Data Structures and Algorithms

SuperSet ID:6412063

Exercise 7: Financial Forecasting

Code:

public class FinancialForecasting {

public static double futureValue(double presentValue, double rate, int years) {

if (years == 0) {

return presentValue;

}

return futureValue(presentValue, rate, years - 1) \* (1 + rate / 100);

}

public static double futureValueMemo(double presentValue, double rate, int years, double[] memo) {

if (years == 0) {

return presentValue;

}

if (memo[years] != 0) {

return memo[years];

}

memo[years] = futureValueMemo(presentValue, rate, years - 1, memo) \* (1 + rate / 100);

return memo[years];

}

public static void main(String[] args) {

double presentValue = 10000; // ₹10,000

double rate = 10; // 10% annual growth

int years = 5;

System.out.println("Future Value (Recursive): ₹" + futureValue(presentValue, rate, years));

double[] memo = new double[years + 1];

System.out.println("Future Value (Memoized): ₹" + futureValueMemo(presentValue, rate, years, memo));

}

}

Output:

A close-up of a text

Description automatically generated