THE BATTLE OF NEIGHBORHOODS: Downtown Toronto Vs West Toronto

Introduction: Business Understanding
In the first part of this project, I will compare two most populated Boroughs in the city of Toronto. Specifically, the report is for a friend who is hoping to leave Toronto Islands in Downtown Toronto (the most populated borough in Toronto) for an undecided place but would like to go for a place like where he currently stays i.e. The city must be like Toronto Island and must in the same capital city of Toronto.

In addition to my analysis, I will also analyze and recommend a place in any of the neighborhoods for anyone planning to open a restaurant. The location of interest must be a densely populated area with few American restaurants or no American restaurant.

I will utilize the data scientist skills to explore Toronto neighborhood datasets and extract the needed information. Advantages of each area will then be clearly expressed so that best possible final location can be chosen by stakeholders

Approach:
I will use pandas to scrape and explore the Canada dataset, an html file that contains Canada postcode, borough, and neighborhoods. I will also scrape the Canadian population information html file and merged it with the previous data frame. I will extract the top two populated boroughs in the data frame and utilize foursquare API to explore each of their neighborhoods. I will use K-means to cluster and segment their neighborhoods into 5 clusters and visualize the cluster on a Map of Toronto using the Folium Library. Furthermore, I will also explore the top 20 neighborhoods with the highest number of restaurants using the foursquare API and visualize on a horizontal bar graph. Also, I will check for the top 5 restaurants in the neighborhoods and will give suggestions based on results.

Data
Based on my problem definition, the factors that I will consider in making my decisions include the following;

- Top 20 neighborhoods with the highest number of restaurants
- Top 5 restaurants in the selected neighborhoods
- Population of boroughs and their neighborhoods

The dataset used for my analysis are found in the links below;

- Canada data: https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M
- PopulationInformation: https://www12.statcan.gc.ca/censusrecensement/2016/dp-pd/hlt-fst/pd-pl/Table.cfm?Lang=Eng&T=1201&SR=1&S=22&O=A&RPP=9999&PR=0
- Geocoordinates of Canada by Postal codes: http://cocl.us/Geospatial_data
- I will use the foursquare API to explore neighborhoods and K-means to cluster and segment neighborhoods