
DSA Lab 8 | Set 2 | isBST

Input file: standard input
Output file: standard output
Time limit: 3 seconds
Memory limit: 1024 megabytes

Given a preorder and inorder traversal of a binary tree of integers, compute the post order traversal of the tree and check if the given tree is a binary search tree(BST). Assume all node values to be distinct.

Input

The first line contains an integer N , indicating the number of nodes in the tree.

The second line contains N single space separated integers denoting the preorder traversal of the binary tree.

The third line contains N single space separated integers denoting the inorder traversal of the binary tree.

Constraints:

Basic:

$1 \leq N \leq 10$

$1 \leq integer \leq 1000$

Advanced:

$1 \leq N \leq 1000$

$1 \leq integer \leq 10000$

Output

The first line should contain N single space separated integers indicating the post-order traversal of the binary tree.

The second line should display **YES** if the tree is a BST, else display **NO**.

Examples

standard input	standard output
6 5 9 6 2 11 7 6 9 2 5 11 7	6 2 9 7 11 5 NO
7 18 15 8 3 16 17 20 3 8 15 16 17 18 20	3 8 17 16 15 20 18 YES