

D. Rectangle Painting 1

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

There is a square grid of size $n \times n$. Some cells are colored in black, all others are colored in white. In one operation you can select some rectangle and color all its cells in white. It costs $\max(h, w)$ to color a rectangle of size $h \times w$. You are to make all cells white for minimum total cost.

Input

The first line contains a single integer n ($1 \leq n \leq 50$) — the size of the square grid.

Each of the next n lines contains a string of length n , consisting of characters '.' and '#'. The j -th character of the i -th line is '#' if the cell with coordinates (i, j) is black, otherwise it is white.

Output

Print a single integer — the minimum total cost to paint all cells in white.

Examples

input

Copy

3

#.#
###

output

Copy

3

input

Copy

3
...
...
...

output

Copy

0

input

Copy

4
#...
....
....
....
#...

output

Copy

2

input

Copy

5
#...#
.#.#.
.....
.#...
#....

output

Copy

5

Note

The examples and some of optimal solutions are shown on the pictures below.

Codeforces Round #576 (Div. 1)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++11 5.1.0

Choose file:

选择文件

 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.


Submit

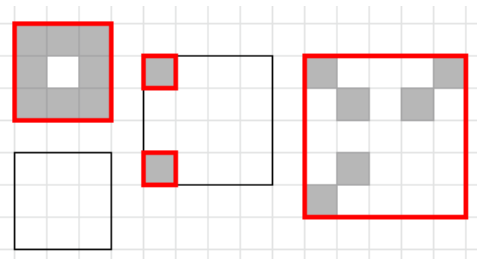
→ Problem tags

dp

No tag edit access

→ Contest materials

- Announcement (en) 



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