

Target Position Finder in Sorted List

Challenge: You are given a sorted list of unique integers in ascending order. Your task is to find the specific position of a target number within this list. If the target number exists in the list, return its position. If it does not exist, return the position where it would need to be inserted to maintain the ascending order of the list.

Requirement: Implement an algorithm with a time complexity of $O(\log n)$.

Examples:

Example 1:

Input: `nums = [1, 3, 5, 6]`, `target = 5`

Output: 2

Example 2:

Input: `nums = [1, 3, 5, 6]`, `target = 2`

Output: 1

Example 3:

Input: `nums = [1, 3, 5, 6]`, `target = 7`

Output: 4

Constraints:

$$1 \leq \text{nums.length} \leq 10^4$$

$$-10^4 \leq \text{nums}[i] \leq 10^4$$

All values in `nums` are unique and sorted in ascending order.

$$-10^4 \leq \text{target} \leq 10^4$$