**USING CRIME DATA AND LOCATION TO REVEAL POTENTIAL FOR A SECURITY**

**FIRM EXPERT RELOCATING TO THE CITY OF BUFFALO NEWYORK STATE**

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**Introduction: Business problem**

This project is designed to help a friend who is a security expert with plans to relocate to the city of Buffalo New York. From Canada, create a portfolio of potential clients in the city of Buffalo.

His startup firm specializes in different range of security products and services, professional consultations and security gadgets. One of his challenges is navigating through a new city and scoping out areas and clients, would be a daunting task

After a few hours of discussing the problem with him and his team, the following were identified as key issues that needed to be resolved

* Are there any data of crime rates?
* Where were the most committed?
* And finally what kind of Businesses are located around the crime rate?

The answers to these questions would help him know the potential target areas and customers that the company shall like to do business with. More so, it will help to reduce the cost of products/service promotions in the local media. And finally help selling different products and services to different customers based on the type of crimes that prevails in their areas.

As a data scientist, tool that would be used for this projects to draw out insights shall include, a complete datasets of crimes and list of neighbourhoods and their locations in the city of Buffalo, geolacator, geopy, folium python libraries to draw, locates positions on the map of Buffalo and Foursquare API to extract the venues from the coordinates that will be superimposed on the map

**Data**

To resolve the three key issues raised by my friend, the data that will be used for this project will contain information vital for the projects. It must be a location datasets and luckily for us the city of Buffalo has a repository of data in the website sites.

The dataset for crime rates will be download via [www.data.buffalony.gov](http://www.data.buffalony.gov) and it contains yearly reports of crimes committed and reported, with corresponding crime locations in the city of Buffalo, New York state from 2009 to 2018 and last updated in 2018

The second dataset containing the list of neighbourhoods with their corresponding coordinates was also downloaded from the same website

We are going to use geolocator to obtain the coordinates of Buffalo city. The folium library will be used to plot the map and located the crime areas according to the addresses with their corresponding coordinates given in the dataset

**Methodology**

Our focus is to direct our search for areas that the firm can quickly set up the business and hit the ground running with the information they have about the crimes in the city and where to specifically pitch their tents

The first step involved data input and wrangling the crime dataset to extract features required for the analysis

Secondly the crime locations (latitude and longitude) were used to pin the points to the map, revealing in much better details, in picture, where the crimes were committed.

The third steps involve extracting the neighbourhoods with their respective coordinates and used Foursquare API to extract the venues in each of the neighbourhoods using their respective coordinates. These venues were then plotted on the map revealing their locations in the city.

**Results and Discussion**

The analysis has shown that Buffalo offers a great opportunity for a security firm with novel products and services that can easily be marketed to potential customers. The List of The business in Buffalo was extracted and tabulated and the total counts of each looks very convincing enough for the team to start making head way into the city. With more businesses clustered around the city centre, this insight would also help them to set up their office around the city centre and gradually move into other areas far from the city canter.

**Conclusion**

The aim of this project was to answer the three questions raised by my friend in order to help him make approach plans in setting up a security business in a new city. Datasets from the city of Buffalo, which of course would be the perfect place to gather the data, was used in conjunction with folium, geolocator, and geopy to plot the map and locate new areas that was in the original datasets.

Over 3000 potential customers were revealed more with neighbourhoods where each are located.

The crime rates were also plotted on the locations the were reported and the spread across the city.

Finally this project can be useful for anyone planning to relocate to city of Buffalo and is concerned about which area would be best safe to live in(Although this would need further analysis), but insights can be drawn from the map. Our major focus is to help in locating areas where crimes were reported and use the numbers together with their locations to make decisions as a security firm moving into a new country. This project would be useful to local councils and police departments.