**Exercise 6 – Cursors**

**Scenario 1: Generate Monthly Statements for All Customers**

DECLARE

CURSOR c\_Transactions IS

SELECT t.TransactionID, t.CustomerID, t.TransactionDate, t.Amount, c.Name

FROM Transactions t

JOIN Customers c ON t.CustomerID = c.CustomerID

WHERE EXTRACT(MONTH FROM t.TransactionDate) = EXTRACT(MONTH FROM SYSDATE)

AND EXTRACT(YEAR FROM t.TransactionDate) = EXTRACT(YEAR FROM SYSDATE);

v\_TransactionID Transactions.TransactionID%TYPE;

v\_CustomerID Transactions.CustomerID%TYPE;

v\_TransactionDate Transactions.TransactionDate%TYPE;

v\_Amount Transactions.Amount%TYPE;

v\_Name Customers.Name%TYPE;

BEGIN

OPEN c\_Transactions;

LOOP

FETCH c\_Transactions INTO v\_TransactionID, v\_CustomerID, v\_TransactionDate, v\_Amount, v\_Name;

EXIT WHEN c\_Transactions%NOTFOUND;

-- Print the statement for each customer

DBMS\_OUTPUT.PUT\_LINE('Statement for Customer: ' || v\_Name);

DBMS\_OUTPUT.PUT\_LINE('Transaction ID: ' || v\_TransactionID);

DBMS\_OUTPUT.PUT\_LINE('Date: ' || TO\_CHAR(v\_TransactionDate, 'YYYY-MM-DD'));

DBMS\_OUTPUT.PUT\_LINE('Amount: ' || v\_Amount);

DBMS\_OUTPUT.PUT\_LINE('----------------------------------------');

END LOOP;

CLOSE c\_Transactions;

END GenerateMonthlyStatements;

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**Scenario 2: Apply Annual Fee to All Accounts**

DECLARE

CURSOR c\_Accounts IS

SELECT AccountID, Balance

FROM Accounts;

v\_AccountID Accounts.AccountID%TYPE;

v\_Balance Accounts.Balance%TYPE;

v\_AnnualFee NUMBER := 50; -- Define the annual fee amount

BEGIN

OPEN c\_Accounts;

LOOP

FETCH c\_Accounts INTO v\_AccountID, v\_Balance;

EXIT WHEN c\_Accounts%NOTFOUND;

-- Deduct the annual fee from the account balance

UPDATE Accounts

SET Balance = Balance - v\_AnnualFee

WHERE AccountID = v\_AccountID;

DBMS\_OUTPUT.PUT\_LINE('Applied annual fee to Account ID: ' || v\_AccountID);

END LOOP;

COMMIT;

CLOSE c\_Accounts;

END ApplyAnnualFee;

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**Scenario 3: Update the Interest Rate for All Loans**

DECLARE

CURSOR c\_Loans IS

SELECT LoanID, InterestRate

FROM Loans;

v\_LoanID Loans.LoanID%TYPE;

v\_InterestRate Loans.InterestRate%TYPE;

v\_NewInterestRate NUMBER := 0.05; -- Define the new interest rate (5%)

BEGIN

OPEN c\_Loans;

LOOP

FETCH c\_Loans INTO v\_LoanID, v\_InterestRate;

EXIT WHEN c\_Loans%NOTFOUND;

-- Update the loan interest rate

UPDATE Loans

SET InterestRate = v\_NewInterestRate

WHERE LoanID = v\_LoanID;

DBMS\_OUTPUT.PUT\_LINE('Updated Loan ID: ' || v\_LoanID || ' with new Interest Rate: ' || v\_NewInterestRate);

END LOOP;

COMMIT;

CLOSE c\_Loans;

END UpdateLoanInterestRates;

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