Exercise 1: Control Structures

SET SERVEROUTPUT ON;

BEGIN

  EXECUTE IMMEDIATE 'DROP TABLE Loans';

EXCEPTION WHEN OTHERS THEN NULL;

END;

/

BEGIN

  EXECUTE IMMEDIATE 'DROP TABLE Customers';

EXCEPTION WHEN OTHERS THEN NULL;

END;

/

CREATE TABLE Customers (

  CustomerID NUMBER PRIMARY KEY,

  Name VARCHAR2(100),

  Age NUMBER,

  Balance NUMBER,

  IsVIP VARCHAR2(5)

);

CREATE TABLE Loans (

  LoanID NUMBER PRIMARY KEY,

  CustomerID NUMBER REFERENCES Customers(CustomerID),

  InterestRate NUMBER,

  DueDate DATE

)

INSERT INTO Customers VALUES (1, 'Alice', 65, 12000, 'FALSE');

INSERT INTO Customers VALUES (2, 'Bob', 45, 8000, 'FALSE');

INSERT INTO Customers VALUES (3, 'Charlie', 70, 15000, 'FALSE');

INSERT INTO Loans VALUES (101, 1, 10, SYSDATE + 20);  -- due soon

INSERT INTO Loans VALUES (102, 2, 12, SYSDATE + 40);  -- due later

INSERT INTO Loans VALUES (103, 3, 11, SYSDATE + 10);  -- due soon

COMMIT;

BEGIN

  FOR rec IN (

    SELECT DISTINCT l.CustomerID

    FROM Loans l

    JOIN Customers c ON l.CustomerID = c.CustomerID

    WHERE c.Age > 60

  )

  LOOP

    UPDATE Loans

       SET InterestRate = InterestRate - 1

     WHERE CustomerID = rec.CustomerID;

  END LOOP;

  COMMIT;

  DBMS\_OUTPUT.PUT\_LINE('Scenario 1 done: Applied 1% discount.');

END;

/

BEGIN

  FOR rec IN (SELECT CustomerID FROM Customers WHERE Balance > 10000)

  LOOP

    UPDATE Customers

       SET IsVIP = 'TRUE'

     WHERE CustomerID = rec.CustomerID;

  END LOOP;

  COMMIT;

  DBMS\_OUTPUT.PUT\_LINE('Scenario 2 done: Promoted to VIP.');

END;

/

DECLARE

  CURSOR c\_due IS

    SELECT l.LoanID, c.Name, l.DueDate

    FROM Loans l

    JOIN Customers c ON l.CustomerID = c.CustomerID

    WHERE l.DueDate <= SYSDATE + 30;

BEGIN

  FOR rec IN c\_due LOOP

    DBMS\_OUTPUT.PUT\_LINE('Reminder: Loan ' || rec.LoanID ||

                         ' for ' || rec.Name ||

                         ' is due on ' || TO\_CHAR(rec.DueDate, 'DD-MON-YYYY'));

  END LOOP;

  DBMS\_OUTPUT.PUT\_LINE('Scenario 3 done: Reminders sent.');

END;

/

PROMPT

PROMPT ==== Final Customers Table ====

SELECT \* FROM Customers;

PROMPT

PROMPT ==== Final Loans Table ====

SELECT \* FROM Loans;

**OUTPUT:**

