

CATALYSTS  
CODING  
CONTEST

A person's hands are shown from the bottom, gently cradling a glowing, semi-transparent globe of the Earth. The globe is illuminated from the right, creating a bright rim light and casting the continents in a dark, reddish-brown hue. The background is a deep, dark blue space filled with numerous small, bright white stars and a soft, out-of-focus light source on the right side, creating a bokeh effect. The overall mood is one of care, responsibility, and global connectivity.

Level 3

The real world is not unidimensional. From now on, your input will contain a matrix where each cell represents the altitude at that position.

Solar panels array are placed on **square flat areas**. Your task is to find the **largest square area** that can be used to place a solar panel array.

If there are **multiple answers** of maximal length, **output all of them sorted ascending by row first and then column**.

Input

```
r c
a00 a10 a20 ... ac-1 0
a01 a11 a21 ... ac-1 1
...
a0r-1 a1r-1 ... ac-1r-1
```

$c$  - number of columns

$r$  - number of rows

$a_{xy}$  - altitude of world at **column  $x$**  and **row  $y$**   
(integer)

$r, c < 10^3$

$a_{xy} < 10^3$

Output

```
length
X0 Y0
X1 Y1
X2 Y2
...
```

$X_i$  - **column** of the top left cell of the  $i$ -th flat area of maximal length

$Y_i$  - **row** of the top left cell of the  $i$ -th flat area of maximal length

length - length of the square of the largest flat area

	0	1	2	3	4	5	6	7	8	9
0	9	9	10	11	11	11	11	11	10	10
1	10	10	10	11	11	11	11	11	10	10
2	12	12	11	11	11	11	11	12	12	12
3	14	14	13	13	12	12	12	13	13	14
4	16	16	15	13	12	12	12	13	15	16
5	17	16	15	14	12	12	12	13	15	16
6	16	16	15	14	12	12	12	13	15	15
7	15	15	14	14	13	13	13	13	13	12
8	12	13	13	14	14	15	14	12	10	8
9	11	11	12	14	15	15	15	12	8	6

Image representing the given example.

The cyan squares represent the first flat area from the answer.  
There is another one just as large, but this one has a lower column.