**Exercise 4: Functions**

**Scenario 1:** Calculate the age of customers for eligibility checks.

* **Question:** Write a function CalculateAge that takes a customer's date of birth as input and returns their age in years.

CREATE OR REPLACE FUNCTION CalculateAge(

dob IN DATE ) RETURN NUMBER IS

curr\_date DATE := SYSDATE;

age NUMBER;

BEGIN

age := FLOOR(MONTHS\_BETWEEN(curr\_date, dob) / 12);

RETURN age;

EXCEPTION

WHEN OTHERS THEN

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

RETURN NULL;

END;

**Scenario 2:** The bank needs to compute the monthly installment for a loan.

* **Question:** Write a function **CalculateMonthlyInstallment** that takes the loan amount, interest rate, and loan duration in years as input and returns the monthly installment amount.

CREATE OR REPLACE FUNCTION CalculateMonthlyInstallment(

loan\_amt IN NUMBER,

interest\_rate IN NUMBER,

duration IN NUMBER

) RETURN NUMBER IS

monthly\_interset NUMBER;

total\_payments NUMBER;

monthly\_installment NUMBER;

BEGIN

monthly\_interset := interest\_rate / 12 / 100;

total\_payments := duration \* 12;

IF monthly\_interset = 0 THEN

monthly\_installment := loan\_amt / total\_payments;

ELSE

monthly\_installment := (loan\_amt \* monthly\_interset \* POWER(1 + monthly\_interset, total\_payments)) /

(POWER(1 + monthly\_interset, total\_payments) - 1);

END IF;

RETURN monthly\_installment;

EXCEPTION

WHEN OTHERS THEN

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

RETURN NULL;

END;

**Scenario 3:** Check if a customer has sufficient balance before making a transaction.

* **Question:** Write a function **HasSufficientBalance** that takes an account ID and an amount as input and returns a boolean indicating whether the account has at least the specified amount.

CREATE OR REPLACE FUNCTION HasSufficientBalance(

acc\_id IN NUMBER,

amt IN NUMBER

) RETURN BOOLEAN IS balance NUMBER;

BEGIN

SELECT Balance INTO balance FROM Accounts

WHERE AccountID = acc\_id;

IF balance >= amt THEN

RETURN TRUE;

ELSE

RETURN FALSE;

END IF;

EXCEPTION

WHEN NO\_DATA\_FOUND THEN

RETURN FALSE;

WHEN OTHERS THEN

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

RETURN FALSE;

END;