Remove Duplicates from Sorted Array Solution

Given an integer array `nums` sorted in **non-decreasing order**, remove the duplicates **in-place** such that each unique element appears only **once**. The **relative order** of the elements should be kept the **same**. Then return *the number of unique elements in* `nums`.

Consider the number of unique elements of `nums` to be `k`, to get accepted, you need to do the following things:

- Change the array `nums` such that the first `k` elements of `nums` contain the unique elements in the order they were present in `nums` initially. The remaining elements of `nums` are not important as well as the size of `nums`.
- Return `k`.

Custom Judge:

The judge will test your solution with the following code:

```
int[] nums = [...]; // Input array

int[] expectedNums = [...]; // The expected answer with correct length



int k = removeDuplicates(nums); // Calls your implementation



assert k == expectedNums.length;

for (int i = 0; i < k; i++) {

    assert nums[i] == expectedNums[i];

}
```

If all assertions pass, then your solution will be **accepted**.

Example 1:

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

Output: 2, nums = [1,2,_]

Explanation: Your function should return k = 2, with the first two elements
of nums being 1 and 2 respectively.

It does not matter what you leave beyond the returned k (hence they are unde
rscores).
```

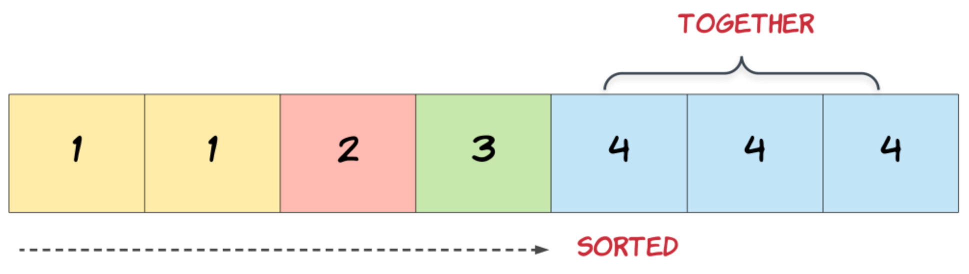
Example 2:

```
Input: nums = [0,0,1,1,1,2,2,3,3,4]

Output: 5, nums = [0,1,2,3,4,_,_,_,_,_]

Explanation: Your function should return k = 5, with the first five elements
of nums being 0, 1, 2, 3, and 4 respectively.

It does not matter what you leave beyond the returned k (hence they are unde
rscores).
```

Constraints:

- `1 <= nums.length <= 3 * 10`^{4}
- `-100 <= nums[i] <= 100`
- `nums` is sorted in **non-decreasing** order.

Show Hint #1



Show Hint #2

Show Hint #3

C#

```
public class Solution {
    public            int RemoveDuplicates(int[] nums)
 {
        if (nums.Length == 0) return 0;

        int i = 0;
        for (int j = 1; j < nums.Length; j++) {
            if (nums[j] != nums[i]) {
                i++;
                nums[i] = nums[j];
            }
        }
        return i + 1;
    }
}
```