

## B. Sereja and Mirroring

time limit per test: 1 second  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

Let's assume that we are given a matrix  $b$  of size  $x \times y$ , let's determine the operation of mirroring matrix  $b$ . The mirroring of matrix  $b$  is a  $2x \times y$  matrix  $c$  which has the following properties:

- the upper half of matrix  $c$  (rows with numbers from 1 to  $x$ ) exactly matches  $b$ ;
- the lower half of matrix  $c$  (rows with numbers from  $x + 1$  to  $2x$ ) is symmetric to the upper one; the symmetry line is the line that separates two halves (the line that goes in the middle, between rows  $x$  and  $x + 1$ ).

Sereja has an  $n \times m$  matrix  $a$ . He wants to find such matrix  $b$ , that it can be transformed into matrix  $a$ , if we'll perform on it **several** (possibly zero) mirrorings. What minimum number of rows can such matrix contain?

### Input

The first line contains two integers,  $n$  and  $m$  ( $1 \leq n, m \leq 100$ ). Each of the next  $n$  lines contains  $m$  integers — the elements of matrix  $a$ . The  $i$ -th line contains integers  $a_{i1}, a_{i2}, \dots, a_{im}$  ( $0 \leq a_{ij} \leq 1$ ) — the  $i$ -th row of the matrix  $a$ .

### Output

In the single line, print the answer to the problem — the minimum number of rows of matrix  $b$ .

### Examples

input
4 3 0 0 1 1 1 0 1 1 0 0 0 1
output
2

  

input
3 3 0 0 0 0 0 0 0 0 0
output
3

  

input
8 1 0 1 1 0 0 1 1 0
output
2

**Note**

In the first test sample the answer is a  $2 \times 3$  matrix  $b$ :

001  
110

If we perform a mirroring operation with this matrix, we get the matrix  $a$  that is given in the input:

001  
110  
110  
001