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Submit a solution for A-Snake

Time limit: 1 s

Real time limit: 5 s

Memory limit: 256M

Problem A: Snake

Write a program that outputs the coordinates of elements from a array of size $n \times m$, which is filled like snake. Snake array - which is filled in like this:

- For all j and k ($j < k$): $a_{ij} > a_{(i+1)j}$.

- If i is even then, for all j and k ($j < k$) : $a_{ij} > a_{ik}$.

- If i is odd then, for all j and k ($j < k$) : $a_{ij} < a_{ik}$.

  Here is an example of 3×4 Snake array

  25 23 20 19

  13 15 17 18

  12 10 9 8

Input format

The first line of input contains a single number t - the number of elements which you must find. $1 \leq t \leq 10000$

The next line contains t integers - the values of the elements that you need print their coordinates.

The next line of input contains 2 space-separated integers, n and m, the number of rows and the columns. $1 \leq n,m \leq 800$

The next n lines contain m integers. Snake array $n \times m$, $-10^7 \leq a_{ij} \leq 10^7$ for each $0 \leq i \leq n, 0 \leq j \leq m$

Output format

Print k lines the answer with coordinates for each case. If the given element is not in the snake array, then print -1.

Examples

Input

```
5
10 15 13 8 23
3 4
25 23 20 19
13 15 17 18
12 10 9 8
```

Output

```
2 1
1 1
1 0
2 3
0 1
```

Input

```
8
1 7 17 12 6 15 18 20
5 5
25 24 23 22 21
16 17 18 19 20
15 14 13 12 11
6 7 8 9 10
5 4 3 2 1
```

Output

```
4 4
3 1
1 1
2 3
3 0
2 0
1 2
1 4
```

Input

```
4
-2 7 8 4
2 3
9 8 5
-1 3 4
```

Output

```
-1
-1
0 1
1 2
```

Notes

In the third example, the elements -2 and 7 is do not exist. Therefore, you should print -1.

Submit a solution

Language: [g++ - GNU C++ 11.4.0 ▾]

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Send!   [Send!]

Previous submissions of this problem

Run ID	Time	Size	Problem	Language	Result	Failed test	View source	View report
5240	893:14:02	2001	A	g++	OK	N/A	View	View

| A | B | C | D | E | F | G | H | I | J | K |