Friend Circles

There are N students in a class. Some of them are friends, while some are not. Their friendship is transitive in nature, i.e., if A is friend of B and B is friend of C, then A is also friend of C. A friend circle is a group of students who are directly or indirectly friends.

You are given a $N \times N - matrix$ M which consists of characters `Y` or `N`. If $M[i][j] = Y$, then i^{th} and j^{th} students are friends with each other, otherwise not. You have to print the total number of friend circles in the class.

Input Format
First line of the input contains an integer N - (size of the matrix), followed by N lines each having N characters.

Output Format
Print the maximum number of friend circles.

Constraints
$1 \leq N \leq 300$
Each element of matrix friends will be `Y` or `N`.
Number of rows and columns will be equal in the matrix.

$M[i][i] = Y$, where $0 \leq i < N$
$M[i][j] = M[j][i]$, where $0 \leq i < j < N$

Sample Input#00

```
4
YYNN
YYYN
NYYN
NNNY
```

Sample Output

```
2
```

Explanation: There are two pairs of friends $(0, 1)$ and $(1, 2)$. So $(0, 2)$ is also a pair of friends by transitivity. So first friend circle contains $(0, 1, 2)$, and second friend circle contains only student 3.

Sample Input#01

```
5
YNNNN
NYNNN
NNYNN
NNNYN
NNNNY
```

Sample Output#01

```
5
```

Explanation: No students are friends with each other. So each friend circle will contain of only one student $\{0\}, \{1\}, \{2\}, \{3\}, \{4\}$.