Problem 3: Given an array of **N integers**, write a program to return an element that occurs more than **N/2** times in the given array. You may consider that such an element always exists in the array.

```python
def majority_element(nums):
    candidate = None
    count = 0
    for num in nums:
        if count == 0:
            candidate = num
            count = 1
        elif num == candidate:
            count += 1
        else:
            count -= 1

    count = 0
    for num in nums:
        if num == candidate:
            count += 1



    if count > len(nums) // 2:
        return candidate



nums1 = [3, 2, 3]
print(majority_element(nums1))


nums2 = [2, 2, 1, 1, 1, 2, 2]
print(majority_element(nums2))


nums3 = [4, 4, 2, 4, 3, 4, 4, 3, 2, 4]
print(majority_element(nums3))
```
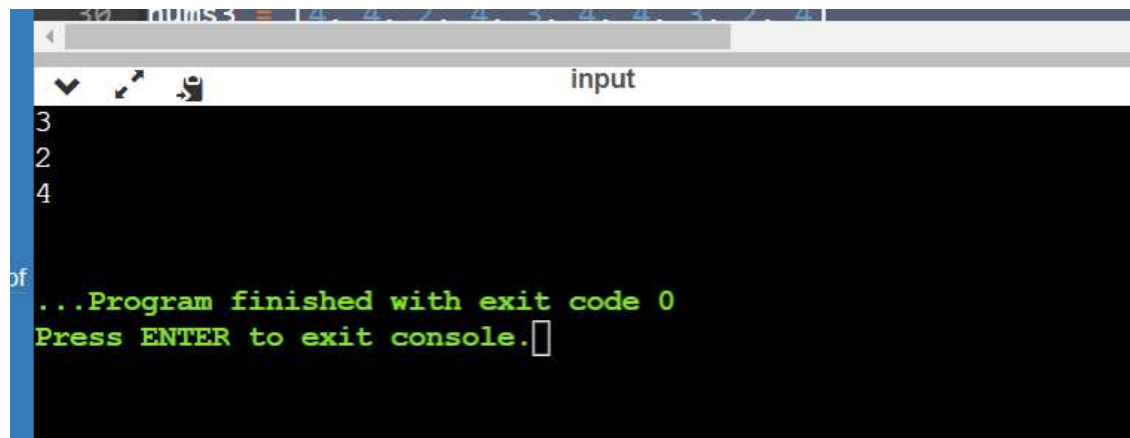
```
3
2
4


...Program finished with exit code 0
Press ENTER to exit console.
```