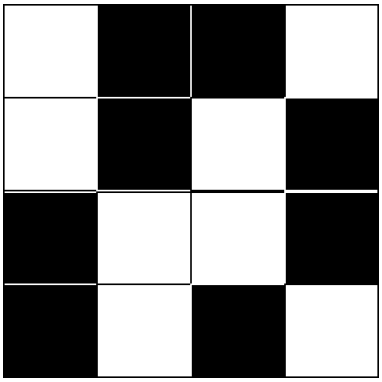
Problem W
Black and White
Time limit: 1 second



You are given an n-by-n grid where each square is colored either black or white. A grid is *correct* if all of the following conditions are satisfied:

- Every row has the same number of black squares as it has white squares.
- Every column has the same number of black squares as it has white squares.
- No row or column has 3 or more consecutive squares of the same color.

Given a grid, determine whether it is *correct*.

Input

The first line contains an integer n ($2 \leq n \leq 24$; n is even). Each of the next n lines contains a string of length n consisting solely of the characters '`B`' and '`W`', representing the colors of the grid squares.

Output

If the grid is *correct*, print the number 1 on a single line. Otherwise, print the number 0 on a single line.

Sample Input 1

```
4
WBBW
WBWB
BWWB
BWBW
```

Sample Output 1

```
1
```

Sample Input 2

```
4
BWWB
BWBB
WBBW
WBWW
```

Sample Output 2

```
0
```

Sample Input 3

```
6
BWBWWB
WBWBWB
WBBWBW
BBWBWW
BWWBBW
WWBWBB
```

Sample Output 3

```
0
```

Sample Input 4

```
6
WWBBWB
BBWWBW
WBWBWB
BWBWBW
BWBBWW
WBWWBB
```

Sample Output 4

```
1
```