

The Battle of Neighborhoods IBM Capstone Project.

The Best Neighborhood in Toronto to open a Greek Restaurant.

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Introduction:

Toronto is the capital city of the Canadian province of Ontario. With a recorded population of 2,731,571 in 2016, it is the most populous city in Canada and the fourth most populous city in North America.

Toronto is an international center of business, finance, arts, and culture, and is recognized as one of the most multicultural and cosmopolitan cities in the world.

The diverse population of Toronto reflects its current and historical role as an important destination for immigrants to Canada. More than 50 percent of residents belong to a visible minority population group, and over 200 distinct ethnic origins are represented among its inhabitants. While the majority of Torontonians speak English as their primary language, over 160 languages are spoken in the city.

Toronto is a prominent center for music, theatre, motion picture production, and television production, and is home to the headquarters of Canada's major national broadcast networks and media outlets. Its varied cultural institutions, which include numerous museums and galleries, festivals and public events, entertainment districts, national historic sites, and sports activities, attract over 43 million tourists each year.

Its economy is highly diversified with strengths in technology, design, financial services, life sciences, education, arts, fashion, aerospace, environmental innovation, food services, and tourism.

Business Problem:

The goal of this analysis is to use Foursquare location data and regional clustering of venue information to determine what is the optimal neighborhood in Toronto for an entrepreneur to open a Greek restaurant. As Greek is the 20th most commonly spoken language in the Toronto CMA, with 41,225 people (0.7% of the population) speaking Greek. In the City of Toronto per se, Greek is the 17th most common ethnic origin, being claimed by 57,425 people (2.1% of the population), as per 2016 Census. For this reason, there are numerous opportunities to open a new Greek restaurant there. Through this project we are trying to locate the most suitable neighborhood in Toronto, Canada for a Greek entrepreneur to open a new Greek restaurant.

Target Audience:

This project refers to entrepreneurs who would be interested in opening a Greek Restaurant in Toronto, Canada.

Data Overview:

The data being used in this analysis had been provided from multiple sources. First of all, Toronto's neighborhoods have been extracted from [Wikipedia](#) by using a web scraper. Furthermore, we used Geocoder python library in order to obtain the Geographical location of the neighborhoods and finally, Foursquare API has been used for the purpose of analyzing venue data and especially Greek restaurants in Toronto, Canada. Venue data will help to consider which are the best neighborhoods for an

entrepreneur to open a Greek restaurant. Pictures below depict an example of the data which has been used.

Postal Code ↕	Borough ↕	Neighbourhood ↕
M1A	Not assigned	Not assigned
M2A	Not assigned	Not assigned
M3A	North York	Parkwoods
M4A	North York	Victoria Village
M5A	Downtown Toronto	Regent Park, Harbourfront
M6A	North York	Lawrence Manor, Lawrence Heights
M7A	Downtown Toronto	Queen's Park, Ontario Provincial Government
M8A	Not assigned	Not assigned
M9A	Etobicoke	Islington Avenue, Humber Valley Village
M1B	Scarborough	Malvern, Rouge
M2B	Not assigned	Not assigned
M3B	North York	Don Mills
M4B	East York	Parkview Hill, Woodbine Gardens
M5B	Downtown Toronto	Garden District, Ryerson
M6B	North York	Glencairn

Picture 1: Neighborhoods and Postal Codes provided by Wikipedia.

	A	B	C
1	Postal Code	Latitude	Longitude
2	M1B	43.8066863	-79.1943534
3	M1C	43.7845351	-79.1604971
4	M1E	43.7635726	-79.1887115
5	M1G	43.7709921	-79.2169174
6	M1H	43.773136	-79.2394761
7	M1J	43.7447342	-79.2394761
8	M1K	43.7279292	-79.2620294
9	M1L	43.7111117	-79.2845772
10	M1M	43.716316	-79.2394761
11	M1N	43.692657	-79.2648481
12	M1P	43.7574096	-79.273304
13	M1R	43.7500715	-79.2958491
14	M1S	43.7942003	-79.2620294

Picture 2: Geospatial data for every Postal Code of Toronto.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Malvern, Rouge	43.806686	-79.194353	Wendy's	43.807448	-79.199056	Fast Food Restaurant
1	Rouge Hill, Port Union, Highland Creek	43.784535	-79.160497	Royal Canadian Legion	43.782533	-79.163085	Bar
2	Guildwood, Morningside, West Hill	43.763573	-79.188711	RBC Royal Bank	43.766790	-79.191151	Bank
3	Woburn	43.770992	-79.216917	Starbucks	43.770037	-79.221156	Coffee Shop
4	Cedarbrae	43.773136	-79.239476	Drupati's Roti & Doubles	43.775222	-79.241678	Caribbean Restaurant

Picture 3: Example of data provided by Foursquare for venues in different Neighborhoods.

Methodology:

The first step towards the analysis we would like to achieve is to scrape Wikipedia website, by using BeautifulSoup python library, in order to obtain all the information available for the Boroughs and Neighborhoods of Toronto, Canada as shown in picture 1. After scraping the website there was a lot of registrations in which the values of Borough and Neighborhoods were "Not assigned" so we had to get rid of these values. The next step consists of grouping data based on borough, that could contain more than one neighborhood in it, with all the neighborhoods in this borough being separated with a comma in the same row and saving it into a data frame. The result of this step is the data frame show in picture 4.

	Borough	Postal Code	Neighbourhood
0	Central Toronto	M4N	Lawrence Park
1	Central Toronto	M4P	Davisville North
2	Central Toronto	M4R	North Toronto West, Lawrence Park
3	Central Toronto	M4S	Davisville
4	Central Toronto	M4T	Moore Park, Summerhill East

Picture 4: Data scraped from Wikipedia and grouped by Borough into a data frame.

In order to obtain the geographical coordinates of the neighborhoods in each postal code in Toronto we used data provided from the following link: https://cocl.us/Geospatial_data. After we had access in this information, we merged it with abovementioned data frame based on the Postal Code so it would be easier to deploy the analysis. The result after the merge is shown in picture 5.

	Borough	Postal Code	Neighbourhood	Latitude	Longitude
0	Central Toronto	M4N	Lawrence Park	43.728020	-79.388790
1	Central Toronto	M4P	Davisville North	43.712751	-79.390197
2	Central Toronto	M4R	North Toronto West, Lawrence Park	43.715383	-79.405678
3	Central Toronto	M4S	Davisville	43.704324	-79.388790
4	Central Toronto	M4T	Moore Park, Summerhill East	43.689574	-79.383160

Picture 5: Merged data frame consisted of all the Boroughs with their Postal Codes, Neighborhoods and Latitude and Longitude data.

Additionally, we used Foursquare API to get data for all the venues existing in those areas, in a radius of 500 meter, in the neighborhoods of Toronto consisting of venue's name, location and category which was then merged with the geospatial data of every neighborhood to comfort the analysis needed to be done. The result is show in Picture 6.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Lawrence Park	43.728020	-79.388790	Lawrence Park Ravine	43.726963	-79.394382	Park
1	Lawrence Park	43.728020	-79.388790	Zodiac Swim School	43.728532	-79.382860	Swim School
2	Lawrence Park	43.728020	-79.388790	TTC Bus #162 - Lawrence-Donway	43.728026	-79.382805	Bus Line
3	Davisville North	43.712751	-79.390197	Homeway Restaurant & Brunch	43.712641	-79.391557	Breakfast Spot
4	Davisville North	43.712751	-79.390197	Sherwood Park	43.716551	-79.387776	Park

Picture 6: Venue data provided from Foursquare API.

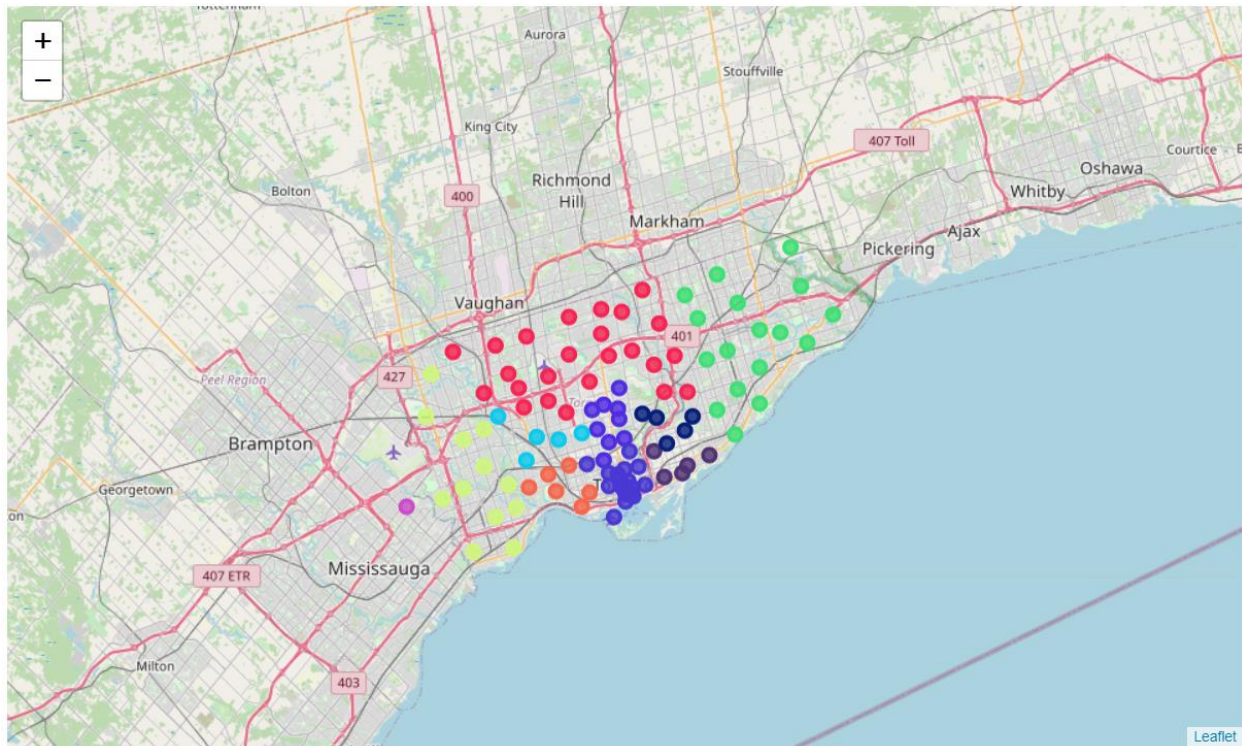
In order to obtain the data from Foursquare API we had to use developers Foursquare Credentials which is CLIENT_ID, CLIENT_SECRET and VERSION of the API which are provided by their webpage.

Now, after all the data cleansing achieved above, the next step was to analyze it. First of all we calculated the number of all the neighborhoods in every Borough of Toronto and the result is shown in Picture 7.

Borough	
Central Toronto	9
Downtown Toronto	19
East Toronto	5
East York	5
Etobicoke	12
Mississauga	1
North York	24
Scarborough	17
West Toronto	6
York	5

Picture 7: Total Number of Neighborhoods in each Borough of Toronto.

The next step of our analysis consists of creating a map of Toronto, by using folium, consisting of all Neighborhoods which have been colored with different colors depending on the Borough they belong to. Result is shown in Picture 8.



Picture 8: Toronto Neighborhoods colored based on Boroughs they belong to.

To continue with, we examined, from the data collected from Foursquare API consisting of all the venues of the city which includes Parks, Swim schools, Bus lines, Breakfast Spots, etc, how many Greek restaurants there are in those areas. The result was a total of 14 Greek Restaurants. So, for the sake of our analysis, we had to transform our data that was merged as shown in Picture 6, with One hot encoding technique in order to make our clustering more efficient. In addition, for each of the Neighborhoods, individual venues were turned into frequency if how many of those venues were

located in each neighborhood. Then we grouped those rows by Neighborhood and by taking the average of the frequency of occurrences of each Venue Category. Result is show in Picture 9.

	Neighborhoods	Accessories Store	Adult Boutique	Airport	Airport Food Court	Airport Gate	Airport Lounge	Airport Service	Airport Terminal	American Restaurant	Antique Shop	Aquarium	Art Gallery	Art Museum	Arts & Crafts Store	Asian Restaurant
0	Agincourt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0
1	Alderwood, Long Branch	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0
2	Bathurst Manor, Wilson Heights, Downsview North	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0
3	Bayview Village	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.0	0.0	0.0	0.0	0.0	0.0
4	Bedford Park, Lawrence Manor East	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.041667	0.0	0.0	0.0	0.0	0.0	0.0

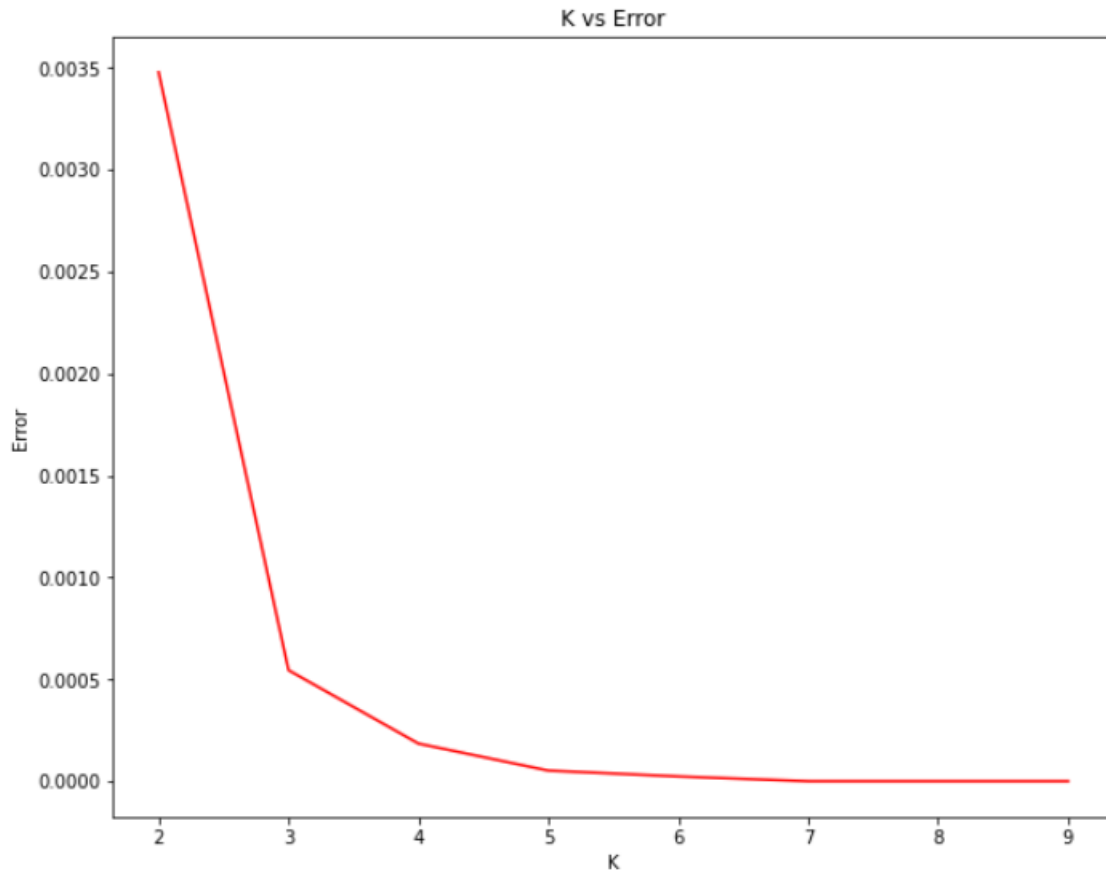
Picture 9: Grouped Neighborhoods by the average of the frequency of each Venue.

Our final step before the start of trying to cluster our data was to create a new data frame which had stored only the Neighborhood names as well as the mean frequency of Greek Restaurants in each Neighborhood. This step helps us to have a better view of summarized data based on each neighborhood about Greek restaurants and made the analysis much easier. This data frame is show below in Picture 10.

	Neighborhoods	Greek Restaurant
0	Agincourt	0.000000
1	Alderwood, Long Branch	0.000000
2	Bathurst Manor, Wilson Heights, Downsview North	0.000000
3	Bayview Village	0.000000
4	Bedford Park, Lawrence Manor East	0.041667

Picture 10: Data frame storing Neighborhoods and Greek Restaurants mean frequency in that Neighborhoods.

After all the preprocessing done above, we are ready to continue with clustering the neighborhoods based on the mean frequencies of Greek Restaurants existing in those neighborhoods. To achieve this, we used K-means ++ clustering algorithm. First of all, we had to compute the optimum k value for our data set in order to achieve the lowest error after the clustering. To find that value elbow point technique was used, running a test with different numbers of k values and calculating each time the error of the clustering. The k value we chose was at the point in which the line had a sharp decrease of error value. In this case based of diagram shown in Picture 11 is k = 4, which means the clustering was done with 4 different clusters.



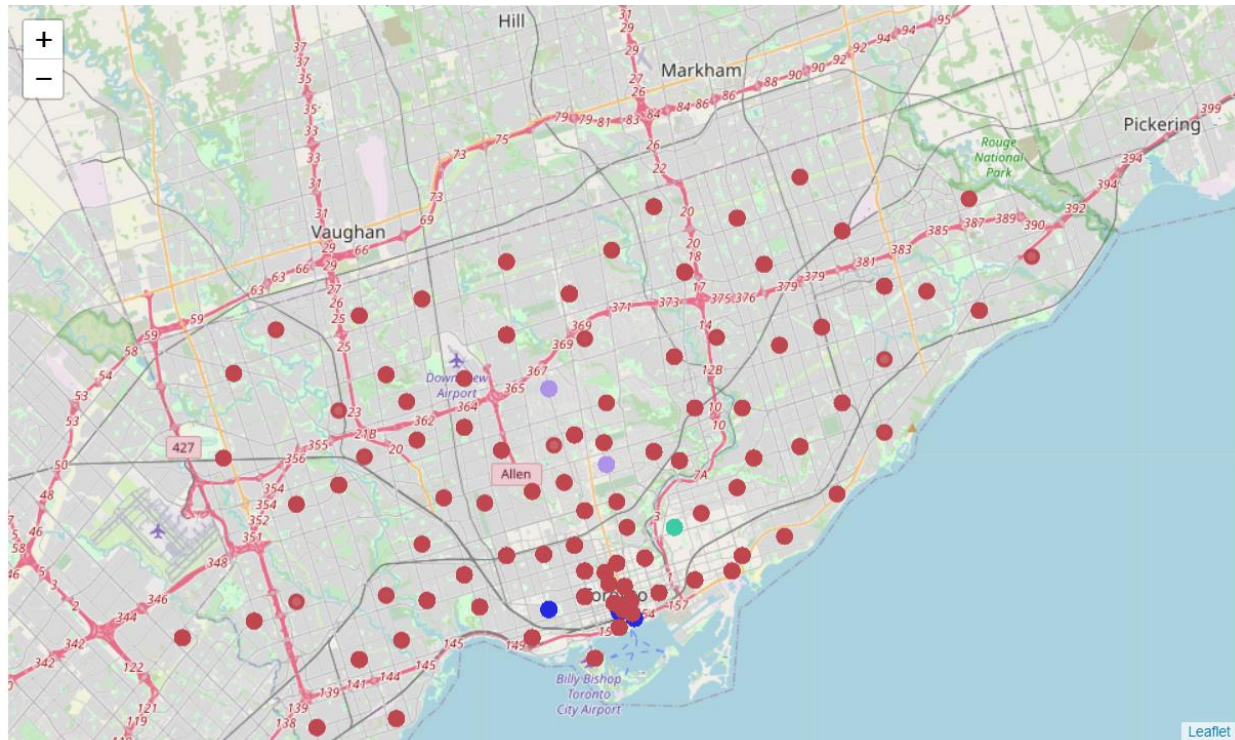
Picture 11: Elbow diagram showing which is the optimum value of k for k-means clustering algorithm.

To continue with, neighborhoods that had similar average frequency of Greek Restaurants were divided into 4 different clusters, which was labeled with values from 0 to 3. We merged the Cluster Labels with the Neighborhoods and the average frequency of Greek restaurants in order to visualize them and make some inspections about the result. This final data frame is shown in Picture 12.

	Neighborhoods	Greek Restaurant	Cluster Labels
0	Agincourt	0.000000	2
1	Alderwood, Long Branch	0.000000	2
2	Bathurst Manor, Wilson Heights, Downsview North	0.000000	2
3	Bayview Village	0.000000	2
4	Bedford Park, Lawrence Manor East	0.041667	3

Picture 12: Data frame consisting of Neighborhoods and their Greek restaurant mean frequency as well as the Cluster Labels they belong to.

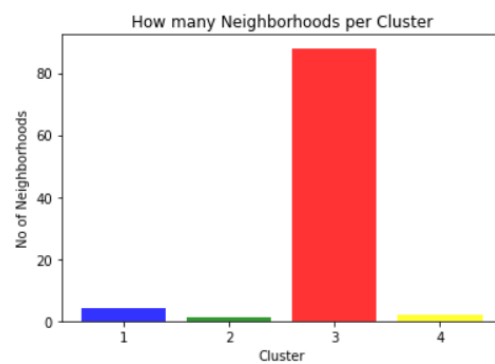
After the creation of the final data frame shown above, we then can proceed to our results for analyzing the opportunities for opening a new Greek restaurant in Toronto, Canada. In order to visualize the data so it could be clearer to understand the results we created a map, using Folium package, and each neighborhood was colored based on the cluster label. The map is shown in Picture 13.



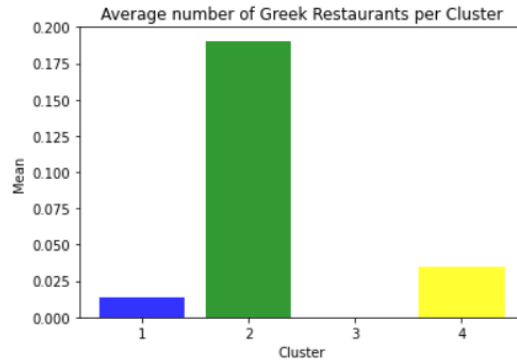
Picture 13: Map with neighborhoods colored based on Cluster Labels. Blue is Cluster 1, Green is Cluster 2, Red is Cluster 3 and Purple is Cluster 4.

Results:

Finally, we have a total of 4 clusters. Before we proceed in analyzing the results in each cluster one by one, we calculate the total amount of neighborhoods and the average Greek Restaurant frequency in each cluster. The results are shown in Picture 14 and Picture 15 below.



Picture 14: Number of Neighborhoods per Cluster.



Picture 15: Average number of Greek Restaurants per Cluster.

From the bar graphs created by using Matplotlib library, we can compare the number of Neighborhoods as well as the average number of Greek restaurants per cluster. We see that cluster 2 has the lowest value for number of neighborhoods, which is only 1 neighborhood, while cluster 3 has the biggest value which is 88. Cluster 1 has 4 neighborhoods and cluster 4 has only 2. Now let's compare the average Greek Restaurant per cluster.

This final analysis is crucial as we can see that even though there is only one neighborhood in cluster 2, it has the highest number of Greek Restaurants (0.190476) while cluster 3 has the most neighborhoods but has the least average of Greek Restaurants which is zero. Also, from the map above, we can see that neighborhoods in Cluster 3 are the most sparsely populated. Now let's analyze the Clusters individually.

Cluster 1 (Blue color on map):

The number of Greek Restaurants in Cluster 1 is : 4

	Borough	Neighborhood	Greek Restaurant	Cluster Labels	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
303	West Toronto	Little Portugal, Trinity	0.023256	0	43.647927	-79.419750	apt 200	43.644026	-79.420063	Bar
282	West Toronto	Little Portugal, Trinity	0.023256	0	43.647927	-79.419750	Frankie's Bar & Cafe	43.644290	-79.418481	Diner
280	West Toronto	Little Portugal, Trinity	0.023256	0	43.647927	-79.419750	El Almacen Yerba Mate Cafe + Gallery	43.643682	-79.421627	Café
279	West Toronto	Little Portugal, Trinity	0.023256	0	43.647927	-79.419750	Trinity Bellwoods Park	43.647072	-79.413756	Park
277	West Toronto	Little Portugal, Trinity	0.023256	0	43.647927	-79.419750	Artscape Youngplace	43.646921	-79.417342	Art Gallery
276	West Toronto	Little Portugal, Trinity	0.023256	0	43.647927	-79.419750	Montgomery's	43.644273	-79.418521	Restaurant
275	West Toronto	Little Portugal, Trinity	0.023256	0	43.647927	-79.419750	La Banane	43.649040	-79.420599	French Restaurant
274	West Toronto	Little Portugal, Trinity	0.023256	0	43.647927	-79.419750	The Communist's Daughter	43.649362	-79.420963	Bar

Picture 16: Cluster 1 snippet with 4 Greek Restaurants in Cluster.

Cluster 1 has the second lowest average frequency of Greek Restaurants. Cluster 1 was mainly located in Downtown Toronto and West Toronto Boroughs. Little Portugal, Trinity, Toronto Dominion Centre,

Design Exchange, First Canadian Place, Underground city was some of the neighborhoods in this cluster. However, there were only 4 Greek Restaurants there.

Cluster 2 (Green color on map):

The number of Greek Restaurants in Cluster 2 is : 8

	Borough	Neighborhood	Greek Restaurant	Cluster Labels	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Louis Cifer Brew Works	43.677663	-79.351313	Brewery
31	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Re: Reading	43.678507	-79.347678	Bookstore
23	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Sushi Friends	43.677614	-79.351641	Japanese Restaurant
24	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Kalyvia	43.677973	-79.351208	Greek Restaurant
25	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Simone's Caribbean Restaurant	43.678655	-79.346582	Caribbean Restaurant
26	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Athen's Pastries	43.678166	-79.348927	Greek Restaurant
27	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Starbucks	43.678879	-79.346357	Coffee Shop
28	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Dough Bakeshop	43.676643	-79.356846	Bakery
29	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Pizzeria Libretto	43.678489	-79.347576	Pizza Place
30	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Don Valley Trail	43.676331	-79.353923	Trail
32	East Toronto	The Danforth West, Riverdale	0.190476	1	43.679557	-79.352188	Alexandros	43.678304	-79.349486	Greek Restaurant

Picture 17: Cluster 2 snippet with 8 Greek Restaurants in Cluster.

Cluster 2 is mainly spotted in East Toronto Borough. The Danforth West and Riverdale was the only two neighborhoods that were located in this cluster. Cluster 2 had 8 Greek Restaurants although it consists of only two neighborhoods. It has the highest average of Greek Restaurants between the clusters which is equal to 0.190476. The reason why the average of Greek Restaurants is the highest is because there are only 2 neighborhoods in this cluster.

Cluster 3 (Red color on map):

The number of Greek Restaurants in Cluster 3 is : 0

	Borough	Neighborhood	Greek Restaurant	Cluster Labels	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Central Toronto	Lawrence Park	0.0	2	43.728020	-79.388790	TTC Bus #162 - Lawrence-Donway	43.728026	-79.382805	Bus Line
1125	East Toronto	Business reply mail Processing Centre, South C...	0.0	2	43.662744	-79.321558	The Sidekick	43.664484	-79.325162	Comic Shop
1207	Etobicoke	New Toronto, Mimico South, Humber Bay Shores	0.0	2	43.605647	-79.501321	McDonald's	43.602464	-79.498859	Fast Food Restaurant
1206	Etobicoke	New Toronto, Mimico South, Humber Bay Shores	0.0	2	43.605647	-79.501321	Shoppers Drug Mart	43.601677	-79.502239	Pharmacy
1205	Etobicoke	New Toronto, Mimico South, Humber Bay Shores	0.0	2	43.605647	-79.501321	Pet Valu	43.602431	-79.498653	Pet Store
1204	Etobicoke	New Toronto, Mimico South, Humber Bay Shores	0.0	2	43.605647	-79.501321	Crossfit Colosseum	43.604816	-79.507024	Gym
1203	East York	East Toronto, Broadview North (Old East York)	0.0	2	43.685347	-79.338106	The Path	43.683923	-79.335007	Park
1202	East York	East Toronto, Broadview North (Old East York)	0.0	2	43.685347	-79.338106	Donlands & Mortimer	43.687680	-79.340100	Intersection

Picture 18: Cluster 3 snippet with 0 Greek Restaurants in Cluster.

There was a total of 88 neighborhoods in this cluster but not a single Greek Restaurant existed there, that's why it has the lowest average frequency of Greek Restaurants which is 0. We can see that nodes of Cluster 3 were dispersed all throughout Toronto making it one of the most sparsely populated cluster.

Cluster 4 (Purple color on map):

The number of Greek Restaurants in Cluster 4 is : 2

	Borough	Neighborhood	Greek Restaurant	Cluster Labels	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
56	North York	Bedford Park, Lawrence Manor East	0.041667	3	43.733283	-79.41975	Karbouzi Greek Taverna	43.736204	-79.420359	Greek Restaurant
44	North York	Bedford Park, Lawrence Manor East	0.041667	3	43.733283	-79.41975	Starbucks	43.732604	-79.419136	Coffee Shop
33	North York	Bedford Park, Lawrence Manor East	0.041667	3	43.733283	-79.41975	Satay on the Road	43.735310	-79.419783	Thai Restaurant
34	North York	Bedford Park, Lawrence Manor East	0.041667	3	43.733283	-79.41975	Aroma Espresso Bar	43.735975	-79.420391	Café
35	North York	Bedford Park, Lawrence Manor East	0.041667	3	43.733283	-79.41975	Darbar Persian Grill	43.735484	-79.420006	Restaurant
36	North York	Bedford Park, Lawrence Manor East	0.041667	3	43.733283	-79.41975	The Copper Chimney	43.736195	-79.420271	Indian Restaurant
37	North York	Bedford Park, Lawrence Manor East	0.041667	3	43.733283	-79.41975	Sakura Garden	43.733398	-79.419491	Sushi Restaurant
38	North York	Bedford Park, Lawrence Manor East	0.041667	3	43.733283	-79.41975	Francobollo	43.734557	-79.419549	Italian Restaurant
39	North York	Bedford Park, Lawrence Manor East	0.041667	3	43.733283	-79.41975	Tim Hortons	43.735356	-79.419605	Coffee Shop
40	North York	Bedford Park, Lawrence Manor East	0.041667	3	43.733283	-79.41975	Pheasant & Firkin	43.735173	-79.419702	Pub

Picture 19: Cluster 4 snippet with 2 Greek Restaurants in Cluster.

Cluster 4 venues were located in North York and Central Toronto boroughs. Bedford Park, Lawrence Manor East and Davisville is the only three neighborhoods in this cluster. There were a lot of different venues in this cluster with 2 Greek Restaurants in it. This made up the second highest average of Greek Restaurants which was approximately 0.041667.

Discussion:

Most of the Greek Restaurants are in cluster 2 represented by the green color on map depicted in Picture 13. Cluster 2 is mainly spotted in East Toronto Borough. The Danforth West and Riverdale was the only two neighborhoods that were located in this cluster. Even though there is a huge number of neighborhoods in cluster 3, there is not a single Greek Restaurant there. We see that in the Downtown Toronto and West Toronto area (cluster 1) there is the second lowest value of Greek Restaurants. Looking at the nearby venues, the optimum place to put a new Greek Restaurant is Downtown Toronto as there are many neighborhoods in the area but not a single one Greek Restaurant there, eliminating any competition. The second- best group of neighborhoods that would be a great opportunity to open a new Greek Restaurant consist of The Annex, North Midtown, Yorkville, North Toronto West, Lawrence Park located mainly in Central Toronto Borough in Cluster 3. Some of the drawback of this analysis are that the clustering is completely based on data obtained from Foursquare API. A better analysis would have been accomplished if we could use more info about the number of Greek Population in those areas. This concludes the optimal findings for this project and recommends to entrepreneurs to open an Greek Restaurant in these location with little to no competition.

Conclusion:

In conclusion, to end off this project, we had an opportunity on a business problem and it was tackled in way that it was similar to how a genuine data scientist would work. We utilized numerous Python libraries to fetch information, to control the content of it and to break down and visualize the results. We used Foursquare API to investigate the settings in neighborhoods of Toronto, get great measure of data from Wikipedia which we scraped with the Beautiful Soup web scraping library. We also visualized utilizing different plots present in seaborn and matplotlib libraries. Similarly, we applied Machine Learning techniques to anticipate the error, given the information and utilized Folium to picture it on map. There are a lot of improvements that can be achieved for this analysis with the assistance of more information and distinctive Machine Learning strategies. Additionally, we can utilize this venture to investigate any situation, for example, opening an alternate cuisine or opening a Movie Theater and so on. Ideally, this task acts as an initial direction to tackle more complex real-life problems using data science.