B. Fox And Two Dots

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Fox Ciel is playing a mobile puzzle game called "Two Dots". The basic levels are played on a board of size $n \times m$ cells, like this:

Each cell contains a dot that has some color. We will use different uppercase Latin characters to express different colors.

The key of this game is to find a cycle that contain dots of same color. Consider 4 blue dots on the picture forming a circle as an example. Formally, we call a sequence of dots $d_1, d_2, \ldots, d_k$ a *cycle* if and only if it meets the following condition:

1. These k dots are different: if $i \neq j$ then d_i is different from d_j.
2. k is at least 4.
3. All dots belong to the same color.
4. For all $1 \leq i \leq k - 1$: d_i and d_{i+1} are adjacent. Also, d_k and d_1 should also be adjacent. Cells x and y are called adjacent if they share an edge.

Determine if there exists a *cycle* on the field.

Input

The first line contains two integers n and m $(2 \leq n, m \leq 50)$: the number of rows and columns of the board.

Then n lines follow, each line contains a string consisting of m characters, expressing colors of dots in each line. Each character is an uppercase Latin letter.

Output

Output "Yes" if there exists a *cycle*, and "No" otherwise.

Examples

input
3 4 AAAA ABCA AAAA
output
Yes

input
3 4 AAAA ABCA AADA
output
No

input
4 4 YYYR BYBY BBBY BBBY
output
Yes

Codeforces Round #290 (Div. 2)

Finished

→ **Virtual participation**

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ **Problem tags**

dfs and similar

No tag edit access

→ **Contest materials**

- Announcement
- Tutorial

input
7 6 AAAAAB ABBBAB ABAAAB ABABBB ABAAAB ABBBAB AAAAAB
output
Yes

input
2 13 ABCDEFGHIJKLM NOPQRSTUVWXYZ
output
No

Note

In first sample test all 'A' form a cycle.

In second sample there is no such cycle.

The third sample is displayed on the picture above ('Y' = Yellow, 'B' = Blue, 'R' = Red).