**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.

DECLARE

CURSOR c1 IS

SELECT CUSTOMERID,((SYSDATE-DOB)/365) AS AGE FROM CUSTOMERS;

cust\_id customers.customerid%TYPE;

cust\_age NUMBER;

BEGIN

OPEN c1;

LOOP

FETCH c1 INTO cust\_id,cust\_age;

EXIT WHEN C1%NOTFOUND;

IF cust\_age>60 THEN

UPDATE LOANS set INTERESTRATE=INTERESTRATE\*0.99

WHERE LOANS.CUSTOMERID=cust\_id;

END IF;

END LOOP;

CLOSE C1;

END;

/

**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.

SQL> alter table customers add ISVAL varchar(10);

Table altered.

SQL> DECLARE

2 CURSOR c2 IS

3 SELECT CUSTOMERID,BALANCE FROM CUSTOMERS;

4 v\_balance customers.balance%TYPE;

5 v\_custid customers.customerid%TYPE;

6 BEGIN

7 OPEN c2;

8 LOOP

9 FETCH c2 INTO v\_custid,v\_balance;

10 EXIT WHEN C2%NOTFOUND;

11 IF v\_balance >10000 THEN

12 UPDATE CUSTOMERS SET ISVAL=’TRUE’ WHERE CUSTOMERID=v\_custid;

13 END IF;

14 END LOOP;

15 END;

16 /

PL/SQL procedure successfully completed.

SQL> select \* from customers;

CUSTOMERID NAME DOB BALANCE LASTMODIF ISVAL

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1 John Doe 15-MAY-85 1000 04-AUG-24

2 Jane Smith 20-JUL-90 1500 04-AUG-24

**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.

SQL> DECLARE

2 CURSOR c3 IS

3 SELECT l.LOANID, c.CUSTOMERID, l.ENDDATE

4 FROM LOANS l

5 JOIN CUSTOMERS c ON l.CUSTOMERID = c.CUSTOMERID

6 WHERE l.ENDDATE BETWEEN SYSDATE AND SYSDATE + 30;

7

8 loan\_id LOANS.LOANID%TYPE;

9 cust\_id CUSTOMERS.CUSTOMERID%TYPE;

10 due\_date LOANS.ENDDATE%TYPE;

11 BEGIN

12 OPEN c3;

13 LOOP

14 FETCH c3 INTO loan\_id, cust\_id, due\_date;

15 EXIT WHEN c3%NOTFOUND;

16 DBMS\_OUTPUT.PUT\_LINE('Loan ID: ' || loan\_id || ', Customer ID: ' || cust\_id || ', Due Date: ' || TO\_CHAR(due\_date, 'YYYY-MM-DD'));

17 END LOOP;

18 CLOSE c3;

19 END;

20 /

PL/SQL procedure successfully completed.