

# Problem 283: Move Zeroes

## Problem Information

**Difficulty:** [Easy](#)

**Acceptance Rate:** 0.00%

**Paid Only:** No

## Problem Description

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]

Constraints:

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

4

-2

31

$\leq \text{nums}[i] \leq 2$

31

-1

Follow up:

Could you minimize the total number of operations done?

## Code Snippets

C++:

```
class Solution {
public:
    void moveZeroes(vector<int>& nums) {
        }
};
```

**Java:**

```
class Solution {  
    public void moveZeroes(int[] nums) {  
  
    }  
}
```

**Python3:**

```
class Solution:  
    def moveZeroes(self, nums: List[int]) -> None:  
        """  
        Do not return anything, modify nums in-place instead.  
        """
```

**Python:**

```
class Solution(object):  
    def moveZeroes(self, nums):  
        """  
        :type nums: List[int]  
        :rtype: None Do not return anything, modify nums in-place instead.  
        """
```

**JavaScript:**

```
/**  
 * @param {number[]} nums  
 * @return {void} Do not return anything, modify nums in-place instead.  
 */  
var moveZeroes = function(nums) {  
  
};
```

**TypeScript:**

```
/**  
 * Do not return anything, modify nums in-place instead.  
 */  
function moveZeroes(nums: number[]): void {  
  
};
```

**C#:**

```
public class Solution {  
    public void MoveZeroes(int[] nums) {  
  
    }  
}
```

**C:**

```
void moveZeroes(int* nums, int numsSize) {  
  
}
```

**Go:**

```
func moveZeroes(nums []int) {  
  
}
```

**Kotlin:**

```
class Solution {  
    fun moveZeroes(nums: IntArray): Unit {  
  
    }  
}
```

**Swift:**

```
class Solution {  
    func moveZeroes(_ nums: inout [Int]) {  
  
    }  
}
```

**Rust:**

```
impl Solution {  
    pub fn move_zeroes(nums: &mut Vec<i32>) {  
  
    }  
}
```

### Ruby:

```
# @param {Integer[]} nums
# @return {Void} Do not return anything, modify nums in-place instead.
def move_zeroes(nums)

end
```

### PHP:

```
class Solution {

    /**
     * @param Integer[] $nums
     * @return NULL
     */
    function moveZeroes(&$nums) {

    }
}
```

### Dart:

```
class Solution {
void moveZeroes(List<int> nums) {

}
```

### Scala:

```
object Solution {
def moveZeroes(nums: Array[Int]): Unit = {

}
```

## Solutions

### C++ Solution:

```

/*
 * Problem: Move Zeroes
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

class Solution {
public:
void moveZeroes(vector<int>& nums) {

}
};

```

### Java Solution:

```

/**
 * Problem: Move Zeroes
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

class Solution {
public void moveZeroes(int[] nums) {

}
}

```

### Python3 Solution:

```

"""
Problem: Move Zeroes
Difficulty: Easy
Tags: array

```

```

Approach: Use two pointers or sliding window technique
Time Complexity: O(n) or O(n log n)
Space Complexity: O(1) to O(n) depending on approach
"""

class Solution:

def moveZeroes(self, nums: List[int]) -> None:
# TODO: Implement optimized solution
pass

```

### Python Solution:

```

class Solution(object):
def moveZeroes(self, nums):
"""
:type nums: List[int]
:rtype: None Do not return anything, modify nums in-place instead.
"""

```

### JavaScript Solution:

```

/**
 * Problem: Move Zeroes
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

/**
 * @param {number[]} nums
 * @return {void} Do not return anything, modify nums in-place instead.
 */
var moveZeroes = function(nums) {

};

```

### TypeScript Solution:

```

/**
 * Problem: Move Zeroes
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

/**
Do not return anything, modify nums in-place instead.
*/
function moveZeroes(nums: number[]): void {

};

```

### C# Solution:

```

/*
 * Problem: Move Zeroes
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

public class Solution {
public void MoveZeroes(int[] nums) {

}
}

```

### C Solution:

```

/*
 * Problem: Move Zeroes
 * Difficulty: Easy
 * Tags: array
 *

```

```

* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/
void moveZeroes(int* nums, int numsSize) {
}

```

### Go Solution:

```

// Problem: Move Zeroes
// Difficulty: Easy
// Tags: array
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(1) to O(n) depending on approach

func moveZeroes(nums []int) {
}

```

### Kotlin Solution:

```

class Solution {
    fun moveZeroes(nums: IntArray): Unit {
    }
}

```

### Swift Solution:

```

class Solution {
    func moveZeroes(_ nums: inout [Int]) {
    }
}

```

### Rust Solution:

```

// Problem: Move Zeroes
// Difficulty: Easy
// Tags: array
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(1) to O(n) depending on approach

impl Solution {
    pub fn move_zeroes(nums: &mut Vec<i32>) {
        }

    }
}

```

### Ruby Solution:

```

# @param {Integer[]} nums
# @return {Void} Do not return anything, modify nums in-place instead.
def move_zeroes(nums)

end

```

### PHP Solution:

```

class Solution {

    /**
     * @param Integer[] $nums
     * @return NULL
     */
    function moveZeroes(&$nums) {
        }

    }
}

```

### Dart Solution:

```

class Solution {
    void moveZeroes(List<int> nums) {
        }

    }
}

```

**Scala Solution:**

```
object Solution {  
    def moveZeroes(nums: Array[Int]): Unit = {  
        }  
        }  
}
```