

## Lab 10 - P1

### Problem Statement

You are given an array A of integers and an array B of integers. Suppose that A[0:i] consists of the elements of A from 0 to i (including both A[0] and A[i]). For every element A[i], print the element B[i] lesser than A[i] in A[0:i].

Note : The element which is x lesser than A[i] in the array A[0:i] is the element which is x elements to the left of A[i] in the sorted sequence of A[0:i]. For example, if A = {5,1,3,7,9}, consider A[3]=7. The array A[0:3] is {5,1,3,7}, and the sorted array is {1,3,5,7}. Thus, the element which is 1 lesser than 7 is 5, which is 2 lesser than 7 is 3, and which is 3 lesser than 7 is 1. If we ask for the number which is 4 lesser than 7, it does not exist in A[0:3].

### Input Format

The first line contains n ( $1 \leq n \leq 10^5$ ) – the lengths of the arrays A and B.

The next line contains n distinct space separated integers, where the ith integer represents A[i] ( $1 \leq A[i] \leq 5 \cdot 10^5$ )

The next line contains n space separated integers, where the ith integer represents B[i] ( $0 \leq B[i] \leq n$ )

### Output Format

Print n space separated integers, where each integer represents the number which is B[i] lesser than A[i] in A[0:i]. If there is no such number, print -1.

### Sample Testcases

Input	Output
5 4 2 1 7 3 0 0 3 2	4 2 1 1 1
5 8 3 9 1 6 2 2 1 3 2	-1 -1 8 -1 1