

A. Flag

time limit per test: 2 seconds
 memory limit per test: 64 megabytes
 input: standard input
 output: standard output

According to a new ISO standard, a flag of every country should have a chequered field $n \times m$, each square should be of one of 10 colours, and the flag should be «striped»: each horizontal row of the flag should contain squares of the same colour, and the colours of adjacent horizontal rows should be different. Berland's government asked you to find out whether their flag meets the new ISO standard.

Input

The first line of the input contains numbers n and m ($1 \leq n, m \leq 100$), n — the amount of rows, m — the amount of columns on the flag of Berland. Then there follows the description of the flag: each of the following n lines contain m characters. Each character is a digit between 0 and 9, and stands for the colour of the corresponding square.

Output

Output YES, if the flag meets the new ISO standard, and NO otherwise.

Examples

input
3 3 000 111 222
output
YES

input
3 3 000 000 111
output
NO

input
3 3 000 111 002
output
NO

→ Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

Codeforces Beta Round #16 (Div. 2 Only)

Finished

→ Virtual participation

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Start virtual contest

→ Problem tags

implementation

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→ Contest materials

- Announcement 
- Tutorial 