## Financial Forecasting

1. Recursion:

* Recursion is a programming technique where a method **calls itself** to solve a smaller instance of the same problem.
* Recursion is a method where we attempt to break the entire problem into sub-problems and in we attempt to solve the entire problem by solving these sub-problems in a nested fashion
* We utilize recursive calls to delve deep into the problem and we backtrack by solving the sub-problems

2. Time complexity:

* Time complexity of recursive algorithm will always increase in an exponential order
* It is calculated from number of calls to number of nested levels
* In this solution only one recursive call is made and it will be called "year" number of times => O(1^n) = O(n)

3. Limitation

* For large n, recursion uses more stack space, and might hit stack overflow.

4. Optimization:

* In order to optimize recursion, we can use "memoization" where we save the results of all the previously calculated recursion calls
* If we need to recompute that call then we can simply reuse the prior result and skip recomputation.