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The Longest Common Subsequence 🔖

by **PRASHANTB1984**

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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.

bank
btpn

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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

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

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

f ✕ in

Solved score: 55.00pts

Submissions:8681

Max Score:55
Difficulty: Medium

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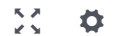
```java
1 ▾ import java.io.*;
2   import java.util.*;
3   import java.text.*;
4   import java.math.*;
5   import java.util.regex.*;
6
7 ▾ public class Solution {
8
9 ▾     public static void main(String[] args) {
10 ▾         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11          }
12  }
```

Line: 1 Col: 1

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