

Problem 2832: Maximal Range That Each Element Is Maximum in It

Problem Information

Difficulty: Medium

Acceptance Rate: 75.36%

Paid Only: Yes

Tags: Array, Stack, Monotonic Stack

Problem Description

You are given a **0-indexed** array `nums` of **distinct** integers.

Let us define a **0-indexed** array `ans` of the same length as `nums` in the following way:

`ans[i]` is the **maximum** length of a subarray `nums[l..r]`, such that the maximum element in that subarray is equal to `nums[i]`.

Return `ans`.

Note that a **subarray** is a contiguous part of the array.

Example 1:

Input: `nums = [1,5,4,3,6]` **Output:** `[1,4,2,1,5]` **Explanation:** For `nums[0]` the longest subarray in which 1 is the maximum is `nums[0..0]` so `ans[0] = 1`. For `nums[1]` the longest subarray in which 5 is the maximum is `nums[0..3]` so `ans[1] = 4`. For `nums[2]` the longest subarray in which 4 is the maximum is `nums[2..3]` so `ans[2] = 2`. For `nums[3]` the longest subarray in which 3 is the maximum is `nums[3..3]` so `ans[3] = 1`. For `nums[4]` the longest subarray in which 6 is the maximum is `nums[0..4]` so `ans[4] = 5`.

Example 2:

Input: `nums = [1,2,3,4,5]` **Output:** `[1,2,3,4,5]` **Explanation:** For `nums[i]` the longest subarray in which it's the maximum is `nums[0..i]` so `ans[i] = i + 1`.

****Constraints:****

`*`1` <= nums.length <= 105` *`1` <= nums[i] <= 105`` * All elements in ``nums`` are distinct.

Code Snippets

C++:

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

    }
};
```

Java:

```
class Solution {
    public int[] maximumLengthOfRanges(int[] nums) {

    }
}
```

Python3:

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