https://github.com/EarnAnurat/PythonAsgnmt2\_Anurat2488941

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# Plotting the Grow Dataset

# https://towardsdatascience.com/easy-steps-to-plot-geographic-data-on-a-map-python-11217859a2db

# https://matplotlib.org/3.5.3/api/\_as\_gen/matplotlib.pyplot.html

import numpy as np

import pandas as pd

import matplotlib.pyplot as plt

# Read a comma-separated values (csv) file into DataFrame.

df = pd.read\_csv("GrowLocations.csv", delimiter=',', skiprows=0, low\_memory=False) # [39294 rows x 8 columns]

# drop unused column

df = df.drop(["Type","SensorType","BeginTime","EndTime"], axis=1)

# .split

df["Serial"] = df["Serial"].str.split(".").str[0]

df["Code"] = df["Code"].str.split("\_").str[1]

# rename

df = df.rename(columns={"Latitude": "Lon", "Longitude": "Lat"})

# filter out lat and lon = 0

df = df[(df["Lon"] != 0) | (df["Lat"] != 0)] # [33744 rows x 8 columns]

# bounding box for the map

df = df[(df["Lon"] > -10.592) & (df["Lon"] < 1.6848)]

df = df[(df["Lat"] > 50.681) & (df["Lat"] < 57.985)]

# drop duplicate

df = df.drop\_duplicates() # [5624 rows x 3 columns]

print(df) # [1073 rows x 4 columns]

df.to\_csv("dfnew.csv",index=False)

# A map of the UK from Openstreet map.

map7 = plt.imread("map7.png")

# The bounding box for the map is as follows:

axis = (-10.592,1.685,50.681,57.985)

# Create a new figure

fig, ax = plt.subplots(figsize = (8,7))

colors = np.random.randint(1073, size=(1073))

ax.scatter(df.Lon, df.Lat, zorder = 1, alpha = 0.8, c = colors, s = 50, cmap = "rainbow")

ax.set\_title('Plotting the Grow Dataset/nAnurat 2488941')

ax.set\_xlim(axis[0], axis[1])

ax.set\_ylim(axis[2], axis[3])

ax.imshow(map7, zorder=0, extent = axis, aspect= 'equal')

plt.show()

