**MONICA B (SUPERSET ID - 5008627)**

**Exercise 7: Financial Forecasting**

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

The basic recursive technique is a great way to naturally represent the problem. Recursion is a programming approach in which a function calls itself to solve smaller versions of the same problem until a predefined condition is met. Recursion can often be used to represent difficult problems in a simpler, more understandable fashion.

1. Discuss the time complexity of your recursive algorithm.

1.The Time complexity is O(n).

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

**Simple Recursive Approach:** The temporal complexity is O(n), where n represents the number of years. The function calls itself n times, resulting in a linear relationship in terms of years.

**Optimized Recursive Approach:** The time complexity remains O(n), but memorizing eliminates superfluous calculations, making it more efficient in terms of execution time.