**Exercise 1: Control Structures**

SET SERVEROUTPUT ON;

BEGIN

EXECUTE IMMEDIATE 'DROP TABLE loans';

EXECUTE IMMEDIATE 'DROP TABLE customers';

EXCEPTION

WHEN OTHERS THEN

NULL;

END;

/

BEGIN

EXECUTE IMMEDIATE '

CREATE TABLE customers (

customer\_id NUMBER PRIMARY KEY,

name VARCHAR2(100),

age NUMBER,

balance NUMBER,

is\_vip CHAR(1) DEFAULT ''N''

)';

EXECUTE IMMEDIATE '

CREATE TABLE loans (

loan\_id NUMBER PRIMARY KEY,

customer\_id NUMBER,

interest\_rate NUMBER,

due\_date DATE,

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

)';

END;

/

BEGIN

INSERT INTO customers VALUES (1, 'Alice', 65, 12000, 'N');

INSERT INTO customers VALUES (2, 'Bob', 45, 8000, 'N');

INSERT INTO customers VALUES (3, 'Charlie', 70, 9500, 'N');

INSERT INTO customers VALUES (4, 'David', 30, 15000, 'N');

INSERT INTO loans VALUES (101, 1, 10.5, SYSDATE + 10);

INSERT INTO loans VALUES (102, 2, 11.0, SYSDATE + 40);

INSERT INTO loans VALUES (103, 3, 12.0, SYSDATE + 20);

INSERT INTO loans VALUES (104, 4, 9.5, SYSDATE + 5);

COMMIT;

END;

/

DECLARE

v\_name VARCHAR2(100);

BEGIN

-- Scenario 1: Interest discount for age > 60

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;

-- Scenario 2: VIP flag for balance > 10,000

FOR cust IN (

SELECT customer\_id

FROM customers

WHERE balance > 10000

) LOOP

UPDATE customers

SET is\_vip = 'Y'

WHERE customer\_id = cust.customer\_id;

END LOOP;

-- Scenario 3: Print reminders

FOR loan\_rec IN (

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

FROM loans l

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

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

) LOOP

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

', your loan (ID: ' || loan\_rec.loan\_id ||

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

END LOOP;

COMMIT;

END;

/

Output:

Reminder: Alice, your loan (ID: 101) is due on 07-JUL-2025

Reminder: Charlie, your loan (ID: 103) is due on 17-JUL-2025

Reminder: David, your loan (ID: 104) is due on 02-JUL-2025