

Homework #10

(Due date: 30 November 2023)

Objective :

Learn how to use **string**, **array** and combine with **for** and **while**

loops to implement some operations.

10.1

Write a program let the user to generate an array of length 10, where each value is between -5 and 5, and find a subarray (containing at least one number and is a contiguous segment cut from the original array) such that the product of the elements in this subarray is maximized."

Hint:

```
1  #include<stdio.h>
2  #include<stdlib.h>
3  #include<time.h>
4
5  int main(){
6
7      srand(time(NULL));
8      //隨機生成一個介於0到9之間的數字
9      int randnum = rand() % 10;
10
```

Output :

```
10.1
[4 1 -2 5 5 3 -2 -4 0 -3 ]
Maximum Product Subarray is from position 1 to 7 with product 1200
The subarray is: [4 1 -2 5 5 3 -2 ]
```

10.2

Write a program let the user input a string where each character can only be 'R' or 'L', count how many balanced substring(s) can be split.

Hint: A balanced string is a string with an equal number of “L” and “R” characters.

Input:

RLRRLLLLRLLLL

Output :

```
10.2
Input a string: RLRRLL
RL
RLRRLL
LR
LRRL
RRL
RL
Maximum number of balanced substrings: 6
```

Please note:: users of visual studio add the following code to your program's beginning

```
2  #pragma warning(disable:4996)
```

繳交格式及規定：

程式重點地方請加註解,給分也會酌量參考註解。

請繳交 .c 檔即可。

c 檔的檔名一律統一,以學號為檔名壓縮成一個以學號為名的壓縮檔
上傳,

上傳請一律繳交壓縮檔。

Example:

若學號為 B123456789, 則.c/.cpp 檔名為 B123456789.c ,

而壓縮檔名為 B123456789.rar 。

繳交期限 2023.11.30 (四) 09:00 分之前,逾期一律不收,

無輸入輸出及逾期者一律以 0 分計算。

1. 點選要繳交的作業,選擇「進行作業」。

