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852. Peak Index in a Mountain Array

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Let's call an array `A` a *mountain* if the following properties hold:

- `A.length >= 3`
- There exists some `0 < i < A.length - 1` such that `A[0] < A[1] < ... A[i-1] < A[i] > A[i+1] > ... > A[A.length - 1]`

Given an array that is definitely a mountain, return any `i` such that `A[0] < A[1] < ... A[i-1] < A[i] > A[i+1] > ... > A[A.length - 1]`.

Example 1:

```
Input: [0,1,0]
Output: 1
```

Example 2:

```
Input: [0,2,1,0]
Output: 1
```

Note:

1. `3 <= A.length <= 10000`
2. `0 <= A[i] <= 10^6`
3. A is a mountain, as defined above.

Seen this question in a real interview before? Yes No   ⊗

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| Java   ▾ | ⟨⟩ ⟳ >_ ⚙ |

```java
class Solution {
    public int peakIndexInMountainArray(int[] A) {
        int start = 1, end = A.length - 2;
        while (start <= end) {
            int mid = (start + end) >>> 1;
            if (A[mid] > A[mid - 1]) {
                if (A[mid] > A[mid + 1]) {
                    return mid;
                } else {
                    start = mid + 1;
                }
            } else {
                end = mid - 1;
            }
        }
        throw new RuntimeException("no way..");
    }
}
```

☑ **Custom Testcase** (**Contribute** ❶)

[0,1,3,5,2,1]

❓ How to create a testcase ▾

☐ Notes

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Check out our solution!   Reveal Solution ❯ (/articles/peak-index-in-a-mountain-array/)