

## Problem

Several car companies exist in such a way that each company can control a large share of sales in different markets. You are required to perform a simulation that modifies the results after any mergers that happen between these companies.

Your task is to determine the minimum number of mergers that must be performed between the car companies to ensure that a market is controlled by no more than two separate companies.

**Note:** A merger between two companies results in a single company that controls the same markets as the two previous companies.

### Input format

- First line: An integer  $n$  denoting the number of car companies
- Second line: An integer  $m$  denoting the number of markets controlled by each company
- Each  $i^{th}$  line of the  $n$  subsequent lines (where  $0 \leq i < n$ ):  $m$  space-separated integers denoting the market ID of the market controlled by company  $i$

### Output format

Print an integer denoting the minimum number of mergers.

### Constraints

$$1 \leq n \leq 5$$

$$1 \leq m \leq 3$$

$$1 \leq \text{market\_id} \leq 10^5$$

Sample Input	Sample Output
2 2 1 2 2 3	0

Time Limit: 1

Memory Limit: 256

Source Limit: