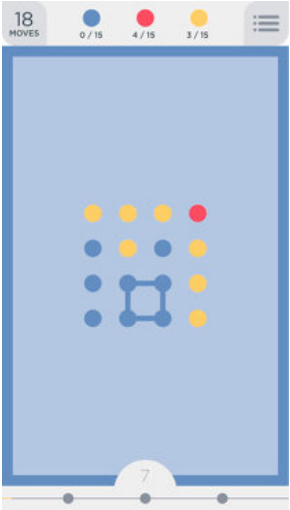


PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

B. Fox And Two Dots

time limit per test: 2 seconds
memory limit per test: 256 megabytes

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, \dots, d_k a cycle if and only if it meets the following condition:

- These k dots are different: if $i \neq j$ then d_i is different from d_j .
- k is at least 4.
- All dots belong to the same color.
- 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	Copy
3 4 AAAA ABCA AAAA	
output	Copy
Yes	

input	Copy
3 4 AAAA ABCA AADA	
output	Copy
No	

Codeforces Round 290 (Div. 2)

Finished

Practice



→ Virtual participation

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++17 7.3.0

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
315244285	Apr/13/2025 09:30	Accepted

→ Problem tags

dfs and similar *1500

No tag edit access

→ Contest materials

- Codeforces Round #290
- Tutorial (en)

input	Copy
4 4 YYR BYBY BBBY BBBY	
output	Copy
Yes	

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

input	Copy
2 13 ABCDEFGHIJKLM NOPQRSTUVWXYZ	
output	Copy
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).

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