The Longest Common Subsequence

A subsequence is a sequence that can be derived from another sequence by deleting some elements without changing the order of the remaining elements. Longest common subsequence (*LCS*) of 2 sequences is a subsequence, with maximal length, which is common to both the sequences.

Given two sequence of integers, $A = [a_1, a_2, \ldots, a_n]$ and $B = [b_1, b_2, \ldots, b_m]$, find **any one** longest common subsequence.

In case multiple solutions exist, print any of them. It is guaranteed that at least one non-empty common subsequence will exist.

Recommended References

This Youtube video tutorial explains the problem and its solution quite well.

Input Format

First line contains two space separated integers, n and m, where n is the size of sequence A, while m is size of sequence B. In next line there are n space separated integers representing sequence A, and in third line there are m space separated integers representing sequence B.

n m
A_1 A_2 ... A_n
B_1 B_2 ... B_m

Constraints

$1 \leq n \leq 100$
$1 \leq m \leq 100$
$0 \leq a_i < 1000, where\ i \in [1, n]$
$0 \leq b_j < 1000, where\ j \in [1, m]$

Output Format

Print the longest common subsequence and each element should be separated by at least one white-space. In case of multiple answers, print any one of them.

Sample Input

```
5 6
1 2 3 4 1
3 4 1 2 1 3
```

Sample Output

```
1 2 3
```

Explanation

There is no common subsequence with length larger than 3. And "1 2 3", "1 2 1", "3 4 1" are all correct answers.

Tested by Khongor