**Exercise 1: Control Structures**

**Scenario 1: Apply 1% Discount to Interest Rates for Age > 60**

BEGIN

FOR rec IN (SELECT CustomerID, InterestRate 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;

END;

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

BEGIN

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

LOOP

UPDATE Customers

SET IsVIP = 'TRUE'

WHERE CustomerID = rec.CustomerID;

END LOOP;

COMMIT;

END;

**Scenario 3: Remind Customers with Loans Due in Next 30 Days**

DECLARE

v\_due\_date DATE;

v\_name VARCHAR2(100);

BEGIN

FOR rec IN (

SELECT c.CustomerName, l.DueDate

FROM Loans l

JOIN Customers c ON l.CustomerID = c.CustomerID

WHERE l.DueDate BETWEEN SYSDATE AND SYSDATE + 30

)

LOOP

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

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

END LOOP;

END;

**Exercise 3: Stored Procedures**

**Scenario 1: ProcessMonthlyInterest – Add 1% to all Savings Account Balances**

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest IS

BEGIN

UPDATE Accounts

SET Balance = Balance + (Balance \* 0.01)

WHERE AccountType = 'SAVINGS';

COMMIT;

END;

/

**Scenario 2: UpdateEmployeeBonus – Bonus Based on Department and Percentage**

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus (

dept\_id IN NUMBER,

bonus\_percent IN NUMBER

) IS

BEGIN

UPDATE Employees

SET Salary = Salary + (Salary \* (bonus\_percent / 100))

WHERE DepartmentID = dept\_id;

COMMIT;

END;

/

**Scenario 3: TransferFunds – Transfer Between Accounts with Balance Check**

CREATE OR REPLACE PROCEDURE TransferFunds (

from\_account\_id IN NUMBER,

to\_account\_id IN NUMBER,

amount IN NUMBER

) IS

v\_balance NUMBER;

BEGIN

SELECT Balance INTO v\_balance FROM Accounts WHERE AccountID = from\_account\_id FOR UPDATE;

IF v\_balance < amount THEN

RAISE\_APPLICATION\_ERROR(-20001, 'Insufficient balance in source account.');

END IF;

UPDATE Accounts

SET Balance = Balance - amount

WHERE AccountID = from\_account\_id;

UPDATE Accounts

SET Balance = Balance + amount

WHERE AccountID = to\_account\_id;

COMMIT;

END;

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