Algorithms_Data Structures:

Exercise 7: financial Forecasting

```
import java.util.Scanner;


public class FinancialForecast {
    public static double calculateFutureValue(double V0, double r, int n) {
        if (n == 0) {
            return V0;
        }
        return calculateFutureValue(V0, r, n - 1) * (1 + r);
    }
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("================================================");
        System.out.println("       Recursive Financial Forecast Tool       ");
        System.out.println("================================================");
        System.out.print("Enter initial investment amount (V0): ");
        double initialInvestment = scanner.nextDouble();

        System.out.print("Enter annual growth rate (in %): ");
        double growthRatePercent = scanner.nextDouble();
        double growthRate = growthRatePercent / 100.0;

        System.out.print("Enter number of years (n): ");
        int years = scanner.nextInt();
        double futureValue = calculateFutureValue(initialInvestment, growthRate, years);
        System.out.println("\n============== Forecast Summary ===============");
        System.out.printf("Initial Investment: $%.2f%n", initialInvestment);
```

```
        System.out.printf("Growth Rate:       %.2f%%%n", growthRatePercent);
        System.out.printf("Number of Years:    %d%n", years);
        System.out.println("-----------------------------------------------");
        System.out.printf("Future Value:      $%.2f%n", futureValue);
        System.out.println("===============================================");

        scanner.close();
    }
}
```

Output: