

LeetCode Medium – Two Pointer Problem

Problem:

Given an array of integers numbers sorted in non-decreasing order, find two numbers such that they add up to a specific target number.

Return the indices of the two numbers (1-indexed).

Example:

Input: numbers = [2,7,11,15], target = 9

Output: [1,2]

Approach (Two Pointer):

- Use two pointers: left at start, right at end
- If sum is smaller, move left
- If sum is larger, move right

C++ Solution:

```
class Solution {  
public:  
    vector<int> twoSum(vector<int>& numbers, int target) {  
        int left = 0, right = numbers.size() - 1;  
        while (left < right) {  
            int sum = numbers[left] + numbers[right];  
            if (sum == target)  
                return {left + 1, right + 1};  
            else if (sum < target)  
                left++;  
            else  
                right--;  
        }  
        return {};  
    }  
};
```

Time Complexity: O(n)

Space Complexity: O(1)