**Exercise 6: Cursors**

**Scenario 1: Generate monthly statements for all customers**

Query:

DECLARE

CURSOR c\_transactions IS

SELECT t.AccountID, t.TransactionDate, t.Amount, t.TransactionType, c.Name

FROM Transactions t

JOIN Customers c ON t.AccountID = c.CustomerID

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

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

v\_account\_id NUMBER;

v\_transaction\_date DATE;

v\_amount NUMBER;

v\_transaction\_type VARCHAR2(10);

v\_customer\_name VARCHAR2(50);

BEGIN

FOR r IN c\_transactions LOOP

v\_account\_id := r.AccountID;

v\_transaction\_date := r.TransactionDate;

v\_amount := r.Amount;

v\_transaction\_type := r.TransactionType;

v\_customer\_name := r.Name;

DBMS\_OUTPUT.PUT\_LINE('Statement for ' || v\_customer\_name || ' - Account ID: ' || v\_account\_id);

DBMS\_OUTPUT.PUT\_LINE('Transaction Date: ' || v\_transaction\_date);

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

DBMS\_OUTPUT.PUT\_LINE('Transaction Type: ' || v\_transaction\_type);

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

END LOOP;

END;

**Scenario 2: Apply annual fee to all accounts**

Query:

DECLARE

CURSOR c\_accounts IS

SELECT AccountID, Balance

FROM Accounts;

v\_account\_id NUMBER;

v\_balance NUMBER;

v\_annual\_fee NUMBER := 50;

BEGIN

FOR r IN c\_accounts LOOP

v\_account\_id := r.AccountID;

v\_balance := r.Balance;

UPDATE Accounts

SET Balance = Balance - v\_annual\_fee

WHERE AccountID = v\_account\_id;

DBMS\_OUTPUT.PUT\_LINE('Annual fee of ' || v\_annual\_fee || ' applied to account ' || v\_account\_id);

END LOOP;

END;

**Scenario 3: Update the interest rate for all loans based on a new policy**

Query:

DECLARE

CURSOR c\_loans IS

SELECT LoanID, InterestRate

FROM Loans;

v\_loan\_id NUMBER;

v\_interest\_rate NUMBER;

v\_new\_interest\_rate NUMBER := 5;

BEGIN

FOR r IN c\_loans LOOP

v\_loan\_id := r.LoanID;

v\_interest\_rate := r.InterestRate;

UPDATE Loans

SET InterestRate = v\_new\_interest\_rate

WHERE LoanID = v\_loan\_id;

DBMS\_OUTPUT.PUT\_LINE('Interest rate updated to ' || v\_new\_interest\_rate || ' for loan ' || v\_loan\_id);

END LOOP;

END;