

Problem 2874: Maximum Value of an Ordered Triplet II

Problem Information

Difficulty: Medium

Acceptance Rate: 56.47%

Paid Only: No

Tags: Array

Problem Description

You are given a **0-indexed** integer array `nums`.

Return _ **the maximum value over all triplets of indices**_ `(i, j, k)` _such that_ `i < j < k` _._ If all such triplets have a negative value, return `0`.

The **value of a triplet of indices** `(i, j, k)` is equal to `(nums[i] - nums[j]) * nums[k]` .

Example 1:

Input: `nums = [12,6,1,2,7]` **Output:** `77` **Explanation:** The value of the triplet (0, 2, 4) is `(nums[0] - nums[2]) * nums[4] = 77`. It can be shown that there are no ordered triplets of indices with a value greater than 77.

Example 2:

Input: `nums = [1,10,3,4,19]` **Output:** `133` **Explanation:** The value of the triplet (1, 2, 4) is `(nums[1] - nums[2]) * nums[4] = 133`. It can be shown that there are no ordered triplets of indices with a value greater than 133.

Example 3:

Input: `nums = [1,2,3]` **Output:** `0` **Explanation:** The only ordered triplet of indices (0, 1, 2) has a negative value of `(nums[0] - nums[1]) * nums[2] = -3`. Hence, the answer would be 0.

****Constraints:****

* `3 <= nums.length <= 105` * `1 <= nums[i] <= 106`

Code Snippets

C++:

```
class Solution {  
public:  
    long long maximumTripletValue(vector<int>& nums) {  
  
    }  
};
```

Java:

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

Python3:

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