

## A. Ragmentation

time limit per test: 2 s.  
memory limit per test: 1024 MB

You are given a grid of size  $n \times m$ , where the cell in the  $i$ -th row and the  $j$ -th column contains an integer  $a_{i,j}$ .

You are allowed to rearrange the elements **within each column independently** in any order.

After rearranging, define the following quantity:  $\sum_{i=1}^n \sum_{j=1}^{m-1} |a_{i,j} - a_{i,j+1}|$ . Your task is to determine the minimum possible value of this quantity after rearranging the columns.

### Input

The first line contains two integers  $n$  and  $m$  ( $1 \leq n \leq 100$ ,  $2 \leq m \leq 100$ ) — the number of rows and columns of the grid.

Each of the next  $n$  lines contains  $m$  space-separated integers  $a_{i,1}, a_{i,2}, \dots, a_{i,m}$  ( $1 \leq a_{i,j} \leq 10^9$ ), where  $a_{i,j}$  is the integer in the  $i$ -th row and the  $j$ -th column.

### Output

Print the minimum possible value of the aforementioned quantity in one line.

### Examples

input	Copy
<pre>3 2 4 1 5 8 4 7</pre>	
output	Copy
<pre>9</pre>	

input	Copy
<pre>2 3 1 1 4 5 1 4</pre>	
output	Copy
<pre>10</pre>	

### Micro1 Contest #9

Contest is running

01:36:39

Contestant



### → Languages

The following languages are only available for the problems from the contest

#### Micro1 Contest #9:

- GNU G++17 7.3.0
- GNU G++20 13.2 (64 bit, winlibs)
- GNU G++23 14.2 (64 bit, msys2)

### → Submit?

Language:
GNU G++23 14.2 (64 bit, ms

Choose file:

Choose File
No file chosen

Submit

### → Last submissions

Submission	Time	Verdict
<a href="#">318118862</a>	May/02/2025 17:52	Accepted