M. BST duplicate

Time Limit: 1 seconds

Problem description

Write a program to build a binary search tree by inserting N ($1 \le N \le 100$) integer values into the BST one by one. Note that the nodes can have duplicate values.

Your task is to display the in-order and pre-order traversing of the BST.

For example,

- Create a BST tree by adding into the tree N integers as follows: 7, 9, 4, 9, 1, 12, 6, 7, 1, 10.
- The in-order traversing of the BST tree is: 1, 1, 4, 6, 7, 7, 9, 9, 10, 12.
- The pre-order traversing of the BST tree is: 7, 7, 4, 1, 1, 6, 9, 9, 12, 10.

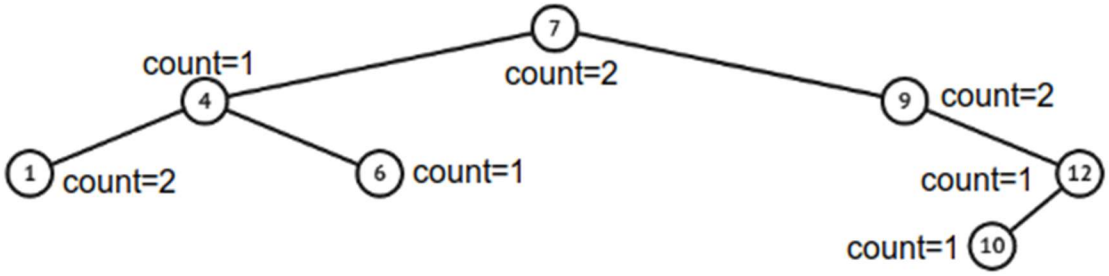

Figure 1. The BST that created by inserting 7, 9, 4, 1, 12, 6, 10 one by one

Input:

- The first line contains a positive integer N ($1 \le N \le 100$) which is the number of integer values to insert into the BST.
- The second line containing N integers that will be inserted into the BST one by one, each number separated by at least one space.

Output:

Contains 2 line:

- The first line contains the list of numbers representing the in-order traversing of the BST. Each number separated by one comma.
- The second line contains the list of numbers representing the pre-order traversing of the BST. Each number separated by one comma.

Example:

Input	Output
10 7 9 4 9 1 12 6 7 1 10	1,1,4,6,7,7,9,9,10,12 7,7,4,1,1,6,9,9,12,10