

## 702. Search in a Sorted Array of Unknown Size

Medium 807 41 Add to List Share

This is an **interactive problem**.

You have a sorted array of **unique** elements and an **unknown size**. You do not have an access to the array but you can use the `ArrayReader` interface to access it. You can call `ArrayReader.get(i)` that:

- returns the value at the  $i^{\text{th}}$  index (**0-indexed**) of the secret array (i.e., `secret[i]`), or
- returns  $2^{31} - 1$  if the  $i$  is out of the boundary of the array.

You are also given an integer `target`.

Return the index  $k$  of the hidden array where `secret[k] == target` or return `-1` otherwise.

You must write an algorithm with  $O(\log n)$  runtime complexity.

### Example 1:

**Input:** `secret = [-1,0,3,5,9,12]`, `target = 9`

**Output:** 4

**Explanation:** 9 exists in `secret` and its index is 4.

### Example 2:

**Input:** `secret = [-1,0,3,5,9,12]`, `target = 2`

**Output:** -1

**Explanation:** 2 does not exist in `secret` so return -1.

### Constraints:

- $1 \leq \text{secret.length} \leq 10^4$
- $-10^4 \leq \text{secret}[i], \text{target} \leq 10^4$
- `secret` is sorted in a strictly increasing order.

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