**Project Title:** Financial Forecast using Recursion

**Objective:**

To forecast the future financial value of an investment based on a fixed growth rate over multiple years using Recursive Algorithm.

**Core Concepts Used:**

* Recursion to repeatedly apply compound growth formula
* Time Complexity Analysis for performance understanding
* Iteration as Optimization to reduce space overhead

**What is Recursion:**

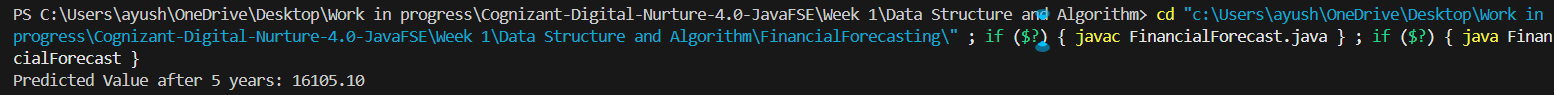
Recursion is when a method calls itself to solve smaller subproblems of the original problem.

It's particularly useful when:

* The problem is naturally repetitive (like Fibonacci, factorials, tree traversal)
* You want clean, readable logic

**Forecasting Formula:**

FutureValue(n)=FutureValue(n−1)×(1+rate)

**Sample Output**:

**Time Complexity:**

* **Recursive**: O(n) time, O(n) space

**Conclusion:**

Recursion offers a clean, conceptual approach to forecasting, but should be optimized with iteration or memoization for real-world systems requiring high performance.