Leaflet Challenge

After reviewing part one and part two of the assignment below are the topics I am going to address:

1. **Briefly explain the logic for generating the base map.**

A basemap provides a user with context for a map. You can add information to a basemap by overlaying other information on top of it. Basemaps contain reference information that may provide different geospatial information based on what the cartographer is trying to communicate. The map is created when leaflet script dependencies are added. The base map is imported through leaflet Mapbox using an API key as a variable. To customize the map’s appearance, create a tile layer, create the map object, and add the map tile layer to the map. Send the 'mapid' to the html file so that it populates on the web.

1. **Describe how the JSON was loaded and how was the data traversed. Explain how was the information from the JSON used to render data on the map.**

Update the D3 script dependencies. GeoJSON is a format for encoding a variety of geographic data structures. The information from GeoJSon is needed in order to add a layer to the map with geographical detail. The USGS earthquake data (GeoJSon) is imported through D3.json. The GeoJSon function moves through the data and the dictionary "Features" allows us to describe features with a set of properties. The lat & long is the key to locating the earthquakes. The URL of this JSON pulls in the data for our visualization.

1. **Explain the logic for generating the circles and amending the size of them. What does this communicate?**

Circles were created by using the Styleinfo function and circle markers. The styleInfo function moves through the feature dictionary and pulls out the properties.mag to find the magnitude of the earthquake. GetColor matches the magnitude size to a specific color including a default color using a switch function. Circle markers can change the size of the radius depending on the distance from a point that you want to show.

1. **Describe how the layer for the Tectonic plates was generated.**

The map layers were created, the basic gray map, the satellite and outdoor through leaflet mapbox. Then a var was created, a var for a new layer group - tectonic plates. Using d3 to call in the tetonic plates data from the GeoJson page <https://raw.githubusercontent.com/fraxen/tectonicplates/master/GeoJSON/PB2002_boundaries.json>. Created a 'platedata' function to add the orange lines. Created a layer for the tectonic plate data and then creating an overlay variable – these layers are how the map iscustomized.

1. **What are the components in the layer control? How were they generated?** The components of the layer control are the base map, the different color map layers and the earthquake & tectonic overlays. They are generated through a series of functions, first defining them as new layers groups, then the object that defines all the different layer components. .Control.layers has the layers, baseMaps, overlays which is then pushed(addto.map) to the map.
2. **Explain the difference between the base map (tile layer) and the data layer(s).**

The base maps are just leaflet maps. The data layers are using D3 Json to pull in the data, a JS function to loop through the dictionary and pull out the data, for our visualization from the USGS website and the geojson from the github repository. The base map shows the imaging that was pulled to be at the base, and the data layers were added on top to show different things. The data layers show certain detail on the map, such as tectonic plates and seismic activity. The data layers increase the detail on the visualization.

1. **Walk through the logic of how the legend was generated and rendered on the page.**

A div or place for the legend was created in the logic and added details using "info legend". A control function is called in the css to loop through intervals and generate a label with a colored square for each interval. Then grades and color vars are created. From there we loop through the intervals and generate a label with a colored square for each interval by pulling in the grades and color vars. Then legend. is addTo the map.