Battle of the Neighbourhoods - Edmonton

Introduction

The purpose of the project is to look at the various neighbourhoods in Edmonton in order to determine several options of different neighbourhoods to acquire a new office for the organization. In understanding this project it is important to understand the background.

First for those reading this report, Edmonton is the capital city of the province of Alberta and is the fifth largest city in Canada. It is the most northern capital of all the provinces in Canada and has its beginnings in the fur trade. Today Edmonton is the centre of the oil and gas industry, home to Oilers hockey team and the largest mall in North America. Edmonton also has the largest area of urban parkland in North America.

In Edmonton an organization is looking into acquiring a new office space. Over the years this organization has moved around several times and of concern to the staff is that neighbourhood of the new location be safe, have a variety of lunch locations and coffee shops to pick up coffee.

Over the years and currently office locations have been in the following neighbourhoods: Calder, Strathcona, Westmount, McDougall, Eastwood, Strathcona Industrial Park, Grovenor and Strathearn.
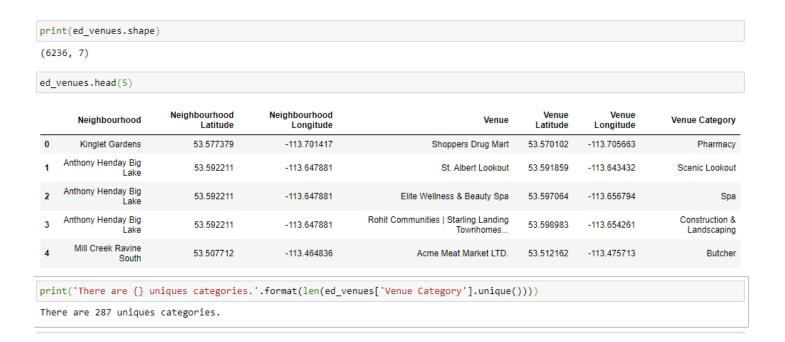
Data

- Data will be accessed on the Neighbourhood location in Edmonton. This data will be acquired from the City of Edmonton Open Data Portal. Data regarding the location of neighbourhood centroid will be imported into a Jupyter Notebook in a JSON format.

```
df_Ed.head(10)
```

	number	neighbourhood	area_sq_km	latitude	longitude
0	4477	Kinglet Gardens	2.637129	53.577379	-113.701417
1	4018	Anthony Henday Big Lake	3.217870	53.592211	-113.647881
2	6492	Mill Creek Ravine South	0.758605	53.507712	-113.464836
3	4023	Anthony Henday Rampart	3.150323	53.627635	-113.576203
4	3220	Hagmann Estate Industrial	0.527770	53.582176	-113.544951
5	5505	Ambleside	3.143942	53.430640	-113.600677
6	4464	The Uplands	3.572662	53.461707	-113.658220
7	6020	Avonmore	0.897090	53.507780	-113.451631
8	4012	Anthony Henday South West	4.547852	53.464532	-113.637545
9	2590	Overlanders	0.841196	53.581011	-113.388176

```
df_Ed.shape
```

```
(400, 5)
```

- Crime data in each Neighbourhood location will be accessed also through City of Edmonton Open Data. However, due to the size of this data it will be download as a CSV file and then imported into the Jupyter Notebook.

```
df_edcrime.head(10)
```

	number	neighbourhood	Assault	Break and Enter	Homicide	Robbery	Sexual Assaults	Theft From Vehicle	Theft Of Vehicle	Theft Over $5000	Grand Total
0	1090	DOWNTOWN	420.0	147.0	1.0	67.0	28.0	321.0	66.0	13.0	1063
1	1030	CENTRAL MCDOUGALL	278.0	60.0	NaN	21.0	22.0	108.0	63.0	12.0	564
2	1150	OLIVER	94.0	105.0	NaN	25.0	15.0	242.0	58.0	6.0	545
3	1140	MCCAULEY	269.0	63.0	2.0	27.0	13.0	119.0	46.0	3.0	542
4	1020	BOYLE STREET	174.0	65.0	1.0	14.0	28.0	102.0	44.0	6.0	434
5	1010	ALBERTA AVENUE	118.0	99.0	NaN	16.0	13.0	127.0	53.0	4.0	430
6	1180	QUEEN MARY PARK	91.0	77.0	NaN	17.0	10.0	123.0	66.0	6.0	390
7	5480	STRATHCONA	80.0	79.0	NaN	22.0	13.0	153.0	33.0	6.0	386
8	5200	GARNEAU	31.0	82.0	NaN	7.0	4.0	151.0	24.0	5.0	304
9	2080	BELVEDERE	67.0	64.0	NaN	10.0	7.0	93.0	53.0	5.0	299

```
df_edcrime.shape
```

```
(373, 11)
```

- Data on restaurants and coffee shops in each neighbourhood will be accessed using the Four Square Developers API and will be limited to a 1000 meter radius of the centroid point of each neighbourhood.

```
print(ed_venues.shape)
```

```
(6236, 7)
```

```
ed_venues.head(5)
```

	Neighbourhood	Neighbourhood Latitude	Neighbourhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Kinglet Gardens	53.577379	-113.701417	Shoppers Drug Mart	53.570102	-113.705663	Pharmacy
1	Anthony Henday Big Lake	53.592211	-113.647881	St. Albert Lookout	53.591859	-113.643432	Scenic Lookout
2	Anthony Henday Big Lake	53.592211	-113.647881	Elite Wellness & Beauty Spa	53.597064	-113.656794	Spa
3	Anthony Henday Big Lake	53.592211	-113.647881	Rohit Communities	Starling Landing Townhomes...	53.598983	-113.654261	Construction & Landscaping
4	Mill Creek Ravine South	53.507712	-113.464836	Acme Meat Market LTD.	53.512162	-113.475713	Butcher

```
print('There are {} uniques categories.'.format(len(ed_venues['Venue Category'].unique())))
```

```
There are 287 uniques categories.
```

Essentially we will trying to limit the choices to a few neighbourhoods that have lower crime rates, a higher number of restaurants of which a few of those restaurants need to be coffee shops. This will be done by sorting and limiting the data to the top neighbourhoods as well as visualizing the data using Folium maps and Matplotlib.