**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

CURSOR customer\_cursor IS

SELECT c.CustomerID, l.LoanID, l.InterestRate

FROM Customers c

JOIN Loans l ON c.CustomerID = l.CustomerID

WHERE EXTRACT(YEAR FROM SYSDATE) - EXTRACT(YEAR FROM c.DOB) > 60;

BEGIN

FOR loan\_record IN customer\_cursor LOOP

UPDATE Loans

SET InterestRate = loan\_record.InterestRate - 1

WHERE LoanID = loan\_record.LoanID;

DBMS\_OUTPUT.PUT\_LINE('Applied 1% discount to loan ID: ' || loan\_record.LoanID);

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(1) DEFAULT 'N';

DECLARE

CURSOR customer\_cursor IS

SELECT CustomerID, Balance

FROM Customers;

BEGIN

FOR customer\_record IN customer\_cursor LOOP

IF customer\_record.Balance > 10000 THEN

UPDATE Customers

SET IsVIP = 'Y'

WHERE CustomerID = customer\_record.CustomerID;

DBMS\_OUTPUT.PUT\_LINE('Customer ID: ' || customer\_record.CustomerID || ' promoted to VIP.');

ELSE

UPDATE Customers

SET IsVIP = 'N'

WHERE CustomerID = customer\_record.CustomerID;

DBMS\_OUTPUT.PUT\_LINE('Customer ID: ' || customer\_record.CustomerID || ' is not a VIP.');

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

CURSOR loan\_cursor IS

SELECT l.LoanID, l.CustomerID, c.Name, l.EndDate

FROM Loans l

JOIN Customers c ON l.CustomerID = c.CustomerID

WHERE l.EndDate BETWEEN SYSDATE AND SYSDATE + 30;

BEGIN

FOR loan\_record IN loan\_cursor LOOP

DBMS\_OUTPUT.PUT\_LINE('Reminder: Customer ' || loan\_record.Name || ' (ID: ' || loan\_record.CustomerID || ') has a loan (ID: ' || loan\_record.LoanID || ') due on ' || TO\_CHAR(loan\_record.EndDate, 'YYYY-MM-DD') || '.');

END LOOP;

END;