST VALUES(52761,6,'90-ALM-I')
*
```

```
ERROR at line 1:
ORA-20002: THE RECEIPT ALREADY HAS 5 ITEMS
```

```
ORA-06512: at "1049.MAX_CONST_ITEMS", line 16
ORA-04088: error during execution of trigger '1049.MAX_CONST_ITEMS'
```

```
SQL> INSERT INTO ITEM_LIST VALUES(83085,6,'45-CH');
INSERT INTO ITEM_LIST VALUES(83085,6,'45-CH')
      *
```

ERROR at line 1:

ORA-20002: THE RECEIPT ALREADY HAS 5 ITEMS

ORA-06512: at "1049.MAX_CONST_ITEMS", line 16

ORA-04088: error during execution of trigger '1049.MAX_CONST_ITEMS'

```
SQL> INSERT INTO ITEM_LIST VALUES(32565,4,'50-APP');
```

1 row created.

```
SQL> INSERT INTO ITEM_LIST VALUES(32565,4,'50-APP');
INSERT INTO ITEM_LIST VALUES(32565,4,'50-APP')
      *
```

ERROR at line 1:

ORA-20003: THE ITEM IS PURCHASED THRICE

ORA-06512: at "1049.MAX_CONST_ITEMS", line 18

ORA-04088: error during execution of trigger '1049.MAX_CONST_ITEMS'

```
SQL> rollback;
```

Rollback complete.