import pandas as pd

import numpy as np

import geopandas as gpd

import matplotlib

import matplotlib.pyplot as plt

from shapely.geometry import Point

data20 = pd.read\_csv('2020.csv', low\_memory=False)

data20 = pd.read\_csv('2020.csv', low\_memory=False)

print ('shape 2020',data20.shape)

print ('shape 2021',data21.shape)

print ('2020 columns:',data20.columns)

print ('2021 columns:',data21.columns)

import shapely

import warnings

from shapely.errors import ShapelyDeprecationWarning

warnings.filterwarnings("ignore", category=ShapelyDeprecationWarning)

gdf20 = gpd.GeoDataFrame(

data20, geometry=gpd.points\_from\_xy(data20.Longitude, data20.Latitude))

gdf21 = gpd.GeoDataFrame(

data21, geometry=gpd.points\_from\_xy(data21.Longitude, data21.Latitude))

dep20 = gdf20.loc[gdf20['Agency']=='DEP']

dep21 = gdf21.loc[gdf21['Agency']=='DEP']

dep20.plot( color='blue',legend=True,figsize=(12, 12), markersize=2)

plt.axis('off')

plt.title('311 DEP complaints April 2020')

dep21.plot( color='red',legend=True,figsize=(12, 12),markersize=2)

plt.axis('off')

plt.title('311 DEP complaints April 2021')

plt.show()

dep20 = gdf20.loc[gdf20['Agency'] =='DEP']

noise20 = dep20.loc[dep20['Complaint Type'] =='Noise']

construction20 = noise20.loc[noise20['Descriptor'] =='Noise: Construction Before/After Hours (NM1)']

dep21 = gdf21.loc[gdf21['Agency'] =='DEP']

noise21 = dep21.loc[dep21['Complaint Type'] =='Noise']

construction21 = noise21.loc[noise21['Descriptor'] =='Noise: Construction Before/After Hours (NM1)']

construction20.plot( color='blue',legend=True,figsize=(9, 9), markersize=1.5)

plt.axis('off')

plt.title('311 DEP constructio noise complaints April 2020')

construction21.plot( color='red',legend=True,figsize=(9, 9),markersize=1.5)

plt.axis('off')

plt.title('311 DEP construction noise complaints April 2021')

plt.show()

construction20.count()

construction21.count()

