Problem Set - Bus Data Collection & Analysis

In this assignment you will once again use MBTA bus data, route 1.

You can sign up for an MBTA developer key at:
https://www.mbta.com/developers/v3-api

The URL for MBTA route 1 is (replace YOUR_KEY with the key you get from MBTA):
https://api-v3.mbta.com/vehicles?api_key=YOUR_KEY&filter[route]=1&include=trip

Question 1 - Collect bus data for 1 hour, at 15 second intervals from Server
Call MBTA route 1 every 15 seconds for a duration of 1 hour from Server (using Node). Save every call to a json file, call it "db.json".

The data needs to have the following structure.

```
{
  "vehicles": [
    {
      "id": "y1791",
      "label": "1791",
      "direction_id": 0,
      "latitude": 42.333351135253906,
      "longitude": -71.07364654541016
    },
    {
      "id": "y1803",
      "label": "1803",
      "direction_id": 1,
      "latitude": 42.32965087890625,
      "longitude": -71.08399200439453
    },
    {
      "id": "y1809",
      "label": "1809",
      "direction_id": 1,
      "latitude": 42.32993698120117,
      "longitude": -71.08405303955078
    }]
}
```

Use the lowdb npm package, https://www.npmjs.com/package/lowdb, to save your data.

Question 2 - find the number of vehicle entries In Server (Using node)
Use the data you created in question 1, the "db.json" file.

Use the lowdb functions to count the number of vehicle entries.

Submit code that loads lowdb, loads the data, the "db.json" file, and counts the number of vehicle entries using lowdb functions.

Name the file you submit "count.js"

Question 3 - find the number of unique bus IDs In Server (Using node)
Use the data you created in question 1, the "db.json" file.

Use the lowdb functions to find the number of unique bus IDs.

Submit code that loads lowdb, loads the data, the "db.json" file, and finds the unique bus IDs in the dataset using lowdb functions.

Name the file you submit "unique.js"

Question 4 - Unique bus IDs on html dropdown
Create an HTML page that loads the data, the "db.json" file, and finds the unique bus IDs in the dataset. Use the unique IDs to populate a dropdown element as show below.

Name the file you submit "unique.html"
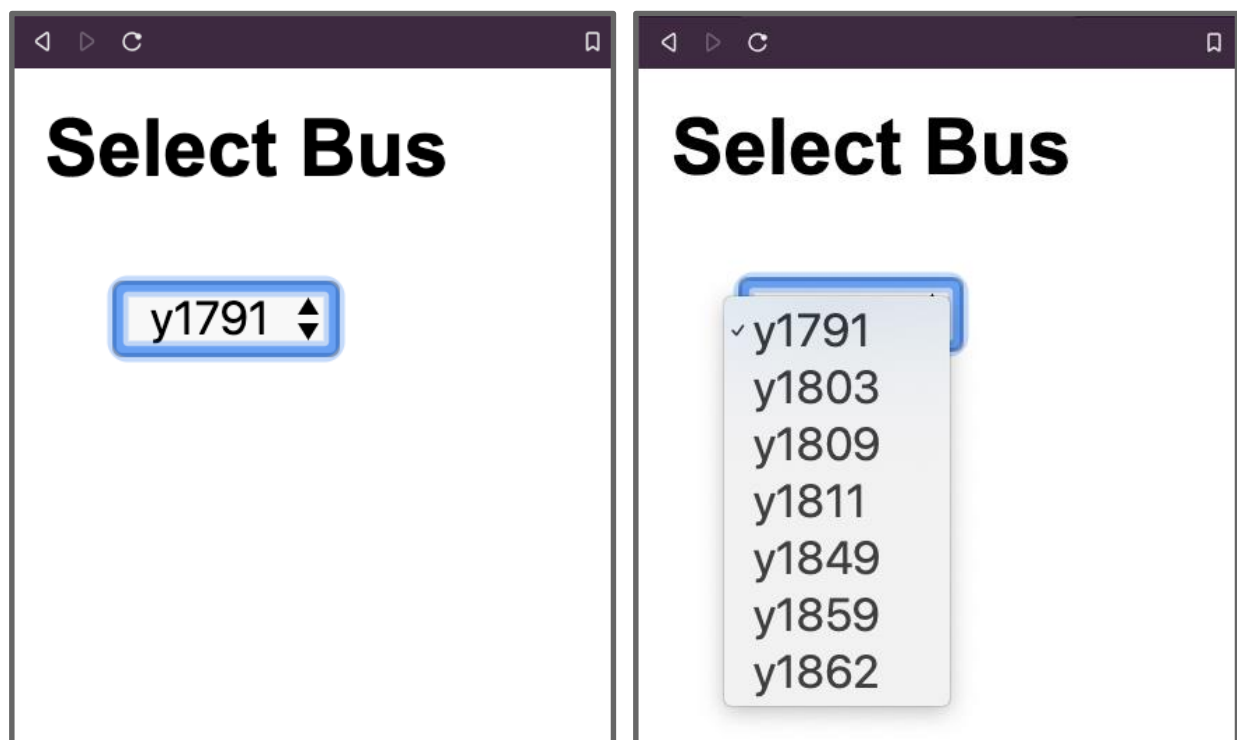
Question 5 - Show data for ID - html file
Create an HTML page that loads the data, the "db.json" file, and finds the data for the ID
selected from the dropdown. The data shown on the page should only be for the selected ID.

Name the file you submit "data.html"

Question 6 - Show data for ID on map - html file

In addition to the work you did on question 6, show the resulting data for the ID on a map. As before, the data shown on the map should only be for the selected ID.

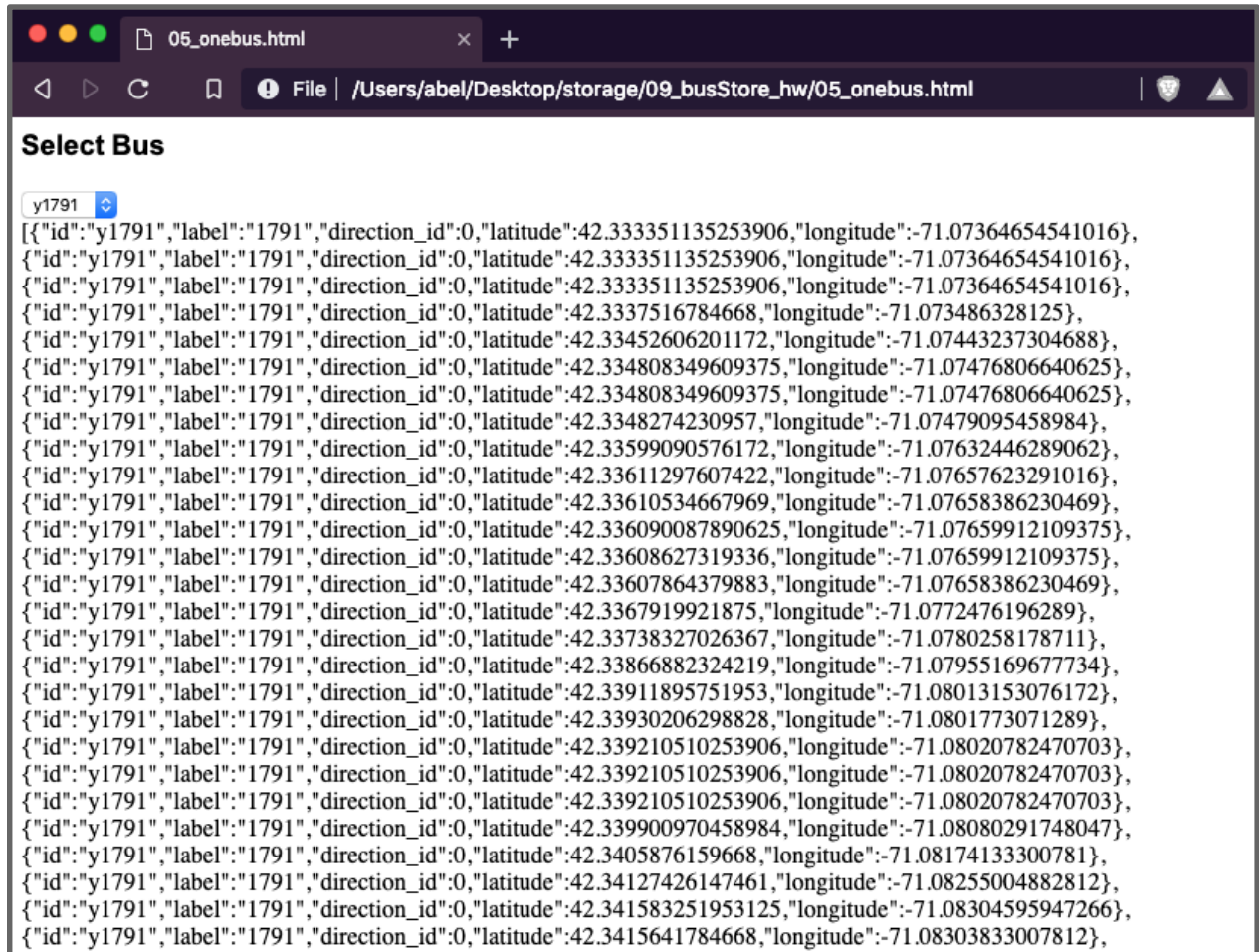Name the file you submit "map.html"

[{"id":"y1791","label":"1791","direction_id":0,"latitude":42.333351135253906,"longitude":-71.07364654541016},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.333351135253906,"longitude":-71.07364654541016},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.333351135253906,"longitude":-71.07364654541016},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.3337516784668,"longitude":-71.073486328125},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.33452606201172,"longitude":-71.07443237304688},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.334808349609375,"longitude":-71.07476806640625},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.334808349609375,"longitude":-71.07476806640625},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.3348274230957,"longitude":-71.07479095458984},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.33599090576172,"longitude":-71.07632446289062},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.33611297607422,"longitude":-71.07657623291016},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.33610534667969,"longitude":-71.07658386230469},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.336090087890625,"longitude":-71.07659912109375},
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{"id":"y1791","label":"1791","direction_id":0,"latitude":42.3367919921875,"longitude":-71.0772476196289},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.33738327026367,"longitude":-71.0780258178711},
{"id":"y1791","label":"1791","direction_id":0,"latitude":42.33866882324219,"longitude":-71.07955169677734},