**Exercise 4: Functions**

**Scenario 2:**

**CODE:**

***-- creation of Customers table***

CREATE TABLE Customers (

CustomerID NUMBER PRIMARY KEY,

Name VARCHAR2(100),

DOB DATE,

Balance NUMBER,

LastModified DATE

);

***-- Inserting values into Customers table***

BEGIN

INSERT INTO Customers VALUES (1, 'Alice Reddy', TO\_DATE('1950-05-10', 'YYYY-MM-DD'), 12000, SYSDATE);

INSERT INTO Customers VALUES (2, 'Bob Singh', TO\_DATE('1990-08-21', 'YYYY-MM-DD'), 8000, SYSDATE);

INSERT INTO Customers VALUES (3, 'Carol Mehta', TO\_DATE('1962-01-15', 'YYYY-MM-DD'), 15000, SYSDATE );

INSERT INTO Customers VALUES (4, 'David Rao', TO\_DATE('1985-12-01', 'YYYY-MM-DD'), 9500, SYSDATE);

INSERT INTO Customers VALUES (5, 'Esha Iyer', TO\_DATE('1945-03-25', 'YYYY-MM-DD'), 20000, SYSDATE);

END;

/

***-- creation of Loans table***

CREATE TABLE Loans (

LoanID NUMBER PRIMARY KEY,

CustomerID NUMBER,

LoanAmount NUMBER,

InterestRate NUMBER,

StartDate DATE,

EndDate DATE,

FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID)

);

***-- Inserting values into Loans table***

BEGIN

INSERT INTO Loans VALUES (1, 1, 5000, 5, SYSDATE, ADD\_MONTHS(SYSDATE, 60));

INSERT INTO Loans VALUES (2, 2, 15000, 6.5, SYSDATE, ADD\_MONTHS(SYSDATE, 36));

INSERT INTO Loans VALUES (3, 3, 25000, 7, SYSDATE, ADD\_MONTHS(SYSDATE, 24));

INSERT INTO Loans VALUES (4, 4, 10000, 6.8, SYSDATE, ADD\_MONTHS(SYSDATE, 12));

INSERT INTO Loans VALUES (5, 5, 30000, 5.5, SYSDATE, ADD\_MONTHS(SYSDATE, 48));

END;

/

***-- Function to calculate Monthly installment***

CREATE OR REPLACE FUNCTION CalculateMonthlyInstallment(

loanAmount NUMBER,

annualInterestRate NUMBER,

loanDurationYears NUMBER

)

RETURN NUMBER

AS

monthlyInterestRate NUMBER;

totalMonths NUMBER;

EMI NUMBER;

BEGIN

***-- Convert annual interest rate to monthly (decimal form)***

monthlyInterestRate:=annualInterestRate/12/ 100;

***-- Total number of monthly installments***

totalMonths:=loanDurationYears\*12;

***-- Apply EMI formula***

EMI:=(loanAmount\*monthlyInterestRate\*POWER(1+monthlyInterestRate,totalMonths))/

(POWER(1+monthlyInterestRate,totalMonths)-1);

RETURN ROUND(EMI, 2); -- Return EMI rounded to 2 decimal places

END;

/

DECLARE

result NUMBER;

BEGIN

**-*- Example: ₹1,00,000 loan, 10% interest, 5 years duration***

result:=CalculateMonthlyInstallment(100000,10,5);

DBMS\_OUTPUT.PUT\_LINE('Monthly EMI: ₹' || result);

END;

/

**OUTPUT:**

