

Velociraptor is fit

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When a velociraptor does not smell human blood, takes advantage to do some exercise and mark its territory. In a rectangular room $n \times m$ with obstacles, our friend starts running trying to keep the direction and the sense of its movement while it is possible, leaving a pheromone trace. Under any circumstances it will go out of the room, nor will cross an obstacle, nor will cross a square that was crossed previously. In these cases, velociraptor will turn 90 degrees to the right. If, even turning 90 degrees, the velociraptor could not continue, it would stop.

Implement a program that prints the squares where the velociraptor has been before stopping. The velociraptor always starts in the central position of the room, moving towards north.

Input

The input describes a room. The first line has the number of rows n and the number of columns m . It is fulfilled that $2 < n, m < 200$. n as well as m are odd numbers. n lines follow, with m characters each one. An asterisk indicates an obstacle. The central position is always free.

Output

Your program must print the board with a 'V' in each position where the velociraptor has been.

Sample input 1

```
9 19
.....
.....*..
.....*.....
.....*...*.
.....
.....
.....*.....*.....
.....*.....
.....
```

Sample input 2

```
3 3
.*.
...
...
```

Sample input 3

```
3 3
.*.
..*
...
```

Sample output 1

```
vvvvvvvvvvvvvvvvvvv
V.....VV*.V
V.....*....VV..V
V.....VVVV*VV.*V
V.....V..V.VV..V
V.....V.VV..V
V...*......V*VVVVV
V.....V.....*
vvvvvvvvvvvvv.....
```

Sample output 2

```
V*.
VVV
VVV
```

Sample output 3

```
.*.
.V*
...
```

Problem information

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