Quiz Section for Program Design (II)

Bonus #2

In this program, you will receive a map of a maze, and your task is to find the shortest path from 'A' (start) to 'B' (end). The map is represented by a $n \times m$ matrix, and each element in the matrix is either floor or wall (' . ' is floor and '#' is wall). Only floor element can be passed through. You can walk left, right, up, and down through the floor squares.

Input:

The first line has two integers n and m which represent: the height and width of the map.

Following the first line. Then, there are n lines of m characters describing the map.

Output:

Print "YES" , if there is a path between A and B, and "NO" otherwise.

If there exists a path, print the length (i.e., the numbers of elements between 'A' and 'B') of the shortest path.

Constraints:

- $1 \leq n, m \leq 1000$

Input	Output
3 4 #### #A## ###B	NO
7 7 ####### #A..### ###...# .#..#.# .#.##.# ##B...# #######	YES 7