The Battle of Neighborhoods

Applied Data Science Capstone Project

Introduction

- Many people constantly seek new job opportunities within the same community they live in or across the city or even a different city itself.
- Let's say a person got an interesting job offer from a different city , say New York and he/she lives in Downtown Toronto currently.
- It would be really helpful to seek a place to live which is most similar to the current living location of that person.
- This information can help the person decide on which neighborhood he/she would love to live in once he/she moves to New York after accepting a new job offer.

Data

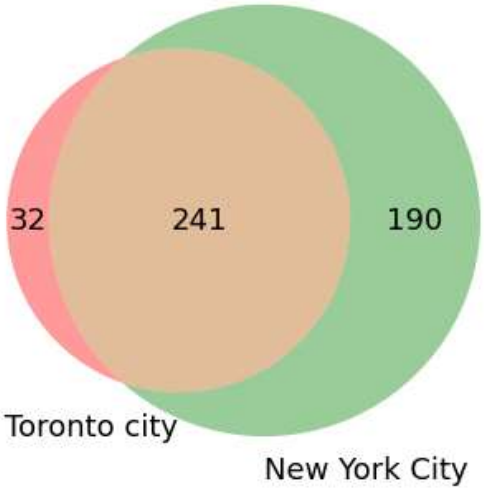
a. Data of New York

- Location data of New York get from https://cocl.us/new_York_dataset
- All about Venues data we using API get from Foursquare.com

b. Data of Toronto

- Post code and Borought of Toronto we get from Wikipedia.
- All about Venues data we using API get from Foursquare.com

Data (cont)



Plotting a Venn diagram to visualize the similar venues

Data (cont)

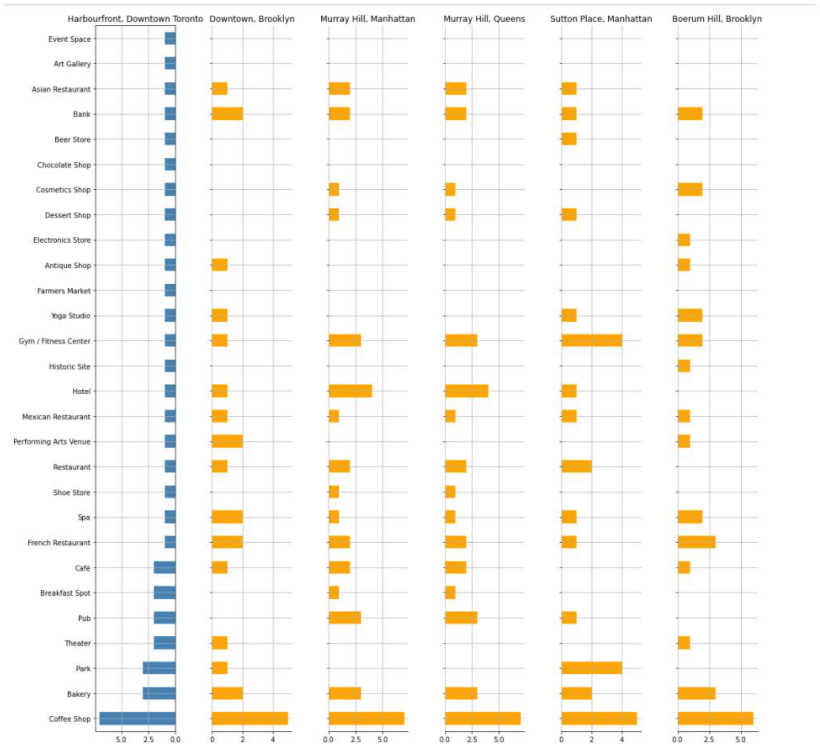


Diagram compare all Venues between Toronto Downtown with other downtown of New York

Result

- The top 5 locations in New York that match the Harbourfront, Downtown Toronto.
- The bar graph shows comparision of the venue categories and their number of occurances to the matched locations in New York. This gives a fair idea how each matched place is New York is close to the current living place in Toronto with number of categries matched as closely as possible.

	Borough	Neighborhood	Latitude	Longitude	Yoga Studio	Accessories Store	Adult Boutique	American Restaurant	Antique Shop	Art Gallery	Art Museum	Arts & Crafts Store	Asian Restaurant	Athletics & Sports	Wo
115	Manhattan	Murray Hill	40.748303	-73.978332	1.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	1.0	0.0	
180	Queens	Murray Hill	40.764126	-73.812763	1.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	1.0	0.0	
87	Brooklyn	Boerum Hill	40.685683	-73.983748	2.0	0.0	0.0	1.0	1.0	0.0	0.0	3.0	1.0	1.0	
276	Manhattan	Flatiron	40.739673	-73.990947	2.0	0.0	0.0	4.0	0.0	2.0	0.0	1.0	0.0	0.0	
271	Manhattan	Sutton Place	40.760280	-73.963556	2.0	0.0	1.0	2.0	0.0	0.0	0.0	0.0	1.0	0.0	

Observations

The following observations are being made after analyzing the data above.

•New York has double in venue categories than Toronto.

•There are more Buroughs in Toronto than New York but there are more neighborhoods in New York than Toronto.

Observations(cont)

The matched locations observations are as follows

- Manhattan,Murray Hill
- Queens,Murray Hill
- Brooklyn,Boerum Hill
- Manhattan,Flatiron
- Manhattan,Sutton Place

Conclusion

- In this resport, I analyzed the relationship between neighborhoods and their venue categories in differnt cities New York and Toronto.
- The Matrix multiplication methodology used eliminiates dissimilar venues and multiplies similar categories giving it a comparitive advantage over other methodologies. For example, according to the example used above, if a person is currently living in HarbourFront, Downtown Toronto, the best place to choose is Murray Hill, Manhattan in New York since it matches most venue categories with HarbourFront, Downtown Toronto according to the graph above.