Exercise 6: Cursors

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

**Question: Write a PL/SQL block using an explicit cursor GenerateMonthlyStatements that retrieves all transactions for the current month and prints a statement for each customer.**

| DECLARE  CURSOR cur\_transactions IS  SELECT c.CustomerID, c.Name, t.TransactionDate, t.Amount, t.TransactionType  FROM Customers c  JOIN Accounts a ON c.CustomerID = a.CustomerID  JOIN Transactions t ON a.AccountID = t.AccountID  WHERE t.TransactionDate BETWEEN TRUNC(SYSDATE, 'MM') AND LAST\_DAY(SYSDATE);  v\_customerID Customers.CustomerID%TYPE;  v\_name Customers.Name%TYPE;  v\_transactionDate Transactions.TransactionDate%TYPE;  v\_amount Transactions.Amount%TYPE;  v\_transactionType Transactions.TransactionType%TYPE; BEGIN  OPEN cur\_transactions;  LOOP  FETCH cur\_transactions INTO v\_customerID, v\_name, v\_transactionDate, v\_amount, v\_transactionType;  EXIT WHEN cur\_transactions%NOTFOUND;  DBMS\_OUTPUT.PUT\_LINE('Customer: ' || v\_name || ' (' || v\_customerID || ')');  DBMS\_OUTPUT.PUT\_LINE('Transaction Date: ' || v\_transactionDate);  DBMS\_OUTPUT.PUT\_LINE('Amount: ' || v\_amount || ' Type: ' || v\_transactionType);  DBMS\_OUTPUT.PUT\_LINE('-----------------------------');  END LOOP;  CLOSE cur\_transactions; END; |
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**Scenario 2: Apply annual fee to all accounts.**

**Question: Write a PL/SQL block using an explicit cursor ApplyAnnualFee that deducts an annual maintenance fee from the balance of all accounts.**

| DECLARE  CURSOR cur\_accounts IS  SELECT AccountID, Balance  FROM Accounts;  v\_accountID Accounts.AccountID%TYPE;  v\_balance Accounts.Balance%TYPE;  v\_annualFee CONSTANT NUMBER := 100; BEGIN  OPEN cur\_accounts;  LOOP  FETCH cur\_accounts INTO v\_accountID, v\_balance;  EXIT WHEN cur\_accounts%NOTFOUND;  UPDATE Accounts  SET Balance = Balance - v\_annualFee  WHERE AccountID = v\_accountID;  DBMS\_OUTPUT.PUT\_LINE('Account ID: ' || v\_accountID || ' New Balance: ' || (v\_balance - v\_annualFee));  END LOOP;  CLOSE cur\_accounts; END; |
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**Scenario 3: Update the interest rate for all loans based on a new policy.**

**Question: Write a PL/SQL block using an explicit cursor UpdateLoanInterestRates that fetches all loans and updates their interest rates based on the new policy.**

| DECLARE  CURSOR cur\_loans IS  SELECT LoanID, InterestRate  FROM Loans;  v\_loanID Loans.LoanID%TYPE;  v\_interestRate Loans.InterestRate%TYPE;  v\_newInterestRate CONSTANT NUMBER := 5; BEGIN  OPEN cur\_loans;  LOOP  FETCH cur\_loans INTO v\_loanID, v\_interestRate;  EXIT WHEN cur\_loans%NOTFOUND;  UPDATE Loans  SET InterestRate = v\_newInterestRate  WHERE LoanID = v\_loanID;  DBMS\_OUTPUT.PUT\_LINE('Loan ID: ' || v\_loanID || ' New Interest Rate: ' || v\_newInterestRate);  END LOOP;  CLOSE cur\_loans; END; |
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