PLSQL Exercise

**Exercise 1: Control Structures**

**Scenario - 1**

**DECLARE**

**CURSOR customer\_cursor IS**

**SELECT c.customer\_id, c.date\_of\_birth, l.loan\_id, l.interest\_rate**

**FROM customers c**

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

**v\_age NUMBER;**

**v\_new\_interest\_rate NUMBER;**

**BEGIN**

**FOR customer\_rec IN customer\_cursor LOOP**

**v\_age := FLOOR(MONTHS\_BETWEEN(SYSDATE, customer\_rec.date\_of\_birth) / 12);**

**IF v\_age > 60 THEN**

**v\_new\_interest\_rate := customer\_rec.interest\_rate - 1;**

**UPDATE loans**

**SET interest\_rate = v\_new\_interest\_rate**

**WHERE loan\_id = customer\_rec.loan\_id;**

**DBMS\_OUTPUT.PUT\_LINE('Applied 1% discount to customer ID ' ||**

**customer\_rec.customer\_id ||**

**', new interest rate: ' || v\_new\_interest\_rate || '%');**

**END IF;**

**END LOOP;**

**COMMIT;**

**DBMS\_OUTPUT.PUT\_LINE('Discount application process completed.');**

**EXCEPTION**

**WHEN OTHERS THEN**

**ROLLBACK;**

**DBMS\_OUTPUT.PUT\_LINE('Error: ' || SQLERRM);**

**END;**

**Scenario – 2**

**DECLARE**

**CURSOR customer\_cursor IS**

**SELECT customer\_id, balance**

**FROM customers**

**FOR UPDATE;**

**v\_vip\_threshold NUMBER := 10000;**

**BEGIN**

**FOR customer\_rec IN customer\_cursor LOOP**

**IF customer\_rec.balance > v\_vip\_threshold THEN**

**UPDATE customers**

**SET IsVIP = 'TRUE'**

**WHERE CURRENT OF customer\_cursor;**

**DBMS\_OUTPUT.PUT\_LINE('Promoted customer ID ' || customer\_rec.customer\_id ||**

**' to VIP status (balance: $' || customer\_rec.balance || ')');**

**END IF;**

**END LOOP;**

**COMMIT;**

**DBMS\_OUTPUT.PUT\_LINE('VIP promotion process completed.');**

**EXCEPTION**

**WHEN OTHERS THEN**

**ROLLBACK;**

**DBMS\_OUTPUT.PUT\_LINE('Error: ' || SQLERRM);**

**END;**

**Scenario – 3**

**DECLARE**

**CURSOR loan\_cursor IS**

**SELECT l.loan\_id, l.due\_date, c.customer\_id, c.first\_name, c.last\_name, c.email**

**FROM loans l**

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

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

**AND l.status = 'ACTIVE'; -- Only active loans**

**v\_days\_until\_due NUMBER;**

**BEGIN**

**DBMS\_OUTPUT.PUT\_LINE('Sending loan due reminders...');**

**DBMS\_OUTPUT.PUT\_LINE('--------------------------------');**

**FOR loan\_rec IN loan\_cursor LOOP**

**v\_days\_until\_due := loan\_rec.due\_date - SYSDATE;**

**DBMS\_OUTPUT.PUT\_LINE('Reminder for customer: ' || loan\_rec.first\_name || ' ' || loan\_rec.last\_name);**

**DBMS\_OUTPUT.PUT\_LINE('Email: ' || loan\_rec.email);**

**DBMS\_OUTPUT.PUT\_LINE('Loan ID: ' || loan\_rec.loan\_id || ' is due in ' ||**

**ROUND(v\_days\_until\_due) || ' days (Due date: ' ||**

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

**DBMS\_OUTPUT.PUT\_LINE('--------------------------------');**

**END LOOP;**

**DBMS\_OUTPUT.PUT\_LINE('Reminder process completed. ' || loan\_cursor%ROWCOUNT || ' reminders sent.');**

**EXCEPTION**

**WHEN OTHERS THEN**

**DBMS\_OUTPUT.PUT\_LINE('Error: ' || SQLERRM);**

**END;**