Lavatory

Mouse Stofl has been invited to the SOI final in the university of Bern. He is very excited and prepared himself for all imaginable situations: He sharpened his ten pencils, took with him three notepads, carried liters of water to Bern and also a cheese so big that it would maybe be big enough for all participants. Briefly speaking, he did everything to not have to move for the next five hours and to be able to concentrate completely on the tasks. But there is something he forgot!

Suddenly during the contest, he has to go to the toilet desperately. Unfortunately, the university is under reconstruction and so not all toilets are accessible.

Luckily Stofl has a map of the university with him with all the toilets, walls and barriers. But is there any accessible toilet? Or would he waist his time with an unsuccessful search?

Input

The first line of the Input contains 2 integers n (separated by spaces). n is the height of the map and m is the width. Then there follows the map as ASCII image.

#	Wall or Barrier
.	Floor
s	Stofl
t	Toilet

There is at least one toilet and exactly one Stofl.

Output

Print Go if Stofl can reach a toilet and Oh no! if not.

Limits

The tests consist out of 4 test groups, each worth 25 points.

- In test group 1 holds $n \leq 10$.
- In test group 2 holds $n \leq 50$.
- In test group 3 holds $n \leq 100$.
- In test group 4 holds $n \leq 300$.

Examples

Input	Output
5 7 s...... .####.. #.t.#.. #...#.. ##..###	Oh no!

Stofl can reach no toilet.

Input	Output
8 9 ....#####.. ..#.t.#.. ..#...... ..####### .... ###...s.. t.#......	Go

Stofl goes up, left, up, right, down, left, up and then reaches the upper toilet. He can't reach the toilet at the lower left corner.