



Task: Raspad

A nearby meadow consists of quadratic *fields* organized in n rows and m columns. The rows are denoted with numbers from 1 to n from top to bottom, and the columns with numbers from 1 to m from left to right. Some fields are grass fields (denoted with “1”), whereas some are underwater because of the heavy spring rainfall (denoted with “0”). Two grass fields are *connected* if it is possible to get from one field to another using a series of moves where, in each step, we move to the adjacent grass field located up, down, left or right. A *component* is a set of mutually connected grass fields that is *maximal* in the sense that, if A is a field in the component K , then all the adjacent grass fields of A are also in the component K .

For a given meadow P and indices a and b ($1 \leq a \leq b \leq n$), P_b^a is a meadow consisting of rows between the a^{th} and the b^{th} row of the original meadow P (including both a^{th} and b^{th} row). The *complexity* of meadow P_b^a is the number of components of the grass fields located on the meadow. Determine the sum of the complexities of all possible meadows P_b^a .

Input

The first line of input contains the positive integers n and m — dimensions of the meadow. Each of the following n lines contains a string of exactly m characters that denotes one row of the meadow. Each character of the string is either the digit “0” or the digit “1”.

Output

You must output the required sum of all complexities.

Scoring

Subtask	Score	Constraints
1	9	$n \leq 100, m \leq 50$
2	17	$n \leq 1\,000, m \leq 50$
3	35	$n \leq 100\,000, m \leq 15$
4	39	$n \leq 100\,000, m \leq 50$

Sample tests

input

```
4 4
1101
1111
1010
1011
```

output

14

input

```
5 7
0100010
0111110
0101001
1111011
0100100
```

output

33

input

```
4 12
011111010111
110000101001
110111101111
111101111111
```

output

28

Explanation of the first sample: If we denote the complexity of meadow P_b^a with $|P_b^a|$ then it holds that $|P_1^1| = 2$, $|P_2^1| = 1$, $|P_3^1| = 1$, $|P_4^1| = 1$, $|P_2^2| = 1$, $|P_3^2| = 1$, $|P_4^2| = 1$, $|P_3^3| = 2$, $|P_4^3| = 2$, $|P_4^4| = 2$, and the sum of these numbers is 14.