

Blue and Green



SEASON 10 - SECOND ROUND

Stanislav has a sheet of paper with sides N and M , which represents a table with N rows and M columns. Some strange blue and green stains have mysteriously appeared in some cells of the table and he likes them for some reason, although they are gross. He has decided to paint the other cells in blue and green and make his whole sheet colorful. Stanislav likes both colors equally and wants to have equal amounts of them on his sheet. He finds one row or column beautiful if the number of blue stains in it equals the number of green stains in it. The whole sheet is beautiful if all rows and columns in it are beautiful. Help Stanislav put exactly one stain in each empty cell, without changing stains which have already appeared and without leaving any cell unpainted, in order to make his sheet beautiful, or determine that it's impossible.

Input (blueandgreen.in)

On the first line of the input file you are given the numbers N and M . Each of the next N lines contains a string of length M . If there is a blue stain in the i -th cell of the j -th row, the i -th character on the j +1-st line of the input is 'b'. If there is a green stain, the character is 'g' and if the cell is empty, the character is '_' (an underscore).

Output (blueandgreen.out)

If it's impossible to paint the empty cells in the required way, output only one line, containing the number -1. Otherwise, output N lines containing M characters each, describing the final coloring of the sheet. If there are many solutions, output any of them.

Constraints

$2 \leq N, M \leq 1000$

Both N and M are even.

Examples

Input	Output	Explanation
<pre>6 6 bggbbg gbbggg gbb___ gb___ b__ggb b__ggb g__bbg</pre>	<pre>bggbbg gbbggg gbbggg bggbbg bggbbg gbbggg gbbggg</pre>	
<pre>2 4 gb__ _b__</pre>	-1	<p>The second column can't become beautiful.</p>