**Week-1 Algorithms and Data Structures Financial Forecasting**

1.Explain the concept of recursion and how it can simplify certain problems.

Sol: Recursion is a technique where a function calls itself to solve smaller subproblems. It simplifies complex problems like mathematical computations, tree traversal into small problems to calculate the solution.

2. Discuss the time complexity of your recursive algorithm.

Sol: The time complexity of the developed algorithm for calculating the annual growth is O(n) i.e.; one recursive call per every year.

3. Explain how to optimize the recursive solution to avoid excessive computation.

Sol: To optimize a recursive solution and avoid excessive computation use iteration instead of recursion to reduce memory usage, apply mathematical formulas like Math.pow() to get direct results without repeated calls, use memorization to store and reuse results of subproblems, avoiding redundant calculations.