**The order of a Tree**

**Time Limit: 2000/1000 MS (Java/Others)    Memory Limit: 32768/32768 K (Java/Others)**

**Problem Description**

As we know,the shape of a binary search tree is greatly related to the order of keys we insert. To be precisely:  
1.  insert a key k to a empty tree, then the tree become a tree with  
only one node;  
2.  insert a key k to a nonempty tree, if k is less than the root ,insert  
it to the left sub-tree;else insert k to the right sub-tree.  
We call the order of keys we insert “the order of a tree”,your task is,given a oder of a tree, find the order of a tree with the least lexicographic order that generate the same tree.Two trees are the same if and only if they have the same shape.

**Input**

There are multiple test cases in an input file. The first line of each testcase is an integer n(n <= 100,000),represent the number of nodes.The second line has n intergers,k1 to kn,represent the order of a tree.To make if more simple, k1 to kn is a sequence of 1 to n.

**Output**

One line with n intergers, which are the order of a tree that generate the same tree with the least lexicographic.

**Sample Input**

4

1 3 4 2

**Sample Output**

1 3 2 4

**Source**

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