

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.