
Avoiding three-in-a-row

P51064_en

Examen parcial d'Algorísmia, FME (2015-11-03)

Given an $n \times m$ board with some cells already marked, fill it with 'o' and 'x' in all the possible ways, but avoiding any horizontal or vertical three-in-a-row. The diagonal three-in-a-row are allowed.

Input

Input consists of several cases. Every case begins with n and m , followed by n rows with m characters each. If the cell is already marked, there is an 'o' or an 'x'. Otherwise, we have a period. You can assume that $n \cdot m$ is between 1 and 20, and that there is no three-in-a-row initially.

Output

For every case, print in lexicographical order (from top to bottom, and inside each row, from left to right) all the ways to fill the board without any forbidden three-in-a-row. Print a line with 10 dashes at the end of each board, and a line with 20 asterisks at the end of each case.

Sample input

```
2 2
X.
.X

4 5
.X...
OXO.O
..O..
...X.

3 4
.X..
...O
.XX.
```

Sample output

```
XO
OX
-----
XO
XX
-----
XX
OX
-----
XX
XX
-----
*****
*****
OXOX
XOXO
OXXO
-----
XXOX
OOXO
OXXO
-----
XXOX
XOXO
OXXO
-----
*****
```

Problem information

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