

CATALYSTS  
CODING  
CONTEST

# Level 4

A pair of hands is shown from the wrist up, holding a glowing, textured sphere. The sphere has a dark, almost black surface with bright, orange-red, vein-like patterns that resemble a planet's surface or a skull's structure. The hands are positioned at the bottom, with fingers slightly curled around the sphere. The background is a deep, dark blue or black, filled with numerous small, bright white stars and a soft, warm orange glow emanating from behind the sphere, creating a sense of depth and focus on the central object.

Without modifying the terrain, the largest flat square area is not big enough to save the planet. From now on, you will be able to **increase or decrease the altitude of any cell by at most 1 unit.**

Your task remains the same, find the largest square area that can be flattened by modifying the terrain as mentioned above.

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)

$r, c, a_{xy} < 10^3$

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	41	41	41	41	41	41	40	40	40	40
1	41	41	41	41	41	41	41	40	40	40
2	41	41	41	41	41	41	41	40	40	40
3	41	41	41	41	41	41	41	41	40	40
4	42	42	42	42	41	41	41	41	41	40
5	42	42	42	42	42	42	41	41	41	41
6	43	43	43	43	42	42	42	42	42	41
7	43	43	43	43	43	43	43	42	42	42
8	44	44	44	44	44	43	43	43	43	43
9	44	44	44	44	44	44	44	44	43	43

Image representing the given example.  
The cyan squares represent the first flat area from the answer.