HW7
(deadline : 2019/12/19)

手寫題：

2. Create a binary search tree using the following data entered as a sequential set:

```
14 23 7 10 33 56 80 66 70
```

10. The binary search tree in Figure 7-19 was created by starting with a null tree and entering data from the keyboard. In what sequence were the data entered? If there is more than one possible sequence, identify the alternatives.

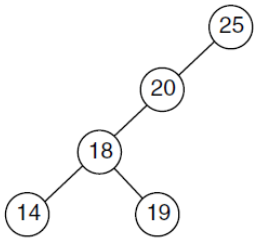


FIGURE 7-19 Figure for Exercise 10

14. Delete the node containing 85 from the binary search tree in Figure 7-22.

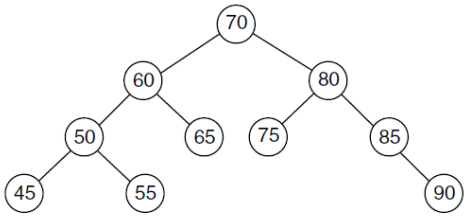


FIGURE 7-22 Figure for Exercises 13 and 14

16. Develop a nonrecursive algorithm for Algorithm 7-3, "Search BST."

ALGORITHM 7-3 Search BST

```
Algorithm searchBST (root, targetKey)
Search a binary search tree for a given value.
   Pre    root is the root to a binary tree or subtree
          targetKey is the key value requested
   Return the node address if the value is found
          null if the node is not in the tree
1  if (empty tree)
      Not found
   1  return null
2  end if
3  if (targetKey < root)
   1  return searchBST (left subtree, targetKey)
4  else if (targetKey > root)
   1  return searchBST (right subtree, targetKey)
5  else
      Found target key
   1  return root
6  end if
end searchBST
```

程式題：

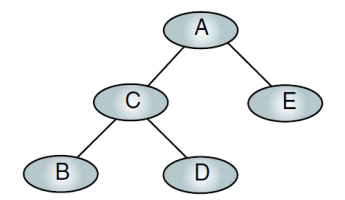
22. Write a program that reads a list of names and telephone numbers from a text file and inserts them into a BST tree. Once the tree has been built, present the user with a menu that allows him or her to search the list for a specified name, insert a new name, delete an existing name, or print the entire phone list. At the end of the job, write the data in the list back to the file. Test your program with at least 10 names.

讀檔為 HW7_22.txt

23. Create the ADT for a binary search tree using the array implementation. In an array implementation, the pointers become indexes to the subtree elements. When you create the tree, you need to know the maximum number of nodes to be stored in the tree. To test the ADT, use it to run the program in Project 22.

25. Rework Project 24 using a preorder traversal.

24. Write a program that processes a threaded binary tree. The program should first build the tree, then use an iterative traversal to process it using the threads.



請以此圖來 Build tree

（第 24 題不用寫，僅為第 25 題參考用）