

PASSION FOR GREEK CUISINE

David Eddie

The artist, Prince once stated:
“*I love Toronto. It’s a real melting pot in every sense of the word. There are all sorts of different people everywhere you go. There are all sorts of great music, great nights spots and great restaurants*”



INTRODUCTION:

Background

It has been stated that buying a home is the biggest decision that you will make in your life. Location, location, location is a common cliché heard when evaluating options of what/where/and when to buy a home. For some individuals, it is an easy process, but for others when not enabled with all of the necessary information that the buyer values, then it can be more difficult. Websites like mls.ca help potential buyers find a home, but there are limited parameters for the buyer to select to narrow down where they could buy a home. Options like is the property waterfront, is the home a two-storey home, ability to select a price range, etc. But what if the buyer is a “foodie”, a person with a particular interest in a type of food?

Problem Statement

In this project, the buyer is a foodie and specifically loves Greek cuisine. This “value” of living close to well rated Greek restaurants is paramount in their selection of where to buy a home. Currently the ability to find the best location to buy a house in Canada based on being situated closest to the most Greek restaurants does not exist.

Interest

Specifically, this report will be targeted to home buyers interested in buying a house as close as possible to the best Greek restaurants in one of the 6 largest Canadian cities.

DATA:

Data Sources

Based on the problem statement, factors that will influence the recommendation are:

- i) the number of Greek restaurants in the area;
- ii) the distance to the Greek restaurants; and
- iii) the ratings of the Greek restaurants

To extract and generate the required information, the Foursquare API will be used in conjunction with geospatial mapping using Python code.

What information will the data contain

The data will hold information constrained to Greek Restaurants in the 6 largest cities in Canada: Toronto, Montreal, Vancouver, Calgary, Edmonton, and Ottawa. The name and address of each Greek restaurant will be listed along with their geographic coordinates—latitude and longitude—and what city they are located in.

METHODOLOGY:

Descriptive Analytics

First, the data was used to understand how many Greek restaurants are in each city. This is a foundational aspect of solving the problem statement and resulted in:

City	# of Greek Restaurants
Toronto	158
Montreal	76
Vancouver	46
Calgary	40
Ottawa	27
Edmonton	26

Not surprising, but Toronto and Montreal have the most Greek restaurants. Both being sprawling metropolitan areas, it then was considered how spread out the Top 25 restaurants are geographically.

Mappings of Top 25 rated Greek Restaurants in each city:

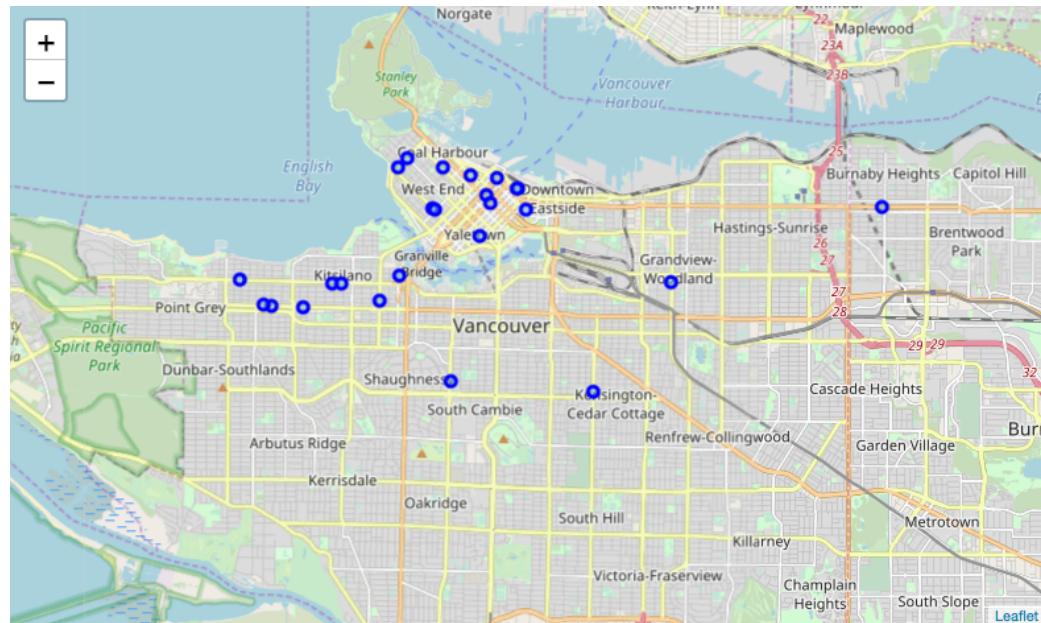
TORONTO:



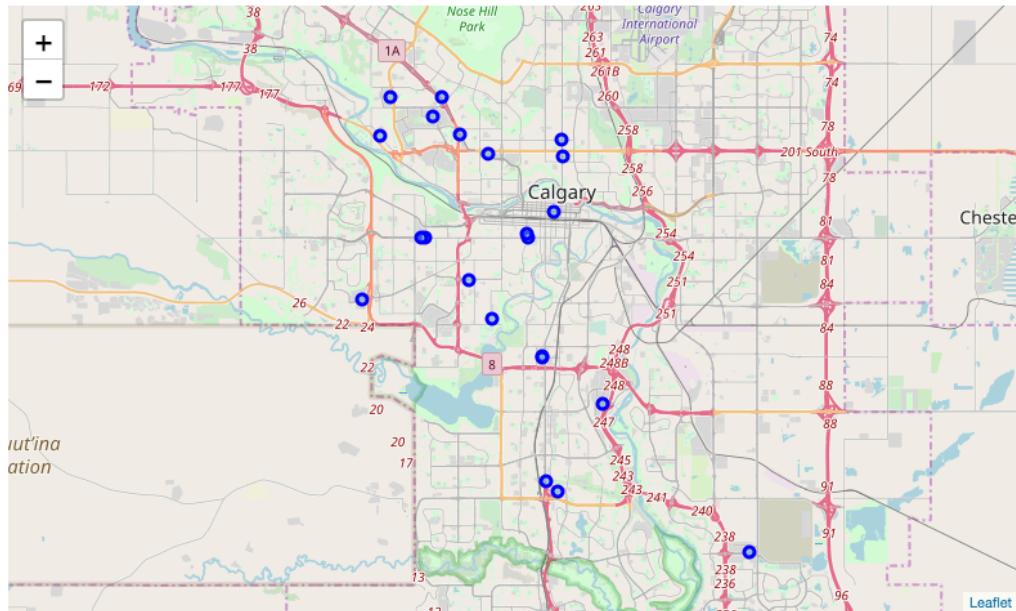
MONTREAL:



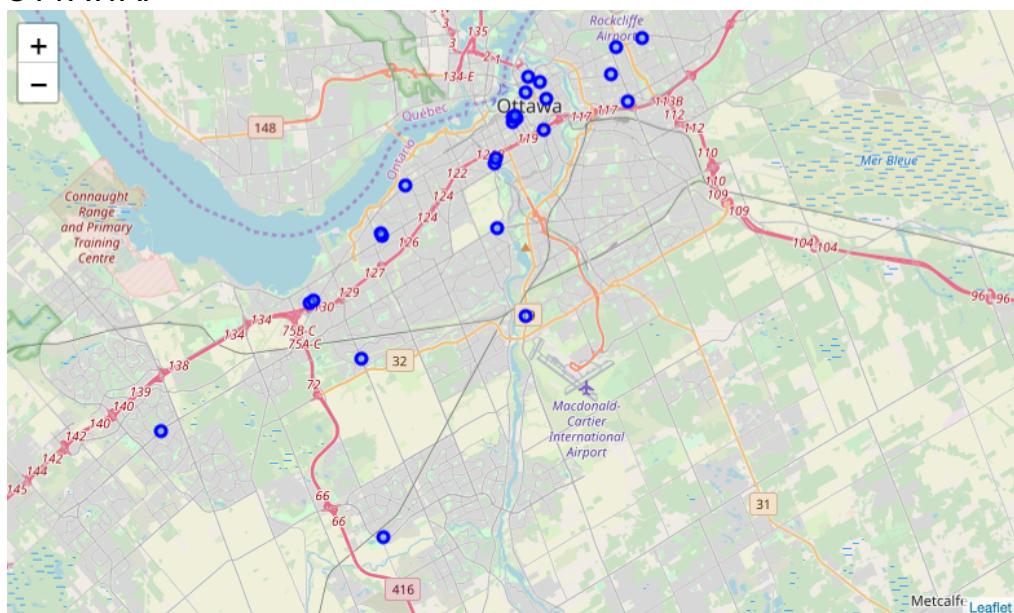
VANCOUVER:



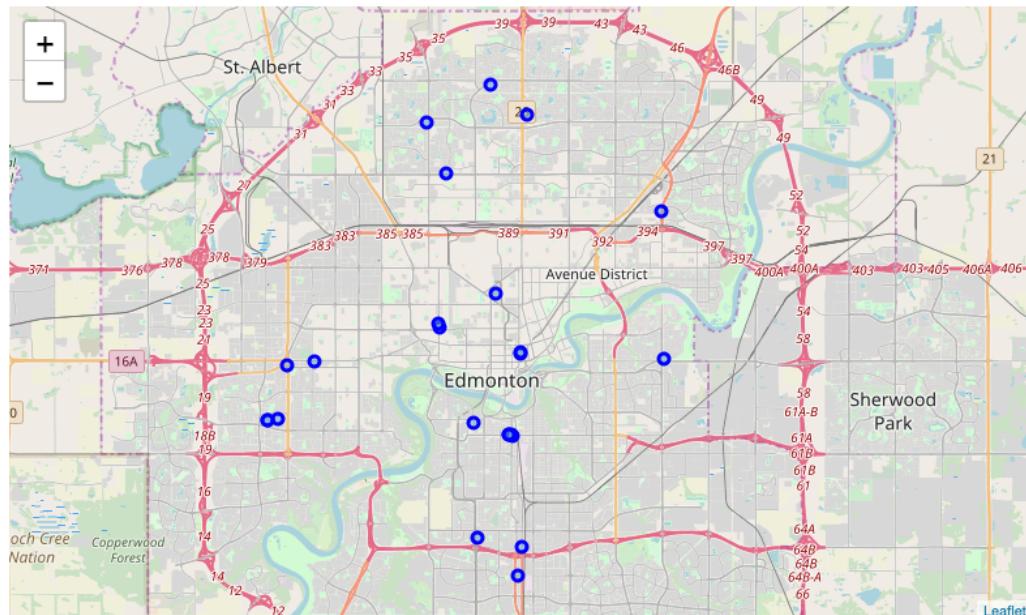
CALGARY:



OTTAWA:



EDMONTON:



As contemplated, the Greek restaurants in Toronto are very spread out.

With the basic descriptive analytics complete, the second step in the analysis is to explore restaurant density across the 6 different cities to identify a few promising areas with a high number of top-rated Greek restaurants. To do this, the average distance of the Greek restaurants will be calculated from the mean location of all of the Top 25 Greek restaurants in each city.

City	Avg. Distance of Top 25 Greek Restaurants from the mean coordinates
Toronto	.0606
Montreal	.0328
Vancouver	.0285
Calgary	.0652
Ottawa	.0634
Edmonton	.0649

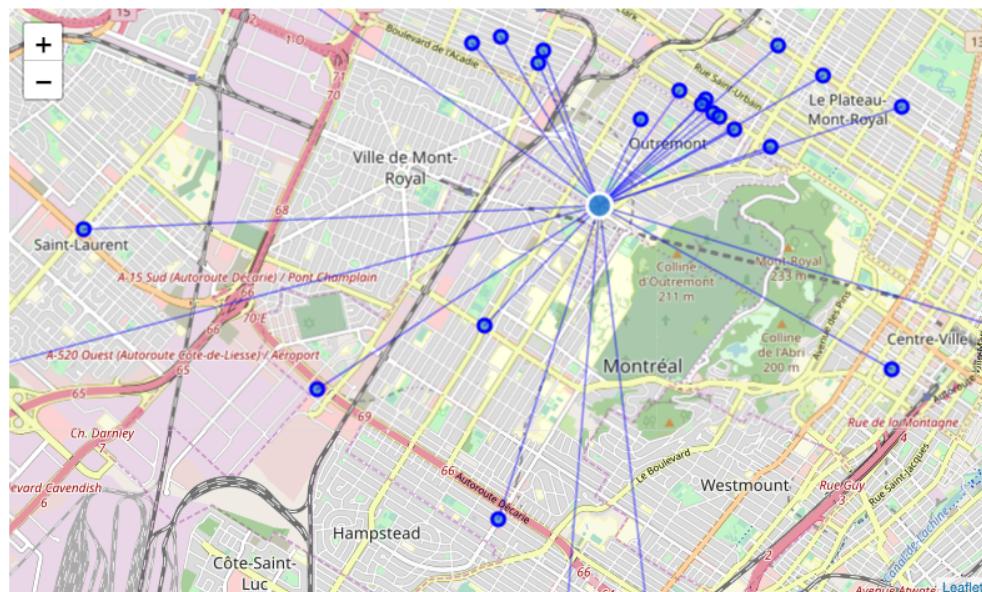
As shown above, Vancouver is the best place to buy a home due to the smallest average distance to get to the Top 25 Greek Restaurants if buying a home at the mean coordinate's location.

Show the updated Mappings of Top 25 rated Greek Restaurants in each city based on the mean location coordinates:

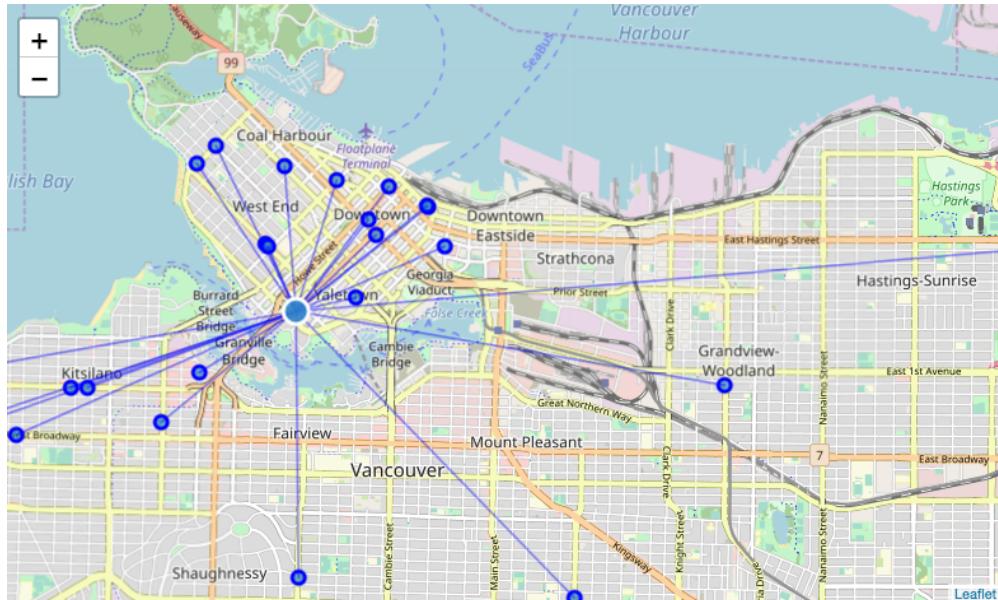
TORONTO:



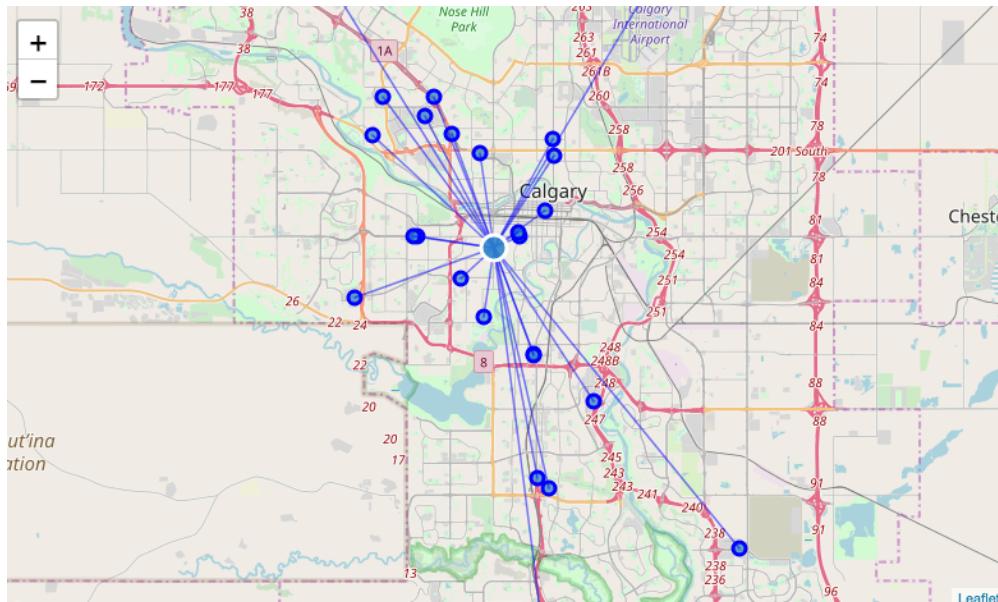
MONTREAL:



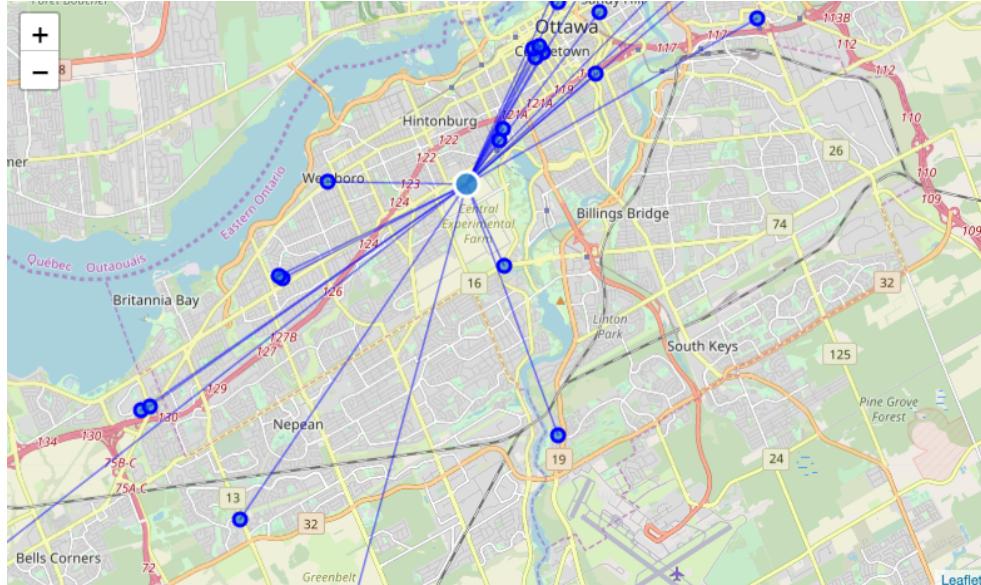
VANCOUVER:



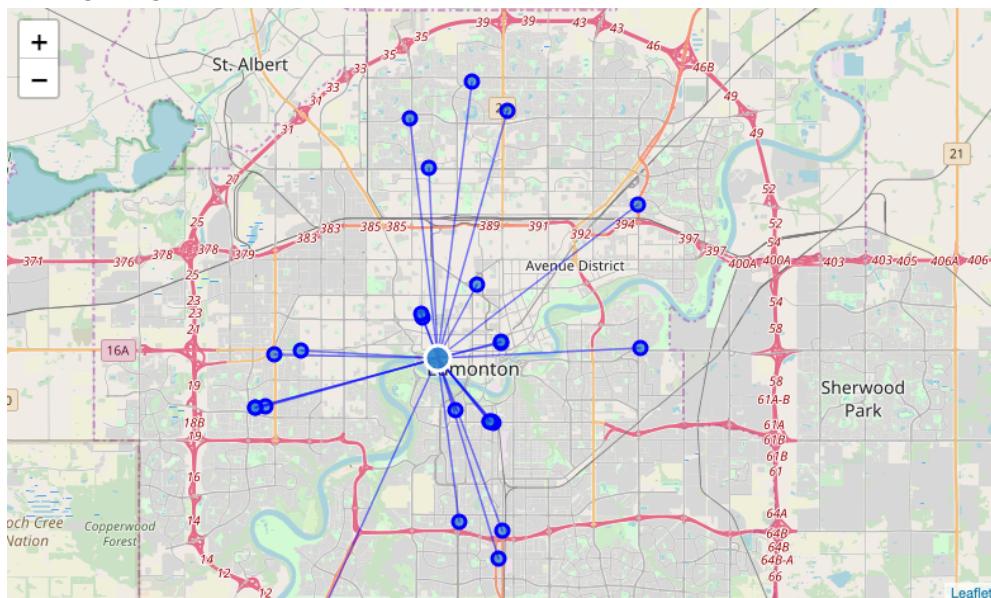
CALGARY:



OTTAWA:



EDMONTON:



Machine Learning

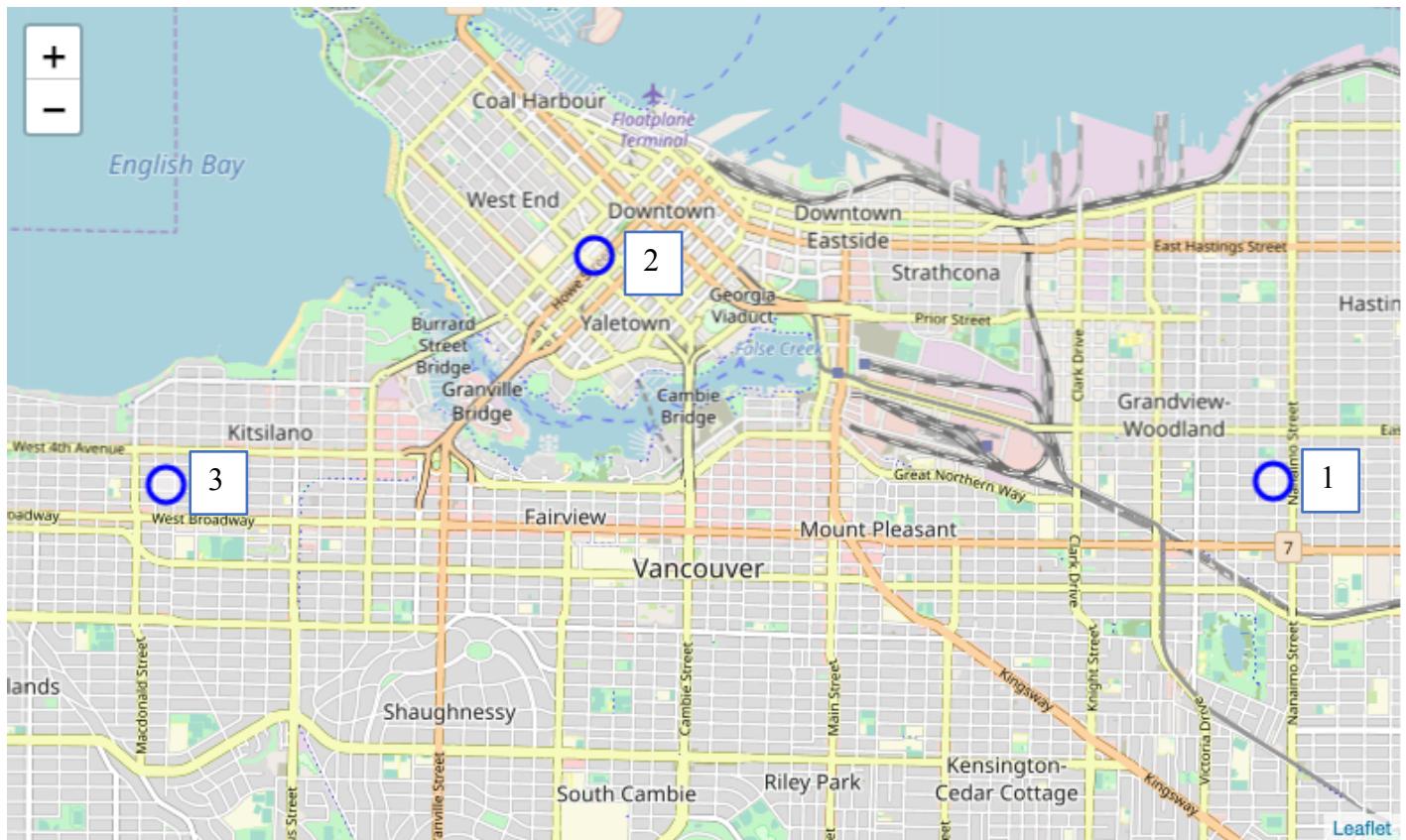
Based on the aforementioned calculations and visuals, it appears that Vancouver would be the best place to buy a house based on the criteria.

Instead of settling to soon on buying a home at the mean coordinates location, clustering may yield another option for the best location in Vancouver to buy a home.

The Top 25 Greek restaurant locations were clustered into 3 clusters.

Cluster #	# of Greek Restaurants in the cluster
1	3
2	15
3	7

Cluster #2 has 15 of the Top 25 Greek restaurants in it.



RESULTS & DISCUSSION:

The analysis shows that although there is a great number of Greek restaurants in Toronto & Montreal, there are pockets of top-rated Greek restaurants density. The top density areas for best Greek restaurants are first Vancouver, and then Montreal--based on the top 25 Greek restaurants.

If the top # of Greek restaurants is changed for the analysis (ex. 30, 15, or 10), they all result with Vancouver being the city with the top density.

Close to the intersection of Pacific St. and Seymour St. would be the ideal location to buy a place based on our problem statement.

But, as shown by using machine learning to cluster the Greek restaurants in Vancouver into 3 clusters, then this will yield a different location to buy a home.

Based on clustering, it may be ideal to live in the middle of Cluster #2 (Lat: 49.280592, Long: -123.123993) near the intersection of Hornby St. and Nelson St. as this cluster has 15 of the top 25 Greek restaurants within it.

CONCLUSION:

The purpose of this project was to identify the best location to buy a house in one of the largest 6 Canadian cities based on proximity to the top-rated Greek restaurants. By calculating restaurant density distribution from Foursquare data, I was able to determine where the best Greek restaurants were located in each city. Further analysis of changing the # of top-rated Greek restaurants to be in close proximity did not change the result--Vancouver remained the best city.

Following further analysis, two potential "best" locations were determined for the buyer as options.

- i) Option 1 at the intersection of Pacific & Seymour would be the best location if trying to be in the best location for all 25 restaurants.
- ii) Option 2 presented a secondary option based on clustering which determined the best location to be in to be in closest proximity to 15 of the 25 best restaurants--situated at the intersection of Hornby and Nelson.