

COMP 120: Web Programming and Engineering

Lab: The Ride-Hailing Service, Part 1 on Week 3

Overview

Over the next three weeks, you will create a ride-hailing service --both the client and server. Parts 1 and 2 are the client, and part 3 will be the server.

It is important to note that instructions for this lab may be deliberately vague at times. You are expected to ask questions if you are confused or not sure about something as in the professional world. There will also be opportunities to go beyond expectations especially for those who feel they have mastered the material.

Instructions and Requirements

The following table is a list of vehicles and their locations:

Vehicle ID	Latitude	Longitude
mXfkjrFw	42.3453	-71.0464
nZXB8ZHz	42.3662	-71.0621
Tkwu74WC	42.3603	-71.0547
5KWpnAJN	42.3472	-71.0802
uf5ZrXYw	42.3663	-71.0544
VMerzMH8	42.3542	-71.0704

Create a page (named **index.html**) that displays a Google Map of all the vehicles listed above. Requirements:

- The map shall take up the entire page.
- A CSS file is required in order for the Google Map to even work.
- Use a separate file for the JavaScript. Do not mix JavaScript in the HTML file with the exception of the script tag to include the JavaScript file.
- For now, the map shall be centered on latitude = 42.352271, longitude = -71.05524200000001. This location is South Station in Boston, MA.



- Each vehicle on the map shall be a marker with this icon:

The required files for this part of the assignment: **index.html**, one CSS file, one JavaScript file, the **README** (more details on **README** below).

Getting Started

1. Create a new folder named **notuber** in your folder **comp120-XXXXX** on your computer, the one you have been using since the [responsive design lab](#).
2. Follow the Google Maps JavaScript API tutorial "Getting Started" at <https://developers.google.com/maps/documentation/javascript/overview>.

Testing Your Work

For this part of the lab, you can open the **index.html** page on a web browser. However, it is bad practice as you will see next week. Another way to serve your page locally is to run Python's simple HTTP server in the folder of your work. That is:

```
% cd comp120-XXXXX/notuber; # where XXXXX is the name of your  
private GitHub repository  
% python3 -m http.server
```

By default, a simple web server will open up on port 8000. Go to **http://localhost:8000/** on your favorite web browser to test your work.

Do not serve your work via the **gh-pages branch of your private GitHub repository.**

Performance Optimization Requirements

For this lab, you will need to measure the performance of the web page. Please DO NOT incorporate performance optimizations at first. After you complete the requirements above and the page works, record page load times and file sizes using your web browser's developers tools. Then, perform the following performance optimizations:

1. Load CSS first, head section
2. Minify CSS
3. Move JavaScript includes and code to the bottom of the HTML before the closing body tag
4. Minify JavaScript code. NOTE: be sure to make a copy of your "readable" (a.k.a., developer version) JavaScript first!

If page works with performance optimizations, record page load times and file sizes using your web browser's developers tools. Show the differences in **README**.

The README File

Each lab shall include a **README** file that describes the work. This description must:

1. Identify what aspects of the work have been correctly implemented and what have not.
2. Identify anyone with whom you have collaborated or discussed the lab.
3. Say approximately how many hours you have spent completing the lab.
4. Be written in either text format (**README.txt**) or in Markdown (**README.md**). Markdown is preferred. No other formats will be accepted. Please use all capital letters for **README**
5. **IMPORTANT:** For this lab, show the impact of performance enhancements. Provide a comparison of the performance of page with vs without optimizations. At bare minimum, provide load times and file sizes.


This **README.md** file must be directly in the folder of the lab.

Submitting Part 1

Push all your changes to the private repository in GitHub that I created for you in a folder named **notuber** under the **master** branch. Say that your private repository in GitHub is named **comp120-mchow**, make sure all the files are pushed to **comp120-mchow/notuber**.

Assessment

This lab is worth 10 points:

- (1.5 points) **README**
- (1 point) The basics (proper repository folder name, 1 CSS file, map on entire page, separate file for JavaScript)
- (1 point) Map centered on South Station
- (1.5 points) Perform all performance enhancements
- (5 points) All the vehicles are marked on the map with the icon image  used as marker
- (-3 points) Errors exist in JavaScript console. That is, errors that are not Google Maps API related. Warnings are acceptable.