***FinancialForecast.java***

public class FinancialForecast {

public static double forecastValue(double presentValue, double growthRate, int years) {

if (years == 0) {

return presentValue;

}

return forecastValue(presentValue, growthRate, years - 1) \* (1 + growthRate);

}

public static double forecastMemo(double presentValue, double growthRate, int years, double[] memo) {

if (years == 0) return presentValue;

if (memo[years] != 0) return memo[years];

memo[years] = forecastMemo(presentValue, growthRate, years - 1, memo) \* (1 + growthRate);

return memo[years];

}

}

***ForecastTest.java***

public class ForecastTest {

public static void main(String[] args) {

double presentValue = 1000.0;

double growthRate = 0.10;

int years = 5;

double futureValue = FinancialForecast.forecastValue(presentValue, growthRate, years);

System.out.printf("Future value after %d years: %.2f%n", years, futureValue);

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

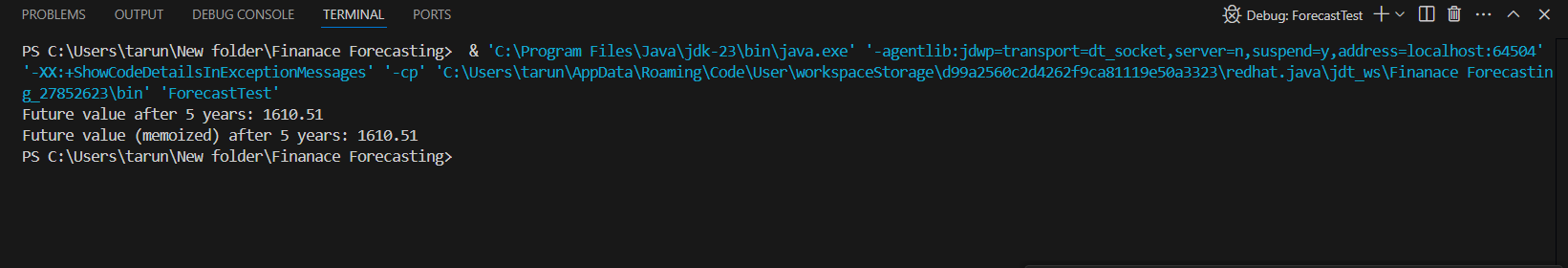
double futureValueMemo = FinancialForecast.forecastMemo(presentValue, growthRate, years, memo);

System.out.printf("Future value (memoized) after %d years: %.2f%n", years, futureValueMemo);

}

}

**Output**

****