

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
```

```
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
```