CREATING INTERACTIVE CHLOROPLETH MAPS WITH FOLIUM

STEPS:

* Source for shapefile in “.shp” or “.kml” format, you can try this website for your kml file <https://www.igismap.com/download-nigeria-shapefile-free-administrative-boundary-state-city-map/>
* Convert shapefile downloaded to a geojson file, you can use : <https://mygeodata.cloud/converter/kml-to-geojson>
* After getting our shape file into a geojson file, we move to write some code using Python, applying the Geopandas, Pandas and Folium python packages
* Prepare data in a notebook, editing the geojson file to fit our needs using the data we need to visualize (population density, number of schools, corona cases)
* Plotting the chloropleth map using Folium and added some extra functionalities to it like the “tooltipit” options
* Export the generated map into html which can be embedded on a webpage, or a png file which can uses a status representation
* To implement other kinds of folium visualization check out the documentation
* For further research into interactive maps you can check out “plotly” and “bokeh” python packages
* Thank you for your time

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**CHLOROPLETH MAP**

A chloropleth map is a map which uses differences in shading, colouring, or the placing of symbols within predefined areas to indicate the average values of a particular quantity in those areas. (from oxford dictionary) as seen in the image below:

IMAGE OF CHLOROPLETH MAP

In this article, I will try to walk you through the process of creating a chloropleth map with python using the folium package. Visualization with chlorpleth map helps to give insight to data and is visually attractive.

I will divide the processes into 4 short steps which will be followed sequentially.

**STEP 1: SOURCING FOR SHAPEFILE IN “.KML” FORMAT WITH POLYGON COORDINATES**

Inorder to generate a map visualization with folium and most map visualization packages we require a shapefile of the area of the world map we want to work with.

In this article I will creating a visualization on the Nigeria map area, so I need to source for a shapefile in “.KML” format of the Nigeria’s map area having polygon coordinates

There are a lot of sites out there that simply supply this resource for free, for this visalization I got my shape file from this site “<https://www.igismap.com/download-nigeria-shapefile-free-administrative-boundary-state-city-map/>”, they offer shapefiles for other locations let move on to convert this file to a Geojson file.

IMAGE

**STEP 2: CONVERSION OF SHAPEFILE TO A GEOJSON**

Moving on from step 1, let us convert the \*\*\*\*.KML to a geojson file.

For this step I also used an online cloud resource to convert mu “\*\*\*\*.KML” to a Geojson file, the link to the online resource is <https://mygeodata.cloud/converter/kml-to-geojson>.

IMAGE

**STEP 3: INTEGRATING OUR GEOJSON WITH THE DATA**

From this step forward we get hands on with some python codes.

We start by installing Python Pandas and GeoPandas packages to help us integrate the data we need to visualize into the geojson file.

In this article I am visualizing the COVID-19 case distribution across the states of Nigeria using data gotten from the NCDC site (note: data might not be up to date by the time you are reading this publication).

The Jupyter notebook containing the well commented code for this step can be found in my GitHub Repo : \*\*\*\*\*\*\*\*\*

Below is the final dataframe after integrating the COVID-19 data with the Geojson file.

IMAGE

**STEP 4: GENERATION OF INTERACTIVE CHLOROPLETH MAP WITH FOLIUM**

To the final step which is the visualization of the chloropleth map with Folium.

We will be using the “folium.chloropleth” module, so we need to install the Folium package for this using “conda install \*\*\*/ pip install \*\*\*”

The Jupyter notebook containing the well commented code for this step can be found in my GitHub Repo : \*\*\*\*\*\*\*\*\*

Below is a screenshot of our generated Chloropleth interactive map.

IMAGE

**PARTING WORDS:**

Other map visualization types are possible using the Folium pandas check out the documentation for more info on that : \*\*\*\*\*\*\*

The generated map can be saved as an “.html” which can be embedded to a webpage or simply as an image.

I hope you find this article helpful and insightful, if so kindly star my GitHub Repos.