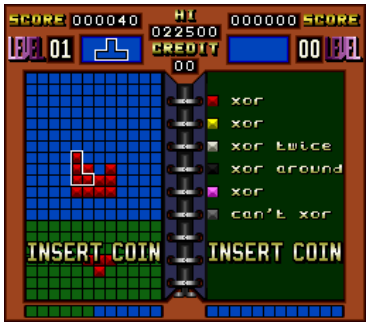
Problem D
Xortris
Problem ID: xortris



Screenshot of World of Xor

It is 1990 and you are in the development team of a video game that is going to revolutionize the future of arcades. The player is given a rectangular board with some white and black squares. The goal is to turn the whole board white. At each turn, the player may choose a tetromino from an infinite supply, move and rotate it within the limits of the board, and toggle the colour of the four squares covered by the tetromino. A tetromino is a connected set of 4 squares (see Figure D.1).

Unfortunately, the testing team has been complaining about some levels being impossible to solve. You know that testers are skilled enough to place a piece in any position and rotation needed, so the problem may be somewhere else. Your next debugging step is to write a program that checks whether a level is solvable.

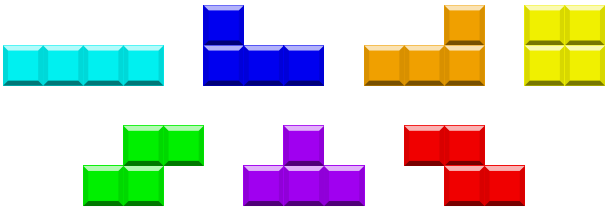


Figure D.1: All tetrominoes. From Wikimedia.

Input

The first line contains two integers m and n ($1 \leq m, n \leq 100$), the dimensions of the board. m lines with n characters each follow. The character '`.`' represents a white square, and the character '`X`' represents a black square.

Output

One line with the word "`possible`" if the level is solvable and "`impossible`" if it is not.

Sample Input 1	Sample Output 1
3 3	possible

Sample Input 2	Sample Output 2
3 3 XXX XXX XXX	impossible