

# DBMS LAB OBSERVATION:

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Queries/Code:

## Oracle Live

-- Cart table

```
CREATE TABLE Carts (  
  id NUMBER GENERATED BY DEFAULT AS IDENTITY PRIMARY KEY,  
  customer_id NUMBER REFERENCES Customers(id),  
  total_value NUMBER(12,2),  
  created_at TIMESTAMP DEFAULT SYSTIMESTAMP,  
  updated_at TIMESTAMP  
);  
->
```

```
SQL> CREATE TABLE Carts (  
      id NUMBER GENERATED BY DEFAULT AS IDENTITY PRIMARY KEY,  
      customer_id NUMBER REFERENCES Customers(id),  
      total_value NUMBER(12,2),...
```

[Show more...](#)

Table CARTS created.

Elapsed: 00:00:00.032

-- Trigger for Carts

```
CREATE TRIGGER trg_carts_before_update  
BEFORE UPDATE ON Carts  
FOR EACH ROW  
BEGIN  
  :NEW.updated_at := SYSTIMESTAMP;  
END;  
/  
->
```

```
SQL> CREATE TRIGGER trg_carts_before_update
      BEFORE UPDATE ON Carts
      FOR EACH ROW
      BEGIN...
```

[Show more...](#)

Trigger TRG\_CARTS\_BEFORE\_UPDATE compiled

Elapsed: 00:00:00.074

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```
CREATE OR REPLACE TRIGGER trg_display_cart_value_changes
AFTER INSERT OR UPDATE OR DELETE ON Carts
FOR EACH ROW
DECLARE
  val_old NUMBER;
  val_new NUMBER;
  val_diff NUMBER;
  act VARCHAR2(10);
BEGIN
  IF INSERTING THEN
    act := 'INSERT';
    val_old := NULL;
    val_new := :NEW.total_value;
    val_diff := NVL(:NEW.total_value,0);

    DBMS_OUTPUT.PUT_LINE('Action: ' || act);
    DBMS_OUTPUT.PUT_LINE('Cart ID: ' || :NEW.id);
    DBMS_OUTPUT.PUT_LINE('Customer ID: ' || :NEW.customer_id);
    DBMS_OUTPUT.PUT_LINE('Created At: ' || TO_CHAR(:NEW.created_at,
'YYYY-MM-DD HH24:MI:SS'));
    DBMS_OUTPUT.PUT_LINE('Old Value: NULL');
    DBMS_OUTPUT.PUT_LINE('New Value: ' || TO_CHAR(:NEW.total_value));
    DBMS_OUTPUT.PUT_LINE('Value Difference: ' || TO_CHAR(val_diff));

  ELSIF UPDATING THEN
    act := 'UPDATE';
    val_old := :OLD.total_value;
    val_new := :NEW.total_value;
    val_diff := NVL(:NEW.total_value,0) - NVL(:OLD.total_value,0);

    DBMS_OUTPUT.PUT_LINE('Action: ' || act);
```

```

        DBMS_OUTPUT.PUT_LINE('Cart ID: ' || :NEW.id);
        DBMS_OUTPUT.PUT_LINE('Customer ID: ' || :NEW.customer_id);
        DBMS_OUTPUT.PUT_LINE('Created At: ' || TO_CHAR(:NEW.created_at,
'YYYY-MM-DD HH24:MI:SS'));
        DBMS_OUTPUT.PUT_LINE('Updated At: ' || TO_CHAR(:NEW.updated_at,
'YYYY-MM-DD HH24:MI:SS'));
        DBMS_OUTPUT.PUT_LINE('Old Value: ' || TO_CHAR(:OLD.total_value));
        DBMS_OUTPUT.PUT_LINE('New Value: ' || TO_CHAR(:NEW.total_value));
        DBMS_OUTPUT.PUT_LINE('Value Difference: ' || TO_CHAR(val_diff));

ELSIF DELETING THEN
    act := 'DELETE';
    val_old := :OLD.total_value;
    val_new := NULL;
    val_diff := -NVL(:OLD.total_value,0);

    DBMS_OUTPUT.PUT_LINE('Action: ' || act);
    DBMS_OUTPUT.PUT_LINE('Cart ID: ' || :OLD.id);
    DBMS_OUTPUT.PUT_LINE('Customer ID: ' || :OLD.customer_id);
    DBMS_OUTPUT.PUT_LINE('Created At: ' || TO_CHAR(:OLD.created_at,
'YYYY-MM-DD HH24:MI:SS'));
    DBMS_OUTPUT.PUT_LINE('Old Value: ' || TO_CHAR(:OLD.total_value));
    DBMS_OUTPUT.PUT_LINE('New Value: NULL');
    DBMS_OUTPUT.PUT_LINE('Value Difference: ' || TO_CHAR(val_diff));
END IF;
END;
/
->
SQL> CREATE OR REPLACE TRIGGER trg_display_cart_value_changes
    AFTER INSERT OR UPDATE OR DELETE ON Carts
    FOR EACH ROW
    DECLARE...

```

[Show more...](#)

Trigger TRG\_DISPLAY\_CART\_VALUE\_CHANGES compiled

Elapsed: 00:00:00.075

---

-- a) Insert a cart

```
INSERT INTO Carts (customer_id, total_value) VALUES (1, 1200);
```

->

```
SQL> INSERT INTO Carts (customer_id, total_value) VALUES (1, 1200)
```

Action: INSERT  
Cart ID: 21  
Customer ID: 1  
Created At: 2025-11-03 11:27:57  
Old Value: NULL  
New Value: 1200  
Value Difference: 1200

1 row inserted.

Elapsed: 00:00:00.011

#### -- b) View carts

**SELECT \* FROM Carts;**

->SQL> SELECT \* FROM Carts

ID	CUSTOMER_ID	TOTAL_VALUE	CREATED_AT	UPDATED_AT
1	1	1200	2025-11-03T11:19:47.46714Z	

Elapsed: 00:00:00.001

1 rows selected.

#### -- c) Update cart value

**UPDATE Carts SET total\_value = 1500 WHERE id = 1;**

->

SQL> UPDATE Carts SET total\_value = 1500 WHERE id = 1

Action: UPDATE  
Cart ID: 1  
Old Value: 1200  
New Value: 1500  
Value Difference: 300

1 row updated.

Elapsed: 00:00:00.009

#### -- d) View carts after update

**SELECT \* FROM Carts;**

->

SQL> SELECT \* FROM Carts

ID	CUSTOMER_ID	TOTAL_VALUE	CREATED_AT	UPDATED_AT
1	1	1500	2025-11-03T11:19:47.46714Z	2025-11-03T11:20:38.655353Z

Elapsed: 00:00:00.002

1 rows selected.

#### -- f) Delete cart

**DELETE FROM Carts WHERE id = 1;**

**->**

SQL> DELETE FROM Carts WHERE id = 1

Action: DELETE

Cart ID: 1

Old Value: 1500

New Value: NULL

Value Difference: -1500

1 row deleted.

Elapsed: 00:00:00.004