Drop It!

Welcome to the game of Drop It! In this game, you will be dropping various pieces onto a 2D grid, which contains obstacles and open spaces. The goal is to strategically drop the pieces in such a way that they will stack up and form complete rows, which will then disappear and earn you points. However, gravity will pull the pieces straight down until they hit an obstacle, the bottom of the grid, or another piece that has already come to rest. Given a snapshot of the grid, your task is to determine where each piece will eventually settle.

Input

Each input file will consist of a single test case. You will be presented with a 2D grid consisting of rows and columns. The size of the grid can vary between inputs and will be specified by two integers *r* and *c* ($1 \le r, c \le 100$). Each row of the grid will contain *c* characters representing the contents of each column: 'o' for a game piece, '#' for an obstacle, and '.' for an open space.

Output

Output the grid, after the gravity has done its work according to the usual laws of physics.

Sample Input

```
2 5
#..#o
####o
```

```
3 2
oo
o.
..
```

```
4 3
...
ooo
#..
..#
```

Sample Output

```
#..#o
####o
```

```
..
o.
oo
```

```
...
o..
#.o
.o#
```