**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\_dob DATE;

v\_new\_interest\_rate NUMBER;

BEGIN

FOR customer\_rec IN (SELECT CustomerID, DOB FROM Customers) LOOP

v\_dob := customer\_rec.DOB;

v\_age := TRUNC((SYSDATE - v\_dob) / 365.25);

IF v\_age > 60 THEN

FOR loan\_rec IN (SELECT LoanID, InterestRate FROM Loans WHERE CustomerID = customer\_rec.CustomerID) LOOP

v\_new\_interest\_rate := loan\_rec.InterestRate - 1;

UPDATE Loans

SET InterestRate = v\_new\_interest\_rate

WHERE LoanID = loan\_rec.LoanID;

END LOOP;

END IF;

END LOOP;

COMMIT;

END;

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**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(5) DEFAULT 'FALSE';

BEGIN

FOR customer\_rec IN (SELECT CustomerID, Balance FROM Customers) LOOP

IF customer\_rec.Balance > 10000 THEN

UPDATE Customers

SET IsVIP = 'TRUE'

WHERE CustomerID = customer\_rec.CustomerID;

END IF;

END LOOP;

COMMIT;

END;

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**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;

v\_customer\_name VARCHAR2(100);

BEGIN

FOR loan\_rec IN (

SELECT LoanID, CustomerID, EndDate

FROM Loans

WHERE EndDate BETWEEN SYSDATE AND SYSDATE + 30

) LOOP

-- Fetch the customer's name

SELECT Name INTO v\_customer\_name

FROM Customers

WHERE CustomerID = loan\_rec.CustomerID;

-- Print the reminder message

DBMS\_OUTPUT.PUT\_LINE('Reminder: Customer ' || v\_customer\_name ||

' has a loan due on ' || TO\_CHAR(loan\_rec.EndDate, 'YYYY-MM-DD'));

END LOOP;

END;

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