

Homework 12

Objective :

Learning how to use *pointer* and *structure*.

Exercise :

12

Stack is a common kind of data structure. The data IO of stack is first in last out (FILO). Stack is controlled by two functions: one is push, another is pop. Please design a program that **use pointer** to implement stack. User can use instruction to control stack and output the state of stack. There are two instructions:

1. **Number 1+space+number N**: this way is for push. When detecting the first input is 1, push the number N into stack and refresh the state of stack. Ex: (1 23), (1 5), (1 45)...

2. **Number 2**: This is for pop. Pop the top element of the stack and refresh the state of stack. Ex: (2).

This program should let user **keep input until input EOF**. The program should include two functions:

1. **void mypush(int)**: input a integer N. This N should be push into stack.
2. **int mypop()**: pop the top element of the stack and return the value in the element. This function should check whether there is any element in the stack. If not, function need return a error message. You can use -1 instead.

Note: this homework can't use build-in push and pop.

Note: you don't need to check the error input.

Output:

```
Nothing in stack.
Please input the instruction:2
Error pop.
Nothing in stack.
Please input the instruction:1 3
push 3 into stack.
*      *
*   3   *
*      *
*      *
*****
Please input the instruction:1 5
push 5 into stack.
*      *
*   5   *
*      *
*      *
*****
*      *
*   3   *
*      *
*      *
*****
Please input the instruction:1 20
push 20 into stack.
*      *
*  20   *
*      *
*      *
*****
*      *
*   5   *
*      *
*      *
*****
*      *
*   3   *
*      *
*      *
*****
Please input the instruction:1 444
push 444 into stack.
*      *
* 444   *
*      *
*      *
*****
*      *
*   20  *
*      *
*      *
*****
*      *
*   5   *
*      *
*      *
*****
*      *
*   3   *
*      *
*      *
*****
Please input the instruction:1 9
push 9 into stack.
*      *
*   9   *
*      *
*      *
*****
*      *
*  444  *
*      *
*      *
*****
*      *
*   20  *
*      *
*      *
*****
*      *
*   5   *
*      *
*      *
*****
*      *
*   3   *
*      *
*      *
*****
Please input the instruction:2
pop 9 from stack.
*      *
* 444   *
*      *
*      *
*****
*      *
*   20  *
*      *
*      *
*****
*      *
*   5   *
*      *
*      *
*****
*      *
*   3   *
*      *
*      *
*****
Please input the instruction:2
pop 444 from stack.
*      *
*   20  *
*      *
*      *
*****
*      *
*   5   *
*      *
*      *
*****
*      *
*   3   *
*      *
*      *
*****
Please input the instruction:2
pop 20 from stack.
*      *
*   5   *
*      *
*      *
*****
*      *
*   3   *
*      *
*      *
*****
Please input the instruction:~Z
-----
Process exited after 105.7 seconds with return value 0
請按任意鍵繼續 . . .
```

Rule and Format :

Comment in your program will get addition point in consider.

Please hand in .c file and name your .c file with your student number.

Compress all the .c file and name with your student number.

Upload the compressed file finally.

Example:

If your student number is B073040055, the file name will be B073040055.c.

Compressed file is B073040055.rar/.zip.

Deadline is **2018.12.20** (Thur.) before class.

No input/output will get 0 point.

Please upload homework to Cyber University:

1. Go to NSYSU Cyber University <http://cu.nsysu.edu.tw/>
2. Sign in and select C program design(I)
3. Click “Assessment Center”



4. Click “Do assignment”

M063040037 您好！您正在【教室環境】中
 【請遵守智慧財產權觀念，不得非法影印，教師所提供之教材供學生本人自修學習使用，不得散播及做為商業用途】

課程學習互動區 作業評量區 課程資訊區 個人區 校園廣場

| 作業/報告 | 測驗/考試 | 問卷/投票

作業 / 報告

作業型態	比重	名稱	時間	繳交狀態	開始	開放觀摩	教師試做
個人	100%	Homework01	從 即日起 到 2017-10-12 12:00	進行作業		不公布	教師試做

5. Click "Start"

M063040037 您好！您正在【教室環境】中
 【請遵守智慧財產權觀念，不得非法影印，教師所提供之教材供學生本人自修學習使用，不得散播及做為商業用途】

課程學習互動區 作業評量區 課程資訊區 個人區 校園廣場

| 作業/報告 | 測驗/考試 | 問卷/投票

準備進行作業

您好，請詳細閱讀以下作答注意事項後開始作答。若不馬上作答，可按「下次再來」離開。

作業名稱：	Homework01
總分	0分
比重	100%
總題數	0題
作答起訖日期與時間	從 即日起 到 2017-10-12 12:00
是否可重繳	可重繳
開放觀摩	不公布
作答說明/師長叮嚀	C程式設計(一)作業繳交 請繳交.cpp檔。 .cpp檔的檔名一律統一，以學號為檔名。 Ex:B063040001.cpp

開始作答 下次再來

6. Click "選擇檔案" -> upload file .cpp -> submit

e-Learning M063040037 您好！您正在【教室環境】中
 【請遵守智慧財產權觀念，不得非法影印，教師所提供之教材供學生本人自修學習使用，不得散播及做為商業用途】

課程學習互動區 作業評量區 課程資訊區 個人區 校園廣場

1061_C程式設計(一) | 作業/報告 | 測驗/考試 | 問卷/投票

作業 / 報告

作業名稱：Homework01

作業內容

附檔繳交區 選擇檔案 B063040001.cpp 放棄此檔 每個檔案限1500M，總合不得超過1500M

更多檔案 確定繳交 不作答離開