**Analysis**

1. **Discuss the time complexity of your recursive algorithm**

Ans: The recursive financial forecasting algorithm has O(n) time complexity , where n is the number of years. Each recursive call processes one year’s growth , leading to n total calls . The space complexity is also O(n) due to the call stack though tail recursion optimization can reduce it to O(1).

1. **Explain how to optimize the recursive solution to avoid excessive computation**

Ans: Tail Recursion: restructure the recursion so the recursive call is the last operation,enabling compilers to optimize stack usage.

Memoization: cache repeated calculations

Iterative Approach : Replace recursion with a loop for constant O(1) space .

Limit Depth : For very large n , switch to iteration best for this case is tail recursion .