Bloomberg
CODECON

Memory Limit: 1024 MB
Time Limit: 5 s

Vashta Nerada (200 points)

Introduction

Time traveling duo David and Donna have just landed on a 51st century planet **The Library** and find out that the whole planet is infested with *Vashta Nerada*(flesh eating swarming creatures) that feeds on organic matter! As a result, the Library's defense system has quarantined the whole planet and **saved** all human consciousness into its memory.

Fortunately, they have found a way to **restore the human lives** one at a time to The Library's main floor. Every time a human life is restored, *Vashta Nerada*tries to feed them.

They both devise a plan to **grid search** the floor, where David will take up a portion of the grid which has the creature. And in the rest of the grid, Donna will have to find the human/cell with the **highest** IR heat signature.

Write a program to **help Donna** find that cell. You are *guaranteed* that there will always be only one unique highest heat signature.

Input Specifications

The input is the floor plan of an RxC matrix input where 1 < R, C < 10000. The first line will contain R. The second line will contain C. You will then receive R lines of C integers each (representing the RxC matrix). Each integer, v, in the matrix satisfies 0 < v < 1000.

This will be followed by one integer N, where 0 < N < 1000, representing the number of humans to be restored. Then will follow 2N lines, of N rectangular subgrid coordinates where David will hunt 'Vashta Nerada'. They will be in order, top left (x, y) followed by bottom right (a, b) corners, in the format (row index, column index). The following invariants will hold:

- $0 \leq x < R$, $0 \leq a < R$
- $0 \leq y < C$, $0 \leq b < C$
- $x \leq a$, $y \leq b$

The area of each subgrid will be less than the area of the full grid. Each coordinate will be printed on one line, with the integers separated by spaces. He will always have a non-zero sized area to hunt in.

Output Specifications

For each iteration, print coordinates of the location of highest reading. Each coordinates should be printed one per line. The printed indices separated by a space. (m,n) where $0 \leq m < R$ and $0 \leq n < C$

Sample Input/Output

Input

```
5
5
1 2 3 4 5
6 7 8 9 0
1 2 3 4 5
```

```
6 7 8 9 0
1 2 3 4 5
2
0 2
2 4
1 0
4 4
```

Output

```
3 3
0 4
```

Explanation

First iteration, David is hunting in (0,2)(2,4) subgrid. (3,3) has the highest reading of 9 outside that area.
Second iteration, David is hunting in (1,0)(4,4). Outside that subgrid, (0,4) has the highest reading of 5.