3

Dango Maker

You are a professional confectioner making dangos, Japanese sweet dumplings. Now, you are about to skewer the dumplings.

The dumplings are placed on a grid of cells with N rows and M columns. Each cell contains one dumpling. The color of each dumpling is either red (R), green (G), or white (W).

You will choose three consecutive dumplings from the cells, and skewer them to a stick. The direction of the chosen three consecutive dumplings must be from left to right, or from top to bottom.

Now, you want to make sticks of dumplings whose colors are red, green, white, in this order. You want to make as many sticks of dumplings as possible. The order of dumplings skewered to a stick must be the same as the order of dumplings chosen from the cells. You are not allowed to skewer more than one sticks to one dumpling.

How many sticks of dumplings can you make?

Task

Given the colors of dumplings placed on the cells, write a program which calculates the maximum number of sticks of dumplings you can make. The colors must be red, green, white, in this order.

Input

Read the following data from the standard input.

- The first line of input contains two space separated integers N and M.

- The i-th line ($1 \leq i \leq N$) of the following N lines contains a string of size M consisting of R, G, or W. The j-th character ($1 \leq j \leq M$) of this string is the color of the dumpling in the i-th row from the top, and the j-th column from the left.

Output

White one line to the standard output. The output should contain the maximum number of sticks of dumplings.

Constraints

All input data satisfy the following conditions.

- $1 \leq N \leq 3\,000$.

- $1 \leq M \leq 3\,000$.

Subtask

Subtask 1 [13 points]

The following conditions are satisfied.

- $N \leq 4$.

- $M \leq 4$.

Subtask 2 [20 points]

The following conditions are satisfied.

- $N \leq 10$.

- $M \leq 10$.

Subtask 3 [67 points]

- There are no additional constraints.

Sample Input and Output

Sample Input 1	Sample Output 1
3 4	3
RGWR	
GRGG	
RGWW	

By the following way, you can make 3 sticks of dumplings.

- You choose three consecutive dumplings from the first row from top, and the first column from left. The direction is from left to right. Then, you skewer them to a stick in this order.

- You choose three consecutive dumplings from the first row from top, and the 4-th column from left. The direction is from top to bottom. Then, you skewer them to a stick in this order.

- You choose three consecutive dumplings from the third row from top, and the first column from left. The direction is from left to right. Then, you skewer them to a stick in this order.

Since you cannot make 4 sticks, output 3.

Sample Input 2	Sample Output 2
4 4	4
RGWR	
GRRG	
WGGW	
WWWR	

By the following way, you can make 4 sticks of dumplings.

- You choose three consecutive dumplings from the first row from top, and the first column from left. The direction is from left to right. Then, you skewer them to a stick in this order.

- You choose three consecutive dumplings from the first row from top, and the 4-th column from left. The direction is from top to bottom. Then, you skewer them to a stick in this order.

- You choose three consecutive dumplings from the second row from top, and the second column from left. The direction is from top to bottom. Then, you skewer them to a stick in this order.

- You choose three consecutive dumplings from the second row from top, and the third column from left. The direction is from top to bottom. Then, you skewer them to a stick in this order.

Since you cannot make 5 sticks, output 4.

Sample Input 3	Sample Output 3
5 5	6
RGRGW	
GRRGW	
WGGWR	
RWRGW	
RGWGW	