SCENARIO – 1:

CREATE OR REPLACE TRIGGER UpdateCustomerLastModified

BEFORE UPDATE ON Customers

FOR EACH ROW

BEGIN

:NEW.LastModified := SYSDATE;

END UpdateCustomerLastModified;

/

TESTING:

UPDATE Customers

SET Balance = Balance + 500

WHERE CustomerID = 1;

SELECT CustomerID, Balance, LastModified

FROM Customers

WHERE CustomerID = 1;

SCENARIO-2:

CREATE TABLE AuditLog (

AuditID NUMBER PRIMARY KEY,

TransactionID NUMBER,

AccountID NUMBER,

TransactionDate DATE,

Amount NUMBER,

TransactionType VARCHAR2(10),

LoggedDate DATE

);

CREATE OR REPLACE TRIGGER LogTransaction

AFTER INSERT ON Transactions

FOR EACH ROW

BEGIN

INSERT INTO AuditLog (AuditID, TransactionID, AccountID, TransactionDate, Amount, TransactionType, LoggedDate)

VALUES (AuditLog\_seq.NEXTVAL, :NEW.TransactionID, :NEW.AccountID, :NEW.TransactionDate, :NEW.Amount, :NEW.TransactionType, SYSDATE);

END LogTransaction;

/

TESTING:

INSERT INTO Transactions (TransactionID, AccountID, TransactionDate, Amount, TransactionType)

VALUES (3, 1, SYSDATE, 150, 'Deposit');

SELECT \* FROM AuditLog;

SCENARIO-3:

CREATE OR REPLACE TRIGGER CheckTransactionRules

BEFORE INSERT ON Transactions

FOR EACH ROW

DECLARE

v\_balance NUMBER;

BEGIN

-- Check for withdrawals

IF :NEW.TransactionType = 'Withdrawal' THEN

SELECT Balance INTO v\_balance

FROM Accounts

WHERE AccountID = :NEW.AccountID;

IF :NEW.Amount > v\_balance THEN

RAISE\_APPLICATION\_ERROR(-20002, 'Insufficient funds for withdrawal.');

END IF;

END IF;

-- Check for deposits

IF :NEW.TransactionType = 'Deposit' THEN

IF :NEW.Amount <= 0 THEN

RAISE\_APPLICATION\_ERROR(-20003, 'Deposit amount must be positive.');

END IF;

END IF;

END CheckTransactionRules;

/

TESTING:

INSERT INTO Transactions (TransactionID, AccountID, TransactionDate, Amount, TransactionType)

VALUES (4, 1, SYSDATE, 2000, 'Withdrawal');

INSERT INTO Transactions (TransactionID, AccountID, TransactionDate, Amount, TransactionType)

VALUES (5, 1, SYSDATE, -100, 'Deposit');

INSERT INTO Transactions (TransactionID, AccountID, TransactionDate, Amount, TransactionType)

VALUES (6, 1, SYSDATE, 100, 'Deposit');