**Recursion:** Recursion is a technique where a method calls itself to solve smaller sub-problems of the same nature until it reaches a base case.

In financial forecasting, recursion can simplify the calculation of future values by:

* + Predict the next value based on past growth rates.
  + Use the predicted value to recursively calculate subsequent future values

**Time Complexity**

* Each recursive call handles one period, and there are n periods to be forecasted. Thus, the time complexity is **O(n)** .

**Optimization**

Use Dyanmic Programming to cache the intermediate result