Problem J

Junior Steiner Three

Time Limit: 2 seconds

The Pacific Ocean has had it too good for too long. Look at that huge expanse of nothing but water... what a smug jerk. The *Inter-Continental Pacific Connection* is a project spearheaded by Team Magma, whose aim is to add more glorious land to this world!

Let's model the Pacific Ocean as a grid that has been subdivided into r rows and c columns. Each cell in this grid is either **land** or **water**. Humans live on the land, which makes land awesome, and they drown when they enter the water, which makes water lame. A human can walk between two land cells if and only if they share an edge (sharing a corner is not enough).

Team Magma can pay 1 million pesos in order to transform any water cell of their choice into a land cell. They would like to transform the grid such that starting from any land cell, it is possible to reach any other land cell just by walking.

In a perfect world, they would be able to accomplish this goal by just transforming the *entire* Pacific Ocean into land. But this is not a perfect world. In order to respect budget constraints, please help Team Magma figure out how to achieve their goal using the minimum possible cost.

...Okay, so maybe this problem is too difficult. Fine, to make things easier, let's limit ourselves to this specific case: In the given grid, **exactly three** of its cells are land.

Input Format

The first line of input contains the space-separated integers r and c.

Then, r lines of input follow, each containing a string of length c. This encodes the state of the cells in the grid.

- The period `.` character means that the corresponding cell has water
- The hash `#` character means that the corresponding cell has land

Constraints

- $2 \leq r, c \leq 100$
- There will always be **exactly** three `#` characters in the grid, with the rest being `.` characters.

Output Format

Output r lines that each contain a string of c characters, corresponding to the grid from the input *after* you have transformed some of its cells into land.

Your solution will be accepted if it satisfies all of the following:

- The land cells from the input are still land cells in the output
- Starting from any land cell, it should be possible to reach any other land cell in the grid just by walking.

- Among all solutions that satisfy the two previous requirements, your answer should also *minimize* the number of cells which were transformed from water into land.

If there are multiple possible solutions, any will be accepted.

Sample Input 1

```
4 5
.....
..#..
....#
.#...
```

Sample Output 1

```
.....
..#..
..###
.##..
```

Sample Input 2

```
3 3
..#
.#.
#..
```

Sample Output 2

```
.##
##.
#..
```

Sample Input 3

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

Sample Output 3

```
..#
.##
...
...
```