

C - More Post-Its!

Context

Pepito loves to reuse his post-its. After he writes a post-it, he puts it in a wall for a later use.

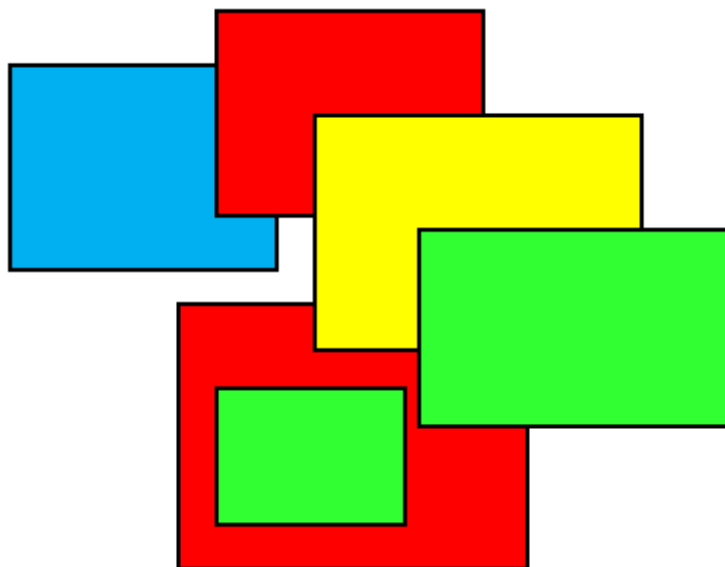


However, now the problem is that he has so many post-its, one on the top of the other, that he finds it difficult to reuse them...

The Problem

In this problem, you have to help Pepito to organize his post-its. You have to order them from top to bottom. The first level should be the post-its (one or more) that don't have any post-it over them. The second levels are the post-its that only have post-its of first level above them. And so on.

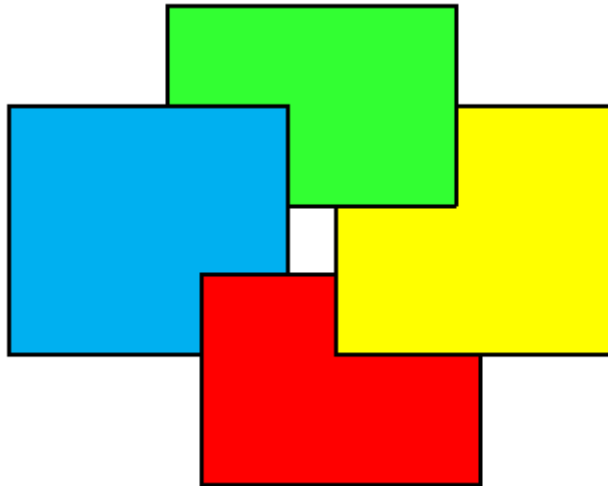
For example, consider this sample:



In this sample, the post-its of first level are painted in green, the second level in yellow, the third level in red, and the fourth level in blue. The post-its are always rectangular, and the

sides of the rectangles will not be completely covered; that is, some part of each side has to be visible.

Be careful because Pepito likes to play pranks, and sometimes he puts the post-its in a way that there is no solution, such as in the following sample:



In this case, you have to write "No solution".

The Input

The first line of the input contains an integer number, N , indicating the number of test cases.

Each test case is described in several lines. The first line contains two integers, H W , from 1 to 200, indicating the size of the wall. Then, there are H lines, each of them with W characters, representing the map of the wall. Each post-it has an assigned letter (uppercase or lowercase) or a digit (from 0 to 9). Each character indicates the post-it that is visible in that position, or it can contain a point, ".", if there is no post-it. For example, we can have the following map:

```
.....
.....ZZZZZ.....
..000000000000...ZZZZZ.....
..000000000000IIIIIIZZZZ.....
..000000000000IIIIIIZZZZ.....
..000000000000IIIIII.....
.....IIIIIIII.....
...DDDDDDIIIIIIII...AAAA..
...DDDDDDDD.....AAAA..
```

The Output

For each test case, you have to write a first line with the text: "Case X ", where X is the number of the current case (starting from 1). If there is no solution, the following line should say "No solution". Otherwise, you have to write a line with the characters of the post-its of first level, in the following line the post-its of second level, and so on. The characters have to be written in order of ASCII code and separated with a blank space.

Sample Input

```

3
9 28
.....
.....ZZZZZZ.....
..000000000000....ZZZZZZ.....
..000000000000IIIIIIZZZZ.....
..000000000000IIIIIIZZZZ.....
..000000000000IIIIII.....
.....IIIIIIII.....
...DDDDDDIIIIIIII...AAAA..
...DDDDDDDD.....AAAA..
8 12
..44444444..
..44444444..
111111444400
111111444400
111222200000
111222200000
...222222..
...222222..
1 10
n3jSms90AX

```

Sample Output

```

Case 1
A 0
I
D Z
Case 2
No solution
Case 3
0 3 9 A S X j m n s

```