**Liberto De Pablo Spring 2024**

**GISC 27105 - Web Mapping**

**Assignment 2**

1. **How would you add another class to your choropleth map?**

This would be done through the **getColor** function wherein different color codes are attributed to provinces with a population above a determined threshold. Personally, I believe another class could be added to differentiate provinces with more than 100 million inhabitants. The province of Guangdong has a population of 126.6 million people compared to the neighboring province of Hunan with a population of almost half as large of 67.37 million. Despite this gigantic difference in populace, they are both classified with the same color indicator because they both have more than 50 million residents.

1. **How might you create a map where all overlay layers are toggled OFF by default? Why might this be a useful option?**

All overlay layers could be turned off by default by changing the Leaflet Layers Control to:

L.control.layers(basemaps, overlay\_layers, {collapsed:true}).addTo(map);

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By changing the **{collapsed:true}** to true instead of false, the layer control overlay layers are automatically toggled off. To include all of the overlay layers in the layer control one could create a variable containing all of them (in this case the Chinese Provinces and the COVID Data):

var overlay\_layers = {

"Chinese Provinces": overlaymaps,

"COVID Data": covidData

};

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Additionally, one would have to remove all of the **.addTo(map)** components from the overlay layers so they are not added automatically, and can instead be added with the layer control checkbox.

There are a number of reasons why one would make all of the overlay layers optional. For one, it gives the user more flexibility and control over the data they want to visualize on a map at the same time. For example, the map could also contain data on the main train lines and highways connecting the different provinces to understand the relationship between transport and the spreading of disease. To visualize all of the provinces, covid data, and transportation data at the same time may be overwhelming to look at, which is why a layer control checkbox for all layers could be useful. Secondly, transferring all of the overlay layers to the layer control checkbox can ease the computational burden of loading the map on the screen. With the default of toggling every overlay layer to not be visible, one can choose what to visualize at a given time which costs less memory than automatically loading many layers at once.