

283. Move Zeroes

⌵ Difficulty	easy
☑	✓
📅 Finished	@July 7, 2023
⋮ Problem	array
⋮ Previously asked company	Goldman SachsSalesforceWalmart
⌵ website	leetcode

Question:

Given an integer array `nums`, move all `0`'s to the end of it while maintaining the relative order of the non-zero elements.

Note that you must do this in-place without making a copy of the array.

Example 1:

Input: `nums = [0,1,0,3,12]`
Output: `[1,3,12,0,0]`

Example 2:

Input: `nums = [0]`
Output: `[0]`

My solution:

Time complexity: $O(n \log n)$

Space complexity: $O(1)$

```
class Solution(object):
    def moveZeroes(self, nums):
        l, r = 0, 1
        n = len(nums)
        while r < n:
            if nums[l] == 0:
                for i in range(l+1,n):
                    if nums[i] != 0:
                        r = i
                        break
                nums[l], nums[r] = nums[r], nums[l]
                l += 1
                r += 1
            else:
                l += 1
                r += 1
```

Optimal solution:

Time complexity: $O(n)$

Space complexity: $O(1)$

```
class Solution(object):
    def moveZeroes(self, nums):
        l = 0
        for r in range(len(nums)):
            if nums[r]:
                nums[l], nums[r] = nums[r], nums[l]
                l += 1
```