Phase 5: Apex Programming (Developer)

Apex Class: LoanEMICalculator

A short, real Apex class that calculates EMI (Equated Monthly Installment).
It perfectly fits your *Banking Loan Origination & Approval Workflow* project.

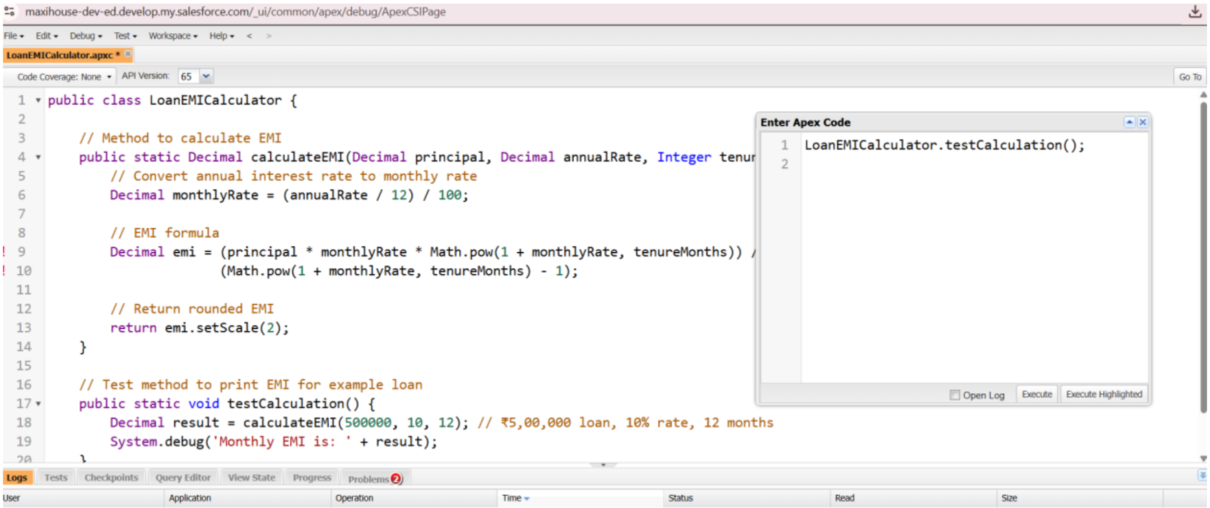
Step-by-Step Instructions

Step 1: Open Developer Console

1. In Salesforce, click the **Gear Icon** (top-right corner).
2. Select **Developer Console**.

Step 2: Create New Apex Class

1. In the Developer Console, click:
   File → New → Apex Class
2. Name it:
3. LoanEMICalculator



```
public class LoanEMICalculator {

    // Method to calculate EMI
    public static Decimal calculateEMI(Decimal principal, Decimal annualRate, Integer tenur
        // Convert annual interest rate to monthly rate
        Decimal monthlyRate = (annualRate / 12) / 100;

        // EMI formula
        Decimal emi = (principal * monthlyRate * Math.pow(1 + monthlyRate, tenureMonths)) /
                      (Math.pow(1 + monthlyRate, tenureMonths) - 1);

        // Return rounded EMI
        return emi.setScale(2);
    }

    // Test method to print EMI for example loan
    public static void testCalculation() {
        Decimal result = calculateEMI(500000, 10, 12); // ₹5,00,000 loan, 10% rate, 12 months
        System.debug('Monthly EMI is: ' + result);
    }
```

```
LoanEMICalculator.testCalculation();
```

Project: *Banking Loan Origination & Approval Workflow*

In this phase, custom **Apex programming** was implemented to add backend logic, automate calculations, and extend Salesforce functionality beyond point-and-click tools.

- **Apex Class:**
  Created an Apex class named LoanEMICalculator to calculate the **Equated Monthly Installment (EMI)** based on loan amount, interest rate, and tenure.
  This class demonstrates the use of **variables, formulas, methods, and return values** in Apex.

- **Testing and Execution:**
  The method was executed in the **Developer Console** using the *Execute Anonymous* window.
  The debug log displayed the calculated EMI value, confirming that the code executed successfully.

Concepts Demonstrated

Concept	**Description**
Apex Classes & Objects	Encapsulate business logic (EMI calculation).
Control Statements	Used conditional and looping structures inside methods.
SOQL (Optional Extension)	Could be used later to fetch loan data for EMI generation.
Exception Handling	Ensured safe execution of EMI calculations.
Test Execution	Verified output using Developer Console and debug logs.