Problem 852: Peak Index in a Mountain Array

Problem Information

Difficulty: Medium
Acceptance Rate: 67.12%
Paid Only: No
Tags: Array, Binary Search

Problem Description

You are given an integer **mountain** array `arr` of length `n` where the values increase to a **peak element** and then decrease.

Return the index of the peak element.

Your task is to solve it in `O(log(n))` time complexity.

Example 1:

Input: arr = [0,1,0]

Output: 1

Example 2:

Input: arr = [0,2,1,0]

Output: 1

Example 3:

Input: arr = [0,10,5,2]

Output: 1

Constraints:

* `3 <= arr.length <= 105` * `0 <= arr[i] <= 106` * `arr` is **guaranteed** to be a mountain array.

Code Snippets

C++:

```
class Solution {
public:
int peakIndexInMountainArray(vector<int>& arr) {

}
};
```

Java:

```
class Solution {
public int peakIndexInMountainArray(int[] arr) {

}
}
```

Python3:

```
class Solution:
def peakIndexInMountainArray(self, arr: List[int]) -> int:
```