Exercise 7: Financial Forecasting

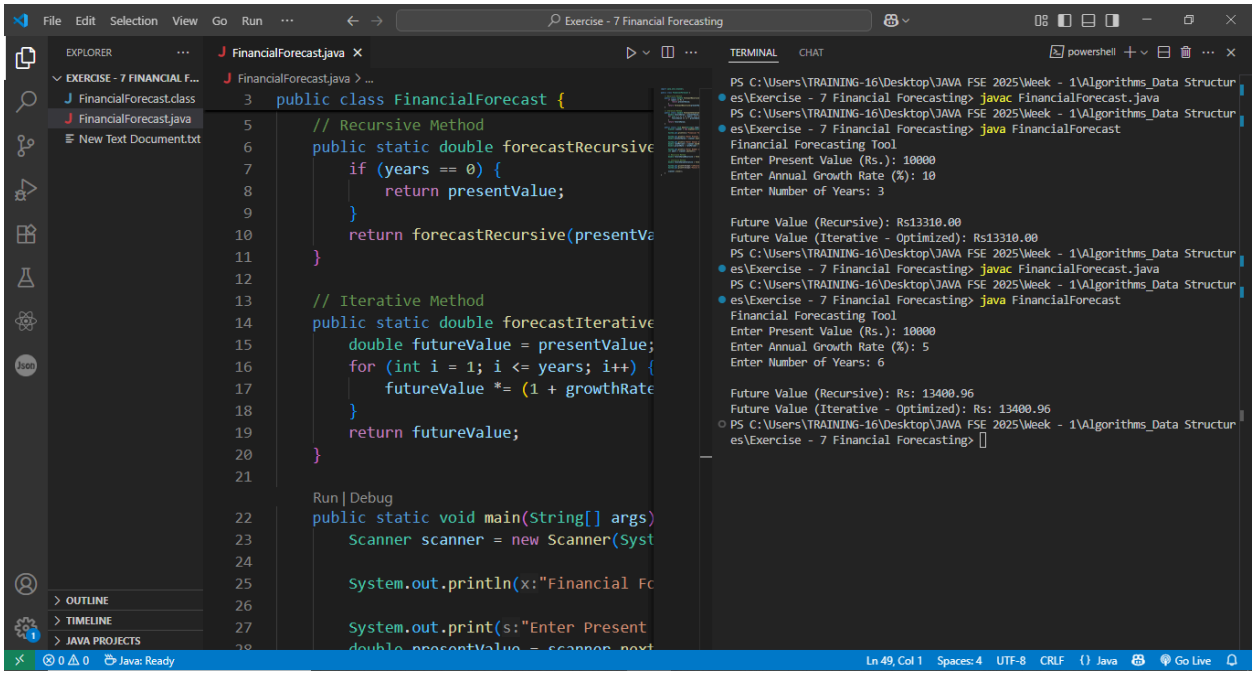
Scenario:
You are developing a financial forecasting tool that predicts future values based on past data.

//FinancialForecast.java

```
import java.util.Scanner;

public class FinancialForecast {

    // Recursive Method
    public static double forecastRecursive(double
presentValue, double growthRate, int years) {
        if (years == 0) {
            return presentValue;
        }
        return forecastRecursive(presentValue,
growthRate, years - 1) * (1 + growthRate);
    }

    // Iterative Method
    public static double forecastIterative(double
presentValue, double growthRate, int years) {
        double futureValue = presentValue;
        for (int i = 1; i <= years; i++) {
            futureValue *= (1 + growthRate);
        }
        return futureValue;
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
```

```
        System.out.println("Financial Forecasting Tool");

        System.out.print("Enter Present Value (Rs.): ");
        double presentValue = scanner.nextDouble();

        System.out.print("Enter Annual Growth Rate (%): 
");
        double ratePercent = scanner.nextDouble();
        double growthRate = ratePercent / 100.0;

        System.out.print("Enter Number of Years: ");
        int years = scanner.nextInt();

        // Recursive Method
        double futureValueRecursive = 
forecastRecursive(presentValue, growthRate, years);

        // Iterative Method
        double futureValueIterative = 
forecastIterative(presentValue, growthRate, years);

        System.out.printf("\nFuture Value (Recursive): 
Rs: %.2f\n", futureValueRecursive);
        System.out.printf("Future Value (Iterative - 
Optimized): Rs: %.2f\n", futureValueIterative);

        scanner.close();
    }
}
```

Output:


File Edit Selection View Go Run
Exercise - 7 Financial Forecasting
EXPLORER
EXERCISE - 7 FINANCIAL F...
FinancialForecast.class
FinancialForecast.java
New Text Document.txt
FinancialForecast.java
FinancialForecast.java > ...
public class FinancialForecast {
// Recursive Method
public static double forecastRecursive
if (years == 0) {
return presentValue;
}
return forecastRecursive(presentVa
}
// Iterative Method
public static double forecastIterative
double futureValue = presentValue;
for (int i = 1; i <= years; i++) {
futureValue *= (1 + growthRate
}
return futureValue;
}
Run | Debug
public static void main(String[] args)
Scanner scanner = new Scanner(Syst
System.out.println(x:"Financial Fo
System.out.print(s:"Enter Present
OUTLINE
TIMELINE
JAVA PROJECTS
TERMINAL CHAT
powershell
PS C:\Users\TRAINING-16\Desktop\JAVA FSE 2025\Week - 1\Algorithms_Data Structur
es\Exercise - 7 Financial Forecasting> javac FinancialForecast.java
PS C:\Users\TRAINING-16\Desktop\JAVA FSE 2025\Week - 1\Algorithms_Data Structur
es\Exercise - 7 Financial Forecasting> java FinancialForecast
Financial Forecasting Tool
Enter Present Value (Rs.): 10000
Enter Annual Growth Rate (%): 10
Enter Number of Years: 3
Future Value (Recursive): Rs13310.00
Future Value (Iterative - Optimized): Rs13310.00
PS C:\Users\TRAINING-16\Desktop\JAVA FSE 2025\Week - 1\Algorithms_Data Structur
es\Exercise - 7 Financial Forecasting> javac FinancialForecast.java
PS C:\Users\TRAINING-16\Desktop\JAVA FSE 2025\Week - 1\Algorithms_Data Structur
es\Exercise - 7 Financial Forecasting> java FinancialForecast
Financial Forecasting Tool
Enter Present Value (Rs.): 10000
Enter Annual Growth Rate (%): 5
Enter Number of Years: 6
Future Value (Recursive): Rs: 13400.96
Future Value (Iterative - Optimized): Rs: 13400.96
PS C:\Users\TRAINING-16\Desktop\JAVA FSE 2025\Week - 1\Algorithms_Data Structur
es\Exercise - 7 Financial Forecasting>
Java: Ready
Ln 49, Col 1 Spaces: 4 UTF-8 CRLF Java Go Live