**Exercise 7: Financial Forecasting**

**Recursion :**

Recursion is a programming concept where a function calls itself in order to solve a problem.

Instead of solving a problem all at once, recursion breaks it down into smaller sub-problems of the same type — solving each one until it reaches a base case (the simplest version of the problem, which can be solved directly).

**Source code :**

public class FinancialForecast {

public static void main(String[] args) {

double principal = 20000;

double rate = 0.07;

int years = 10;

double futureValue = forecast(principal, rate, years);

System.out.println("Forecasted value after " + years + " years: " + futureValue);

}

public static double forecast(double amount, double rate, int years) {

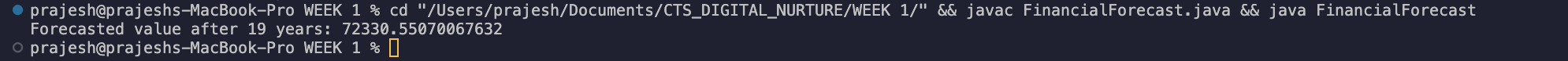
if (years == 0) return amount;

return forecast(amount \* (1 + rate), rate, years - 1);

}

}

**Output :**

****