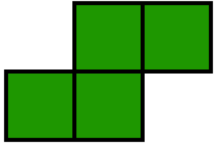


Problem A. Tetris Puzzle

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 512 mebibytes

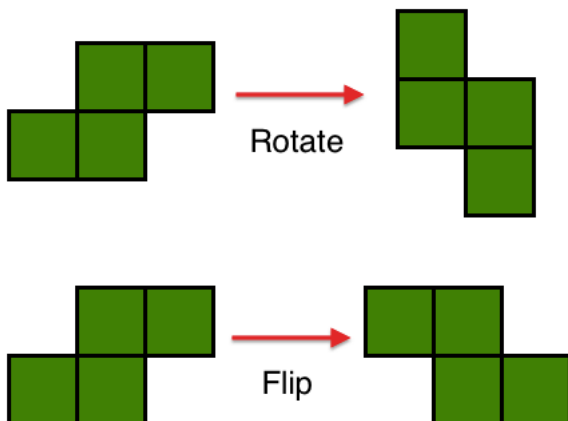
Teto has an infinite number of S-mino tiles. The following picture shows an S-mino tile:



Initially, all tiles are arranged in this orientation. Teto wants to put some tiles on an $N \times N$ grid. The grid is initially empty. Also, Teto has a counter. Initially the counter is set to zero.

He can perform the following operations.

- Place an S-mino tile on the grid (the tile must completely fit within the grid). The tile must be aligned with the grid, and no two tiles can overlap.
- Rotate an S-mino tile clockwise by 90 degrees and increment the counter.
- Flip an S-mino tile with respect to the horizontal axis and increment the counter.
- All rotated tiles and flipped tiles must be placed on the grid.



You are given the state of the grid after Teto finishes placing tiles. For each (i, j) , if $s_{i,j}$ is 'o', the cell that is the i -th from the top and the j -th from the left is filled by one of the tiles. Otherwise, $s_{i,j}$ is '.', and this cell is empty.

Compute the parity of Teto's counter. It is guaranteed that the parity can be uniquely determined.

Input

N
 $s_{1,1} \dots s_{1,N}$
 \vdots
 $s_{N,1} \dots s_{N,N}$

- $1 \leq N \leq 50$
- For each (i, j) , $s_{i,j}$ is either 'o' or '.'.

Output

Print the parity (0 or 1) of the counter.

Example

standard input	standard output
6 .0000. 000000 000000 000000 000000 .0000.	0