

Module 9: Developing Web Maps and Representing Information Using Plots

Assignment

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Assignment

Domain – Social Science

Focus – Creating Web Map

Business challenge/requirement

You are a data analyst in San Francisco (SFO) City IT Department. SFO Police has shared crime data for the year 2016. Data contains various incidents that have happened throughout the year, along with the geolocation data of the crime. You need to prepare effective web maps to analyze and present the data. SFO Commissioner of Police will reassign the forces based on the density of various crime.

Key issues

Data should be displayed pictorially in a map to get the desired attention of top authorities.

Considerations

NONE

Data volume

Approx. 150K records – file Police_Department_Incidents_Year_2016_.csv (Data is downloaded from <https://datasf.org/opendata/>)

Additional information

NA

Business benefits

SFO City Corporation is looking to mitigate the crime rate based on the effective relocation of police personnel, thus reducing the overall security cost.

Approach to Solve

You must use the fundamentals of Web Mapping and create three maps.

Display the first 100 records from the data. The map will be saved in BasicWebMap.html – view it in browser

1. For the latest 7 days of data, create a Web Map of crimes, categorized as ROBBERY
2. For the latest 15 days of data, create a Web Map of crimes, categorized as FRAUD and GAMBLING. Change the icon to font awesome icon (<http://fontawesome.io/icons/>)
3. BONUS ASSIGNMENT -- Display heatmap for Divvy Bikes. Divvy Bikes runs bike rental services in Chicago, and their bike station geolocation data is shared. Refer to BikesHeatMap.py, Divvy_Stations_2016_Q3.csv, and Divvy_Stations_2016_Q4.csv

Enhancements for code

You can try these enhancements in code

1. A lot of visual options are available for changing the map (You can refer to <https://python-visualization.github.io/folium/modules.html> for options)
2. Change the code to create a Web Map for 'BURGLARY' for the last 7 days
3. BONUS ASSIGNMENT – Uncomment the code to see the changes