

7818 MicroRNA Ranking

Ahlaam is a computer science student, doing her master thesis on a bioinformatics project about MicroRNAs, special molecule types found in cells. During her thesis, she wants to find microRNAs relevant to a specific health factor in human beings.

Ahlaam has designed k microRNA ranking algorithms, each of which ranks microRNAs from a specific point of view. There are n microRNAs numbered 1 through n , and each algorithm produces one permutation of these n microRNAs. In the permutation produced by each algorithm, the first microRNA is inferred by the algorithm as the most relevant one to the health factor, and the last microRNA is inferred as the least relevant one.

Ahlaam wants to report a *consensus* ranking on microRNAs. In a consensus ranking, if microRNA i is ranked before another microRNA j , then at least half of the algorithms should have ranked i before j . Write a program to help Ahlaam find a consensus ranking.

Input

There are multiple test cases in the input. The first line of each test contains two space-separated integers n ($1 \leq n \leq 1000$) and k ($1 \leq k \leq 200$), the number of microRNAs and the number of ranking algorithms, respectively. Then, there are k lines, where the i -th line contains a permutation of n numbers $1, \dots, n$, representing the output of the i -th ranking algorithm. The input terminates with a line containing '0 0' which should not be processed.

Output

For each test case, print a single line containing a permutation of n numbers $1, \dots, n$, representing a possible consensus ranking. If there are more than one correct consensus rankings, print the first one in lexicographic order (a sequence a_1, \dots, a_n is lexicographically less than a sequence b_1, \dots, b_n iff there exists a positive integer j such that $a_i = b_i$ for all $1 \leq i \leq j-1$ and $a_j < b_j$). If no such a ranking exists, write 'No solution' instead.

Sample Input

```
5 3
3 2 4 1 5
4 1 5 2 3
2 4 5 1 3
5 2
5 4 3 2 1
1 2 3 4 5
4 3
1 4 2 3
4 2 3 1
3 1 2 4
0 0
```

Sample Output

```
2 4 1 5 3
```

1 2 3 4 5
No solution