

Problem 3511: Make a Positive Array

Problem Information

Difficulty: Medium

Acceptance Rate: 35.60%

Paid Only: Yes

Tags: Array, Greedy, Prefix Sum

Problem Description

You are given an array `nums`. An array is considered **positive** if the sum of all numbers in each **subarray** with **more than two** elements is positive.

You can perform the following operation any number of times:

- * Replace **one** element in `nums` with any integer between -1018 and 1018.

Find the **minimum** number of operations needed to make `nums` **positive**.

Example 1.

Input: `nums = [-10,15,-12]`

Output: 1

Explanation:

The only subarray with more than 2 elements is the array itself. The sum of all elements is $(-10) + 15 + (-12) = -7$. By replacing `nums[0]` with 0, the new sum becomes $0 + 15 + (-12) = 3$. Thus, the array is now positive.

Example 2.

Input: `nums = [-1,-2,3,-1,2,6]`

****Output:**** 1

****Explanation:****

The only subarrays with more than 2 elements and a non-positive sum are:

Subarray Indices	Subarray	Sum	Subarray After Replacement (Set nums[1] = 1)	New Sum
nums[0...2] | [-1, -2, 3] | 0 | [-1, 1, 3] | 3
nums[0...3] | [-1, -2, 3, -1] | -1 | [-1, 1, 3, -1] | 2
nums[1...3] | [-2, 3, -1] | 0 | [1, 3, -1] | 3
Thus, `nums` is positive after one operation.

****Example 3:****

****Input:**** nums = [1,2,3]

****Output:**** 0

****Explanation:****

The array is already positive, so no operations are needed.

****Constraints:****

* `3 <= nums.length <= 105` * `-109 <= nums[i] <= 109`

Code Snippets

C++:

```
class Solution {
public:
    int makeArrayPositive(vector<int>& nums) {

    }
};
```

Java:

```
class Solution {  
    public int makeArrayPositive(int[] nums) {  
  
    }  
}
```

Python3:

```
class Solution:  
    def makeArrayPositive(self, nums: List[int]) -> int:
```