

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 twoSum(vector& 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: $O(1)$