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## Game of life (1)

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The English mathematician John Conway invented in 1970 the following game: Imagine a matrix with  $n$  rows and  $m$  columns. We consider neighbor positions to a given position the (at most, eight) adjacent positions, either horizontally, vertically or diagonally. Every moment, each position is either empty or it contains a bacterium. The rules are:

- An empty position at time  $t$  will contain a bacterium at time  $t + 1$  if and only if at time  $t$  it had exactly three neighbor bacteria.
- An occupied position at time  $t$  will contain a bacterium at time  $t + 1$  if and only if at time  $t$  it had two or three neighbor bacteria.

Write a program that, for every given matrix, prints it at the next moment of time.

### Input

Input consists of several cases. Every case begins with  $n$  and  $m$  (both strictly positive), followed by  $n$  lines, each one with  $m$  characters: 'B' if the position has a bacterium, and '.' if the position is empty. A special case with  $n = m = 0$  marks the end of the input.

### Output

For each case, print the matrix corresponding to the next moment of time using the same format of the input (do not print  $n$  and  $m$ ). Separate matrices with an empty line.

#### Sample input

```
2 3
B.B
.B.

2 2
BB
BB

0 0
```

#### Sample output

```
.B.
.B.

BB
BB
```

### Problem information

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Generation : 2024-04-30 17:56:48

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