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Problem C
Colorful Quadrants
Time Limit: 1.0 Seconds

You are given an $n \times n$ grid, and some of the grid points are colored by one of the k colors. The color of a point is represented by an integer from 0 to k, where 0 represents the uncolored case. Note that multiple points may be colored the same. The rows and columns of the grid are denoted by integers from 1 to n, and a point located at row i and column j is denoted by (i, j). For an uncolored point (i, j) that satisfies $1 < i < n$ and $1 < j < n$, we define four sub-grids by removing row i and column j from the grid. Each of the four sub-grids is called NW (northwest), NE (northeast), SW (southwest), and SE (southeast) based on the position relative to (i, j). We say that (i, j) has *colorful quadrants* if, when selecting one point from each of the four sub-grids, the chosen four points are all of different colors.

See Figure C.1(a) as a 5×5 grid example. The point (2,3) has colorful quadrants because NW has color 1, NE has color 4, SW has color 3, and SE has color 2, as shown in Figure C.1(b). However, the point (4,3) does not have colorful quadrants because both SW and SE have color 2 only, as shown in Figure C.1(c).

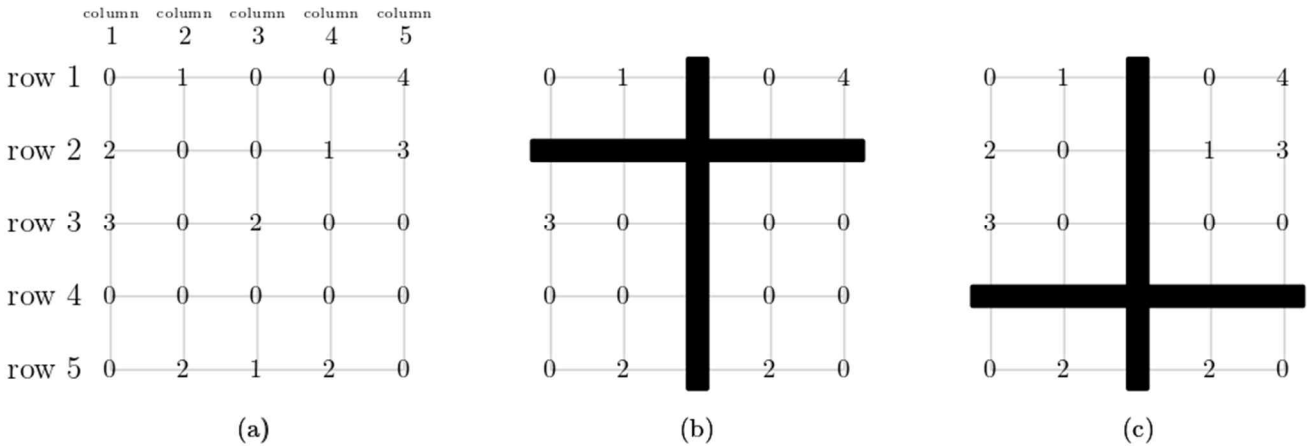


Figure C.1

Given an $n \times n$ grid containing at least four grid points colored in different colors, write a program to count the number of uncolored points that have colorful quadrants.

Input
Your program is to read from standard input. The input starts with a line containing two integers, n and k ($3 \le n \le 2{,}000$, $4 \le k \le 1{,}000$), where n is the number of rows and columns of the grid and k is the number of colors. In the following n lines, the i-th line contains n integers that represent the colors of the points (i, j) for $1 \le j \le n$. The integer c that represents the color of a point is in range $0 \le c \le k$.

Output
Your program is to write to standard output. Print exactly one line. The line should contain the number of uncolored points that have colorful quadrants.

The following shows sample input and output for three test cases.

Sample Input 1	Output for the Sample Input 1
5 4 0 1 0 0 4 2 0 0 1 3 3 0 2 0 0 0 0 0 0 0 0 2 1 2 0	1

Sample Input 2	Output for the Sample Input 2
3 4 1 2 3 4 1 2 3 4 1	0

Sample Input 3	Output for the Sample Input 3
4 8 0 1 2 0 8 0 0 3 7 0 0 4 0 6 5 0	0