

# HELPING A YOUNG COUPLE FIND THE BEST NEIGHBOURHOOD IN TORONTO

## INTRODUCTION

The purpose of this Project is to help a young New York couple in explore their future neighbourhood in Toronto. The man will have a job in Minico neighbourhood and the woman will be working near Enclave of M4L.

We will help them make a smart and efficient decision on selecting the best neighborhood between the 2 neighbourhood near their place of work.

With the current covid situation, lots of people experience changes in their life both personally and professionally. Some people might loose their job and need to find a new one even if it means they need to relocate. This is what happen to our your couple who needs to find the best housing possible.

We have to take in consideration that the woman loves art and pastries so she would like to live in a neighbourhood with several option of theatre, art galery and bakery.

The man likes going out and is looking for a neighbourhood with bar and restaurant options.

## DATA

In order to solve our problem, we will use data from different sources:

- Postal codes of Canada. This Wikipedia page was used in order to scrap the postal codes of the whole city of Toronto. The data was processed using Beautiful Soup and pandas
- Geospatial\_Coordinates.csv was provided from Applied Data Science Capstone course from IBM in coursera which contains the geospatial coordinates of the different regions of Toronto.
- Venue's data extracted using an API call from Foursquare

## METHODOLOGY

The methodology consists of 5 steps :

- Use HTML processing to get the list of neighbourhods of Toronto in dataframe
- use APIS to get the longitudes and latitudes of each neighbourhood
- Use clusering to group the neighbourhood in 4 different clusters.
- for the 2 chosen neighbourhoods : get a list of nearby venues and their type using Foursquare API
- Analyse the results

## RESULTS

- HTMP Processing : we have found 103 neighbourhoods in Toronto from the wikipedia page that we put in a dataframe with postal code, borough and neighborhood as columns.

	PostalCode	Borough	Neighborhood
0	M3A	North York	Parkwoods
1	M4A	North York	Victoria Village
2	M5A	Downtown Toronto	Regent Park, Harbourfront
3	M6A	North York	Lawrence Manor, Lawrence Heights
4	M7A	Queen's Park	Ontario Provincial Government
...	...	...	...
98	M8X	Etobicoke	The Kingsway, Montgomery Road, Old Mill North
99	M4Y	Downtown Toronto	Church and Wellesley
100	M7Y	East Toronto Business	Enclave of M4L
101	M8Y	Etobicoke	Old Mill South, King's Mill Park, Sunnylea, Hu...
102	M8Z	Etobicoke	Mimico NW, The Queensway West, South of Bloor,...

103 rows × 3 columns

For each neighbourhood, we added the latitude and longitude using geopy's nominatim feature.

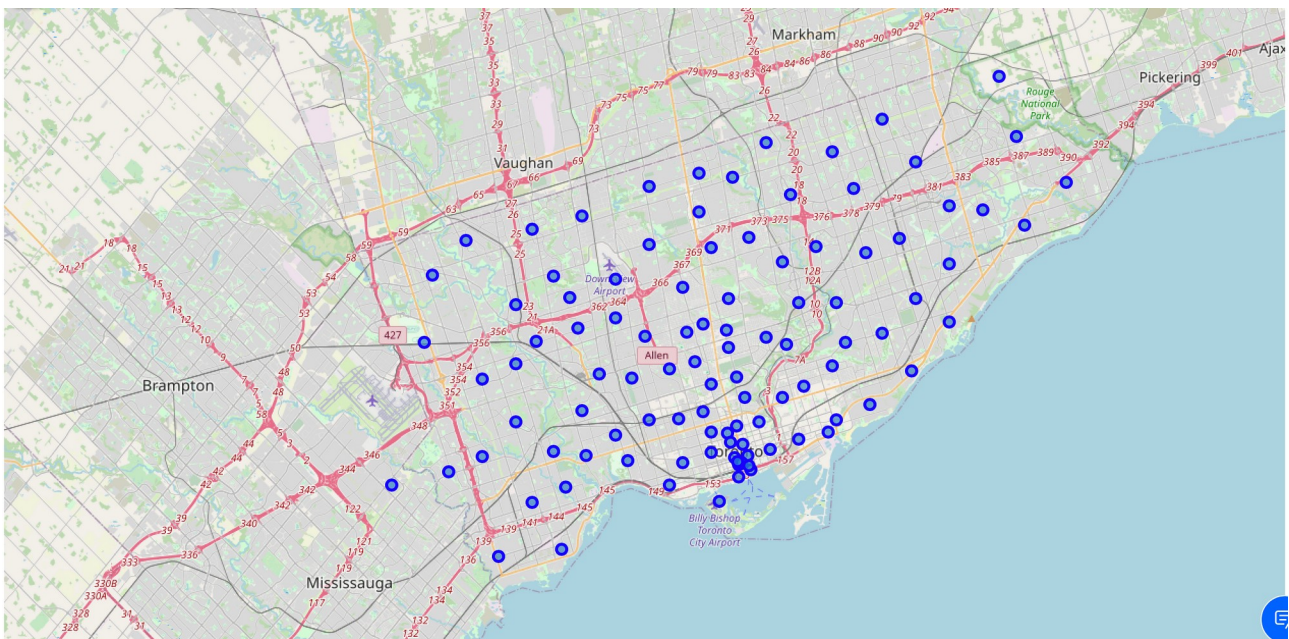
	Postal Code	Latitude	Longitude
0	M1B	43.806686	-79.194353
1	M1C	43.784535	-79.160497
2	M1E	43.763573	-79.188711
3	M1G	43.770992	-79.216917
4	M1H	43.773136	-79.239476
...	...	...	...
98	M9N	43.706876	-79.518188
99	M9P	43.696319	-79.532242
100	M9R	43.688905	-79.554724
101	M9V	43.739416	-79.588437
102	M9W	43.706748	-79.594054

103 rows × 3 columns

The latitude and longitude dataframe was then merged with the neighbourhood dataframe for easy use.

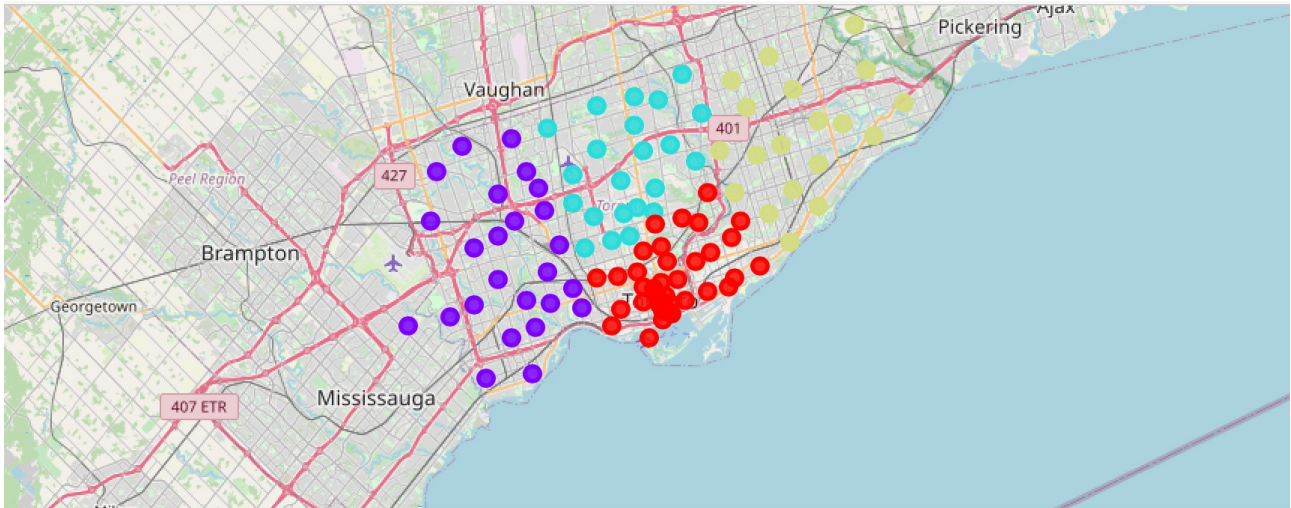
	PostalCode	Borough	Neighborhood	Latitude	Longitude
0	M3A	North York	Parkwoods	43.753259	-79.329656
1	M4A	North York	Victoria Village	43.725882	-79.315572
2	M5A	Downtown Toronto	Regent Park, Harbourfront	43.654260	-79.360636
3	M6A	North York	Lawrence Manor, Lawrence Heights	43.718518	-79.464763
4	M7A	Queen's Park	Ontario Provincial Government	43.662301	-79.389494

The results was then plotted using folium



We then decided to cluster the neighbourhood for better visualization and classification.

The man works in the violet cluster and the women in the green cluster.



## CONCLUSION

As a reminder the woman loves art and pastries so she would like to live in a neighbourhood with several option of theatre, art galery and bakery.  
The man likes going out and is looking for a neighbourhood with bar and restaurant options.

Minico neighbourhood has :

- 3 theatre
- 1 art gallery
- 4 bakeries
- 10 restaurant and bar

Enclave of M4L :

- 1 theatre
- 0 art gallery
- 5 bakeries
- 8 restaurant and bar

WE RECOMMEND THE YOUNG COUPLE TO MOVE TO MINICO NEIGHBOURHOOD AS IT MATCHES THEIR PREFERENCES MORE