

## **FINANCIAL FORECASTING**

### **Q1) Understand Recursive Algorithms:**

Recursion is a programming concept where a function calls itself repeatedly until it reaches a base case that stops the recursion. Recursion can simplify certain problems by breaking them down

into smaller sub-problems of the same type, making it easier to solve them.

### **Simplifying Problems with Recursion:**

Recursion simplifies certain problems by breaking them down into smaller, more manageable sub-problems.

This approach is ideal for problems with a recursive structure, such as tree traversals, dynamic programming,

and combinatorial problems. Recursion enables the solution of complex problems by solving each sub-problem

only once and storing the results for future use. This reduces code complexity and improves efficiency.

### **Q4) Time Complexity analysis:**

The time complexity of this recursive function is  $O(n)$

$O(n)$  because it makes  $n$  recursive calls to compute the final value.

### **Optimizing the Recursive Solution:**

To optimize the recursive solution and avoid excessive computation, we can use memoization or dynamic programming to store the intermediate results. This way, we can avoid recalculating the same values multiple times.