**Exercise 4: Functions**

**ANS1**

DECLARE

A CUSTOMERS.CUSTOMERID%TYPE:=&A;

C NUMBER;

FUNCTION CalculateAge(CID IN CUSTOMERS.CUSTOMERID%TYPE) RETURN NUMBER IS AGE NUMBER;

BEGIN

SELECT FLOOR((SYSDATE-DOB)/365.25) INTO AGE FROM CUSTOMERS WHERE CUSTOMERID=11;

RETURN AGE;

END;

BEGIN

C:= CalculateAge(A);

DBMS\_OUTPUT.PUT\_LINE('THE AGE OF THE CUSTOMER IS '||C);

END;

/

**ANS2**

CREATE OR REPLACE FUNCTION CalculateMonthlyInstallment (

p\_loan\_p\_amountIN NUMBER,

p\_annual\_interest\_rateIN NUMBER,

p\_loan\_duration\_years IN NUMBER

) RETURN NUMBER IS

v\_monthly\_p\_annual\_interest\_rateNUMBER;

v\_total\_payments NUMBER;

v\_monthly\_installment NUMBER;

BEGIN

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

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

v\_monthly\_installment := (p\_loan\_p\_amount\* v\_monthly\_p\_annual\_interest\_rate\* POWER(1 + v\_monthly\_interest\_rate, v\_total\_payments)) /

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

RETURN v\_monthly\_installment;

EXCEPTION

WHEN OTHERS THEN

DBMS\_OUTPUT.PUT\_LINE('ERROR IN CalculateMonthlyInstallment: ' || SQLERRM);

RETURN NULL;

END CalculateMonthlyInstallment;

/

DECLARE

v\_monthly\_installment NUMBER;

BEGIN

v\_monthly\_installment := CalculateMonthlyInstallment(50000, 5, 15);

DBMS\_OUTPUT.PUT\_LINE('Monthly Installment: ' || v\_monthly\_installment);

END;

/

**ANS3**

CREATE OR REPLACE FUNCTION HasSufficientBalance (

p\_account\_id IN Accounts.AccountID%TYPE,

p\_amount IN NUMBER

) RETURN BOOLEAN IS

v\_balance Accounts.Balance%TYPE;

BEGIN

SELECT Balance INTO v\_balance

FROM Accounts

WHERE AccountID = p\_account\_id;

IF v\_balance >= p\_amount THEN

RETURN TRUE;

ELSE

RETURN FALSE;

END IF;

EXCEPTION

WHEN NO\_DATA\_FOUND THEN

RETURN FALSE;

WHEN OTHERS THEN

DBMS\_OUTPUT.PUT\_LINE('ERROR IN HasSufficientBalance: ' || SQLERRM);

RETURN FALSE;

END HasSufficientBalance;

/

DECLARE

v\_sufficient\_balance BOOLEAN;

BEGIN

v\_sufficient\_balance := HasSufficientBalance(10, 500);

IF v\_sufficient\_balance THEN

DBMS\_OUTPUT.PUT\_LINE('THE ACCOUNT HAS SUFFICIENT BALANCE.');

ELSE

DBMS\_OUTPUT.PUT\_LINE('THE ACCOUNT DOES NOT HAVE SUFFICIENT BALANCE.');

END IF;

END;

/