

Module 1 Challenge

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2023-02-22

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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`.

Requirement: Solve this by using binary search.

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 <= nums.length <= 104\n-104 < nums[i], target < 104
```

All the integers in `nums` are unique.
`nums` is sorted in ascending order.

You are given an array of strings `names`, and an array `heights` that consists of distinct positive integers. Both arrays are of length `n`.

For each index `i`, `names[i]` and `heights[i]` denote the name and height of the `i`th person.

Return `names` sorted in descending order by the people's heights.

Example 1:

Input: `names = ["Mary", "John", "Emma"]`, `heights = [180, 165, 170]`

Output: `["Mary", "Emma", "John"]`

Explanation: Mary is the tallest, followed by Emma and John.

Example 2:

Input: `names = ["Alice", "Bob", "Bob"]`, `heights = [155, 185, 150]`

Output: `["Bob", "Alice", "Bob"]`

Explanation: The first Bob is the tallest, followed by Alice and the second Bob.

Constraints:

```
n == names.length == heights.length
1 <= n <= 103
1 <= names[i].length <= 20
1 <= heights[i] <= 105
```