Advent of Code [About] [Events] [Shop] [Settings] [Log Out] Franco Fernando 12* {year=>2024} [Calendar] [AoC++] [Sponsors] [Leaderboard] [Stats]
Day 6: Guard Gallivant
The Historians use their fancy device again, this time to whisk you all away to the North Pole prototype suit manufacturing lab in the year 1518! It turns out that having direct access to history is very convenient for a group of historians.
You still have to be careful of time paradoxes, and so it will be important to avoid anyone from 1518 while The Historians search for the Chief. Unfortunately, a single guard is patrolling this part of the lab.
Maybe you can work out where the guard will go ahead of time so that The Historians can search safely?
You start by making a map (your puzzle input) of the situation. For

example:

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--- Part Two ---

lab safe to search.

up/down and left/right.

quadrant of the mapped area:

standing desk in the bottom right quadrant:

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obstruction?

positions you could choose.

Your puzzle answer was 1602.

You can also [Share] this puzzle.

universal solvent:

corner:

visit before leaving the mapped area?

search the lab without getting caught.

there right now and would notice.

Your puzzle answer was 4722.

marked with an X:

repeatedly following these steps:

- Otherwise, take a step forward.

The map shows the current position of the guard with $\overline{\ }$ (to indicate the

Lab guards in 1518 follow a very strict patrol protocol which involves

obstructions - crates, desks, alchemical reactors, etc. - are shown as #.

- If there is something directly in front of you, turn right 90 degrees.

Following the above protocol, the guard moves up several times until she

Because there is now an obstacle in front of the guard, she turns right

Reaching another obstacle (a spool of several very long polymers), she

This process continues for a while, but the guard eventually leaves the

By predicting the guard's route, you can determine which specific positions

in the lab will be in the patrol path. Including the guard's starting

position, the positions visited by the guard before leaving the area are

In this example, the guard will visit 41 distinct positions on your map.

Predict the path of the guard. How many distinct positions will the guard

While The Historians begin working around the guard's patrol route, you

nightly status of the lab's guard post on the walls of the closet.

borrow their fancy device and step outside the lab. From the safety of a

supply closet, you time travel through the last few months and record the

Returning after what seems like only a few seconds to The Historians, they

Fortunately, they are pretty sure that adding a single new obstruction

won't cause a time paradox. They'd like to place the new obstruction in

such a way that the guard will get stuck in a loop, making the rest of the

To have the lowest chance of creating a time paradox, The Historians would

like to know all of the possible positions for such an obstruction. The new

obstruction can't be placed at the guard's starting position - the guard is

In the above example, there are only 6 different positions where a new

position where the guard moves up/down, — to show a position where the

Option one, put a printing press next to the guard's starting position:

Option two, put a stack of failed suit prototypes in the bottom right

Option three, put a crate of chimney-squeeze prototype fabric next to the

Option four, put an alchemical retroencabulator near the bottom left

Option five, put the alchemical retroencabulator a bit to the right

Option six, put a tank of sovereign glue right next to the tank of

It doesn't really matter what you choose to use as an obstacle so long as

The important thing is having enough options that you can find one that

minimizes time paradoxes, and in this example, there are 6 different

You need to get the guard stuck in a loop by adding a single new

If you still want to see it, you can get your puzzle input.

obstruction. How many different positions could you choose for this

Both parts of this puzzle are complete! They provide two gold stars: **

At this point, you should return to your Advent calendar and try another puzzle.

you and The Historians can put it into position without the guard noticing.

these six situations use \square to mark the new obstruction, \square to show a

obstruction would cause the guard to get stuck in a loop. The diagrams of

guard moves left/right, and + to show a position where the guard moves both

explain that the guard's patrol area is simply too large for them to safely

mapped area (after walking past a tank of universal solvent):

before continuing straight in her new facing direction:

turns right again and continues downward:

reaches an obstacle (in this case, a pile of failed suit prototypes):

guard is currently facing up from the perspective of the map). Any

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