

747 Largest Number At Least Twice of Others

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In a given integer array `nums`, there is always exactly one largest element.

Find whether the largest element in the array is at least twice as much as every other number in the array.

If it is, return the **index** of the largest element, otherwise return `-1`.

Example 1:

Input: `nums = [3, 6, 1, 0]`

Output: `1`

Explanation: 6 is the largest integer, and for every other number in the array `x`, 6 is more than twice as big as `x`. The index of value 6 is 1, so we return 1.

Example 2:

Input: `nums = [1, 2, 3, 4]`

Output: `-1`

Explanation: 4 isn't at least as big as twice the value of 3, so we return `-1`.

Note:

1. `nums` will have a length in the range `[1, 50]`.
2. Every `nums[i]` will be an integer in the range `[0, 99]`.

来自 <<https://leetcode.com/problems/largest-number-at-least-twice-of-others/description/>>

在一个给定的数组`nums`中，总是存在一个最大元素。

查找数组中的最大元素是否至少是数组中每个其他数字的两倍。

如果是，则返回最大元素的索引，否则返回`-1`。

提示:

1. `nums` 的长度范围在`[1, 50]`.
2. 每个 `nums[i]` 的整数范围在 `[0, 99]`.

Solution for Python3:

```
1 class Solution:
2     def dominantIndex(self, nums):
3         """
4         :type nums: List[int]
5         :rtype: int
6         """
```

```

7         m1, m2, index = 0, 0, 0
8         for i in range(len(nums)):
9             if nums[i] > m1:
10                 m1, m2, index = nums[i], m1, i
11             elif nums[i] > m2:
12                 m2 = nums[i]
13         if m2 and m1 // m2 < 2:
14             return -1
15         return index

```

Solution for C++:

```

1  class Solution {
2  public:
3      int dominantIndex(vector<int>& nums) {
4          int m1 = 0, m2 = 0, index = 0;
5          for (int i = 0; i < nums.size(); i++) {
6              if (nums[i] > m1) {
7                  m2 = m1;
8                  m1 = nums[i];
9                  index = i;
10             } else if (nums[i] > m2) {
11                 m2 = nums[i];
12             }
13         }
14         if (m2 && (m1 / m2) < 2)
15             return -1;
16         return index;
17     }
18 };

```