Time limit: 6.0s **Memory limit:** 1G

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 ($1 \le a \le b \le n$), P_b^a is a meadow consisting of rows between the $a^{\rm th}$ and the $b^{\rm th}$ row of the original meadow P (including both $a^{\rm th}$ and $b^{\rm th}$ 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 Specification

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 Specification

You must output the required sum of all complexities.

Constraints

Subtask	Score	Constraints
1	9	$n \leq 100, m \leq 50$
2	17	$n \leq 1000, m \leq 50$
3	35	$n \leq 100000, m \leq 15$
4	39	$n\leq 100000, m\leq 50$

Sample Input 1

4 4

1101

1111 1010

1011

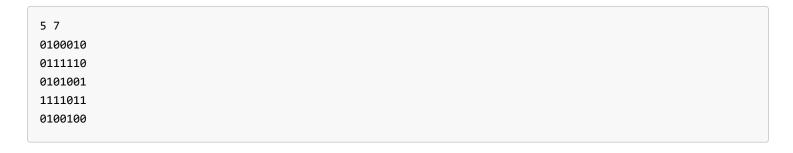
Sample Output 1

Explanation for Sample Output 1

If we denote the complexity of meadow P^a_b with $|P^a_b|$ then it holds that

 $|P_1^1|=2, |P_2^1|=1, |P_3^1|=1, |P_4^1|=1, |P_2^2|=1, |P_3^2|=1, |P_4^2|=1, |P_3^3|=2, |P_4^3|=2, |P_4^4|=2, |P_4^4|=2$

Sample Input 2



Sample Output 2

33

Sample Input 3

Sample Output 3

28