

## Challenge 5 - Tribblemaker

After Bones returned from planet B3/S23 to the USS Enterprise, he rushed to the bridge to brief the captain about his discovery.

– *Jim, I have found a remarkable species down on the planet! They are called Tribbles, look at their reproductive patterns!*



In the cage, Jim and Bones could see the animals spread out on the floor on a grid. They were quickly being born and dead, based on some proximity rule.

```
--X--XX
-X-XX---
XXX---XX
XXXXX--X
X-X--XX-
--XX--XX
-X-X-X-X
X-X-X-X-
```

Spock intervened: *"Fascinating. They seem to be following the standard rules described by the earthling Dr John Conway".*

Bones added: *"Damn it, I'm a doctor not a biologist, but don't you feel like*

*their position on the grid seems to follow a loop? Weren't they positioned like this a while ago? I wonder if we could predict it".*

Chekov overheard the conversation and popped into the room: *"I can do this! I can do this! Just let me code a quick algorithm, it will be super easy".*

## Challenge

Chekov is a genius, but I'm sure you can do this as well. Given an initial grid of Tribbles, find the generations that define a loop. For example, if in generation 57 the pattern looks like it did on generation 5, we have a loop starting on generation 5 with period length 52.

The initial grid given is generation 0. The first generation you need to calculate is generation 1.

## Input

The file contains a grid given as an 8x8 pattern, so it's composed of eight lines with eight characters each. A dash (-) indicates a vacant cell, an X indicates a Tribble.

## Output

Return a line containing two numbers separated by a space. First one is the first generation of the loop, the second is the duration (period) of the loop.

The grid is guaranteed to loop eventually before generation 100. The grid does NOT wrap around. Assume empty cells bordering the initial 8x8, that cannot be populated.

## First example

### Input

```
X - - - - - X
- - - - - 
- - - X - - - 
- - - X - - - 
- - - X - - - 
- - - - - 
- - - - - 
X - - - - - X
```

## Output

1 2

## Second example

### Input

```
XX- - - -XX
XX- - - -XX
- - - - -
- - -XX- -
- - -XX- -
- - - - -
XX- - - -XX
XX- - - -XX
```

## Output

0 1

## Example explanation

This means that for the first grid, on generation 1 a loop starts that repeats every 2 generations (i.e. the grid alternates between two states: generation 3 will look like 1, etc). For the second grid, the loop starts in generation 0 and repeats its pattern every generation (i.e., the grid never changes).

## Submit & test your code

To test and submit code we provide a set of tools to help you. Download [contest tools](#) if you haven't already done that. You will then be able to test and submit your solution to this challenge with the challenge token.

Challenge token: Wt4QTzt2HtG38TbLRbWS

## To test your program

```
./test_challenge Wt4QTzt2HtG38TbLRbwS path/program
```

A nice output will tell you if your program got the right solution or not. You can try as many times as you need.

## To submit your program to the challenge

```
./submit_challenge Wt4QTzt2HtG38TbLRbwS  
path/source_pkg.tgz path/program
```

Note that you first need to solve the test phase before submitting the code. During the submit phase, in some problems, we might give your program harder questions, so try to make your program failsafe.

**Important:** In this phase, you must provide the source code used to solve the challenge and, if necessary, a brief explanation of how you solved it.

Remember **you can only submit once!** Once your solution is submitted you won't be able to amend it to fix issues or make it faster, so please be sure your solution is finished before submitting it.

If you have any doubts, please check the [info section](#).

## Go ahead

### I'm done! :)

Once you have submitted your code, hit refresh and continue to next challenge.

### I'm stuck! :(

Be sure you follow the [Tuenti Engineering](#) twitter for updates and possible hints during the contest.

If this challenge is too hard and you are blocked, you will be able to skip it

after two hours. Note that **you won't be able to complete it later**, and you have a limited number of challenges to skip.

Finally, if you run out of skips but are still really stuck with one problem, you will be able to skip it after 24 hours.

### Challenge status:

Test case	Not done
Solution submitted	Not done
Skip	You still have to wait 0h, 30m and 0s to be able to skip this challenge

Refresh status

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