**Exercise 1: Control Structures**

**Code:**

CREATE TABLE customers (

customer\_id NUMBER PRIMARY KEY,

name VARCHAR2(50),

age NUMBER,

balance NUMBER,

isVIP VARCHAR2(5)

);

CREATE TABLE loans (

loan\_id NUMBER PRIMARY KEY,

customer\_id NUMBER,

interest\_rate NUMBER(5,2),

due\_date DATE,

FOREIGN KEY (customer\_id) REFERENCES customers(customer\_id)

);

INSERT INTO customers VALUES (1, 'John Doe', 65, 12000, 'FALSE');

INSERT INTO customers VALUES (2, 'Jane Smith', 45, 8000, 'FALSE');

INSERT INTO customers VALUES (3, 'Emily Clark', 70, 9500, 'FALSE');

INSERT INTO loans VALUES (101, 1, 7.5, SYSDATE + 10);

INSERT INTO loans VALUES (102, 2, 8.0, SYSDATE + 40);

INSERT INTO loans VALUES (103, 3, 6.5, SYSDATE + 20);

COMMIT;

BEGIN

FOR cust IN (

SELECT c.customer\_id, l.loan\_id

FROM customers c

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

WHERE c.age > 60

) LOOP

UPDATE loans

SET interest\_rate = interest\_rate - 1

WHERE loan\_id = cust.loan\_id;

END LOOP;

DBMS\_OUTPUT.PUT\_LINE('Scenario 1 complete: Interest discount applied.');

END;

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BEGIN

FOR cust IN (

SELECT customer\_id

FROM customers

WHERE balance > 10000

) LOOP

UPDATE customers

SET isVIP = 'TRUE'

WHERE customer\_id = cust.customer\_id;

END LOOP;

DBMS\_OUTPUT.PUT\_LINE('Scenario 2 complete: VIP status updated.');

END;

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BEGIN

FOR loan\_rec IN (

SELECT l.loan\_id, c.name, l.due\_date

FROM loans l

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

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

) LOOP

DBMS\_OUTPUT.PUT\_LINE('Reminder: ' || loan\_rec.name ||

',your loan#' || loan\_rec.loan\_id ||

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

END LOOP;

END;

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