**Exercise 1: Control Structures**

**Scenario 1 Code**:

BEGIN

  FOR cust\_rec IN (

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

    FROM Customers c

    JOIN Loans l ON c.CustomerID = l.CustomerID

    WHERE c.Age > 60

  ) LOOP

    UPDATE Loans

    SET InterestRate = cust\_rec.InterestRate - 1

    WHERE LoanID = cust\_rec.LoanID;

    DBMS\_OUTPUT.PUT\_LINE('Updated LoanID ' || cust\_rec.LoanID || ' for CustomerID ' || cust\_rec.CustomerID);

  END LOOP;

END;

**Scenario 1 Result :**:

Updated LoanID 101 for CustomerID 1

Updated LoanID 103 for CustomerID 3

PL/SQL procedure successfully completed.

Elapsed: 00:00:00.022

**Scenario 2 code:**

BEGIN

  FOR cust IN (

    SELECT CustomerID, Balance

    FROM Customers

    WHERE Balance > 10000

  ) LOOP

    UPDATE Customers

    SET IsVIP = 'Y'

    WHERE CustomerID = cust.CustomerID;

    DBMS\_OUTPUT.PUT\_LINE('Customer ' || cust.CustomerID || ' promoted to VIP.');

  END LOOP;

END;

/

**Scenario 2 Result:**

Customer 1 promoted to VIP.

Customer 3 promoted to VIP.

Customer 4 promoted to VIP.

PL/SQL procedure successfully completed.

Elapsed: 00:00:00.009

**Scenario 3 Code**

BEGIN

  FOR loan IN (

    SELECT LoanID, CustomerID, DueDate

    FROM Loans

    WHERE DueDate BETWEEN SYSDATE AND SYSDATE + 30

  ) LOOP

    DBMS\_OUTPUT.PUT\_LINE(

      'Reminder: Loan ' || loan.LoanID ||

      ' for Customer ' || loan.CustomerID ||

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

    );

  END LOOP;

END;

**Scenario 3 Result:**

Reminder: Loan 101 for Customer 1 is due on 12-JUL-2025

Reminder: Loan 103 for Customer 3 is due on 02-JUL-2025

Reminder: Loan 104 for Customer 4 is due on 17-JUL-2025

PL/SQL procedure successfully completed.

Elapsed: 00:00:00.012

**Exercise 3: Stored Procedures**

**Scenario 1 Code :**

CREATE OR REPLACE PROCEDURE ProcessMonthlyInterest AS

BEGIN

  UPDATE Accounts

  SET Balance = Balance + (Balance \* 0.01)

  WHERE AccountType = 'Savings';

  DBMS\_OUTPUT.PUT\_LINE('Monthly interest processed for all savings accounts.');

END;

BEGIN

  ProcessMonthlyInterest;

END;

**Scenario 1 Result:**

Monthly interest processed for all savings accounts.  
  
  
PL/SQL procedure successfully completed.

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**Scenario 2 code:**

CREATE OR REPLACE PROCEDURE UpdateEmployeeBonus (

    deptName IN VARCHAR2,

    bonusPercent IN NUMBER

)

IS

    newSalary NUMBER;

BEGIN

    FOR emp IN (

        SELECT EmpID, Salary FROM Employees

        WHERE Department = deptName

    ) LOOP

        newSalary := emp.Salary + (emp.Salary \* bonusPercent / 100);

        UPDATE Employees

        SET Salary = newSalary

        WHERE EmpID = emp.EmpID;

        DBMS\_OUTPUT.PUT\_LINE('Updated salary for EmpID ' || emp.EmpID || ' to ' || newSalary);

    END LOOP;

END;

BEGIN

  UpdateEmployeeBonus('HR', 10);

END;

**Scenario 2 Result :**

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Updated salary for EmpID 2 to 44000  
  
  
PL/SQL procedure successfully completed.

**Scenario 3 code:**

CREATE OR REPLACE PROCEDURE TransferFunds (

    fromAccountID IN NUMBER,

    toAccountID IN NUMBER,

    amount IN NUMBER

)

IS

    fromBalance NUMBER;

BEGIN

    SELECT Balance INTO fromBalance

    FROM Accounts

    WHERE AccountID = fromAccountID;

    IF fromBalance < amount THEN

        RAISE\_APPLICATION\_ERROR(-20001, 'Insufficient balance for transfer');

    END IF;

    UPDATE Accounts

    SET Balance = Balance - amount

    WHERE AccountID = fromAccountID;

    UPDATE Accounts

    SET Balance = Balance + amount

    WHERE AccountID = toAccountID;

    DBMS\_OUTPUT.PUT\_LINE('Transferred ' || amount || ' from Account ' || fromAccountID || ' to Account ' || toAccountID);

END;

BEGIN

  TransferFunds(101, 102, 1500);

END;

**Scenario 3 Result :**

Transferred 1500 from Account 101 to Account 102  
PL/SQL procedure successfully completed.

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