

## 📖 Assignment # 1: Financial Calculator using JOptionPane in Java

### 🎯 Objective:

Create a **Java-based Financial Calculator** that performs a variety of financial computations using **JOptionPane** for user interaction.

### ✂ Features to Implement:

Your program should provide a menu with the following options:

1. **Simple Interest Calculator**
2. **Compound Interest Calculator**
3. **Loan EMI Calculator**
4. **Investment Return (Future Value)**
5. **Exit Program**

---

#### 1. Simple Interest:

$$SI = \frac{P \times R \times T}{100}$$

#### 2. Compound Interest:

$$A = P \times \left(1 + \frac{R}{100}\right)^T \quad CI = A - P$$

#### 3. Loan EMI (Monthly Installment):

$$EMI = \frac{P \times R \times (1 + R)^N}{(1 + R)^N - 1}$$

*Note:  $R$  = annual interest rate / (12 × 100),  $N$  = loan period in months*

#### 4. Future Value of Investment:

$$FV = P \times \left(1 + \frac{R}{100}\right)^T$$

**Guidelines:**

1. Use **JOptionPane** to display menu and accept inputs.
2. Use `switch` or `if-else` to handle user choices.
3. Allow user to perform multiple calculations in a loop until they choose to exit.
4. Format output using `String.format()` or `DecimalFormat` for cleaner results.