Problem L. Impress Her

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1.5 seconds
Memory limit:	256 mebibytes

Zenyk decided to impress Marichka and solve the following interesting problem.

You are given a matrix of size $n \times m$ filled with integers. It's guaranteed that all cells which contain the same value are 4-side connected.

Let's define a convex hall of a connected component as minimum-area rectangle (with sides parallel to the matrix sides) that covers all cells of the component. The task is to count the number of pairs of components a and b for which the convex hall of a is inside the convex hall of b. Please note that the convex halls may touch by the side.

Input

The first line contains a pair of integers n and m ($1 \le n, m \le 500$) — the number of rows and columns of the matrix. The next n lines contain m integers each, which represent the matrix. It's guaranteed that matrix integers will be non-negative and won't exceed 10^6.

Output

In the only line print a single integer — the answer to the problem.

Example

standard input	standard output
3 4 1 2 2 4 1 1 1 4 5 1 7 4	3