Data Section

For this project we need the following data :

- New Delhi Restaurants data that contains list Locality, Restaurant name, rating along with their latitude and longitude.
    - Data source : Zomato kaggel dataset
    - Description: This data set contains the required information. And we will use this data set to explore various locality of New Delhi city.
- Nearby places in each locality of New Delhi city.
    - Data source : Foursquare API
    - Description: By using this api we will get all the venues in each neighborhood.

Approach

- Collect the new Delhi city data from Zomato kaggel dataset
- Using Foursquare API we will find all venues for each neighborhood.
- Filter out all venues that are nearby by locality.
- Using aggregative rating for each restaurant to find the best places.
- Visualize the Ranking of neighborhoods using folium library(python)

Firstly, from Data source : Zomato kaggel dataset, by installing and importing most important libraries

Capstone Project - The Battle of Neighborhoods

```
import pandas as pd
import numpy as np
import requests # library to handle requests
from pandas.io.json import json_normalize # tranform JSON file into a pandas dataframe
# Matplotlib and associated plotting modules
import matplotlib.cm as cm
import matplotlib.colors as colors
# import k-means from clustering stage
from sklearn.cluster import KMeans

!conda install -c conda-forge folium=0.5.0 --yes # uncomment this line if you haven't completed the Foursquare API lab
import folium # map rendering library
! pip install geocoder
import geocoder
```

I was able to extract most of the available restaurants in New Delhi as shown in the chart below

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude	Cuisines	...	Currency	Has Table booking	Has Online delivery	Is delivering now	Switch to order menu	Price range	Aggregate rating	Rating color	Rating text	Votes
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	121.027535	14.565443	French, Japanese, Desserts	...	Botswana Pula(P)	Yes	No	No	No	3	4.8	Dark Green	Excellent	314
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi...	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City, Ma...	121.014101	14.553708	Japanese	...	Botswana Pula(P)	Yes	No	No	No	3	4.5	Dark Green	Excellent	591
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...	121.056831	14.581404	Seafood, Asian, Filipino, Indian	...	Botswana Pula(P)	Yes	No	No	No	4	4.4	Green	Very Good	270
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.056475	14.585318	Japanese, Sushi	...	Botswana Pula(P)	No	No	No	No	4	4.9	Dark Green	Excellent	365
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.057508	14.584450	Japanese, Korean	...	Botswana Pula(P)	Yes	No	No	No	4	4.8	Dark Green	Excellent	229

Then, through Foursquare API was able to extract the of the data as shown below

[26]:
```
New_Delhi_grouped = df_final.groupby('Locality').mean().reset_index()
New_Delhi_grouped
```

[26]:

	Locality	Lat	Lng	No_of_Restaurant	Agg_Rating	No_of_Votes
0	ARSS Mall, Paschim Vihar	28.668945	77.101544	1	3.100000	117
1	Adchini	28.537063	77.197808	13	3.292308	1560
2	Aditya Mega Mall, Karkardooma	28.656131	77.301266	4	3.275000	434
3	Aerocity	28.553077	77.104270	2	3.200000	59
4	Aggarwal City Mall, Pitampura	28.690020	77.134650	3	3.033333	126
...	...	...	...	...	...	...
235	West Gate Mall, Rajouri Garden	28.652978	77.123116	1	3.500000	178
236	West Patel Nagar	28.648177	77.166667	4	3.675000	876
237	Worldmark 1, Aerocity	28.550257	77.121721	5	3.220000	77
238	Yusuf Sarai	28.559928	77.208290	16	3.075000	923
239	ibis New Delhi, Aerocity	28.551398	77.123127	1	3.100000	9

240 rows × 6 columns

Then Applied data cleaning as shown

	Restaurant Name	Locality	Longitude	Latitude	Cuisines	Aggregate rating	Rating text	Votes
1	Burger.in	Adchini	77.196923	28.535382	Fast Food	3.2	Average	46
2	Days of the Raj	Adchini	77.197475	28.535493	North Indian, Seafood, Continental	3.4	Average	45
3	Dilli Ka Dhaba	Adchini	77.198033	28.537547	South Indian, North Indian	2.6	Average	11
4	Govardhan	Adchini	77.196924	28.535523	South Indian, North Indian, Chinese	3.4	Average	238
5	Mezbaan Grills	Adchini	77.198122	28.538134	Mughlai	3.1	Average	8

Then Data Transformation as shown,

```
df_final = df_final[df_final['Aggregate rating'] != 0.000000]
df_final.columns =['Locality','Lat','Lng', 'No_of_Restaurant','Cusines', 'Agg_Rating','Comments' ,'No_of_Votes']
df_final.head()
```

	Locality	Lat	Lng	No_of_Restaurant	Cusines	Agg_Rating	Comments	No_of_Votes
0	ARSS Mall, Paschim Vihar	28.668945	77.101544	1	North Indian, South Indian, Chinese, Mithai, F...	3.100000	Average	117
1	Adchini	28.537063	77.197808	13	Fast Food, North Indian, Seafood, Continental,...	3.292308	Average, Good, Poor, Very Good	1560
2	Aditya Mega Mall, Karkardooma	28.656131	77.301266	4	Finger Food, North Indian, Mughlai, Pizza, Fas...	3.275000	Average, Good	434
3	Aerocity	28.553077	77.104270	2	Fast Food, Italian, Pizza, North Indian, Conti...	3.200000	Average	59
4	Aggarwal City Mall, Pitampura	28.690020	77.134650	3	North Indian, Chinese, Street Food, Mithai, No...	3.033333	Average	126

Then the part of Clustering and creating the map distribution will be shown in the notebook, so please kindly check the notebook for the full and complete illustration