Increase Decrease

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

You are given two sequences A and B of length N.

For all i $(1 \leq i \leq N)$, determine whether there exists a permutation C of $(1, 2, \ldots, N)$ such that the LIS (Longest Increasing Subsequence) of the prefix of length i is A_i, and the LDS (Longest Decreasing Subsequence) of the prefix of length i is B_i.

If such a permutation exists, construct one.

Input

The input is given in the following format:

N
$A_1\ A_2\ \ldots\ A_N$
$B_1\ B_2\ \ldots\ B_N$

- $1 \leq N \leq 5 \times 10^5$
- $1 \leq A_i \leq N$ $(1 \leq i \leq N)$
- $1 \leq B_i \leq N$ $(1 \leq i \leq N)$
- All input values are integers

Output

If no such permutation exists, print -1. Otherwise, print N space-separated integers representing the elements of the permutation C. If there are multiple such permutations, any of them will be accepted.

Examples

standard input	standard output
3 1 1 2 1 2 2	2 1 3
4 1 1 2 2 1 2 2 3	3 2 4 1
4 1 2 2 3 1 2 2 2	-1