

Toronto vs Chicago Neighbourhood Clustering

Introduction

- Many times, this very important to know about the neighbourhood of two cities for the traveller coming from different country. The local people might be knowing very well what the key differences are but the person coming from different country will be interested to explore the places before to Chicago and Toronto. In this capstone project, the idea is to explore these two major cities, cluster and compare the neighbourhood by analysing various venue categories.

Interested Audience

- Targeted Stakeholders and audience: There are various stakeholders and audience for this project as below.
- International travellers
- local people
- Business people , who want to start a new venture

Data Sources

- **Data Source and Collection**
- Data sources: Most of the data will be taken from the below sources:
 - Wikipedia
 - GeoJSON
 - Foursquare data

Methodology

- **Approach to solve the problem**

- Scrape relevant web pages to define neighbourhoods using zip/postal code)
- Clean the data
- Transform data and merge with records
- Find appropriate GeoJSON
- Visualize and compare some data

- **Statistical Evaluation**

- We will use below evaluation methods
 - K-mean
 - clustering

Methodology...

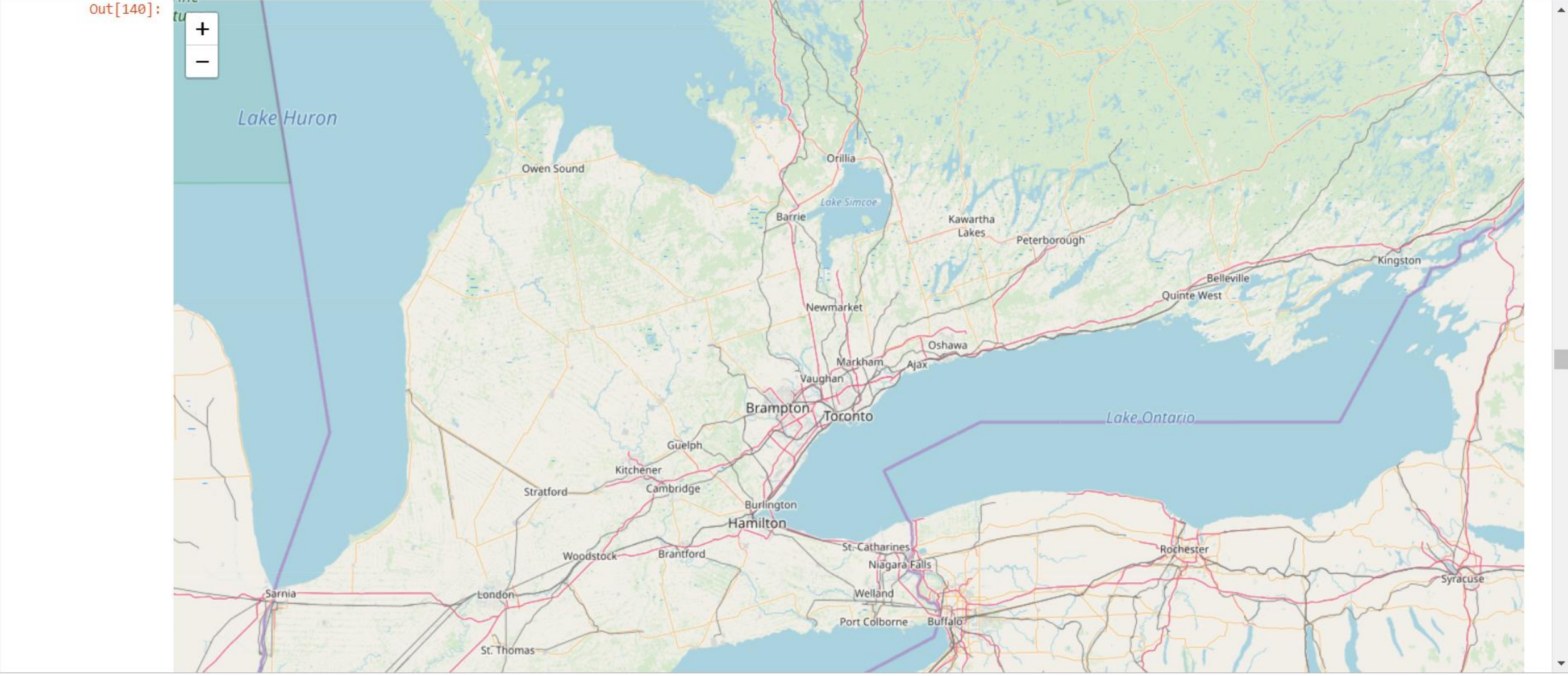
- The ZIP/postal codes and latitude/longitude coordinates will be used to define neighbourhoods for Chicago and Toronto, then a similarity analysis will be performed with the help of Foursquare.
- **Foursquare API**
- The Foursquare API provides location based experiences with diverse information about venues, users, photos, and check-ins. The API supports real time access to places, Snap-to-Place that assigns users to specific locations, and Geo-tag. Additionally, foursquare allows developers to build audience segments for analysis and measurement. JSON is the preferred response format.

Results

- The below figures represent common values by the neighborhoodlike of two cities Toronto and Chicago.

Out[107]:

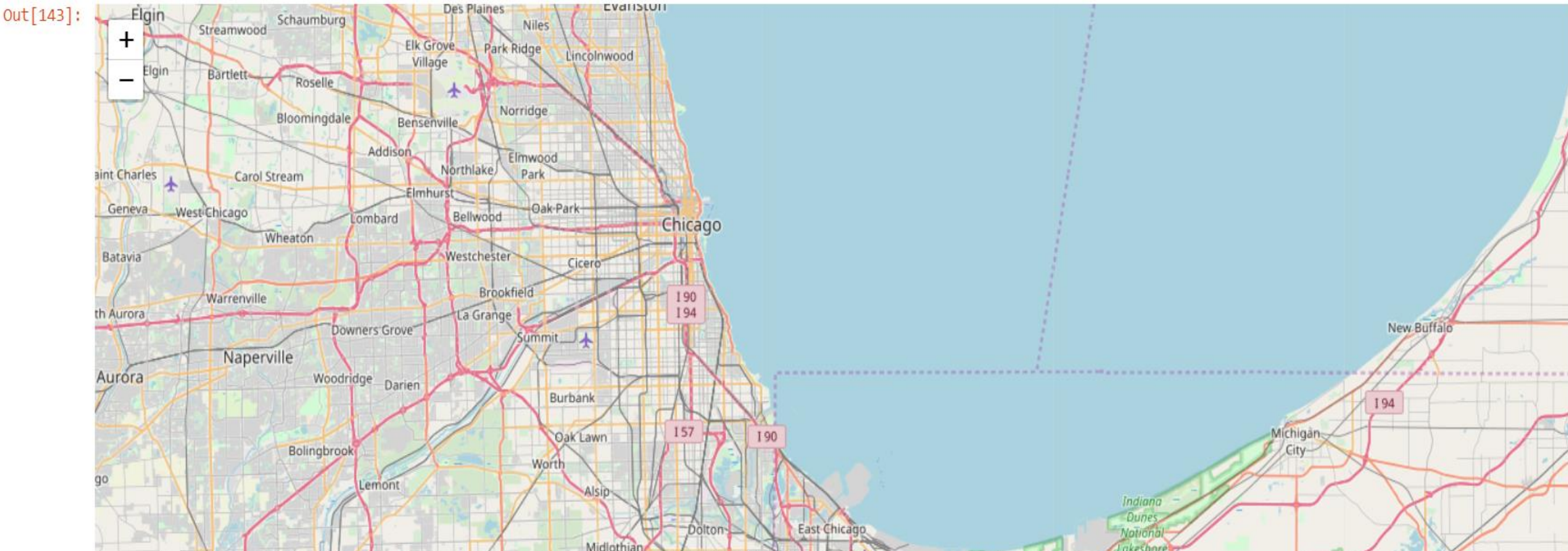
	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Adelaide, King, Richmond	Coffee Shop	Café	Steakhouse	Thai Restaurant	American Restaurant	Clothing Store	Hotel	Bakery	Bar	Gym
1	Agincourt	Breakfast Spot	Lounge	Skating Rink	Clothing Store	Yoga Studio	Ethiopian Restaurant	Drugstore	Dumpling Restaurant	Eastern European Restaurant	Electronics Store
2	Agincourt North, L'Amoreaux East, Milliken, St...	Playground	Park	Yoga Studio	Empanada Restaurant	Doner Restaurant	Donut Shop	Drugstore	Dumpling Restaurant	Eastern European Restaurant	Electronics Store
3	Albion Gardens, Beaumont Heights, Humbergate, ...	Grocery Store	Pizza Place	Beer Store	Fried Chicken Joint	Sandwich Place	Liquor Store	Coffee Shop	Fast Food Restaurant	Pharmacy	Ethiopian Restaurant
4	Alderwood, Long Branch	Pizza Place	Pool	Pharmacy	Gym	Sandwich Place	Coffee Shop	Skating Rink	Pub	Drugstore	Discount Store
5	Bathurst Manor, Downsview North, Wilson Heights	Coffee Shop	Fast Food Restaurant	Gift Shop	Bank	Fried Chicken Joint	Frozen Yogurt Shop	Diner	Deli / Bodega	Sandwich Place	Restaurant



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0	Cook	Coffee Shop	Sandwich Place	Bar	Mexican Restaurant	Park	Italian Restaurant	Pizza Place	Hotel	American Restaurant	Bakery
1	Dupage	Bath House	Pool	Playground	Dog Run	Café	Snack Place	Recreation Center	Baseball Field	Zoo	Dive Bar
2	Lake	Bar	Mexican Restaurant	Performing Arts Venue	Sandwich Place	Garden Center	Art Gallery	Bike Shop	Food & Drink Shop	American Restaurant	Pizza Place

```
In [143]: map_chicago = folium.Map(location=[41.646953, -87.453983], zoom_start=10)
map_chicago
```



Discussion and Observation

Here we can see the similarity and the difference between two cities. The people can the data category by category.

Conclusions

- In this capstone project we have demonstrated the difference between neighbourhoods of Chicago and Toronto for coffee shops, lounge, Playground etc.

