



Problem I

Reveal the Secret

Time limit: 2 seconds

Memory limit: 512 megabytes

Problem Description

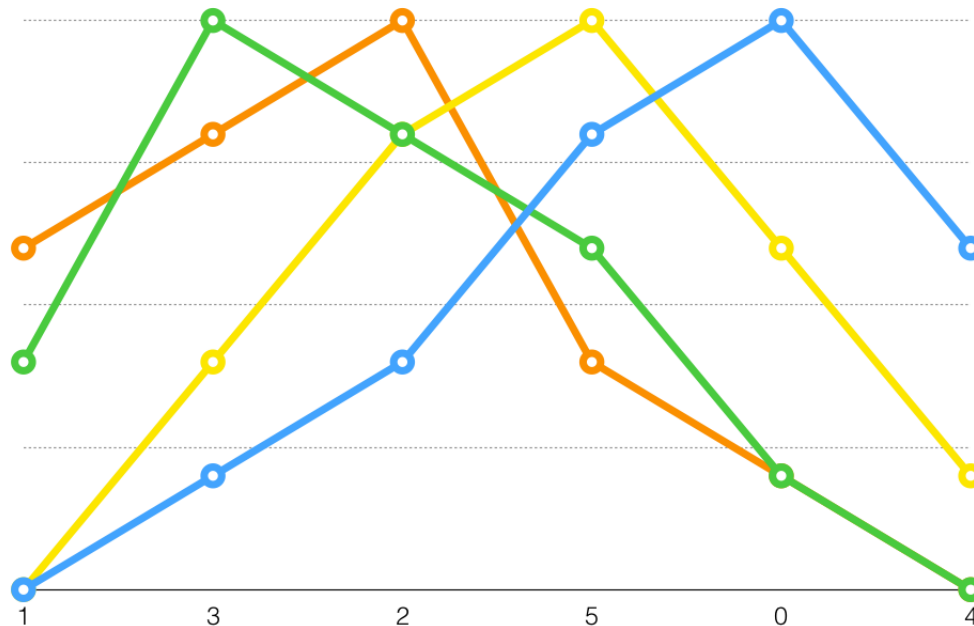
You are an undercover secret agent of a up and coming new magic society. Being a spy sounds cool, but nowadays spies don't go on and fight enemies or hook up with someone wherever they go. Those spies exist only in the movies. (Yes, even a agent from magic society watches Hollywood.) No, being a spy is about being a normal person doing normal stuff, and gather information that seems harmless enough. But looking at them from an eye of an expert, even the most useless piece of clue can worth their weight in gold.

Now, you are pretending to be a harmless, boring librarian who takes care of the ancient city library which don't even have Wi-Fi. Obviously, no muggle ever come here anymore. Especially after the new library is built. However, don't be fooled by its ordinary look. Back in the old days when magic and still entangled in the daily life of common muggles, a lot of secrets are carelessly left here. Here you find an old documents about auction records five centuries ago where a lot of ancient magic societies were bidding for lands to establish their base.

As a member of a magic society you clearly know that every place have a different amount of holy and shadow energy known as their attributes. Different magic societies prefer different balance of the two energy. However, in modern times, the attribute of each location became a heavily guarded secret. If you can figure out the attribute of these locations, your magic society will benefit greatly.

Assume that we can order all these potential locations in a linear order, such that its attribute changes from holy to shadow linearly. Since we know that each magic society prefers a specific balance of energy the most, so we may assume that for each society, their preference will go up from the one end of the attribute spectrum until it reaches their optimal location, and then go down to the other end.

Formally, given a linear order of location x, y, z where $x < y < z$ or $z < y < x$. If x is preferred over y , then y must also be preferred over z . Now from the records you managed to compile a list of preference order of locations for each magical society. Can you also find out the possible linear ordering for the locations that fit these preference order? For instance, following is the solution for sample input 2, where the ordering $(1, 3, 2, 5, 0, 4)$ achieves "single-peakness" for every single preference.



Input Format

The input starts with an integer T , where T represents the number of test cases. Each test case will start with two integers N and M , representing the number of magic societies and the number of locations respectively. It is followed by N lines each representing the preference of a magic society, containing M integers x_1, x_2, \dots, x_M indicating that this magic society prefers x_1 over x_2 over x_3 and so on.

You may assume:

- $1 \leq T \leq 20$
- $0 < N \leq 20$ and $0 < M \leq 100$

Output Format

Output M integers on one line representing the linear ordering of the locations. If there exists more than one possibilities, output the one that is the least lexicographically. If there doesn't exist any possible linear ordering, then you must have mixed up some muggle companies in the list, in that case just output "Muggles!" on the line.

Sample Input

```
3
3 6
0 1 2 5 3 4
0 3 1 2 5 4
1 3 0 4 2 5
4 6
0 5 4 2 3 1
3 2 5 1 0 4
5 2 0 3 4 1
2 3 1 5 0 4
4 4
0 1 2 3
```



0 2 1 3
1 3 2 0
0 1 3 2

Sample Output

Muggles!
1 3 2 5 0 4
Muggles!