Problem 2640: Find the Score of All Prefixes of an Array

Problem Information

Difficulty: Medium
Acceptance Rate: 72.49%
Paid Only: No
Tags: Array, Prefix Sum

Problem Description

We define the **conversion array** `conver` of an array `arr` as follows:

* `conver[i] = arr[i] + max(arr[0..i])` where `max(arr[0..i])` is the maximum value of `arr[j]` over `0 <= j <= i`.

We also define the **score** of an array `arr` as the sum of the values of the conversion array of `arr`.

Given a **0-indexed** integer array `nums` of length `n`, return _an array_`ans` _of length_`n` _where_`ans[i]`_is the score of the prefix_ `nums[0..i]`.

Example 1:

Input: nums = [2,3,7,5,10] **Output:** [4,10,24,36,56] **Explanation:** For the prefix [2], the conversion array is [4] hence the score is 4 For the prefix [2, 3], the conversion array is [4, 6] hence the score is 10 For the prefix [2, 3, 7], the conversion array is [4, 6, 14] hence the score is 24 For the prefix [2, 3, 7, 5], the conversion array is [4, 6, 14, 12] hence the score is 36 For the prefix [2, 3, 7, 5, 10], the conversion array is [4, 6, 14, 12, 20] hence the score is 56

Example 2:

Input: nums = [1,1,2,4,8,16] **Output:** [2,4,8,16,32,64] **Explanation:** For the prefix [1], the conversion array is [2] hence the score is 2 For the prefix [1, 1], the conversion array is [2, 2] hence the score is 4 For the prefix [1, 1, 2], the conversion array is [2, 2, 4] hence the score is 8 For the prefix [1, 1, 2, 4], the conversion array is [2, 2, 4, 8] hence the score is 16 For the

prefix [1, 1, 2, 4, 8], the conversion array is [2, 2, 4, 8, 16] hence the score is 32 For the prefix [1, 1, 2, 4, 8, 16], the conversion array is [2, 2, 4, 8, 16, 32] hence the score is 64

Constraints:

* `1 <= nums.length <= 105` * `1 <= nums[i] <= 109`

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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