Kata 20 - Taxicab Geometry

Assignment

115 - 300 minutes

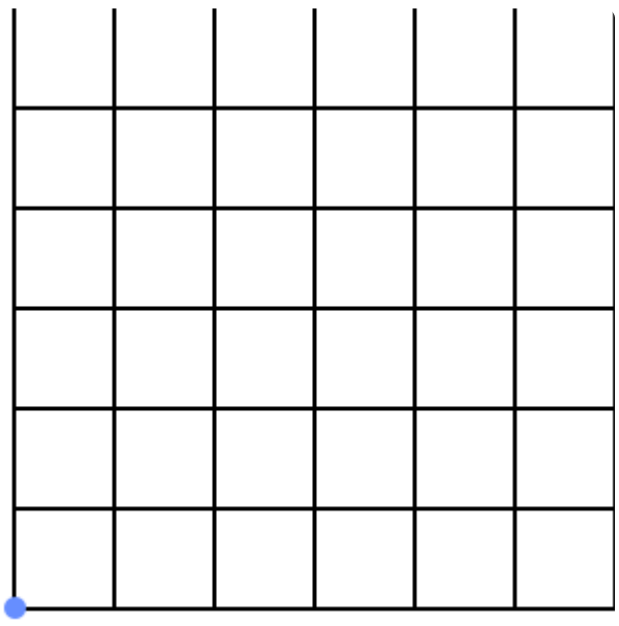
Status | Complete

STRETCH ACTIVITY
This activity is marked as stretch. We strongly suggest you come back to it if/when you've completed all the core exercises for the prep course.

In this exercise, we will write an algorithm to help taxicabs determine how far away a destination is based on the directions given.

Taxicab Geometry

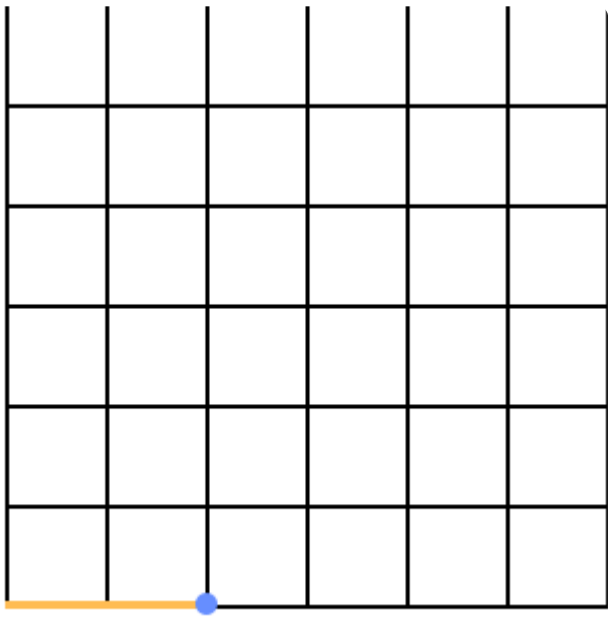
The following grid represents the streets of a city and the blue dot represents a taxi cab before it leaves for its destination.



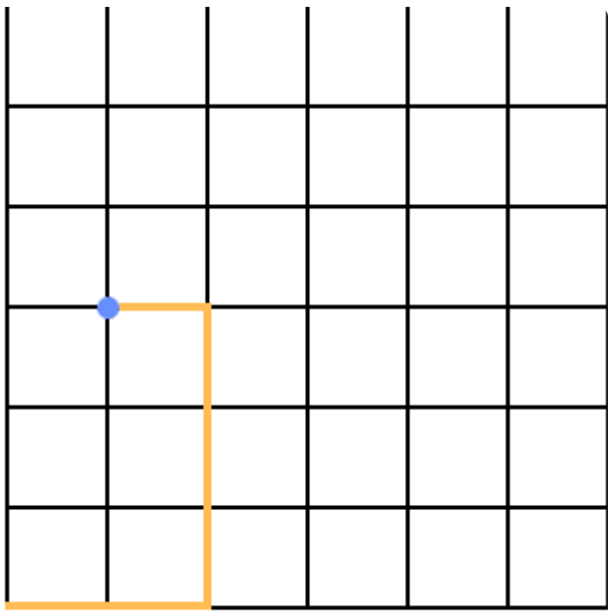
The taxi driver is given a list of directions that tell her whether to turn left or right, and how many blocks to drive for. Every time the taxi driver has to turn left, she will make a 90° turn anticlockwise, and every time the taxi driver has to turn right, she will make a 90° turn clockwise.

Let's take a look at some example directions: `["right", 2, "left", 3, "left", 1]`.

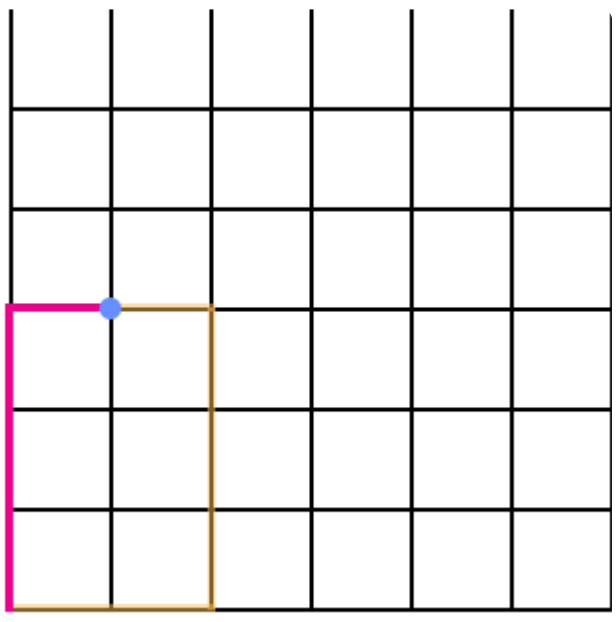
First the taxi driver must turn `"right"`, then drive for `2` blocks.



Then the taxi driver must turn `"left"`, and drive for `3` blocks.



Finally, the taxi driver must turn `"left"` again, and drive for `1` block.



Now that the taxi driver is at her final destination, we can determine that she is `1 block east` and `3 blocks north` of where she started.

Input

```
const blocksAway = function(directions) {
  // Put your solution here
};

console.log(blocksAway(["right", 2, "left", 3, "left", 1]));
console.log(blocksAway(["left", 1, "right", 1, "left", 1, "right", 1, "left", 1, "right", 1]));
console.log(blocksAway(["left", 3, "right", 1, "right", 3, "right", 1]));
```

Expected Output

```
{east: 1, north: 3}
{east: 3, north: 3}
{east: 0, north: 0}
```

> Create a function named `blocksAway` that will receive an array of directions, and return an object that calculates how far north and east those directions will take someone.

The taxi driver will always start at the same position, in the most south west position on the grid. This means that the output will only need to specify an east and north position, since the taxi driver can only end up in these East and North of the starting point.

> Submit Your Work

- Browse to gist.github.com and create a new gist.
- Copy-and-paste your code into the form
- Name the gist and the file appropriately and click `Create secret gist`.
- Finally, mark this activity as completed (at the bottom of this page) and please copy/paste the *entire* browser URL for your gist (from *gist.github.com*) into the text field.

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https://gist.github.com/sa ✖ Cancel Submission

Previous
Kata 19 - Queen Threat Detector (Stretch)

Next
Kata 21 - Number Guesser (Stretch)

How well did you understand this content?

Thank you for your feedback

Got most of it

Please give us some written insight into your feedback

Prep Work

› 1: Welcome

› 2: Dev Environment

› 3: Version Control

› 4: Programming Intro

5: The Browser

6: Katas

6 hrs ***+ 29 hrs stretch*** 🏆

- Katas ✓
- Kata 1 - Sum the Largest Numbers ✓
- Kata 2 - Conditional sums ✓
- Kata 3 - Vowels ✓
- Kata 4 - Instructors Names ✓
- Kata 5 - Percent Encoded String ✓
- Kata 6 - SmartParking ✓
- Kata 7 - In the Air Tonight ✓
- *Kata 8 - Repeating Numbers* ✓
- *Kata 9 - Case Maker* ✓
- *Kata 10 - Multiplication Table* ✓
- *Kata 11 - Bouncy Castles* ✓
- *Kata 12 - The Great Codeville Bake-off* ✓
- *Kata 13 - Talking Calendar* ✓
- *Kata 14 - Change Calculator* ✓
- *Kata 15 - Organizing Instructors* ✓
- *Kata 16 - Case Maker II* ✓
- *Kata 17 - JS Object From URL Encoded String* ✓
- *Kata 18 - Square Code* ✓
- *Kata 19 - Queen Threat Detector* ✓
- *Kata 20 - Taxicab Geometry* ✓
- *Kata 21 - Number Guesser* ✓

7: Stretch Project

8: The Lab Manual

9: Day One Prep

10: Collab Tools Setup

POWERED BY

LIGHTHOUSE LABS