



G Space Invaders

TIME LIMIT: 2.0s
 MEMORY LIMIT: 512MB

A certain species of space invaders were found on the streets of Paris, taking a mosaic form. Each invader has a fixed shape represented by the following 8×13 pattern:

```

#.#.#.#.#.#
#.#####.#
###.#####.###
###.#####.###
#####...#####
..#####..
..###...###..
.##....##....
  
```

Each # denotes an occupied cell, and each . denotes empty cell.

For a positive integer k , a *scaled invader* is obtained by replacing every cell of the pattern with a $k \times k$ block. Occupied cells become filled $k \times k$ blocks, and empty cells become empty $k \times k$ blocks.

You want to code an «invader detector». Your program will be given a photo of a grid that may or may not contain space invaders. You need to determine if there exists such configuration of space invaders that:

- There is at least one space invader.
- Every occupied cell belongs to exactly one space invader,
- All space invaders have the same scale k ,
- It is allowed for one space invader's occupied cells to overlap with empty cells of another space invader.

INPUT

The first line contains two integers n and m ($1 \leq n, m \leq 4000$) — dimensions of the grid.

Each of the next n lines contains a row of a grid, that has exactly m characters, each being “#” or “.”, that represent occupied or empty cell correspondingly.

OUTPUT

Print YES if the photo is valid, otherwise print NO.

SAMPLES

Sample input 1	Sample output 1
<pre>8 13 #.#.#.#.#.# #.#####.# ###.#####.### ###.#####.### #####.##### ..#####.. ..###...###.. .##...##...</pre>	YES

Sample input 2	Sample output 2
<pre>4 5 .#.#. #.#.# .#.#. #.#.#</pre>	NO

Sample input 3	Sample output 3
<pre>8 30 ..#.#.#.#.#.#.#.#.#.#.#.#.#.#.# ..#.#####.#.#.#####.# ..###.#####.###.###.#####.### ..###.#####.###.###.#####.### ..#####.#####.#####.##### ...#####.....#####.. ...###...###.....###...###.. ...##...##.....##...##...</pre>	YES

Sample input 4	Sample output 4
<pre> 9 16 #####.##### ##.....##### ##.....##. ##.....##. #####.....##. #####.....##. ##...##.##..... ##...##.##..... #####..... </pre>	<p>NO</p>