Pair Selection

Given an $N * M$ matrix A, where each entry $A[i][j]$ of A can either be 0 or be 1. You need to select a set of pairs $\{(a_1, b_1), (a_2, b_2) \ldots (a_k, b_k)\}$ such that size of the set (K) is maximized and the following conditions hold true :-

- $a_i \in [1, N]$, $b_i \in [1, M]$ and $A[a_i][b_i] = 1 \; \forall \; i \in [1, K]$
- ALL a_i's are distinct.
- ALL b_i's are distinct.
- For every pair (a_i, b_i), at least one of a_i or b_i should be **good** .

An element $i \in [1, N]$ is **good** if :-

- $a_p = i$ for some $p \in [1, K]$, i.e. element i is selected in the set as some a_p.
- For every $j \in [1, M]$, if $A[i][j] = 1$ then $b_q = j$ for some $q \in [1, K]$, i.e. every such j should be selected as some b_q in the set.

Similarly an element $j \in [1, M]$ is **good** if :-

- $b_p = j$ for some $p \in [1, K]$, i.e. element j is selected in the set as some b_p.
- For every $i \in [1, N]$, if $A[i][j] = 1$ then $a_q = i$ for some $q \in [1, K]$, i.e. every such i should be selected as some a_q in the set.

What is the maximum size of the set that we can choose ?

Input Format

First line contains two integers **N** and **M** denoting the size of the matrix. Next follow **N** lines each containing a string of length **M** denoting the entries of the matrix. Each character of the string is either **0** or **1**.

Constraints

$1 \leq N \leq 500$
$1 \leq M \leq 500$

Output Format

Output 1 integer depicting the maximum **K** given the constraints in the problem.

Sample Input

```
4 4
1100
0100
0011
1100
```

Sample Output

```
3
```

Explanation

We can chose the following 3 pairs:
(1,1),(2,2),(3,3)
a1,a2 and b3 are good. Note that in every pair we want at least one of the ai/bi to be good.