Problem G. Gold Coins

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	1024 mebibytes

Consider a box containing a grid with r rows numbered from 1 to r and c columns numbered from 1 to c. Each square of the grid either is empty or contains a single gold coin.

The state of the box is denoted by a two-dimensional binary matrix s. The value $s_{x,y}$ is 0 if the cell in the x-th row and y-th column is empty, or 1 if it contains a single gold coin.

Consider the following method to distinguish between the coins:

- Let $a_{x,y}$ be defined as the sum of $s_{i,j}$ for all integer pairs (i, j) satisfying $i = x$ and $1 \le j \le y$.
- Let $b_{x,y}$ be defined as the sum of $s_{i,j}$ for all integer pairs (i, j) satisfying $1 \le i \le x$ and $j = y$.
- If the cell in the x-th row and y-th column contains a gold coin, label the coin with the pair $(a_{x,y}, b_{x,y})$.

This method could result in multiple gold coins having the same label, and the coins could not be distinguished. Therefore, we can add some gold coins before labeling them. More formally, we can perform the following operation zero or more times: select a pair (x, y) such that $s_{x,y} = 0$, and set $s_{x,y} \leftarrow 1$.

What is the minimum non-negative number of coins that should be added so that no two coins have the same label?

Input

The first line of input contains two integers: r and c ($1 \le r, c \le 300$). Each of the following r lines contains c integers $s_{i,j}$. The j-th integer in the i-th of these lines is 0 if there is no gold coin initially at $s_{i,j}$, and 1 otherwise.

Output

Print a single integer: the minimum number of gold coins that should be added so that all the gold coins are labeled differently.

Examples

standard input	*standard output*
2 3 1 0 0 0 1 1	1
4 4 0 1 1 1 1 1 0 0 1 1 1 1 1 0 1 0	2
7 7 0 0 0 0 0 0 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	18