# Problem F. Cake

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|---|---|
| Input file: | *standard input* |
| Output file: | *standard output* |
| Time limit: | 2 seconds |
| Memory limit: | 512 mebibytes |

Little Vitechka and little Mitechka have bought a cake which appears to be a connected checkered figure on a checkered pan. But no matter how hard they tried to cut it into two pieces, one part was always more beautiful than the other. So they decided to cut the cake into two equal pieces. The parts must be connected and the cuts must go along the cells.

Help Vitechka and Mitechka to cut the cake.

Two figures are equal if there is an isometry of a plane (a composition of axial symmetries, parallel shifts and rotations) mapping one into another.

A checkered figure is connected if one can reach each any cell from any other cell by moving only between the cells of the figure which are adjacent by side.

## Input

The first line contains two integers $n$ and $m$: height and width of the pan correspondingly ($1 \le n, m \le 1000$).

Each of the following $n$ lines contains $m$ characters "`.`" or "`X`" specifying the pan. The figure covers those and only those cells of the pan which have the symbol "`X`".

It is guaranteed that the cake occupies at least 1 and no more than 1000 cells of the pan.

## Output

If it is possible to cut the cake, print "`YES`" on the first line. On the following $n$ lines, print $m$ characters "`.`", "`A`" or "`B`" so that the figures which consist of cells with characters "`A`" and "`B`" correspondingly specify the partition.

If it is impossible to cut the cake into two equal parts, print "`NO`" on a single line.

## Examples

| standard input | standard output |
|---|---|
| 3 4<br>.X..<br>XXX.<br>..XX | YES<br>.B..<br>BBA.<br>..AA |
| 3 4<br>XXXX<br>.XXX<br>..X. | NO |