## 300. Longest Increasing Subsequence

## **Difficulty: Medium**

https://leetcode.com/problems/longest-increasing-subsequence

Given an integer array nums, return the length of the longest strictly increasing subsequence.

## Example 1:

```
Input: nums = [10,9,2,5,3,7,101,18]
Output: 4
Explanation: The longest increasing subsequence is [2,3,7,101], therefore the length is 4.

Example 2:
Input: nums = [0,1,0,3,2,3]
Output: 4

Example 3:
Input: nums = [7,7,7,7,7,7,7]
Output: 1
```

## **Constraints:**

• 1 <= nums.length <= 2500 • -10<sup>4</sup> <= nums[i] <= 10<sup>4</sup>

**Follow up:** Can you come up with an algorithm that runs in O(n log(n)) time complexity?