**Exercise 4: Functions**

**Step 1: Calculate Age**

CREATE OR REPLACE FUNCTION CalculateAge (

p\_date\_of\_birth DATE

) RETURN NUMBER IS

v\_age NUMBER;

BEGIN

v\_age := TRUNC(MONTHS\_BETWEEN(SYSDATE, p\_date\_of\_birth) / 12);

RETURN v\_age;

END CalculateAge;

/

**Step 2: Calculate Monthly Installment**

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\_payments NUMBER;

v\_monthly\_installment NUMBER;

BEGIN

v\_monthly\_interest\_rate := p\_annual\_interest\_rate / 12 / 100;

v\_number\_of\_payments := p\_loan\_duration\_years \* 12;

IF v\_monthly\_interest\_rate = 0 THEN

v\_monthly\_installment := p\_loan\_amount / v\_number\_of\_payments;

ELSE

v\_monthly\_installment := p\_loan\_amount \* v\_monthly\_interest\_rate /

(1 - POWER(1 + v\_monthly\_interest\_rate, -v\_number\_of\_payments));

END IF;

RETURN v\_monthly\_installment;

END CalculateMonthlyInstallment;

/

**Step 3: Has Sufficient Balance**

CREATE OR REPLACE FUNCTION HasSufficientBalance (

p\_account\_id NUMBER,

p\_amount NUMBER

) RETURN BOOLEAN IS

v\_balance NUMBER;

BEGIN

-- Retrieve the balance of the specified account

SELECT balance INTO v\_balance

FROM accounts

WHERE account\_id = p\_account\_id;

-- Check if the balance is sufficient

IF v\_balance >= p\_amount THEN

RETURN TRUE;

ELSE

RETURN FALSE;

END IF;

EXCEPTION

WHEN NO\_DATA\_FOUND THEN

RETURN FALSE;

END HasSufficientBalance;

/

**Example Data Insertion Scripts**

-- Creating tables

CREATE TABLE accounts (

account\_id NUMBER PRIMARY KEY,

balance NUMBER

);

CREATE TABLE customers (

customer\_id NUMBER PRIMARY KEY,

date\_of\_birth DATE

);

-- Inserting example data

INSERT INTO accounts (account\_id, balance) VALUES (1, 1000);

INSERT INTO accounts (account\_id, balance) VALUES (2, 2000);

INSERT INTO customers (customer\_id, date\_of\_birth) VALUES (1, DATE '1980-01-01');

INSERT INTO customers (customer\_id, date\_of\_birth) VALUES (2, DATE '1990-05-15');

COMMIT;