

Leetcode Problem 2. (Easy)

Remove Element

Given an integer array `nums` and an integer `val`, remove all occurrences of `val` in `nums` **in-place**. The order of the elements may be changed. Then return *the number of elements in `nums` which are not equal to `val`*.

Consider the number of elements in `nums` which are not equal to `val` 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 elements which are not equal to `val`. 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 val = ...; // Value to remove
int[] expectedNums = [...]; // The expected answer with correct length.
// It is sorted with no values equaling val.

int k = removeElement(nums, val); // Calls your implementation

assert k == expectedNums.length;
sort(nums, 0, k); // Sort the first k elements of nums
for (int i = 0; i < actualLength; i++) {
    assert nums[i] == expectedNums[i];
}
```

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

Example 1:

Input: `nums = [3,2,2,3]`, `val = 3`

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

Explanation: Your function should return `k = 2`, with the first two elements of `nums` being 2. It does not matter what you leave beyond the returned `k` (hence they are underscores).

Example 2:

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

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

Explanation: Your function should return `k = 5`, with the first five elements of `nums` containing 0, 0, 1, 3, and 4. Note that the five elements can be returned in any order. It does not matter what you leave beyond the returned `k` (hence they are underscores).

Constraints:

- $0 \leq \text{nums.length} \leq 100$
- $0 \leq \text{nums}[i] \leq 50$
- $0 \leq \text{val} \leq 100$

Link: <https://leetcode.com/problems/remove-element/>

```
class Solution {
    public int removeElement(int[] nums, int val)
    {
        int k = 0;
        for (int i = 0; i < nums.length; i++)
        {
            if (nums[i] != val) {
                nums[k++] = nums[i];
            }
        }
        return k;
    }
}
```

The screenshot shows the LeetCode interface for the 'Remove Element' problem. The left sidebar contains navigation links: Description, Editorial, Solutions (10.1K), and Submissions. The main content area shows the problem status as 'Accepted' with a green checkmark. Below this, there are suggestions for 'Next question' (28. Find the Index of the First Occurrence in a String) and 'More challenges' (203. Remove Linked List Elements, 283. Move Zeroes). The right sidebar displays the user's profile (Sakib Rahman, Apr 14, 2023 21:38), a performance chart showing 'Beats 100%' and 'Memory 41.1 MB', and a 'Details' button. The 'Notes' section is empty. The 'Related Tags' section shows 'Select tags' with a count of 0/5. The 'Console' section at the bottom shows the submitted code, which is identical to the code block in the previous image. The 'Run' and 'Submit' buttons are visible at the bottom right.