1060. Missing Element in Sorted Array Premium

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Given an integer array `nums` which is sorted in **ascending order** and all of its elements are **unique** and given also an integer `k`, return the `k^th` missing number starting from the leftmost number of the array.

Example 1:

```
Input: nums = [4,7,9,10], k = 1
Output: 5
Explanation: The first missing number is 5.
```

Example 2:

```
Input: nums = [4,7,9,10], k = 3
Output: 8
Explanation: The missing numbers are [5,6,8,...], hence the third missing number is 8.
```

Example 3:

```
Input: nums = [1,2,4], k = 3
Output: 6
Explanation: The missing numbers are [3,5,6,7,...], hence the third missing number is 6.
```

Constraints:

- `1 <= nums.length <= 5 * 10^4`
- `1 <= nums[i] <= 10^7`
- `nums` is sorted in **ascending order,** and all the elements are **unique**.
- `1 <= k <= 10^8`

Follow up: Can you find a logarithmic time complexity (i.e., `O(log(n))`) solution?

Seen this question in a real interview before? 1/5

Yes No

Accepted **144.1K** | Submissions **249.9K** | Acceptance Rate **57.6%**

Topics

Array Binary Search

Companies

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Hint 1

First define a function f(x) that counts the number of missing elements until x.

Hint 2

Then use binary search with the given function f(x) to find the kth missing element.

Discussion (7)