

1633. Minimum Number of Increments on Subarrays to Form a Target Array

Difficulty : Hard

<https://leetcode.com/problems/minimum-number-of-increments-on-subarrays-to-form-a-target-array>

You are given an integer array `target`. You have an integer array `initial` of the same size as `target` with all elements initially zeros.

In one operation you can choose **any** subarray from `initial` and increment each value by one.

Return *the minimum number of operations to form a target array from initial*.

The test cases are generated so that the answer fits in a 32-bit integer.

Example 1:

Input: `target = [1,2,3,2,1]`

Output: 3

Explanation: We need at least 3 operations to form the target array from the initial array.

`[0,0,0,0,0]` increment 1 from index 0 to 4 (inclusive).

`[1,1,1,1,1]` increment 1 from index 1 to 3 (inclusive).

`[1,2,2,2,1]` increment 1 at index 2.

`[1,2,3,2,1]` target array is formed.

Example 2:

Input: `target = [3,1,1,2]`

Output: 4

Explanation: `[0,0,0,0]` -> `[1,1,1,1]` -> `[1,1,1,2]` -> `[2,1,1,2]` -> `[3,1,1,2]`

Example 3:

Input: `target = [3,1,5,4,2]`

Output: 7

Explanation: `[0,0,0,0,0]` -> `[1,1,1,1,1]` -> `[2,1,1,1,1]` -> `[3,1,1,1,1]` -> `[3,1,2,2,2]` -> `[3,1,3,3,2]` -> `[3,1,4,4,2]` -> `[3,1,5,4,2]`.

Constraints:

- $1 \leq \text{target.length} \leq 10^5$
- $1 \leq \text{target}[i] \leq 10^5$