Problem A: A network

Advanced Algorithms for Programming Contests

Restrictions

Time: 2 seconds
Memory: 512 MB

Problem description

There are n computers in your network. Some problems occurred in the switch and now not all pairs of computers can establish a connection anymore. Moreover, if computer a is already connected to computer b, neither can connect to another computer. You are to calculate the maximum number of computers that can establish a connection at the same time.

Input

The input consists of

- one line containing n, $(1 \leq n \leq 18)$ – the number of computers
- n lines with n characters each, where the i-th character in the j-th row is "Y" if computers i and j can establish a connection and "N" otherwise. The i-th character in the i-th row is always "N" and interpreted as $n \times n$ matrix the n lines are symmetric.

Output

Output the maximum number of computers that can establish a connection at the same time.

Sample input and output

Input	**Output**
5 NYYYY YNNNN YNNNY YNNNY YNYYN	4