

Given an array of integers `nums` which is sorted in ascending order, and an integer `target` , write a function to search `target` in `nums` . If `target` exists, then return its index. Otherwise, return `-1` .

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

#### Example 1:

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

**Output:** `4`

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

#### Example 2:

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

**Output:** `-1`

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

#### Constraints:

- $1 \leq \text{nums.length} \leq 10^4$
- $-10^4 < \text{nums}[i], \text{target} < 10^4$
- All the integers in `nums` are **unique**.
- `nums` is sorted in ascending order.