

Problem 1. Minesweeper

Minesweeper is a cute little game which comes within a certain Operating System which name we can't really remember. The goal of the game is to find where are all the mines within a $N \times M$ 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.

For instance, the 4x4 field below contains two mines, each represented by a '*' character. If we represent the same field by the hint numbers described earlier, we end up with:

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

Input

Each input file consists of an arbitrary number of fields. The first line of each field contains two integer 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

The output of your program must be a string with the format described as follows.

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 output.

Sample Input

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

Sample Output

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

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

Remark: Sample input/output data is stored in plain-text files named *t1.in* and *t1.out*, respectively. There is also the second set of input/output data available in plain-text files named *t2.in* / *t2.out*. The second set of input/output data consists of 51 fields. Your program must produce correct results for both test sets.