1. Recursive Algorithms

Recursion is a programming technique where a function calls itself to solve smaller instances of a problem. It helps simplify complex problems by breaking them into easier subproblems with a clear base case to stop recursion. This approach is especially useful for problems that follow a repetitive or mathematical pattern.

4. Analysis

The recursive future value algorithm has a time complexity of O(n), since it performs one recursive call per time period. However, recursion can lead to stack overflow or inefficiency for large n due to deep call stacks. To optimize, an iterative approach can be used, which computes the future value in a loop, reducing both space complexity and the risk of excessive recursion.