**📝 LeetCode Problem 2011**

**1. Question Title and Link**

* **Title:** Final Value of Variable After Performing Operations
* **Link:** LeetCode - Final Value of Variable After Performing Operations -2011

**2. Problem Statement**

There’s a programming language with only four operations and one variable X. Here’s how they work:

* ++X and X++ ➡️ Increments the value of X by 1.
* --X and X-- ➡️ Decrements the value of X by 1.

Initially, X = 0.

Given an array of strings operations containing a list of these operations, we need to determine the final value of X after performing all operations.

**Example**:

Input: operations = ["--X","X++","X++"]

Output: 1

**3. Approach and Thought Process 🧠**

My plan is simple: walk through each operation and update X accordingly.

* I’ll initialize X to 0 🟢.
* For each operation, if it’s an increment (either ++X or X++), I’ll add 1 ➕ to X.
* If it’s a decrement (either --X or X--), I’ll subtract 1 ➖ from X.
* By the end of the loop, I’ll return the final value of X. 🚀

**4. Solution Code**

class Solution:

def finalValueAfterOperations(self, operations: List[str]) -> int:

x = 0 # Start with X = 0

for operation in operations:

if operation == '++X' or operation == 'X++':

x += 1 # Increment X by 1

elif operation == '--X' or operation == 'X--':

x -= 1 # Decrement X by 1

return x # Final value of X

**5. Complexity Analysis**

* **Time Complexity:** O(n)O(n)O(n) ➡️ We loop through the list of operations once.
* **Space Complexity:** O(1)O(1)O(1) ➡️ Constant space as we only store a single integer X.

**6. Test Cases**

* **Example 1:** finalValueAfterOperations(["--X","X++","X++"]) ➞ 1
* **Example 2:** finalValueAfterOperations(["++X","++X","X++"]) ➞ 3
* **Example 3:** finalValueAfterOperations(["X++","++X","--X","X--"]) ➞ 0

**💡 Reflection**

This approach is super efficient and beats 100% of solutions on LeetCode!

