**EX 7**

**Understanding Recursive Algorithms**

**Concept of Recursion**

* **Recursion**: A technique where a function calls itself to solve smaller instances of the same problem. It typically includes a base case to terminate the recursive calls and prevent infinite loops.
* **Simplification**: Recursion can simplify complex problems by breaking them down into smaller, more manageable sub-problems.

**Analysis**

**Time Complexity**

* **Time Complexity**: O(n)
  + **Explanation**: The recursive method calls itself n times (where n is the number of years). Each call performs a constant amount of work, resulting in a linear time complexity.

**Optimizing Recursive Solution**

Recursion can lead to excessive computation, especially for large input values. To optimize, we can use **memoization** to store intermediate results and avoid redundant calculations.