Trees — Inserting in a binary search tree P92776_en

Write a program that forms a binary search tree from a given sequence of natural numbers. Each new integer must be placed at the only leaf that allows to mantain the propierty of the binary search trees. The repeated elements must be ignored.

Input

Input is a non empty sequence of natural numbers.

Output

Your program must print the preorder traversal of the resulting tree.

Sample input 1

```
30
10
50
0
100
15
50
120
30
110
```

Sample output 1

```
30
10
0
15
50
100
120
110
```

Problem information

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