CMPUT 274 - Tangible Computing
Morning Problem: Attack Range

Description

Bob has just begun playing a brand new game, one interesting choice he has to make is what class to play. The main difference between each class is their attack range. Bob wants his attack range to be the lowest attack range that is strictly higher than every enemy.

Given a list of all the enemy attack ranges and a list of all the classes attack ranges can you help Bob determine which class he should play.

Input

The first line of input contains two space seperated integers, n ($1 \leq n \leq 1,000$) and m ($1 \leq m \leq 1,000$), the number of enemies and classes respectively.

The next line of input contains n space seperated integers, the enemy attack ranges, each between 1 and 10,000.

The final line of input contains m space seperated integers, the class attack ranges, each between 1 and 10,000.

Output

Output a single line containing the attack range of the class Bob should choose. If no such class exists one should output -1.

Sample Input 1

```
4 5
3 7 2 12
1 22 13 12 51
```

Sample Output 1

```
13
```

Explanation

While 13, 22 and 51 are all larger than every enemy attack range, 13 is the least of those and should be output.

Sample Input 2

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

Sample Output 2

```
-1
```

Explanation

There are no classes that have attack range strictly higher than all enemies, so we should output -1.