**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 (

date\_of\_birth IN DATE

) RETURN NUMBER IS

customer\_age NUMBER;

BEGIN

customer\_age := TRUNC((SYSDATE - date\_of\_birth) / 365.25);

RETURN customer\_age;

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\_amount IN NUMBER,

annual\_interest\_rate IN NUMBER,

loan\_duration\_years IN NUMBER

) RETURN NUMBER IS

monthly\_interest\_rate NUMBER;

number\_of\_payments NUMBER;

monthly\_installment NUMBER;

BEGIN

monthly\_interest\_rate := annual\_interest\_rate / 12 / 100;

number\_of\_payments := loan\_duration\_years \* 12;

IF monthly\_interest\_rate = 0 THEN

monthly\_installment := loan\_amount / number\_of\_payments;

ELSE

monthly\_installment := loan\_amount \* (monthly\_interest\_rate \* POWER(1 + monthly\_interest\_rate, number\_of\_payments))

/ (POWER(1 + monthly\_interest\_rate, number\_of\_payments) - 1);

END IF;

RETURN monthly\_installment;

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 (

account\_id IN NUMBER,

required\_amount IN NUMBER

) RETURN BOOLEAN IS

current\_balance NUMBER;

BEGIN

SELECT balance INTO current\_balance

FROM accounts

WHERE account\_id = account\_id;

IF current\_balance >= required\_amount THEN

RETURN TRUE;

ELSE

RETURN FALSE;

END IF;

END;