

162. Find Peak Element

Description

Hints

Submissions

Discuss

Solution

Pick One

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

Given an input array `nums`, where `nums[i] ≠ nums[i+1]`, find a peak element and return its index.

The array may contain multiple peaks, in that case return the index to any one of the peaks is fine.

You may imagine that `nums[-1] = nums[n] = -∞`.

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: 1 or 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.

```
public class L162 {  
  
    /*  
     * 这道题目是求数组的一个峰值，这个峰值可以是局部的最大值，不能遍历整个数组，  
     * 考虑用二分查找法来缩短时间，由于只需要找到一个峰值，那么在确定二分查找  
     * 折半后中间那个元素后，和紧跟的那个元素比较下大小，如果大于，则说明峰值  
     * 在前面，如果小于，则峰值在后面，这样就可以找到一个峰值。  
     */  
    public int findPeakElement(int[] nums) {  
        int left = 0;  
        int right = nums.length - 1;  
        while (left < right) {  
            int mid = left + (right - left) / 2;  
            if (nums[mid] < nums[mid + 1]) {  
                left = mid + 1;  
            } else {  
                right = mid;  
            }  
        }  
        return right;  
    }  
}
```