**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 :**

import java.util.Scanner;

public class FinancialForecasting {

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

        if (years == 0) {

            return amount;

        }

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

    }

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter investment amount: ");

        double investment = scanner.nextDouble();

        System.out.print("Enter expected annual return rate: ");

        double rate = scanner.nextDouble() / 100;

        System.out.print("Enter investment duration in years: ");

        int years = scanner.nextInt();

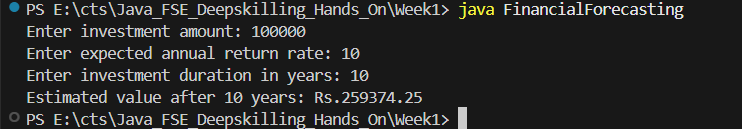
        double finalAmount = predictReturns(investment, rate, years);

        System.out.printf("Estimated value after %d years: Rs.%.2f\n", years, finalAmount);

    }

}

**Output :**

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