**Exercise 6: Cursors**

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

**PL/SQL block:**

DECLARE

CURSOR c\_transactions IS

SELECT t.TransactionID, t.AccountID, t.TransactionDate, t.Amount, t.TransactionType, a.CustomerID

FROM Transactions t

JOIN Accounts a ON t.AccountID = a.AccountID

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

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

v\_customerID Customers.CustomerID%TYPE;

v\_transactionID Transactions.TransactionID%TYPE;

v\_transactionDate Transactions.TransactionDate%TYPE;

v\_amount Transactions.Amount%TYPE;

v\_transactionType Transactions.TransactionType%TYPE;

BEGIN

FOR r\_transaction IN c\_transactions LOOP

v\_customerID := r\_transaction.CustomerID;

v\_transactionID := r\_transaction.TransactionID;

v\_transactionDate := r\_transaction.TransactionDate;

v\_amount := r\_transaction.Amount;

v\_transactionType := r\_transaction.TransactionType;

DBMS\_OUTPUT.PUT\_LINE('CustomerID: ' || v\_customerID ||

', TransactionID: ' || v\_transactionID ||

', Date: ' || v\_transactionDate ||

', Amount: ' || v\_amount ||

', Type: ' || v\_transactionType);

END LOOP;

END;

/

**OUTPUT:**



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

**PL/SQL block:**

DECLARE

CURSOR c\_accounts IS

SELECT AccountID, Balance

FROM Accounts;

v\_accountID Accounts.AccountID%TYPE;

v\_balance Accounts.Balance%TYPE;

v\_fee NUMBER := 50; -- Annual fee to be deducted

BEGIN

FOR r\_account IN c\_accounts LOOP

v\_accountID := r\_account.AccountID;

v\_balance := r\_account.Balance;

-- Deduct the annual fee

UPDATE Accounts

SET Balance = v\_balance - v\_fee

WHERE AccountID = v\_accountID;

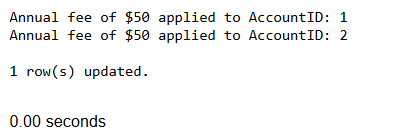
DBMS\_OUTPUT.PUT\_LINE('Annual fee of $' || v\_fee || ' applied to AccountID: ' || v\_accountID);

END LOOP;

END;

/

**OUTPUT:**



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

**PL/SQL block:**

DECLARE

CURSOR c\_loans IS

SELECT LoanID, InterestRate

FROM Loans;

v\_loanID Loans.LoanID%TYPE;

v\_oldInterestRate Loans.InterestRate%TYPE;

v\_newInterestRate Loans.InterestRate%TYPE;

BEGIN

FOR r\_loan IN c\_loans LOOP

v\_loanID := r\_loan.LoanID;

v\_oldInterestRate := r\_loan.InterestRate;

-- Apply new interest rate (increase by 1%)

v\_newInterestRate := v\_oldInterestRate + 1;

UPDATE Loans

SET InterestRate = v\_newInterestRate

WHERE LoanID = v\_loanID;

DBMS\_OUTPUT.PUT\_LINE('Updated LoanID: ' || v\_loanID ||

' from InterestRate: ' || v\_oldInterestRate ||

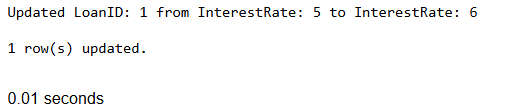
' to InterestRate: ' || v\_newInterestRate);

END LOOP;

END;

/

**OUTPUT:**

****