Symmetric matrix 2

[Note: Symmetric Matrix is an easier version of this problem; you should try to solve it before this one.]

You are given an **N** x **N** matrix $\mathbf{m_{ij}}$ such that $\mathbf{m_{ij} == m_{ji}}$ for **i, j = 1, ..., N**. We would like to compute the value of

$$\sum_{i_1=1}^{N} \cdots \sum_{i_K=1}^{N} \prod_{a=2}^{K} \prod_{b=1}^{a-1} m_{i_a i_b}$$

Note that in the above expression we are going over **K** indices $\mathbf{i_1, ..., i_K}$ that run over the values **1, ..., N**, while summing over the product of all the **K*(K-1)/2** possible matrix elements that we can form with these indices.

Input

The first line of the input contains two integers **N** and **K** (**2 ≤ N ≤ 100** and **2 ≤ K ≤ 10**), representing the number of rows and columns of the matrix $\mathbf{m_{ij}}$ and the number of sums in the formula above, respectively. The following **N** lines contain **N** integers each, being the **j**-th number in the **i**-th line the value of $\mathbf{m_{ij}}$ (**-10 ≤** $\mathbf{m_{ij}}$ **≤ 10** and $\mathbf{m_{ij} == m_{ji}}$ for **i, j = 1, ..., N**).

Output

Print a single line with the result of the calculation. Because this number can be very big, output its remainder modulo division by**1000000007** (**==** $\mathbf{10^9+7}$).

Example

Input:
4 5
-4 -3 -4 2
-3 -6 1 -8
-4 1 -10 -6
2 -8 -6 0

Output:
308822466