**Exercise 1: Control Structures**

**Scenario 1: The bank wants to apply a discount to loan interest rates for customers above 60 years old.**

**Question: Write a PL/SQL block that loops through all customers, checks their age, and if they are above 60, apply a 1% discount to their current loan interest rates.**

DECLARE

v\_age NUMBER;

v\_discount NUMBER := 0.01; -- 1% discount

BEGIN

FOR rec IN (SELECT c.CustomerID, c.Name, c.DOB, l.LoanID, l.InterestRate

FROM Customers c

JOIN Loans l ON c.CustomerID = l.CustomerID)

LOOP

v\_age := FLOOR(MONTHS\_BETWEEN(SYSDATE, rec.DOB) / 12);

IF v\_age > 60 THEN

UPDATE Loans

SET InterestRate = InterestRate - (InterestRate \* v\_discount)

WHERE LoanID = rec.LoanID

DBMS\_OUTPUT.PUT\_LINE('Customer Name: ' || rec.Name ||

' | Age: ' || v\_age ||

' | Loan ID: ' || rec.LoanID ||

' | Old Rate: ' || rec.InterestRate ||

' | New Rate: ' || (rec.InterestRate - (rec.InterestRate \* v\_discount)));

END IF;

END LOOP;

END;

**Scenario 2: A customer can be promoted to VIP status based on their balance.**

**Question: Write a PL/SQL block that iterates through all customers and sets a flag IsVIP to TRUE for those with a balance over $10,000.**

ALTER TABLE Customers ADD (IsVIP CHAR(1));

DECLARE

BEGIN

FOR rec IN (SELECT CustomerID, Name, Balance

FROM Customers)

LOOP

IF rec.Balance > 10000 THEN

UPDATE Customers

SET IsVIP = 'YES'

WHERE CustomerID = rec.CustomerID

DBMS\_OUTPUT.PUT\_LINE('Customer Name: ' || rec.Name ||

' | Balance: ' || rec.Balance ||

' | Promoted to VIP Status');

ELSE

UPDATE Customers

SET IsVIP = 'NO'

WHERE CustomerID = rec.CustomerID;

END IF;

END LOOP;

END;

**Scenario 3: The bank wants to send reminders to customers whose loans are due within the next 30 days.**

**Question: Write a PL/SQL block that fetches all loans due in the next 30 days and prints a reminder message for each customer.**

DECLARE

v\_due\_date DATE;

BEGIN

FOR rec IN (SELECT c.CustomerID, c.Name, l.LoanID, l.EndDate

FROM Customers c

JOIN Loans l ON c.CustomerID = l.CustomerID

WHERE l.EndDate BETWEEN SYSDATE AND SYSDATE + 30)

LOOP

v\_due\_date := rec.EndDate;

DBMS\_OUTPUT.PUT\_LINE('Reminder: Customer Name: ' || rec.Name ||

' | Loan ID: ' || rec.LoanID ||

' | Due Date: ' || TO\_CHAR(v\_due\_date, 'DD-MON-YYYY') ||

' | Your loan is due within the next 30 days. Please make the necessary arrangements.');

END LOOP;

END;