The Longest Common Subsequence

Problem Statement

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.

Tested by Khongor

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.
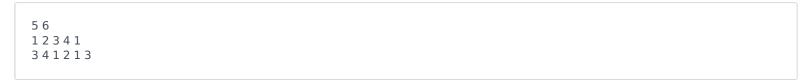
```
n m
A₁ A₂ ... An
B₁ B₂ ... Bm
```

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.