Problem 3698: Split Array With Minimum Difference

Problem Information

Difficulty: Medium
Acceptance Rate: 28.90%
Paid Only: No
Tags: Array, Prefix Sum

Problem Description

You are given an integer array `nums`.

Split the array into **exactly** two subarrays, `left` and `right`, such that `left` is **strictly increasing ** and `right` is **strictly decreasing**.

Return the **minimum possible absolute difference** between the sums of `left` and `right`. If no valid split exists, return `-1`.

Example 1:

Input: nums = [1,3,2]

Output: 2

Explanation:

`i` | `left` | `right` | Validity | `left` sum | `right` sum | Absolute difference ---|---|---|---|---|---|--- 0 | [1] | [3, 2] | Yes | 1 | 5 | `|1 - 5| = 4` 1 | [1, 3] | [2] | Yes | 4 | 2 | `|4 - 2| = 2` Thus, the minimum absolute difference is 2.

Example 2:

Input: nums = [1,2,4,3]

Output: 4

Explanation:

`i` | `left` | `right` | Validity | `left` sum | `right` sum | Absolute difference ---|---|---|---|---|---|--- 0 | [1] | [2, 4, 3] | No | 1 | 9 | - 1 | [1, 2] | [4, 3] | Yes | 3 | 7 | `|3 - 7| = 4` 2 | [1, 2, 4] | [3] | Yes | 7 | 3 | `|7 - 3| = 4` Thus, the minimum absolute difference is 4.

Example 3:

Input: nums = [3,1,2]

Output: -1

Explanation:

No valid split exists, so the answer is -1.

Constraints:

* `2 <= nums.length <= 105` * `1 <= nums[i] <= 105`

Code Snippets

C++:

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

}
};
```

Java:

```
class Solution {
public long splitArray(int[] nums) {

}
```

```
}
```

Python3:

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