SFWRTECH 4WP3 – Advanced Web Programming - Assignment #3

Weight

4% of total course grade

Due date

Monday February 14th at 11:59pm

Primary learning objectives

- Use jQuery to add event handlers to buttons
- Use a jQuery plugin in an application
- Determine a web application user's location with the geolocation API
- Create an application with a Google Map

Requirements

In this assignment we will continue our work on the **Hamilton Homes** website from previous assignments. On the navigation bar there was supposed to be a "Map" navigation option. In this assignment we will work on the Map page and create a Google Map. Use the same navigation bar from Assignment #1, this time with "Map" as the active page, and save your solution file as map.html. You only need to submit the Map page, but you can submit additional files if you like (e.g. an external JavaScript file where you write your JavaScript code).

The Google Map should initially appear centered at the address: 64 Melrose Ave N, Hamilton, Ontario. You may need to research the latitude and longitude position of this address to have map initially centered there.

There should be a row of buttons above the Google Map (use Bootstrap version 5 to style the buttons). The buttons should be named:

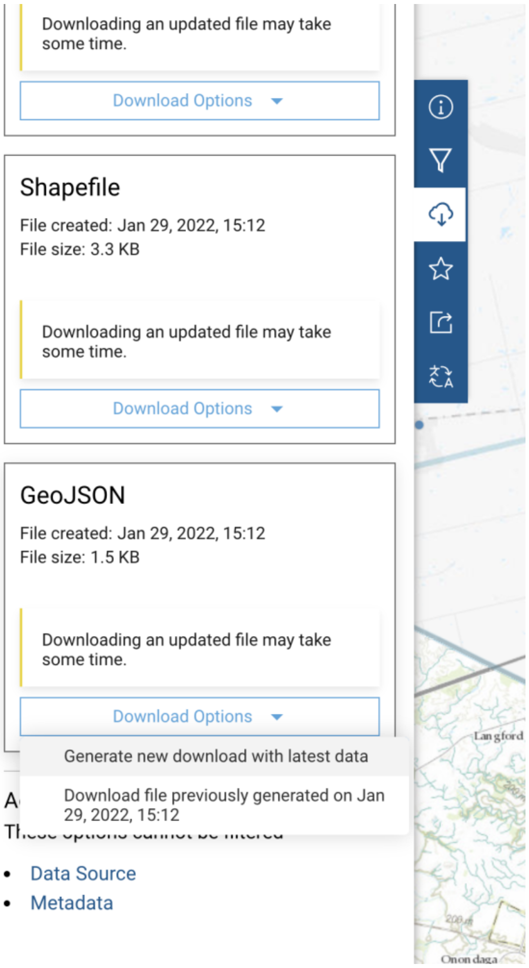
- Geolocate
- Hospitals
- Fire Stations
- Schools
- Waterfalls
- Clear

When the user clicks on the **Geolocate** button, the application should attempt to find the user's current location using the geolocation API. If it can find their location put a marker on the map at that location. The marker should look different than the standard marker, either a different colour or created with a different image. The marker should have an InfoWindow pop-up with the text "Current Location" when clicked.

If the user's current location cannot be found, an alert box should appear below the Google Map, and inform the user that "Error: Location could not be found". The alert box should be styled using Bootstrap (https://getbootstrap.com/docs/5.1/components/alerts/). The alert box should disappear after 5 seconds (you can use setTimeout to implement this (https://www.w3schools.com/jsref/met_win_settimeout.asp).

When one of the Hospital, Fire Stations, Schools or Waterfalls buttons is clicked, the Google Map should be populated with markers for that information (i.e. a markers at each location). When one of these buttons is clicked, any other markers on the map should be removed. In other words, when you click on Fire Stations, only the Fire Stations markers should appear on the map. Each marker should have an InfoWindow with the name of that location (e.g. "McMaster University") that pops-up when the marker is clicked.

You can find the open data for hospitals, fire stations, schools and waterfalls here: http://open.hamilton.ca/. Just search for "Hospitals", etc, to get each data set. You can download the data set as a spreadsheet and then convert the data from CSV to JSON: http://www.csvjson.com/csv2json. Or you can download the JSON data directly from the APIs dropdown at each data set, using the GeoJSON link:



Downloading an updated file may take some time.

Download Options

Shapefile

File created: Jan 29, 2022, 15:12
File size: 3.3 KB

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Download Options

GeoJSON

File created: Jan 29, 2022, 15:12
File size: 1.5 KB

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Download Options

Generate new download with latest data

Download file previously generated on Jan 29, 2022, 15:12

- Data Source
- Metadata

It is recommended that you store each set of data as a JSON array in separate JavaScript files (i.e. hospital.js, fire.js, etc.).

When the clear button is clicked, all markers on the map, including the user’s current location, should be removed from the Google Map.

The click event handlers for the buttons should be added using jQuery.

Getting started

You can check out the example code from week #4 to help get started with this lab. The example code includes an API key you can use for Google Maps.

Submission

Zip your solution as assignment3.zip and upload it to the dropbox on Avenue.

Marking rubric

Component	**Description**	**Marks**
Google Map	Map drawn on page using Google Maps	10
jQuery click events	jQuery used to add click event handlers	10
Geolocate	Geolocate button functionality	30
Clear	Clear button functionality	10
Other (fire, hospitals, etc.)	Other buttons functionality	40
	Total:	/100