

Homework 14

Objective :

Learning how to use *structure*, *pointer*, *linklist*.

Exercise :

14

Data management is important to statistics. There is usually a list to store. When new or delete data, it will modify the list. If it needs to search a data, it usually starts from begin and keeps looking up until finds the target data or the end of the list. Please implement a link list. It contains two instructions. You should write the two instructions in function like below:

1. *void myinsert(int num)*: input a integer *num*. Insert the *num* into the right position in list. The list should be keep in order from small to large. If the num has appeared in the list, skip the num and output message.
2. *int mydelete(int num)*: input a integer *num*. Find the *num* and delete it from list. If not found, return -1.

This homework only gets input from file *input.txt*. At the begin of file has a sequence of numbers. You need insert them into list first. Afert insertion, the list is in order from small to large. Next, the file has *insert* or *delete* instructions many times. Follow the instructions to insert or delete the number in list. Every instruction finish, you should output the current state of list. If there is deleted error, print error message is required as well. The program stop when there is no instruction.

Note: file name can write in the program directly. You don't need to write user input.

Note: how to determine the end of file is `feof()`. Success returns true.

Note: single or double link is both accept.

Note: it is no require to write header in this homework.

Input.txt:

```
檔案(F) 編輯(E) 格式(O) 檢視(V) 說明(H)
8
5 3 9 12 7 1 -5 9
insert 20
delete 3
delete 0
insert 15
delete 0
insert 9
delete 5
insert 33
delete 6
delete 10
insert 14
delete 7
delete 9
insert 1
insert 2
insert 3
delete 3
delete 20
insert -4
insert 12
```

Output:

```
Insert the original numbers.
number 9 is in list already.
list: -5 1 3 5 7 9 12
-----
Insert 20.
list: -5 1 3 5 7 9 12 20
-----
Delete 3.
list: -5 1 5 7 9 12 20
-----
Delete 0.
number 0 is not in list.
list: -5 1 5 7 9 12 20
-----
Insert 15.
list: -5 1 5 7 9 12 15 20
-----
Delete 0.
number 0 is not in list.
list: -5 1 5 7 9 12 15 20
-----
Insert 9.
number 9 is in list already.
list: -5 1 5 7 9 12 15 20
-----
Delete 5.
list: -5 1 7 9 12 15 20
-----
Insert 33.
list: -5 1 7 9 12 15 20 33
-----
Delete 6.
number 6 is not in list.
list: -5 1 7 9 12 15 20 33
-----
Delete 10.
number 10 is not in list.
list: -5 1 7 9 12 15 20 33
-----
Insert 14.
list: -5 1 7 9 12 14 15 20 33
-----
```

```
-----
Delete 7.
list: -5 1 9 12 14 15 20 33
-----
Delete 9.
list: -5 1 12 14 15 20 33
-----
Insert 1.
number 1 is in list already.
list: -5 1 12 14 15 20 33
-----
Insert 2.
list: -5 1 2 12 14 15 20 33
-----
Insert 3.
list: -5 1 2 3 12 14 15 20 33
-----
Delete 3.
list: -5 1 2 12 14 15 20 33
-----
Delete 20.
list: -5 1 2 12 14 15 33
-----
Insert -4.
list: -5 -4 1 2 12 14 15 33
-----
Insert 12.
number 12 is in list already.
list: -5 -4 1 2 12 14 15 33
-----
Insert -6.
list: -6 -5 -4 1 2 12 14 15 33
-----
Insert 14.
number 14 is in list already.
list: -6 -5 -4 1 2 12 14 15 33
-----
Delete 1.
list: -6 -5 -4 2 12 14 15 33
-----
```

```
-----
Insert 16.
list: -6 -5 -4 2 12 14 15 16 33
-----
Insert 19.
list: -6 -5 -4 2 12 14 15 16 19 33
-----
Insert -10.
list: -10 -6 -5 -4 2 12 14 15 16 19 33
-----
Delete 5.
number 5 is not in list.
list: -10 -6 -5 -4 2 12 14 15 16 19 33
-----
Insert -9.
list: -10 -9 -6 -5 -4 2 12 14 15 16 19 33
-----
Insert 7.
list: -10 -9 -6 -5 -4 2 7 12 14 15 16 19 33
-----
Insert 16.
number 16 is in list already.
list: -10 -9 -6 -5 -4 2 7 12 14 15 16 19 33
-----
Insert 19.
number 19 is in list already.
list: -10 -9 -6 -5 -4 2 7 12 14 15 16 19 33
-----
Finish total input.
```

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 **2019.01.03** (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"

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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

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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