ACM 2016 - Islands

You are mapping a faraway planet using a satellite.

The planet's surface can be modeled as a grid. Your satellite has captured an image of the surface. Each grid square is either land (denoted as 'L'), water (denoted as 'W'), or covered by clouds ('C'). Clouds mean that the surface could either be land or water, but you can't tell.

An island is a maximal region of land where every grid cell in the island is reachable from every other by a path that only goes up, down, left or right.

Given an image, determine the minimum number of islands that is consistent with the given information.

Input Format

The first line of input contains two integers, n and m, which are the height and width of the image. The next n lines will each contain exactly m characters, consisting only of 'L', 'W' and 'C', as explained above.

Constraints

$1 \le n, m \le 50$

Output Format

Print one line of output containing an integer denoting the minimum number of islands possible.

Sample Input 0

```
4 5
CCCCC
CCCCC
CCCCC
CCCCC
```

Sample Output 0

```
0
```

Sample Input 1

```
3 2
LW
CC
WL
```

Sample Output 1

```
1
```

Sample Input 2

```
10 10
CCCCCCCCCC
CLWLWLWLWC
CCCCCCCCCC
CWLWLWLWLC
CCCCCCCCCC
WWWWWLLWWW
```

```
LLWLLWWLLL
CCWCCWCCCC
LWWLWWLWWW
CWWWWWWWWC
```

Sample Output 2

```
4
```

Sample Input 3

```
10 10
LCCCCCCCCC
CCCCCCCCCC
CCCCCCCCCC
WWWWWWWWWW
LCCCCCCCCC
CCCCCCCCCC
CCCCCCCCCL
WWWWWWWWWW
LWLWLWLWLW
WLWLWLWLWL
```

Sample Output 3

```
12
```