

Problem E

Flower Festival

Time Limit: 1 second

Your village is preparing for a Flower Festival. The exhibition area has a rectangular shape, and is divided into N rows and M columns. In the cell at the i^{th} row and j^{th} column, there is a pot with flower of type $F[i, j]$.

We want to ensure both vertical and horizontal symmetry in the exhibition area. This means that we should use flowers of the same type at certain cells so that each row and column in the exhibition area are symmetrical.



To follow this layout design, you may need to replace the pots in some cells of the exhibition area. Please determine the minimum of cells to be modified.

Input

The first line contains two positive numbers N and M , the number of rows and columns in the exhibition area ($1 \leq N, M \leq 1000$).

The i^{th} line of the following N lines contains M positive integer numbers $F[i, j]$ to represent the types of flowers in each cell in the i^{th} row of the exhibition area (for $1 \leq j \leq M$). Each number does not exceed 10^6 .

Output

Display the minimum number of cells in the exhibition area to be modified.

Sample Input

Sample Output

2 4 29 10 10 29 29 10 20 17	2
3 3 1 2 1 1 2 1 1 3 1	1

Explanation: in the first example, we need to replace 2 flower pots to ensure the vertical and horizontal symmetry for the exhibition area. One possible layout of the exhibition area (after modification) can be like this:

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29 10 10 29
29 10 10 29
    
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