

162. Find Peak Element

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A peak element is an element that is strictly greater than its neighbors.

Given a **0-indexed** integer array `nums`, find a peak element, and return its index. If the array contains multiple peaks, return the index to **any** of them. It is guaranteed that there will be at least one peak element.

You may imagine that `nums[-1] = nums[n] = -∞`. In other words, an element is always considered to be strictly greater than a neighbor that has never been defined.

You must write an algorithm that runs in $O(\log n)$ time.

Example 1:

Input: `nums = [1,2,3,1]`
Output: `2`
Explanation: 3 is a peak element and your function should return the index number 2.

Example 2:

Input: `nums = [1,2,1,3,5,6,4]`
Output: `5`
Explanation: Your function can return either index number 1 where the peak element is 2, or index number 5 where the peak element is 6.

Constraints:

- `1 <= nums.length <= 1000`
- `-231 <= nums[i] <= 231 - 1`
- `nums[i] != nums[i + 1]` for all valid `i`.

Seen this question in a real interview before? 1/4

☒ Yes ☐ No

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