

A saddle points of a matrix

In the given two-dimensional array of integers A , it is required to find and bring out the row and column indices of all «saddle points». A saddle point in a matrix is an element that is maximal in its column, but minimal in its row, or maximal in its row, but minimal in its column.

Input

From the standard input device, in the first row, two whole M and N are entered - the number of rows and columns of the two-dimensional array A , respectively: $1 \leq M \leq 100$, $1 \leq N \leq 100$. In the next M rows exactly N elements are entered, which are elements of the two-dimensional array A .

Output

Let cnt be the number of saddle points in the matrix A , then you need to print cnt rows, in the i -th of which there are two numbers: row index and column index of the i -th saddle point.

Pay attention to the strict output order: the saddle point L is output before the saddle point R when the row index of the saddle point L is strictly less than the row index of the saddle point R , or the row index of the saddle point L is equal to the row index of the saddle point R , but the column index of the saddle point L is strictly less than the column index of the saddle point R .

It is not need print a space after the column number.

Sample Input

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

Sample Output

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

Note

Rows and columns are numbered from zero.