



# 15. 練習

2024資訊研究社語法班  
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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++)

✓ C++	PHP	Racket
Java	Swift	Erlang
Python	Kotlin	Elixir
Python3	Dart	
C	Go	
C#	Ruby	
JavaScript	Scala	
TypeScript	Rust	

Description | Editorial | **Solutions** | Submissions

Q Search...

All | My Solution | C++ | Java | Python3 | Depth-First Search | Breadth-First Search | Recursion | Graph

+ Your last submission beat 58% of other submissions' runtime.  
👍 346 👁 47K 💬 7

dushyantsingh45 • Open  
**EASY || C++ || BFS**  
Breadth-First Search | Matrix | C++  
👍 1 👁 19 💬 0

Jils Patel • Open  
**Beginner-Friendly | Count the Number of Islands - DFS Approach | Grid Traversal**  
Array | Depth-First Search | Matrix | Python  
👍 1 👁 12 💬 0

DoodleBhai • Open  
**Faster || 2 Methods || Detailed Approach || BFS || DFS || C++**  
Array | Depth-First Search | Breadth-First Search | Union Find | 2+  
👍 1 👁 25 💬 0



# 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

```
1  class Solution {  
2  public:  
3      int removeDuplicates(vector<int>& nums) {  
4          int p = 1;  
5  
6          for (int i = 1; i < nums.size(); i++) {  
7              if (nums[i] > nums[i - 1]) {  
8                  nums[p] = nums[i];  
9                  p++;  
10             }  
11         }  
12  
13         return p;  
14     }  
15 };
```



# 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

```
1  class Solution {  
2  public:  
3      int removeElement(vector<int>& nums, int val) {  
4          int p = 0;  
5  
6          for (int i = 0; i < nums.size(); i++) {  
7              if (nums[i] != val) {  
8                  nums[p] = nums[i];  
9                  p++;  
10             }  
11         }  
12  
13         return p;  
14     }  
15 };
```



# 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)

## Runtime Error 3 / 58 testcases passed

submitted at Apr 01, 2024 15:18

Editorial

Line 1053: Char 9: runtime error: addition of unsigned offset to 0x7fd9329005c0 overflowed to 0x7fd9329005bf (basic\_string.h)  
SUMMARY: UndefinedBehaviorSanitizer: undefined-behavior /usr/bin/../lib/gcc/x86\_64-linux-gnu/11/../../../../include/c++/11/bits/basic\_string.h:1062:9

Last Executed Input

Use Testcase

s =  
"a"

Code | C++

Analyze Complexity

```
class Solution {
public:
    int lengthOfLastWord(string s) {
        int p = s.size() - 1;

        while (s[p] == ' ') {p--;}

        int len = 0;
        while (s[p] != ' ') {p--; len++;}

        return len;
    }
};
```

View less

## 參考解答

```
C++ ▾ 🔒 Auto

1  class Solution {
2  public:
3      int lengthOfLastWord(string s) {
4          int i = s.size() - 1, count = 0;
5          while (s[i] == ' ') {
6              i--;
7          }
8
9          while (i >= 0 && s[i] != ' ') {
10             count++;
11             i--;
12         }
13
14         return count;
15     }
16 };
```