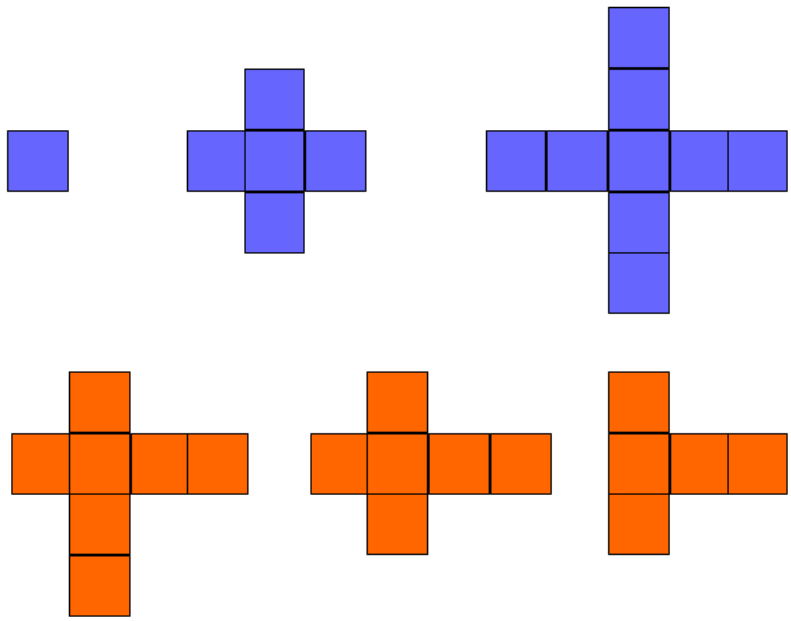
Ema's Supercomputer ☆

Ema built a quantum computer! Help her test its capabilities by solving the problem below.

Given a grid of size $n \times m$, each cell in the grid is either *good* or *bad*.

A *valid* plus is defined here as the crossing of two segments (horizontal and vertical) of equal lengths. These lengths must be odd, and the middle cell of its horizontal segment must cross the middle cell of its vertical segment.

In the diagram below, the blue pluses are *valid* and the orange ones are *not valid*.



Find the two largest *valid* pluses that can be drawn on *good* cells in the grid, and return an integer denoting the maximum product of their areas. In the above diagrams, our largest pluses have areas of 5 and 9. The product of their areas is $5 \times 9 = 45$.

Note: The two pluses *cannot* overlap, and the product of their areas should be maximal.

Input Format

The first line contains two space-separated integers, n and m.
Each of the next n lines contains a string of m characters where each character is either **G** (*good*) or **B** (*bad*). These strings represent the rows of the grid. If the y^{th} character in the x^{th} line is **G**, then (x, y) is a *good* cell. Otherwise it's a *bad* cell.

Constraints

- $2 \leq n \leq 15$
- $2 \leq m \leq 15$

Output Format

Find 2 pluses that can be drawn on *good* cells of the grid, and return an integer denoting the maximum product of their areas.

Sample Input 0

Author	nikasvanidze
Difficulty	Medium
Max Score	40
Submitted By	5284

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```
5 6
GGGGGG
GBBBGB
GGGGGG
GGBBGB
GGGGGG
```

Sample Output 0

```
5
```

Sample Input 1

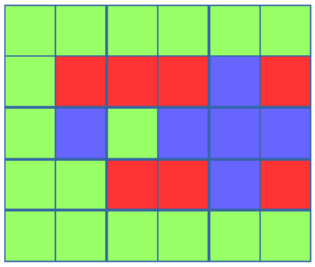
```
6 6
BGBBGB
GGGGGG
BGBBGB
GGGGGG
BGBBGB
BGBBGB
```

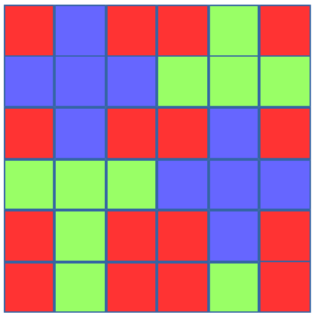
Sample Output 1

```
25
```

Explanation

Here are two *possible solutions* for **Sample 1** (left) and **Sample 2** (right):





Explanation Key:

- *Green*: $\boldsymbol{good}$ cell
- *Red*: $\boldsymbol{bad}$ cell
- *Blue*: possible $\boldsymbol{pluses}$.

For the explanation below, we will refer to a plus of length i as P_i.

Sample 0

There is enough good space to color one P_3 plus and one P_1 plus. $Area(P_3) = 5\ units$, and $Area(P_1) = 1\ unit$. The product of their areas is $5 \times 1 = 5$.

Sample 1

There is enough good space to color two P_3 pluses. $Area(P_3) = 5\ units$. The product of the areas of our two P_3 pluses is $5 \times 5 = 25$.

Current Buffer (saved locally, editable) Java 7

```
1 ▼ import java.io.*;
2   import java.util.*;
```

```java
import java.text.*;
import java.math.*;
import java.util.regex.*;

public class Solution {

    static int twoPluses(String[] grid) {
        // Complete this function
    }

    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        int n = in.nextInt();
        int m = in.nextInt();
        String[] grid = new String[n];
        for(int grid_i = 0; grid_i < n; grid_i++){
            grid[grid_i] = in.next();
        }
        int result = twoPluses(grid);
        System.out.println(result);
        in.close();
    }
}

```

Line: 1 Col: 1

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