**Exercise 7: Financial Forecasting**

1. Explain the concept of recursion and how it can simplify certain problems.
   * Concept of Recursion
     1. Recursion: A technique that a function uses to call itself for solving a smaller instance of the same problem.
     2. Base Case: The condition upon whose satisfaction the recursion stops.
     3. Recursive Case: Case where the function is calling the same function but with smaller or more easily solved instances.
   * Benefits of Recursion
     1. Simplicity: Recursion will help to simplify the code during problems that are properly recursive, say, tree traversal, or any other mathematical calculations, like factorial.
     2. Divide and Conquer: Most of the time, recursion goes hand-in-glove with the divide and conquer algorithms—a strategy by which a problem is solved through breaking it down to smaller subproblems, solving each subproblem recursively, and merging the results accordingly.
2. Discuss the time complexity of your recursive algorithm.
   * Time Complexity: O(n) – The recursive function 'forecastHelper' makes one recursive call per offset which involves linear time complexity regarding the offset.
3. Explain how to optimize the recursive solution to avoid excessive computation.
   * Excessive computation and stack overflow problems that may pose for large offsets can be avoided by using memoization or dynamic programming. Otherwise, one would use the technique of converting the recursive approach into its iterative version.