

Problem

Mode

Time limit: 3 seconds

Little Cyan Fish has an $n \times n$ matrix W .

For an integer sequence $a_1, a_2, \dots, a_n$ with $1 \leq a_i \leq n$, let b_i denote the number of distinct integers that occur the most times in the prefix $a_1, a_2, \dots, a_i$. For example, in the prefix $1, 2, 1, 2, 3$, both 1 and 2 occur twice, so $b_5 = 2$.

Little Cyan Fish defines the weight of the sequence to be

$$\prod_{i=1}^n w_{i,b_i}.$$

Find the sum of the weights of all such sequences. Since the answer can be huge, output it modulo 998244353.

Input

The first line of the input contains a single integer n ($1 \leq n \leq 100$), indicating the length of the sequences and the size of the matrix.

The next n lines describe the matrix W . The i -th of these lines contains n integers $w_{i,1}, w_{i,2}, \dots, w_{i,n}$ ($0 \leq w_{i,j} < 998244353$).

Output

Output a single line containing a single integer, indicating the sum of the weights of all such sequences modulo 998244353.

Sample Input 1

1 7	7
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Sample Output 1

Sample Input 2

2 1 2 3 4	14
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Sample Output 2

Sample Input 3

3 1 1 1 3 1 1 0 0 1	6
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Sample Output 3

In the first sample test case, the only sequence is (1), and its weight is 7.

In the second sample test case, the sequences (1, 1) and (2, 2) each have weight 3, while (1, 2) and (2, 1) each have weight 4. The sum is $3 + 3 + 4 + 4 = 14$.

In the third sample test case, a sequence has nonzero weight only if all three values are different. There are six such sequences, each with weight 1.