



# Mind Palaces



Problem

Submissions

Leaderboard

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Rajeet loves mind palaces! We all know that.

A mind palace, according to Rajeet is something that lets him retrieve a given memory in the least time possible. For this, he structures his mind palace in a very special way. Let a  $N \times M$  Matrix denote the mind palace of Rajeet. For fast retrieval he keeps each row and each column sorted. Now given a memory  $X$ , you have to tell the position of the memory in Rajeet's mind palace.

## Input Format

Input begins with a line containing space separated  $N$  and  $M$ .

The next  $N$  lines each contain  $M$  numbers, each referring to a memory  $Y$ .

The next line contains  $Q$ , the number of queries.

The next  $Q$  lines contain a single element  $X$ , the memory you have to search in Rajeet's mind palace.

## Constraints

$$2 \leq N, M \leq 1000$$

$$2 \leq Q \leq 1000$$

$$-10^9 \leq X, Y \leq 10^9$$

## Output Format

If  $Y$  is present in Mr.Rajeet memory, output its position (0-based indexing).

Else output "-1 -1" (quotes for clarity only).

## Sample Input 0

```
5 5
-10 -5 -3 4 9
-6 -2 0 5 10
-4 -1 1 6 12
2 3 7 8 13
100 120 130 140 150
3
0
-2
170
```

## Sample Output 0

```
1 2
1 1
-1 -1
```



Submissions: 38  
Max Score: 100