

## UESTC 2016 Summer Training #4 Div.2

3:24:46

5:00:00

Overview Problem Status Rank (98171) Discuss

A B C D E F G H I J

## C - (๑`Д`๑)

Time Limit:2000MS Memory Limit:262144KB 64bit IO Format:%l64d &amp; %l64u

Submit

Status

## Description

standard input/output

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## • Statements

Vitaly works at the warehouse. The warehouse can be represented as a grid of  $n \times m$  cells, each of which either is free or is occupied by a container. From every free cell it's possible to reach every other free cell by moving only through the cells sharing a side. Besides that, there are two robots in the warehouse. The robots are located in different free cells.

Vitaly wants to swap the robots. Robots can move only through free cells sharing a side, moreover, they can't be in the same cell at the same time or move through each other. Find out if the swap can be done.

## Input

The first line contains two positive integers  $n$  and  $m$  ( $2 \leq n \cdot m \leq 200000$ ) — the sizes of the warehouse.

Each of the next  $n$  lines contains  $m$  characters. The  $j$ -th character of the  $i$ -th line is «.» if the corresponding cell is free, «#» if there is a container on it, «1» if it's occupied by the first robot, and «2» if it's occupied by the second robot. The characters «1» and «2» appear exactly once in these lines.

## Output

Output «YES» (without quotes) if the robots can be swapped, and «NO» (without quotes) if that can't be done.

## Sample Input

Input

5 3

###

#1#

#.#

#2#

###

**Output**

NO

**Input**

3 5

#...#

#1.2#

####

**Output**

YES

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