Exercise 6: Cursors

Scenario 1:

```
DECLARE
   CURSOR transaction_cursor IS
      SELECT customer_id, transaction_id, transaction_date, amount, transaction_type
      FROM transactions
      WHERE transaction_date BETWEEN TRUNC(SYSDATE, 'MM') AND LAST_DAY(SYSDATE);

   v_customer_id transactions.customer_id%TYPE;
   v_transaction_id transactions.transaction_id%TYPE;
   v_transaction_date transactions.transaction_date%TYPE;
   v_amount transactions.amount%TYPE;
   v_transaction_type transactions.transaction_type%TYPE;

   v_current_customer_id transactions.customer_id%TYPE;
BEGIN
   OPEN transaction_cursor;
   LOOP
      FETCH transaction_cursor INTO v_customer_id, v_transaction_id, v_transaction_date,
v_amount, v_transaction_type;
      EXIT WHEN transaction_cursor%NOTFOUND;

      IF v_current_customer_id IS NULL OR v_current_customer_id != v_customer_id THEN
         IF v_current_customer_id IS NOT NULL THEN
            DBMS_OUTPUT.PUT_LINE('----------------------------------');
         END IF;
         v_current_customer_id := v_customer_id;
         DBMS_OUTPUT.PUT_LINE('Monthly Statement for Customer ID: ' || v_customer_id);
         DBMS_OUTPUT.PUT_LINE('----------------------------------');
      END IF;

      DBMS_OUTPUT.PUT_LINE('Transaction ID: ' || v_transaction_id || ', Date: ' ||
v_transaction_date ||
                           ', Amount: ' || v_amount || ', Type: ' || v_transaction_type);
   END LOOP;
   CLOSE transaction_cursor;
END;
/
```

Scenario 2:

```
DECLARE

   CURSOR account_cursor IS

      SELECT account_id, balance

      FROM accounts;
```

```
    v_account_id accounts.account_id%TYPE;
    v_balance accounts.balance%TYPE;
    v_annual_fee CONSTANT NUMBER := 50;  -- Annual maintenance fee
BEGIN
    OPEN account_cursor;
    LOOP
        FETCH account_cursor INTO v_account_id, v_balance;
        EXIT WHEN account_cursor%NOTFOUND;
        -- Deduct the annual maintenance fee
        UPDATE accounts
        SET balance = balance - v_annual_fee
        WHERE account_id = v_account_id;
    END LOOP;
    CLOSE account_cursor;
    COMMIT;
END;
/
```

Scenario 3:

```
DECLARE
    CURSOR loan_cursor IS
        SELECT loan_id, interest_rate
        FROM loans;

    v_loan_id loans.loan_id%TYPE;
    v_interest_rate loans.interest_rate%TYPE;

    v_interest_rate_increment CONSTANT NUMBER := 0.005;  -- Increment of 0.5%
BEGIN
    OPEN loan_cursor;
    LOOP
        FETCH loan_cursor INTO v_loan_id, v_interest_rate;
```

```
        EXIT WHEN loan_cursor%NOTFOUND;

        -- Update the interest rate based on the new policy
        UPDATE loans
        SET interest_rate = interest_rate + v_interest_rate_increment
        WHERE loan_id = v_loan_id;
    END LOOP;
    CLOSE loan_cursor;

    COMMIT;
END;
/
```