1.6.2 Minesweeper

PC/UVa IDs: 110102/10189, **Popularity:** A, **Success rate:** high **Level:** 1

Have you ever played Minesweeper? This cute little game comes with a certain operating system whose name we can't remember. The goal of the game is to find where all the mines are located within a $M \times N$ field.

The game shows a number in a square which tells you how many mines there are adjacent to that square. Each square has at most eight adjacent squares. The 4×4 field on the left contains two mines, each represented by a "`*`" character. If we represent the same field by the hint numbers described above, we end up with the field on the right:

```
*...          *100
....          2210
.*..          1*10
....          1110
```

Input

The input will consist of an arbitrary number of fields. The first line of each field contains two integers n and m ($0 < n, m \leq 100$) which stand for the number of lines and columns of the field, respectively. Each of the next n lines contains exactly m characters, representing the field.

Safe squares are denoted by "`.`" and mine squares by "`*`," both without the quotes. The first field line where $n = m = 0$ represents the end of input and should not be processed.

Output

For each field, print the message `Field #`x`:` on a line alone, where x stands for the number of the field starting from 1. The next n lines should contain the field with the "`.`" characters replaced by the number of mines adjacent to that square. There must be an empty line between field outputs.

Sample Input

```
4 4
*...
....
.*..
....
3 5
**...
.....
.*...
0 0
```

Sample Output

```
Field #1:
*100
2210
1*10
1110

Field #2:
**100
33200
1*100
```