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

Recursion is a programming technique where a function calls itself to solve smaller parts of a bigger problem. It’s like breaking a big task into smaller, similar tasks.

How it helps simplify problems:

* Breaks complex tasks into simpler ones
* Reduces the need for repetitive code
* Mirrors the natural structure of certain problems (e.g., directory traversal or mathematical sequences)

2. Discuss the time complexity of your recursive algorithm.

Time Complexity: O(n)

Where, n is number of years

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

* Use Iteration – Replace recursion with a loop to save memory
* Memoization – Store already calculated values to avoid repeating work (useful in other complex problems)
* Avoid deep recursion – Helps prevent stack overflow for large inputs