

A. Search for Pretty Integers

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

You are given two lists of non-zero digits.

Let's call an integer pretty if its (base 10) representation has at least one digit from the first list and at least one digit from the second list. What is the smallest positive pretty integer?

Input

The first line contains two integers n and m ($1 \leq n, m \leq 9$) — the lengths of the first and the second lists, respectively.

The second line contains n distinct digits a_1, a_2, \dots, a_n ($1 \leq a_i \leq 9$) — the elements of the first list.

The third line contains m distinct digits b_1, b_2, \dots, b_m ($1 \leq b_i \leq 9$) — the elements of the second list.

Output

Print the smallest pretty integer.

Examples

input
2 3 4 2 5 7 6
output
25

input
8 8 1 2 3 4 5 6 7 8 8 7 6 5 4 3 2 1
output
1

Note

In the first example 25, 46, 24567 are pretty, as well as many other integers. The smallest among them is 25. 42 and 24 are not pretty because they don't have digits from the second list.

In the second example all integers that have at least one digit different from 9 are pretty. It's obvious that the smallest among them is 1, because it's the smallest positive integer.