Problem 2454: Next Greater Element IV

Problem Information

Difficulty: Hard
Acceptance Rate: 40.96%
Paid Only: No
Tags: Array, Binary Search, Stack, Sorting, Heap (Priority Queue), Monotonic Stack

Problem Description

You are given a **0-indexed** array of non-negative integers `nums`. For each integer in `nums`, you must find its respective **second greater** integer.

The **second greater** integer of `nums[i]` is `nums[j]` such that:

* `j > i` * `nums[j] > nums[i]` * There exists **exactly one** index `k` such that `nums[k] > nums[i]` and `i < k < j`.

If there is no such `nums[j]`, the second greater integer is considered to be `-1`.

* For example, in the array `[1, 2, 4, 3]`, the second greater integer of `1` is `4`, `2` is `3`, and that of `3` and `4` is `-1`.

Return _an integer array_`answer` _, where_`answer[i]`_is the second greater integer of_`nums[i]`_._

Example 1:

Input: nums = [2,4,0,9,6] **Output:** [9,6,6,-1,-1] **Explanation:** 0th index: 4 is the first integer greater than 2, and 9 is the second integer greater than 2, to the right of 2. 1st index: 9 is the first, and 6 is the second integer greater than 4, to the right of 4. 2nd index: 9 is the first, and 6 is the second integer greater than 0, to the right of 0. 3rd index: There is no integer greater than 9 to its right, so the second greater integer is considered to be -1. 4th index: There is no integer greater than 6 to its right, so the second greater integer is considered to be -1. Thus, we return [9,6,6,-1,-1].

Example 2:

Input: nums = [3,3] **Output:** [-1,-1] **Explanation:** We return [-1,-1] since neither integer has any integer greater than it.

Constraints:

* `1 <= nums.length <= 105` * `0 <= nums[i] <= 109`

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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