Problem 1064: Fixed Point

Problem Information

Difficulty: Easy
Acceptance Rate: 63.82%
Paid Only: Yes
Tags: Array, Binary Search

Problem Description

Given an array of distinct integers `arr`, where `arr` is sorted in **ascending order** , return the smallest index `i` that satisfies `arr[i] == i`. If there is no such index, return `-1`.

Example 1:

Input: arr = [-10,-5,0,3,7] **Output:** 3 **Explanation:** For the given array, arr[0] = -10, arr[1] = -5, arr[2] = 0, arr[3] = 3, thus the output is 3.

Example 2:

Input: arr = [0,2,5,8,17] **Output:** 0 **Explanation:** arr[0] = 0, thus the output is 0.

Example 3:

Input: arr = [-10,-5,3,4,7,9] **Output:** -1 **Explanation:** There is no such i that arr[i] == i, thus the output is -1.

Constraints:

* `1 <= arr.length < 104` * `-109 <= arr[i] <= 109`

Follow up: The `O(n)` solution is very straightforward. Can we do better?

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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