Placid subsets P68087_en

You are planning a trip for the n members of a club. However, some of the members dislike other members. Therefore, you decide to choose a subset S of members such that:

- Inside S, noone dislikes anyone.
- There is no S' such that $S \subset S'$ and such that S' fulfils the first property. In other words, S must be maximal.

Given the information about who dislikes who, can you count the number of such subsets?

Input

Input consists of several cases, each one with n followed by n lines with n characters each. For $i \neq j$, the j-th character of the i-th line is '`L`' or '`D`' depending on whether i likes or dislikes j. The diagonal has only dots. Assume $1 \leq n \leq 20$.

Output

For every case, print the number of maximal placid subsets.

Sample input 1

```
2
.D
L.

5
.LDDL
D.LDL
DL.LL
LDD.D
LLLL.

6
.LLLLL
L.LLLL
LL.LLL
DLL.LL
LLDL.L
LLLDD.
```

Sample output 1

```
2
3
4
```

Problem information

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