# 15. 練習

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# 一些練習用的資源

LeetCode - 面試練習用、語言支援多、題目較簡單(非競程)

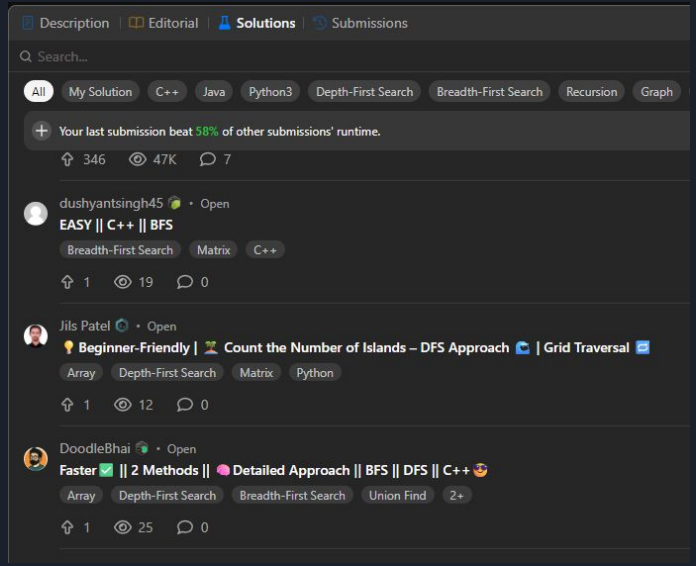
CSES - 競程練習、題目對新手友善

Codeforces - 競賽網站、題目較有挑戰性

Codechef - 教學與競賽網站、提供學習資源

# LeetCode

- 面試導向題目
- 技巧以外也有應用導向(如: 資料庫, Shell, JavaScript等)
- 多語言支援
- 持續更新，有大量題目
- 官方及用戶分享解答
- 有提示及標籤協助
- 使用網頁編輯，不需要編輯器或上傳檔案
- 答案型態為class中的函式(C++)

# LeetCode 26

## Remove Duplicates from Sorted Array

這題要我們把nums(由小到大排續)中，重複的項目移除，且需用in-place(直接修改nums本身)方式解答

若nums移除重複之後共有k項，回傳k並將此k項移到nums的前方(第k項後的值不會被檢查)

**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 underscores).

# 參考解答

C++ Auto

```cpp
class Solution {
public:
    int removeDuplicates(vector<int>& nums) {
        int p = 1;

        for (int i = 1; i < nums.size(); i++) {
            if (nums[i] > nums[i - 1]) {
                nums[p] = nums[i];
                p++;
            }
        }

        return p;
    }
};
```

# LeetCode 27
## Remove Element

這題要我們把nums中，與val相同的項目移除，且需用in-place方式解答

若nums移除與val相等的值之後共有k項，回傳k並將此k項移到nums的前方
(第k項後的值不會被檢查)

**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).

# 參考解答

C++ Auto

```cpp
class Solution {
public:
    int removeElement(vector<int>& nums, int val) {
        int p = 0;

        for (int i = 0; i < nums.size(); i++) {
            if (nums[i] != val) {
                nums[p] = nums[i];
                p++;
            }
        }

        return p;
    }
};
```

# LeetCode 58
## Length of Last Word

給予字串s, 回傳最後一個詞(同英文邏輯)的長度

s僅含英文字母及空白
s中至少有一個詞

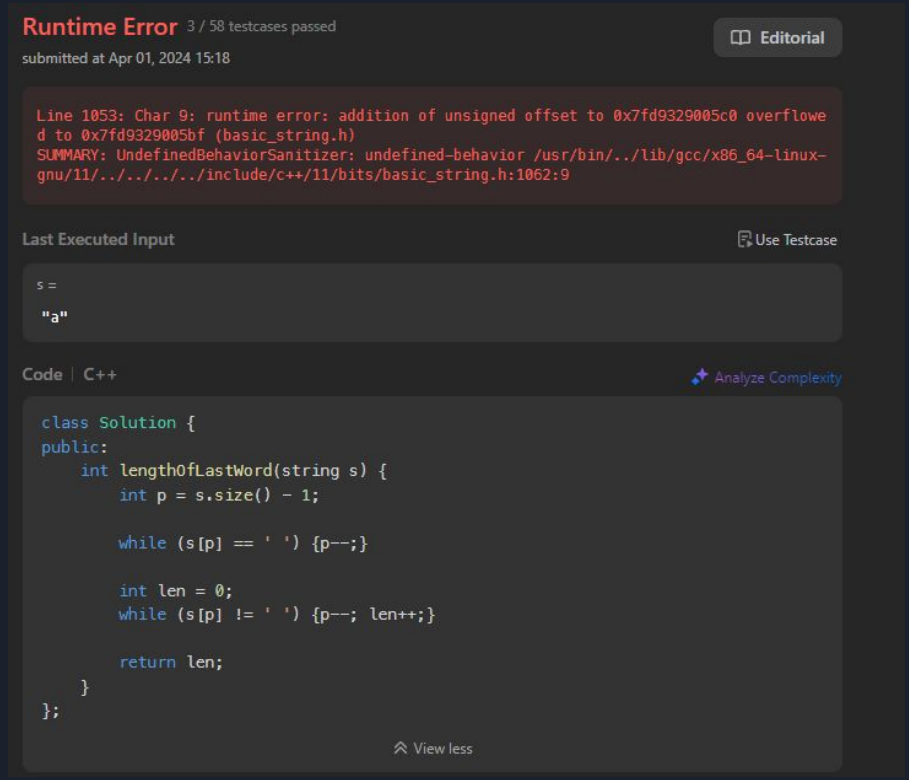
**Example 2:**

> **Input:** s = "   fly me   to   the moon  "
> **Output:** 4
> **Explanation:** The last word is "moon" with length 4.

# 注意例子沒有講的盲點
(有時候會被扣分)

常出錯的地方: 如果詞只有一個,
那個詞的前面不一定有空白

使用while迴圈要特別注意終止條件
(index是否小於0或等於長度)



# 參考解答

C++ Auto

```cpp
class Solution {
public:
    int lengthOfLastWord(string s) {
        int i = s.size() - 1, count = 0;
        while (s[i] == ' ') {
            i--;
        }

        while (i >= 0 && s[i] != ' ') {
            count++;
            i--;
        }

        return count;
    }
};
```