Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Lab 16: Intro to Web Mapping

In this lab students will learn to use desktop and web applications to access data from Web Map Tile and Feature services as well as RESTFUL APIs.

## Part I: Adding a Web Map Service (WMS) to QGIS

1. Open up a new or existing QGIS project.
2. Go to Layer🡪Add Layer🡪**Add WMS/WMTS Layer** and click ‘New’
3. For name put ‘Adirondack Atlas’ and for url paste in this url: http://adirondackatlas.org:8080/geoserver/ows?version=1.1.1&
4. Click OK to save the connection and then click the ‘Connect’ button. You should see a long list of layers.
5. Sort by Title and add these two layers to the map:
   1. hiking\_trails
   2. APAlandclass1973
6. Open the layer properties tab for each and see what options are available.
7. Use the identify tool to click on features and see what is returned for attributes.

## Part II: Adding a Web Feature Server (WFS) to QGIS

1. Go to Layer🡪Add Layer🡪**Add WFS Layer** and click ‘New’
2. For name put ‘Adirondack Atlas’ and for url paste in this url: http://adirondackatlas.org:8080/geoserver/ows?version=1.1.1&
3. Click OK to save the connection and then click the ‘Connect’ button. You should see a long list of layers.
4. Add the hiking\_trails layer to the map
5. Open the layer properties tab and see what options are available as compared to the WMS layers.
6. Try opening up the attribute table.

## Part II: Adding data to Carto from a Web API

1. Open up a browser (preferably Chrome or Firefox) and add the ‘JSON Formatter’ extension or equivalent.
2. Paste these URLs into different tabs in your browser and see how they look:

<https://adirondackatlas.org/api/v1/points.php?keyword=lean-to&geojson=true>

<https://adirondackatlas.org/api/v1/trails.php?keyword=hiking&geojson=true&limit=2000>

<https://adirondackatlas.org/api/v1/units.php?geojson=true>

1. Add these three datasets to Carto: Datasets🡪New Dataset🡪Paste URL🡪Submit🡪Connect Dataset.
2. Rename the three datasets as soon as you import them to ‘leantos’,’hiking\_trails’ and ‘units’.
3. Create a new map: there are a number of ways to do this but one way is to click on one of the datasets and hit the ‘Create Map’ Button
4. Rename the new map ‘Adirondacks’.
5. Add the leantos, hiking\_trails and units layers to the map.
6. Click on the Units layer and go Style🡪Color🡪By Value🡪Keywords
7. Add a legend and popup to the units layer.
8. Play around on your own with styling the map layers. Try out some Carto tutorials if you get stuck.

**Assignment: Due Tuesday, April 3**

**Add one or more layers** of your choice from the Adirondack Atlas API and add it to your Carto Map. (for more info on getting data out of the API see <https://adirondackatlas.org/api/>)

Style the Carto Map so it looks nice, with labels, legend, popups, etc. for each layer.

‘Publish’ the map and **email me the link**.

**ALSO…**

**With your group**, create a Carto Map and/or a QGIS map project showing 3-4 of your most promising datasets. **Save the QGIS project (.prj)** in your GitHub Repo and/or **send me a link** to your published Carto map.