**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.

Solution:

CREATE TABLE Customers (

CustomerID INT PRIMARY KEY,

Name VARCHAR2(100),

Age INT,

Balance NUMBER(10,2),

IsVIP VARCHAR2(5)

);

CREATE TABLE Loans (

LoanID INT PRIMARY KEY,

CustomerID INT,

InterestRate NUMBER(5,2),

DueDate DATE,

FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID)

);

**Scenario 1: Apply 1% Discount for Age > 60**

BEGIN

FOR cust IN (SELECT CustomerID FROM Customers WHERE Age > 60) LOOP

UPDATE Loans

SET InterestRate = InterestRate - 1

WHERE CustomerID = cust.CustomerID;

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.

Solution:

**Scenario 2: Set IsVIP = 'TRUE' for Balance > 10000**

BEGIN

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

UPDATE Customers

SET IsVIP = 'TRUE'

WHERE CustomerID = cust.CustomerID;

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.

Solution:

**Scenario 3: Print Loan Due Reminders for Next 30 Days**

SET SERVEROUTPUT ON;

DECLARE

v\_today DATE := SYSDATE;

v\_limit DATE := SYSDATE + 30;

BEGIN

FOR loan\_rec IN (

SELECT C.Name, L.DueDate, L.LoanID

FROM Loans L

JOIN Customers C ON C.CustomerID = L.CustomerID

WHERE L.DueDate BETWEEN v\_today AND v\_limit

) LOOP

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

' for ' || loan\_rec.Name ||

' is due on ' || TO\_CHAR(loan\_rec.DueDate, 'DD-Mon-YYYY'));

END LOOP;

END;

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