**STRATEGIC LOCATION OF A RESTAURANT IN TORONTO**

***ELAINE MUTAI***

***31 March 2021***

**1. Introduction**

**1.1 Background**

Toronto is the capital city of the Canadian Province of Ontario with a population of over 2.7 million. It is the fourth most populous cities in North America and the most populous in Canada. Toronto is an international center of business, arts, culture and finance. It is known for being one of the most multicultural and cosmopolitan cities in the world. Toronto’s economy is highly diversified in financial services, food services, tourism, technology, environmental innovation, education, fashion and arts. Toronto earned its unofficial nickname “the city of neighborhoods.” There are 140 officially recognized neighborhoods and more than 240 unofficial neighborhoods within the city’s boundaries. Because of its diversity and population density, one might wonder where to strategically set up a hotel industry.

**1.2 Problem**

Toronto has many neighborhoods and municipalities with people from different parts of the world who appreciate a variety of cuisines. Which is the best neighborhood to set up a restaurant with constant flow of customers of any age group or culture to please their preferences? This project would objectively want to set up a restaurant where the demand exceeds supply.

**2. Data**

**2.1 Data Sources**

The available geographical and socio-economic data is available at Wikipedia with information having neighborhood data, boroughs and postal codes.

**2.2 Data Cleaning**

* Web scraping, data wrangling, data cleaning was done to get the required data. This data was read into a pandas data frame to get it into the structured format. The data frame will consist of three columns: Postal Code, Borough, and Neighborhood. Only the cells that have an assigned borough will be processed. Those with a borough that is **Not Assigned** was ignored. Since one Neighborhood can exist in one postal code area, the neighborhoods will be combined into one row but separated with a comma. If a cell has a borough but a **Not assigned** neighborhood, then the neighborhood will be the same as the borough.

**3. Methodology**

**3.1 Foursquare API**

Foursquare is a technology company that built a dataset of accurate location data. Their online website [www.foursquare.com](http://www.foursquare.com) is accessible for persons trying to locate venues. You can as well explore nearby places from your venue of interest, addresses, tips about the services offered by the venues.

**3.1.1 Define Foursquare Credentials and Version**

Make sure that you have created a Foursquare developer account and have your credentials handy

To obtain access token follow these steps.

1. Go to your **"App Settings"** page on the developer console of Foursquare.com
2. Set the **"Redirect URL"** under **"Web Addresses"** to [https://www.google.com](https://www.google.com/?cm_mmc=Email_Newsletter-_-Developer_Ed%2BTech-_-WW_WW-_-SkillsNetwork-Courses-IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork-21253531&cm_mmca1=000026UJ&cm_mmca2=10006555&cm_mmca3=M12345678&cvosrc=email.Newsletter.M12345678&cvo_campaign=000026UJ&cm_mmc=Email_Newsletter-_-Developer_Ed%2BTech-_-WW_WW-_-SkillsNetwork-Courses-IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork-21253531&cm_mmca1=000026UJ&cm_mmca2=10006555&cm_mmca3=M12345678&cvosrc=email.Newsletter.M12345678&cvo_campaign=000026UJ&cm_mmc=Email_Newsletter-_-Developer_Ed%2BTech-_-WW_WW-_-SkillsNetwork-Courses-IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork-21253531&cm_mmca1=000026UJ&cm_mmca2=10006555&cm_mmca3=M12345678&cvosrc=email.Newsletter.M12345678&cvo_campaign=000026UJ&cm_mmc=Email_Newsletter-_-Developer_Ed%2BTech-_-WW_WW-_-SkillsNetwork-Courses-IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork-21253531&cm_mmca1=000026UJ&cm_mmca2=10006555&cm_mmca3=M12345678&cvosrc=email.Newsletter.M12345678&cvo_campaign=000026UJ&cm_mmc=Email_Newsletter-_-Developer_Ed%2BTech-_-WW_WW-_-SkillsNetwork-Courses-IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork-21253531&cm_mmca1=000026UJ&cm_mmca2=10006555&cm_mmca3=M12345678&cvosrc=email.Newsletter.M12345678&cvo_campaign=000026UJ&cm_mmc=Email_Newsletter-_-Developer_Ed%2BTech-_-WW_WW-_-SkillsNetwork-Courses-IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork-21253531&cm_mmca1=000026UJ&cm_mmca2=10006555&cm_mmca3=M12345678&cvosrc=email.Newsletter.M12345678&cvo_campaign=000026UJ)
3. Paste and enter the following url in your web browser **(replace YOUR\_CLIENT\_ID with your actual client id)**: [https://foursquare.com/oauth2/authenticate?client\_id=YOUR\_CLIENT\_ID&response\_type=code&redirect\_uri=https://www.google.com](https://foursquare.com/oauth2/authenticate?client_id=YOUR_CLIENT_ID&response_type=code&redirect_uri=https://www.google.com&cm_mmc=Email_Newsletter-_-Developer_Ed%2BTech-_-WW_WW-_-SkillsNetwork-Courses-IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork-21253531&cm_mmca1=000026UJ&cm_mmca2=10006555&cm_mmca3=M12345678&cvosrc=email.Newsletter.M12345678&cvo_campaign=000026UJ)

This should redirect you to a google page requesting permission to make the connection.

1. Accept and then look at the url of your web browser **(take note at the CODE part of the url to use in step 5)**  
   It should look like [https://www.google.com/?code=CODE](https://www.google.com/?code=CODE&cm_mmc=Email_Newsletter-_-Developer_Ed%2BTech-_-WW_WW-_-SkillsNetwork-Courses-IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork-21253531&cm_mmca1=000026UJ&cm_mmca2=10006555&cm_mmca3=M12345678&cvosrc=email.Newsletter.M12345678&cvo_campaign=000026UJ)
2. Copy the code value from the previous step.  
   Paste and enter the following into your web browser **(replace placeholders with actual values)**: [https://foursquare.com/oauth2/access\_token?client\_id=YOUR\_CLIENT\_ID&client\_secret=YOUR\_CLIENT\_SECRET&grant\_type=authorization\_code&redirect\_uri=https://www.google.com&code=CODE](https://foursquare.com/oauth2/access_token?client_id=YOUR_CLIENT_ID&client_secret=YOUR_CLIENT_SECRET&grant_type=authorization_code&redirect_uri=https://www.google.com&code=CODE&cm_mmc=Email_Newsletter-_-Developer_Ed%2BTech-_-WW_WW-_-SkillsNetwork-Courses-IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork-21253531&cm_mmca1=000026UJ&cm_mmca2=10006555&cm_mmca3=M12345678&cvosrc=email.Newsletter.M12345678&cvo_campaign=000026UJ).
3. When you paste the link , This should lead you to a page that gives you your **access token**.

**3.1.2 Beautiful Soup**

[Beautiful Soup](http://www.crummy.com/software/BeautifulSoup/) is a Python library for pulling data out of HTML and XML files. It works with your favorite parser to provide idiomatic ways of navigating, searching, and modifying the parse tree. It commonly saves programmers hours or days of work. I used this to navigate through the Wikipedia page containing the data.

**3.1.3 Creating a data frame**

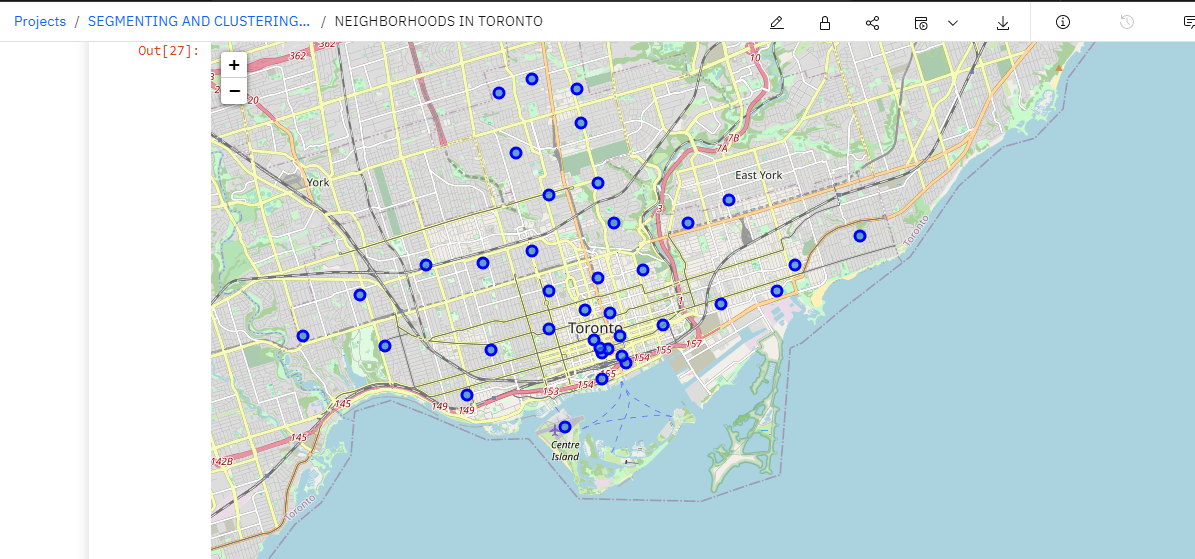
I installed geocoder and created a data frame by joining the table I obtained from the Wikipedia website. The merged data frame now has the coordinates of the different postal codes.

**3.2 Visualization using Folium**

Folium is a great visualization library which I used in this project.

The geographical coordinates of Toronto are 43.6534817, -79.3839347.

The following is an example of the execution of the folium library. Segmenting and clustering Toronto City.



1. **Discussion**

Toronto encompasses an area formerly administered by several separate municipalities that were amalgamated over the years. Each developed a distinct history and identity over the years, and their names remain in common use among Torontonians. Throughout the city there exist hundreds of small neighborhoods and some larger neighborhoods covering a few square kilometers.

The many residential communities of Toronto express a character distinct from the skyscrapers in the commercial core. Victorian and Edwardian-era residential buildings can be found in enclaves such as Rosedale, Cabbagetown, The Annex, and Yorkville.The Wychwood Park neighborhood, historically significant for the architecture of its homes, and for being one of Toronto's earliest planned communities, was designated as an Ontario Heritage Conservation district in 1985. The Casa Loma neighbourhood is named after "Casa Loma", a castle built in 1911 by Sir Henry Pellat, complete with gardens, turrets, stables, an elevator, secret passages, and a bowling alley. Spadina House is a 19th-century manor that is now a museum.

The inner suburbs are contained within the former municipalities of York and East York.. Neighbourhoods such as Crescent Town, Thorncliffe Park, Weston, and Oakwood Village consist mainly of high-rise apartments, which are home to many new immigrant families. During the 2000s, many neighborhoods have become ethnically diverse and have undergone gentrification as a result of increasing population, and a housing boom during the late 1990s and the early 21st century. The first neighbourhoods affected were Leaside and North Toronto, gradually progressing into the western neighbourhoods in York. The outer suburbs comprising the former municipalities of Etobicoke (west), Scarborough (east) and North York (north) largely retain the grid plan laid before post-war development.[122] Sections were long established and quickly growing towns before the suburban housing boom began and the emergence of metropolitan government, existing towns or villages such as Mimico, Islington and New Toronto in Etobicoke; Willowdale, Newtonbrook and Downsview in North York; Agincourt, Wexford and West Hill in Scarborough where suburban development boomed around or between these and other towns beginning in the late 1940s. Upscale neighbourhoods were built such as the Bridle Path in North York, the area surrounding the Scarborough Bluffs in Guildwood, and most of central Etobicoke, such as Humber Valley Village, and The Kingsway. One of largest and earliest "planned communities" was Don Mills, parts of which were first built in the 1950s. Phased development, mixing single-detached housing with higher-density apartment blocks, became more popular as a suburban model of development. Over the late 20th century and early 21st century, North York City Centre, Etobicoke City Centre and Scarborough City Centre have emerged as secondary business districts outside Downtown Toronto. High-rise development in these areas has given the former municipalities distinguishable skylines of their own, with high-density transit corridors serving them

1. **Conclusion**

The following maps indicate the best location for the restaurant, all factors remaining constant.

