

Assignment #2

Due: 9am, Thursday, February 28th

Goals:

Collect some **OSM street data** and convert it to a drawing with multiple layers of your interest. Try to tell a story through your use of color, choice of site, and layers of data. Ask a question. Try to expose something. Be creative and think about the human element of your chosen location.

Background:

Now that you've had some fun with computation it's time to get to the urban science part! Open source data is a powerful tool to make accessible and interesting research tools and models. But first we have to get that data into our computers in an understandable way.

Minimum Requirements:

1. Carefully chosen area because of *something*. For example, don't chose NYC Times Square if you have no interest in it. International sites are welcome and we encourage geographic diversity — your home town, a place you read about in the news, etc!
2. Good graphic practice (lines, colors, etc) tell your story. Think about making clear, readable, and enjoyable experiences for your viewer.
3. You must have at least **3 layers** of data controlled by **key commands**. For example, say I have types of roads. 'b' shows only bike lanes, 's' shows main streets, and 'p' shows pedestrian paths. You can chose to have your layers only show at once or allow them to show together.
4. You must draw some info on your map with text so the viewer can understand your map.
5. You must use open source data. It doesn't have to be from OSM like in class (although you are welcome to do so). There are a lot of open source GIS data sources out there. So feel free to experiment.
6. Frame rate: please be at least in the 40s.

Submission Directions:

Locally In your GitHub repository folder (i.e. cusw- spr19-lastName), create a folder called “*Assignment_2*”. Save your Processing script to this folder. For example, if I created a Processing script called **Apples** and I saved it to this folder, the folder structure would look like this:

Github/cusw-spr19-winder/Assignment_2/Apples/Apples.pde To submit your code online, use the Github Desktop app:

- (1) Navigate to your repository, you should see changes summarized
- (2) **Commit** your changes
- (3) **Sync** or **Push** your commits to github.com

Scroll to next page for tips/steps/hints :)

Some relevant tools, tips, etc:

Using OSM can be great! But also open source data isn't always the best in terms of availability. And sometimes using lots of data is hard and can be slower than you want it to be. This is the pipeline recommended:

1. Go to OSM and export an area of interest to you. Also take a screenshot of the background and bounding box. **Remember you need bounding box info for your code!!!** Export the data and save it somewhere safe. We recommend starting with a smaller area for your first project but you have freedom.
2. OSM will export an XML, we need a JSON. Therefore you must use a converter.
3. Some options to get your OSM data into JSON. **Remember to be patient as data downloads and converts. The bigger your data the longer it takes. You only have to do this part once.**
 1. If you want each layer of the map to be a separate JSON: Go to <https://mygeodata.cloud/converter/osm-to-geojson> and upload your XML file from the OSM export. This will give you a folder of layers. You can load each of there in layer by layer to do your drawing if you like.
 2. If you want just one GeoJSON for the whole map, like how it was done in class: <https://tyrasd.github.io/osmtogeojson/>
4. Use the template in the repository to get you started, as it already has the GeoHelper and other mapping methods set up.
5. Remember to pay mind to draw order in your code. And use classes to make your life easier.