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(p\_dob DATE) RETURN NUMBER IS  v\_age NUMBER; BEGIN  SELECT FLOOR(MONTHS\_BETWEEN(SYSDATE, p\_dob) / 12) INTO v\_age FROM dual;  RETURN v\_age; EXCEPTION  WHEN OTHERS THEN  RETURN NULL; END; |
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**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(  p\_loan\_amount NUMBER,  p\_annual\_interest\_rate NUMBER,  p\_loan\_duration\_years NUMBER ) RETURN NUMBER IS  v\_monthly\_interest\_rate NUMBER;  v\_number\_of\_months NUMBER;  v\_monthly\_installment NUMBER; BEGIN  v\_monthly\_interest\_rate := p\_annual\_interest\_rate / 12 / 100;  v\_number\_of\_months := p\_loan\_duration\_years \* 12;    IF v\_monthly\_interest\_rate > 0 THEN  v\_monthly\_installment := (p\_loan\_amount \* v\_monthly\_interest\_rate) /  (1 - POWER(1 + v\_monthly\_interest\_rate, -v\_number\_of\_months));  ELSE  v\_monthly\_installment := p\_loan\_amount / v\_number\_of\_months;  END IF;    RETURN v\_monthly\_installment; EXCEPTION  WHEN OTHERS THEN  RETURN NULL; END; |
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**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(  p\_account\_id NUMBER,  p\_amount NUMBER ) RETURN BOOLEAN IS  v\_balance NUMBER; BEGIN  SELECT Balance INTO v\_balance  FROM Accounts  WHERE AccountID = p\_account\_id;    RETURN v\_balance >= p\_amount; EXCEPTION  WHEN NO\_DATA\_FOUND THEN  RETURN FALSE;  WHEN OTHERS THEN  RETURN FALSE; END; |
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