https://course.acciojob.com/idle?question=f7984e21-28b9-4d24-a233-b3130578a438

- HARD
- Max Score: 50 Points

Construct BST from given Pre-order traversal

Print the Inorder traversal of a binary search tree that matches the given preorder traversal.

(Recall that a binary search tree is a binary tree where for every node, any descendant of node.left has a value < node.val, and any descendant of node.right has a value > node.val. Also, recall that a preorder traversal displays the node's value first, then traverses the node.left, then traverses node.right.)

Note: It is guaranteed that for the given test cases there is always possible to find a binary search tree with the given requirements.

Input Format

The first line inputs N, size of preorder array.

The second line contains N elements of the preorder array.

Output Format

Print the Inorder traversal of a BST that matches the given preorder traversal.

Example 1

Input

```
6
8 5 1 7 10 12
```

Output

```
1 5 7 8 10 12
```

Explanation

1 5 7 8 10 12 is the Inorder traversal.

Example 2

Input

```
4
2 1 3 4
```

Output

```
1 2 3 4
```

Explanation

1 2 3 4 is the Inorder traversal.

Constraints

1 <= preorder.length <= 100

1 <= preorder[i] <= 10^8

The values of preorder are distinct.

Topic Tags

- **Trees**

My code

```
import java.util.*;
import java.lang.*;
import java.io.*;

public class Main
{
        public static void main (String[] args) throws java.lang.Exception
        {
                //your code here
           Scanner s=new Scanner(System.in);
           int n=s.nextInt();
           int arr[]=new int[n];
           for(int i=0;i<n;i++)
            arr[i]=s.nextInt();
           Arrays.sort(arr);
          for(int i=0;i<n;i++)
           System.out.print(arr[i]+" ");
        }
}
```