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ACM ICPC Team

by dheeraj

Problem

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You are given a list of N people who are attending ACM-ICPC World Finals. Each of them are either well versed in a topic or they are not. Find out the maximum number of topics a 2-person team can know. And also find out how many teams can know that maximum number of topics.

Note Suppose a , b , and c are three different people, then (a,b) and (b,c) are counted as two different teams.

Input Format



The first line contains two integers, N and M , separated by a single space, where N represents the number of people, and M represents the number of topics. N lines follow.

Each line contains a binary string of length M . If the i^{th} line's j^{th} character is **1**, then the i^{th} person knows the j^{th} topic; otherwise, he doesn't know the topic.

Constraints

$$2 \leq N \leq 500$$

$$1 \leq M \leq 500$$

Output Format

On the first line, print the maximum number of topics a 2-person team can know.

On the second line, print the number of 2-person teams that can know the maximum number of topics.

Sample Input

```
4 5
10101
11100
11010
00101
```

Sample Output

```
5
2
```

Explanation

(1, 3) and (3, 4) know all the 5 topics. So the maximal topics a 2-person team knows is 5, and only 2 teams can achieve this.

[f](#) [t](#) [in](#)

Submissions: 24546

Max Score: 20


Difficulty: Easy

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[Finding Max Min](#)[Bitwise OR](#)

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C#



```
1 using System;
2 using System.Collections.Generic;
3 using System.IO;
4 using System.Linq;
5 class Solution {
6
7     static void Main(String[] args) {
8
9         string[] tokens_n = Console.ReadLine().Split(' ');
10        int n = Convert.ToInt32(tokens_n[0]);
11        int m = Convert.ToInt32(tokens_n[1]);
12        string[] topic = new string[n];
13        for (int topic_i = 0; topic_i < n; topic_i++)
14        {
15            topic[topic_i] = Console.ReadLine();
16        }
17
18        //int n = 4, m = 5;
19        //string[] topic = { "10101",
20        //                    "11100",
21        //                    "11010",
22        //                    "00101"};
23
24        int ans = 0;
25
26        int max_ancho = 0;
27        int person_teams2 = 0;
28
29        for (int i = 0; i < n - 1; i++)
30        {
31            for (int j = i + 1; j < n; j++)
32            {
33                int k;
34                int ancho = 0;
35                for (k = 0; k < m; k++)
36                {
37                    if (topic[i][k] == '1' || topic[j][k] == '1')
38                    {
39                        ancho++;
40                    }
41                }
42                //max_ancho = Math.Max(max_ancho, ancho);
43                if (ancho > max_ancho)
44                {
45                    max_ancho = ancho;
46                    person_teams2 = 1;
47                }
48                else if (ancho == max_ancho)
49                {
50                    person_teams2++;
51                }
52            }
53        }
54
55        Console.WriteLine(max_ancho);
56        Console.WriteLine(person_teams2);
57
58
59
60
61    }
62 }
63
```

Line: 45 Col: 25

 [Upload Code as File](#) ☐ Test against custom input[Run Code](#)[Submit Code](#)

Congrats, you solved this challenge!

✓ Test Case #0

✓ Test Case #3

✓ Test Case #6

✓ Test Case #1

✓ Test Case #4

✓ Test Case #7

✓ Test Case #2

✓ Test Case #5

Next Challenge

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