

## 80. Remove Duplicates from Sorted Array II

Medium

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Given an integer array `nums` sorted in **non-decreasing order**, remove some duplicates **in-place** such that each unique element appears **at most twice**. The **relative order** of the elements should be kept the **same**.

Since it is impossible to change the length of the array in some languages, you must instead have the result be placed in the **first part** of the array `nums`. More formally, if there are `k` elements after removing the duplicates, then the first `k` elements of `nums` should hold the final result. It does not matter what you leave beyond the first `k` elements.

Return `k` *after placing the final result in the first `k` slots of `nums`*.

Do **not** allocate extra space for another array. You must do this by **modifying the input array in-place** with  $O(1)$  extra memory.

### Example 1:

**Input:** `nums = [1,1,1,2,2,3]`

**Output:** `5, nums = [1,1,2,2,3,_]`

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

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

### Example 2:

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

**Output:** `7, nums = [0,0,1,1,2,3,3,_,_]`

**Explanation:** Your function should return `k = 7`, with the first seven elements of `nums` being 0, 0, 1, 1, 2, 3 and 3 respectively.

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

### Constraints:

- `1 <= nums.length <= 3 * 104`
- `-104 <= nums[i] <= 104`
- `nums` is sorted in **non-decreasing** order.

```
int removeDuplicates(vector<int>& nums) {  
    int n = nums.size(), i=0, count = 0, m = n;  
  
    while(i<n-2) {  
        if((nums[i] == nums[i+1]) && (nums[i+1] == nums[i+2])) {  
            int k = i+2, j = n-k-1;  
            while(j>0) {  
                nums[k] = nums[k+1];  
                j--;  
                k++;  
            }  
            count++;  
            n--;  
        } else {  
            i++;  
        }  
    }  
    return m-count;  
}
```

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