

# Problem 189: Rotate Array

## Problem Information

**Difficulty:** Medium

**Acceptance Rate:** 43.97%

**Paid Only:** No

**Tags:** Array, Math, Two Pointers

## Problem Description

Given an integer array `nums`, rotate the array to the right by `k` steps, where `k` is non-negative.

**Example 1:**

**Input:** `nums = [1,2,3,4,5,6,7]`, `k = 3` **Output:** `[5,6,7,1,2,3,4]` **Explanation:** rotate 1 steps to the right: `[7,1,2,3,4,5,6]` rotate 2 steps to the right: `[6,7,1,2,3,4,5]` rotate 3 steps to the right: `[5,6,7,1,2,3,4]`

**Example 2:**

**Input:** `nums = [-1,-100,3,99]`, `k = 2` **Output:** `[3,99,-1,-100]` **Explanation:** rotate 1 steps to the right: `[99,-1,-100,3]` rotate 2 steps to the right: `[3,99,-1,-100]`

**Constraints:**

`1 <= nums.length <= 105` `-231 <= nums[i] <= 231 - 1` `0 <= k <= 105`

**Follow up:**

\* Try to come up with as many solutions as you can. There are at least **three** different ways to solve this problem. \* Could you do it in-place with `O(1)` extra space?

## Code Snippets

**C++:**

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

**Java:**

```
class Solution {  
    public void rotate(int[] nums, int k) {  
  
    }  
}
```

**Python3:**

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