Program 5-1

Binary Search Tree – Deletion

第五章的程式作業一是要寫二元搜尋樹的刪除結點功能。
按照 Input 順序建立起二元搜尋樹,接著根據刪除的資訊對二元搜尋樹做刪除,最後用 Level Order 的方式印出整棵樹('X'代表空結點,只需要印到最後一個非空結點即可)。

注意 : D 代表 Deletion、E 代表 Enf of input,刪除的 node 可能不只一個,最後只需要印出最終結果即可, 不用印出過程。每筆 Input 將會由一個 Blank 或是 Enter 隔開。

The first program of Chapter 5 is to realize a Binary search tree delete function.
Use the fallowing input to construct a BST, and the information of the nodes that should be deleted to realize the program.
The output should be printed in Level Order.
('X' is for a NULL node, and you should only print till the last non-NULL node.)

note : D stands for "Deletion"、E stands for "End of input"
The nodes to delete can be more than one, just print the final answer will be fine. All the inputs will be separated by a "Blank" or an "Enter".

Sample Input:
1 3 5 7 2 4
D
5 7
E
Sample output:
1,X,3,X,X,2,4

Program 5-2

Equivalence class

程式作業二是要實現 4-6 所提到的等價類應用(用樹的結構來實作)。
輸入將會先有輸入數的集合,接下來就是等價類的運算式輸入。
Output 請將同一個樹的數用刮號刮起來,同個樹內的同樣 level 再用刮號刮起來。(建樹的時候以數字小的為 Root)
注意: S 代表 Start of equivalence expression、E 代表 End of input。
'='代表'≡'
(若不是用樹的結構將會 0 分計算)

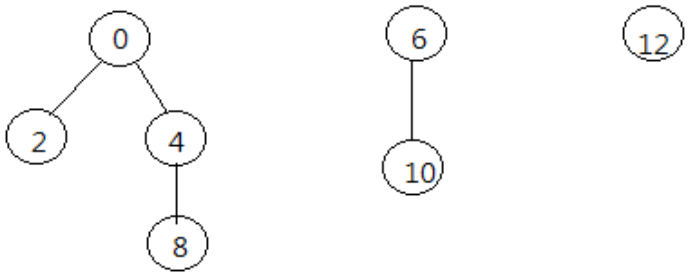
The second program is to realize the equivalence class problem in Chap.4-6.(and should use the tree data structure.)The input will first be the number set of the inputs. And then will be the equivalence expression input.
About output :
The numbers in the same set should be enclosed in brackets. And in the same tree, the numbers in the same level should be enclosed in brackets too.
(When constructing a tree, the number that has a smaller value should be the root.)

Note: 'S' stands for Start of equivalence expression、'E' stands for End of input
'=' stands for '≡'
(if you didn't use the tree data structure, you will get zero points.)

Sample Input :
0 2 4 6 8 10 12
S
0=2
4=8
2=4
6=10
E

Sample Output:
((0),(2,4),(8))
((6),(10))
(12)

output 示意圖↓



General Information:

- **Deadline：2015/12/16 23:59.**
- **Upload your assignment to Moodle system.**
- **Upload file format: Student-Id_Name.rar , Ex.P76991094_王小明.rar**
- **Your file should consist of the following items:**
- **Source Code**
- **Readme file (Program description)**
- **Any copies will be scored as zero.Do not plagiarize!!!**
- **Late homework will not be accepted.**
- **Source code format: .c/.cpp (do NOT save your code in a .txt or PDF file etc.)**

若上傳的 source code 檔案格式是 c/cpp 以外的檔案格式,將一律零分計算

(if the source code you upload is not in the format of c/cpp, you will get zero points.)