**Exercise 1: Control Structures**

**Scenario 1: The bank wants to apply a discount to loan interest rates for customers above 60 years old.**

* + **Question: Write a PL/SQL block that loops through all customers, checks their age, and if they are above 60, apply a 1% discount to their current loan interest rates.**

**Scenario 2: A customer can be promoted to VIP status based on their balance.**

* + **Question: Write a PL/SQL block that iterates through all customers and sets a flag IsVIP to TRUE for those with a balance over $10,000.**

**Scenario 3: The bank wants to send reminders to customers whose loans are due within the next 30 days.**

* + **Question: Write a PL/SQL block that fetches all loans due in the next 30 days and prints a reminder message for each customer.**

**Code :**

CREATE TABLE customers (

  customer\_id    NUMBER PRIMARY KEY,

  customer\_name  VARCHAR2(50),

  age            NUMBER,

  balance        NUMBER(10, 2),

  isVIP          VARCHAR2(5),  -- 'TRUE' or 'FALSE'

  loan\_id        NUMBER

);

CREATE TABLE loans (

  loan\_id        NUMBER PRIMARY KEY,

  customer\_id    NUMBER,

  interest\_rate  NUMBER(5, 2),

  due\_date       DATE

);

INSERT INTO customers VALUES (101, 'Alice Johnson', 65, 15000.00, 'FALSE', 201);

INSERT INTO customers VALUES (102, 'Bob Smith', 45, 8000.00, 'FALSE', 202);

INSERT INTO customers VALUES (103, 'Charlie Brown', 70, 12000.00, 'FALSE', 203);

INSERT INTO customers VALUES (104, 'Daisy Thomas', 35, 11000.00, 'FALSE', 204);

INSERT INTO customers VALUES (105, 'Edward Clark', 62, 9500.00, 'FALSE', 205);

INSERT INTO loans VALUES (201, 101, 7.5, SYSDATE + 10);

INSERT INTO loans VALUES (202, 102, 8.0, SYSDATE + 45);

INSERT INTO loans VALUES (203, 103, 6.5, SYSDATE + 25);

INSERT INTO loans VALUES (204, 104, 7.0, SYSDATE + 5);

INSERT INTO loans VALUES (205, 105, 7.8, SYSDATE - 10);

SELECT \* FROM customers;

SELECT \* FROM loans;

BEGIN

  FOR cust IN (

    SELECT c.customer\_id, c.customer\_name, c.age, l.loan\_id, l.interest\_rate

    FROM customers c

    JOIN loans l ON c.customer\_id = l.customer\_id

    WHERE c.age > 60

  ) LOOP

    UPDATE loans

    SET interest\_rate = cust.interest\_rate - 1

    WHERE loan\_id = cust.loan\_id;

    DBMS\_OUTPUT.PUT\_LINE(' Interest rate updated for Customer ID: ' || cust.customer\_id ||

                         ', Name: ' || cust.customer\_name);

  END LOOP;

END;

/

BEGIN

  FOR cust IN (

    SELECT customer\_id, customer\_name, balance

    FROM customers

    WHERE balance > 10000

  ) LOOP

    UPDATE customers

    SET isVIP = 'TRUE'

    WHERE customer\_id = cust.customer\_id;

    DBMS\_OUTPUT.PUT\_LINE(' Customer ' || cust.customer\_name ||

                         ' (ID: ' || cust.customer\_id ||

                         ') promoted to VIP. Balance: $' || cust.balance);

  END LOOP;

END;

/

DECLARE

  CURSOR due\_loans IS

    SELECT l.loan\_id, l.due\_date, c.customer\_name

    FROM loans l

    JOIN customers c ON l.customer\_id = c.customer\_id

    WHERE l.due\_date BETWEEN SYSDATE AND SYSDATE + 30;

BEGIN

  FOR loan\_rec IN due\_loans LOOP

    DBMS\_OUTPUT.PUT\_LINE('Reminder: Loan ID ' || loan\_rec.loan\_id ||

                         ' for ' || loan\_rec.customer\_name ||

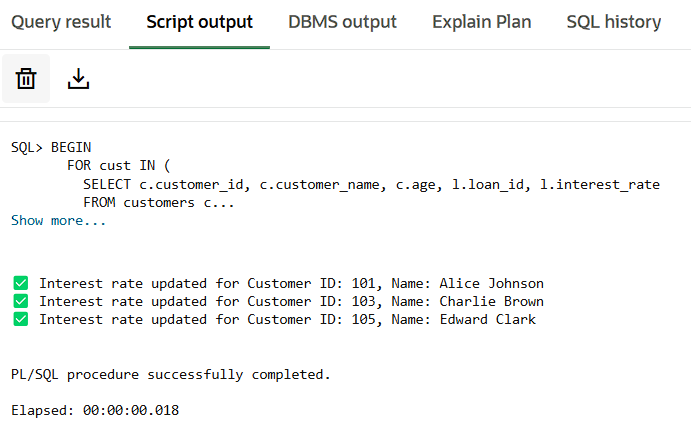
                         ' is due on ' || TO\_CHAR(loan\_rec.due\_date, 'DD-MON-YYYY'));

  END LOOP;

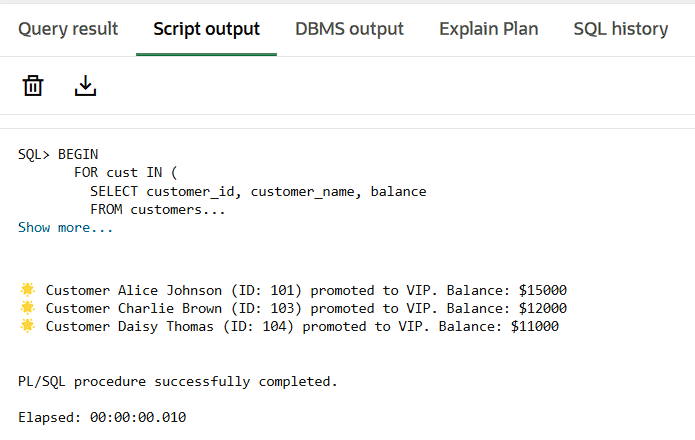
END;

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**Output:**

**Scenario 1:**

**Scenario 2:**

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**Scenario 3:**

