

Comparing Two Boroughs of Financial Capitals

Introduction

Toronto vs. New York City both

- Are the largest cities in their countries
- Are the financial and tourist capitals
- Have convenient public transportation
- Have diverse cultures

Goals

- Explore the similarities and dissimilarities between Toronto and NYC in terms of the most popular venues in their neighborhoods
- Two popular boroughs were selected: Downtown Toronto and Manhattan

Potential Uses of the Results

- Provide suggestions to business owners about the potential success of certain business.
- One example of the question can be asked:
Will opening a Mexican restaurant in Manhattan be a good idea? How about Toronto?

Data Acquisition and Cleaning

Data Acquisition

- list of postal code of Canada from Wikipedia (https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M)
- The geographical data of Toronto provided by IBM
- The data for NYC provided by IBM (https://cocl.us/new_york_dataset)
- The data of neighborhoods provided by Foursquare API

Data Acquisition and Cleaning

Data Cleaning

Step 1: import all necessary libraries and tools

Step 2: cleanup the two data sources for Toronto merge into one data frame, and then extract the borough of Downtown Toronto.

Step 3: The data for NYC can be directly used. The data for Manhattan were extracted.

Step 4: Use the Foursquare API to explore the neighborhoods of these two boroughs.

Results and Discussions

Coffee Shop is the most common venue in **Downtown Toronto**

	Borough	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th I Cor Ven
0	Downtown Toronto	Harbourfront	43.654260	-79.360636	0	Coffee Shop	Park	Pub	Bakery	Restaurant	Café
1	Downtown Toronto	Queen's Park	43.662301	-79.389494	0	Coffee Shop	Park	Gym	Nightclub	Beer Bar	Sanc Place
2	Downtown Toronto	Ryerson,Garden District	43.657162	-79.378937	2	Coffee Shop	Clothing Store	Cosmetics Shop	Café	Middle Eastern Restaurant	Bubl Tea S
3	Downtown Toronto	St. James Town	43.651494	-79.375418	0	Coffee Shop	Café	Restaurant	Hotel	Breakfast Spot	Cloth Stor
4	Downtown Toronto	Berczy Park	43.644771	-79.373306	0	Coffee Shop	Cocktail Bar	Bakery	Steakhouse	Cheese Shop	Beer

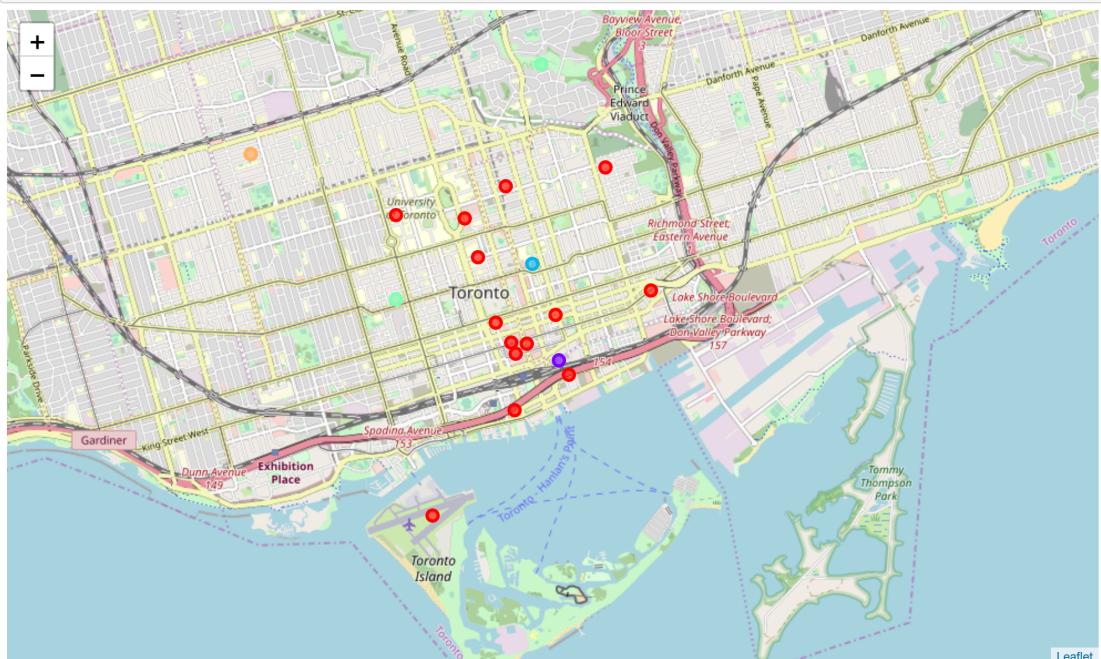
Results and Discussions

- The 1st most common venues in Manhattan are very diverse dependent on different neighborhoods.
- Italian restaurants are very popular, being the 1st most common venue for 12/39 neighborhoods of Manhattan.

	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
0	Battery Park City	Park	Hotel	Coffee Shop	Memorial Site	Wine Shop	Gym	Clothing Store	Italian Restaurant	Shopping Center
1	Carnegie Hill	Coffee Shop	Pizza Place	Cosmetics Shop	Japanese Restaurant	Gym	Grocery Store	French Restaurant	Yoga Studio	Café
2	Central Harlem	Cosmetics Shop	Bar	Chinese Restaurant	African Restaurant	American Restaurant	French Restaurant	Seafood Restaurant	Boutique	Library
3	Chelsea	Coffee Shop	Italian Restaurant	Bakery	Ice Cream Shop	Nightclub	Seafood Restaurant	Theater	Hotel	American Restaurant
4	Chinatown	Chinese Restaurant	Cocktail Bar	American Restaurant	Spa	Optical Shop	Vietnamese Restaurant	Hotpot Restaurant	Salon / Barbershop	Bakery
5	Civic Center	Italian Restaurant	Gym / Fitness Center	Coffee Shop	French Restaurant	Hotel	Spa	American Restaurant	Cocktail Bar	Park
6	Clinton	Theater	Italian Restaurant	Gym / Fitness Center	Coffee Shop	American Restaurant	Hotel	Wine Shop	Spa	Gym
7	East Harlem	Mexican Restaurant	Deli / Bodega	Thai Restaurant	Latin American Restaurant	Bakery	Burger Joint	Dance Studio	Steakhouse	Street Art
8	East Village	Bar	Wine Bar	Ice Cream Shop	Mexican Restaurant	Cocktail Bar	Pizza Place	Chinese Restaurant	Ramen Restaurant	Vegetarian Vegan Restaurant
9	Financial District	Coffee Shop	Bar	Gym	Hotel	American Restaurant	Wine Shop	Pizza Place	Food Truck	Steakhouse
10	Flatiron	Yoga Studio	American Restaurant	Japanese Restaurant	Café	Gym / Fitness Center	Cosmetics Shop	Salon / Barbershop	New American Restaurant	Dessert :
11	Gramercy	Italian Restaurant	Bar	Bagel Shop	Pizza Place	Cocktail Bar	American Restaurant	Wine Shop	Thai Restaurant	Grocery
12	Greenwich Village	Italian Restaurant	Clothing Store	Sushi Restaurant	Café	Gym	French Restaurant	Indian Restaurant	Seafood Restaurant	Coffee Shop

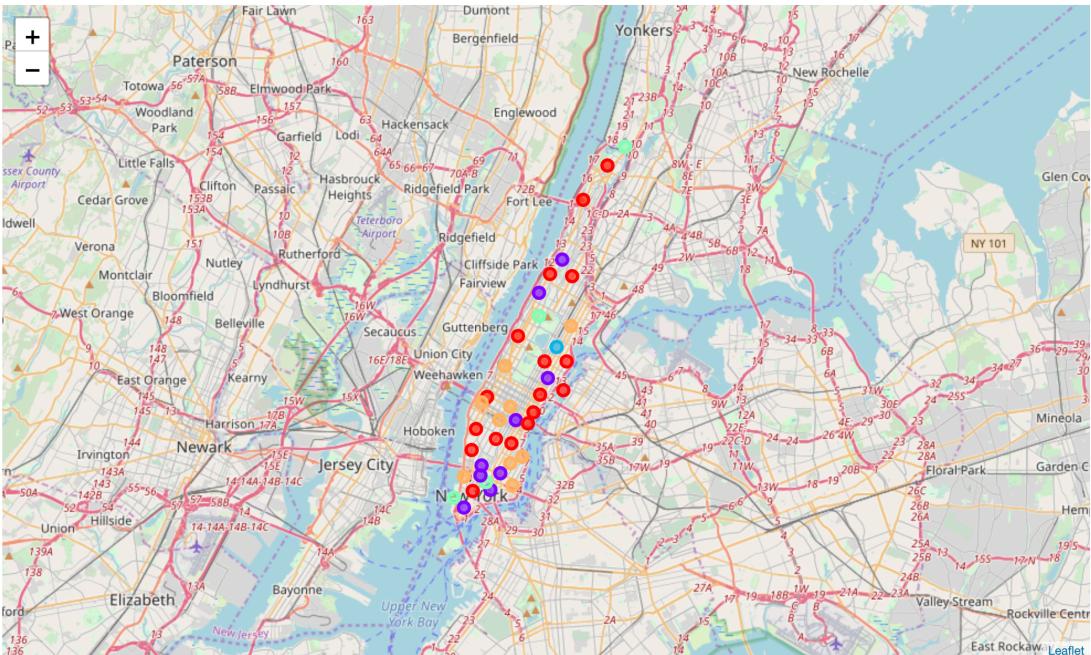
Results and Discussions

- Five Clusters were used.
- For Downtown Toronto, Cluster 1 (Airport Lounge, Coffee Shop, Cafe, Restaurants & Grocery Store) is much more common than the other four clusters.



Results and Discussions

- Five Clusters are similarly common in Manhattan.



Conclusions

- The most popular venue in the neighborhoods of Downtown Toronto is Coffee shop.
- For Manhattan, the 1st most common venues were different dependent on neighborhoods
- Overall, these two cities share similarities in that coffee shop, café and restaurants are the top venues.
- for business Owners at both boroughs, opening a coffee shop is always a good idea.
- Opening a restaurant is also good, but the styles vary depending on boroughs and their neighborhoods. Other businesses that can be considered include baker, boutique and bars.