**PL SQL**

**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:**

DECLARE

TYPE CustomerRec IS RECORD (

customerId NUMBER,

name VARCHAR2(50),

age NUMBER,

balance NUMBER,

isVIP BOOLEAN

);

TYPE CustomerTable IS TABLE OF CustomerRec INDEX BY PLS\_INTEGER;

customers CustomerTable;

TYPE LoanRec IS RECORD (

loanId NUMBER,

customerId NUMBER,

dueDate DATE,

interestRate NUMBER

);

TYPE LoanTable IS TABLE OF LoanRec INDEX BY PLS\_INTEGER;

loans LoanTable;

i PLS\_INTEGER;

today DATE := SYSDATE;

BEGIN

customers(1) := CustomerRec(1, 'Hari', 65, 12000, FALSE);

customers(2) := CustomerRec(2, 'Rahul', 45, 8000, FALSE);

customers(3) := CustomerRec(3, 'Asha', 61, 15000, FALSE);

customers(4) := CustomerRec(4, 'Vikram', 30, 3000, FALSE);

loans(1) := LoanRec(101, 1, today + 10, 7.5);

loans(2) := LoanRec(102, 2, today + 40, 8.2);

loans(3) := LoanRec(103, 3, today + 25, 9.0);

loans(4) := LoanRec(104, 4, today + 5, 7.0);

FOR i IN 1 .. customers.COUNT LOOP

IF customers(i).age > 60 THEN

FOR j IN 1 .. loans.COUNT LOOP

IF loans(j).customerId = customers(i).customerId THEN

loans(j).interestRate := loans(j).interestRate - 1;

END IF;

END LOOP;

END IF;

END LOOP;

FOR i IN 1 .. customers.COUNT LOOP

IF customers(i).balance > 10000 THEN

customers(i).isVIP := TRUE;

END IF;

END LOOP;

DBMS\_OUTPUT.PUT\_LINE('Loan Reminders for due dates within 30 days:');

FOR i IN 1 .. loans.COUNT LOOP

IF loans(i).dueDate <= today + 30 THEN

FOR j IN 1 .. customers.COUNT LOOP

IF loans(i).customerId = customers(j).customerId THEN

DBMS\_OUTPUT.PUT\_LINE(

'Reminder: ' || customers(j).name ||

', your loan ID ' || loans(i).loanId ||

' is due on ' || TO\_CHAR(loans(i).dueDate, 'DD-MON-YYYY')

);

END IF;

END LOOP;

END IF;

END LOOP;

DBMS\_OUTPUT.PUT\_LINE(CHR(10) || 'Customer Status Summary:');

FOR i IN 1 .. customers.COUNT LOOP

DBMS\_OUTPUT.PUT\_LINE(

customers(i).name || ' (Age: ' || customers(i).age ||

', Balance: ' || customers(i).balance ||

') => VIP: ' || CASE WHEN customers(i).isVIP THEN 'YES' ELSE 'NO' END

);

END LOOP;

DBMS\_OUTPUT.PUT\_LINE(CHR(10) || 'Updated Loan Interest Rates:');

FOR i IN 1 .. loans.COUNT LOOP

DBMS\_OUTPUT.PUT\_LINE(

'Loan ID: ' || loans(i).loanId ||

', Customer ID: ' || loans(i).customerId ||

', Interest Rate: ' || loans(i).interestRate || '%' ||

', Due Date: ' || TO\_CHAR(loans(i).dueDate, 'DD-MON-YYYY')

);

END LOOP;

END;

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