Coding Assignment 9

Working With The DOM To Add Animation To Maps

#### **Learning Outcomes Addressed**

 5.Render a map on a web page

 6.Build and manipulate maps on web pages

### Adding animation to maps

mapbox is an open-source platform that allows you to create and display maps on a web page. The mapboxgl JavaScript library is part of the Mapbox ecosystem. It allows you to add all sorts of customizations to the map. For example, you can add a marker at a specific location on the map.

**In this activity, you will be using the MBTA bus data to determine stops between Harvard and MIT. Then, you need to and add an animated marker on the map to highlight the bus routes.**

You can add your code to the mapanimation.js file.

To accomplish this task, you will need to do the following:

* Create a Mapbox account and get the access token
* Add the access token to the mapboxgl instance defined in the mapanimation.js
* Create a marker and add it to the map using the mapboxgl pre-built functions.
* The function move() is called when the button "Show stops between MIT and Harvard" is selected. This is how you can start the marker animation.
* If your code works, you should be able to see a marker moving from one bus stop to the next on the map.

Hint: You can learn more about how to setup the Mapbox access token by reading [*this documentation*](https://docs.mapbox.com/help/tutorials/get-started-tokens-api/)

Task

Use the mapboxgl library to add a marker to the map. Then, implement the move() function to move the marker on the map from one bus stop to the next,

<!DOCTYPE html>

<html>

<head>

    <meta charset="utf-8" />

    <title>Map Animation</title>

    <meta name="viewport" content="initial-scale=1,maximum-scale=1,user-scalable=no" />

    <script src="https://api.mapbox.com/mapbox-gl-js/v1.11.0/mapbox-gl.js"></script>

    <link href="https://api.mapbox.com/mapbox-gl-js/v1.11.0/mapbox-gl.css" rel="stylesheet" />

    <link href="./styles.css" rel="stylesheet" />

</head>

<body>

    <div id="map"></div>

    <div class="map-overlay top">

        <button style="font-size: 2em" onclick="move()">

            Show stops between MIT and Harvard

        </button>

    </div>

    <script src="./mapanimation.js"></script>

</body>

</html>

// This array contains the coordinates for all bus stops between MIT and Harvard

const busStops = [

  [-71.093729, 42.359244],

  [-71.094915, 42.360175],

  [-71.0958, 42.360698],

  [-71.099558, 42.362953],

  [-71.103476, 42.365248],

  [-71.106067, 42.366806],

  [-71.108717, 42.368355],

  [-71.110799, 42.369192],

  [-71.113095, 42.370218],

  [-71.115476, 42.372085],

  [-71.117585, 42.373016],

  [-71.118625, 42.374863],

];

// TODO: add your own access token

mapboxgl.accessToken = '';

// This is the map instance

let map = new mapboxgl.Map({

  container: 'map',

  style: 'mapbox://styles/mapbox/streets-v11',

  center: [-71.104081, 42.365554],

  zoom: 14,

});

// TODO: add a marker to the map at the first coordinates in the array busStops. The marker variable should be named "marker"

// counter here represents the index of the current bus stop

let counter = 0;

function move() {

  // TODO: move the marker on the map every 1000ms. Use the function marker.setLngLat() to update the marker coordinates

  // Use counter to access bus stops in the array busStops

  // Make sure you call move() after you increment the counter.

}

// Do not edit code past this point

if (typeof module !== 'undefined') {

  module.exports = { move };

}

body {

  margin: 0;

  padding: 0;

}

#map {

  position: absolute;

  top: 0;

  bottom: 0;

  width: 100%;

}

.map-overlay {

  position: absolute;

  left: 0;

  padding: 10px;

}