Problem F5202
Cake For Your Class

In your class, there are exactly n boys and n girls. One day all of you stand in a line to form a queue, with girls and boys being alternating. The first person in the line is a girl, and the second person is a boy, and the third person is a girl again and so on.

There will be k many cakes for your class to eat. Each cake has an integer value b_i to describe how big the cake is. Each person has an integer value a_j to describe the maximal size of cake he or she can eat, i.e. the $j\text{-}th$ person in the queue can eat the $i\text{-}th$ cake if and only if $b_i \leq a_j$.

The first cake is for the girls and it is serving from the head of the queue. The first girl in the queue will check if she can eat the cake, if she can she will eat it. If she can not, the second girl in the queue will check if she can eat the cake and so on.

The second cake(if there is) is for the boys and it is serving from the tail of the queue. The last boy in the queue will check if he can eat the cake, if he can he will eat it. If he can not, the second last boy in the queue will check if he can eat the cake and so on.

The rest of odd index cake(if there is) follow the same way of the first cake. The rest of even index cake(if there is) follow the same way of the second cake. And you need to record for each cake, who eats it.

Let us assume you and your classmates are superman such that you can eat and digest the food immediately. So that one's maximal size of cake he or she can eat will not be affected after finishing a cake.

Input

The first line consist of two space separated integers $n(1 \leq n \leq 50)$ $k(1 \leq k \leq 10)$.

The second line consist of $2n$ space separated integers $a_1, a_2, \ldots, a_{2n}$, denoting the maximal size of cake each one can eat. Each a_j is between 1 and 100 inclusive.

The third line consist of k space separated integers $b_1, b_2, \ldots, b_k$, denoting the size of each cake. For each cake it is guaranteed some one can eat it.

Output

Output k lines. The $i\text{-}th$ line consists of a single integer c_i, denoting the index of people who eats the $i\text{-}th$ cake.

Sample Input

```
2 4
1 2 2 1
1 1 2 2
```

Sample Output

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1
4
3
2
```

Explanation of Sample Data

The first cake is of size 1 and the first girl in the queue can eat it.

The second cake is of size 1 and it is serving from the tail, so the last boy in the queue can eat it. He is the fourth person in the queue.

The third cake is of size 2, so the first girl in the queue cannot eat it. The second girl in the queue, who is the third person in the queue, can eat it.

The third cake is of size 2, so the last boy in the queue cannot eat it. The second last boy in the queue, who is the second person in the queue, can eat it.