**Exercise 7: Financial Forecasting**

**Scenario:**

You are developing a financial forecasting tool that predicts future values based on past data.

**Steps:**

1. **Understand Recursive Algorithms:**
   * Explain the concept of recursion and how it can simplify certain problems.
2. **Setup:**
   * Create a method to calculate the future value using a recursive approach.
3. **Implementation:**
   * Implement a recursive algorithm to predict future values based on past growth rates.
4. **Analysis:**
   * Discuss the time complexity of your recursive algorithm.
   * Explain how to optimize the recursive solution to avoid excessive computation.

Recursion is a programming technique where the program calls itself to resolve smaller sub-problems. It makes difficult problems such as tree traversal or stock forecasting easier by employing a base case to terminate and a recursive case to recurse . It's easy but needs to be applied with caution to prevent performance loop.

