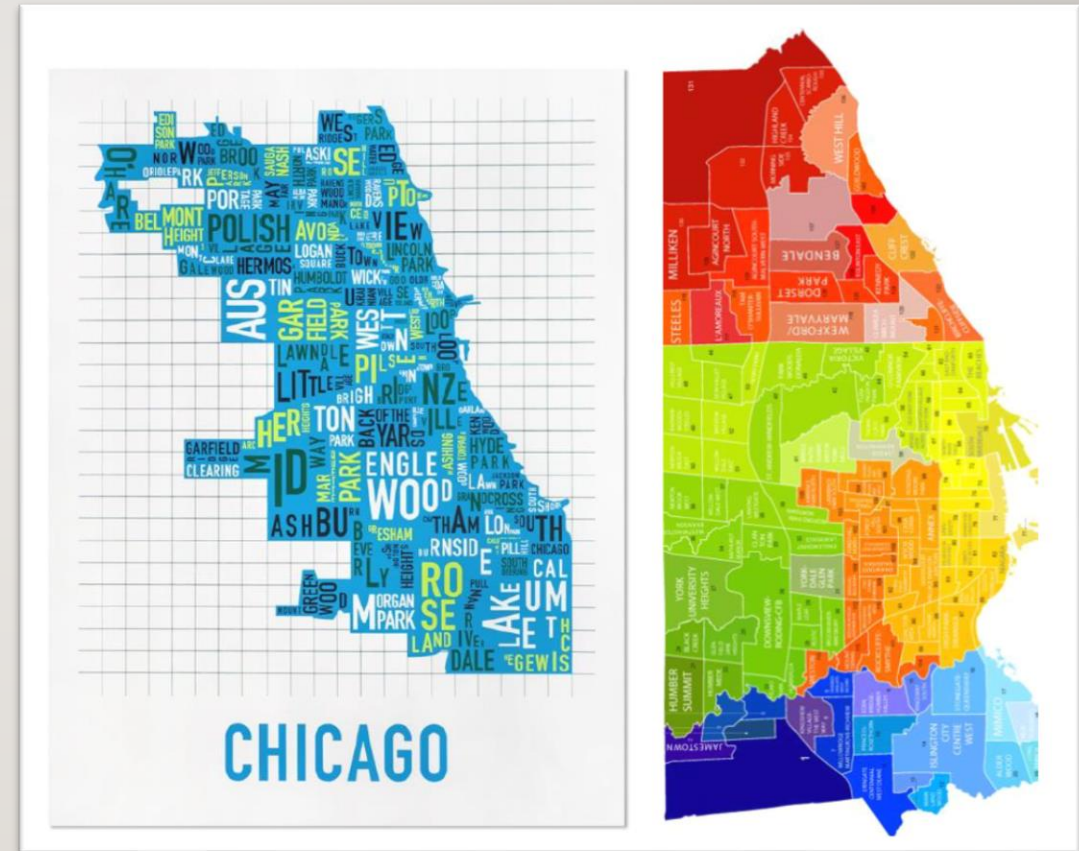


THE BATTLE OF NEIGHBORHOODS

BY:ADITYA SINHA



CHICAGO VS. TORONTO

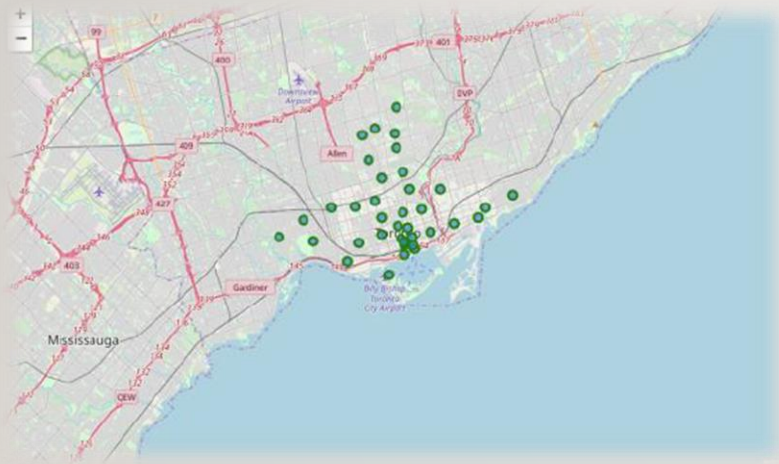
- Chicago and Toronto were both built in similar times and have similar populations.
 - Both have experienced an influx of immigrants and have a diverse food culture.
- The goal of this project:
 - Help a businessman choose which city to open a restaurant in
 - After picking a city, help him find which neighborhood to open the restaurant in

DATA ACQUISITION AND CLEANING

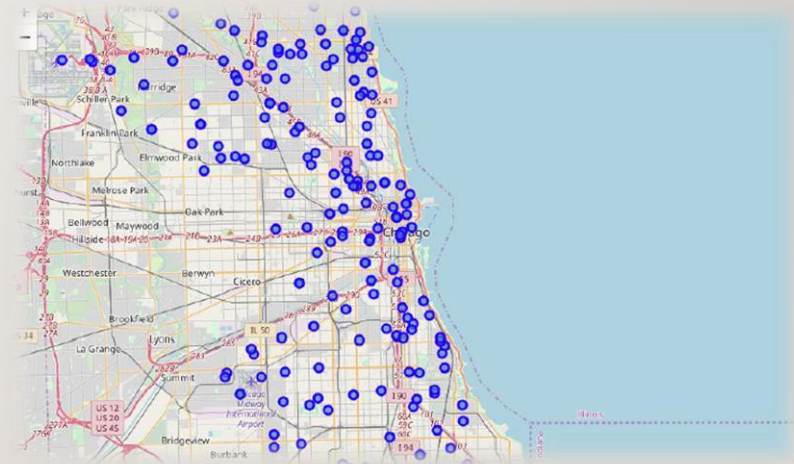
- Chicago dataset obtained from:
 - <https://public.opendatasoft.com/>
- Toronto dataset obtained from:
 - https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M/
- Multiple neighborhoods for particular postal codes were grouped
- 'not assigned' and null values were removed
- Both sets of data were read into a pandas dataframe that included coordinates as well

DATA PROCESSING AND VISUALIZING

- Displayed all neighborhoods for each city on a leaflet map:



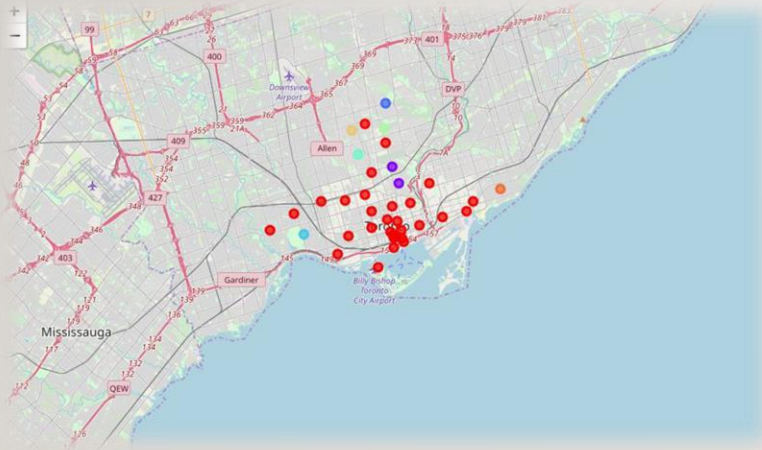
Toronto



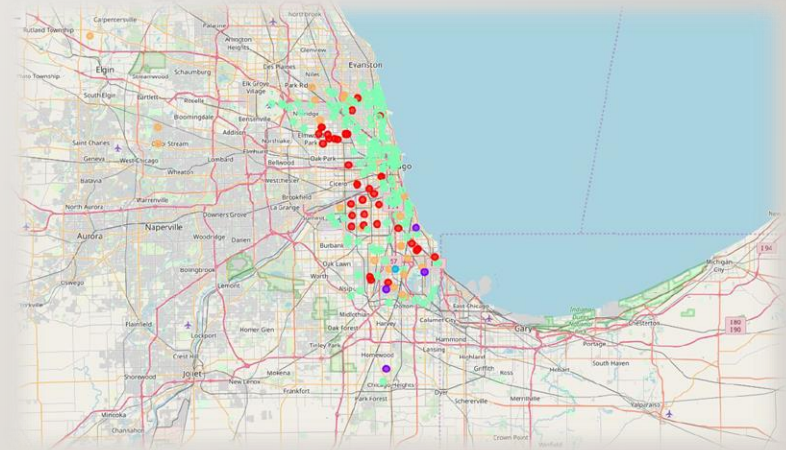
Chicago

DATA PROCESSING AND VISUALIZING

- Using k-means clustering to determine discriminating venue categories:



Toronto



Chicago

RESULTS

- Compared to Chicago, Toronto has very few restaurants in the ‘1st most common venue’.
- The yellow highlights are all restaurants.

	Borough	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
0	East Toronto	0	Health Food Store	Trail	Pub
1	East Toronto	0	Greek Restaurant	Coffee Shop	Ice Cream Shop
2	East Toronto	0	Sandwich Place	Pizza Place	Ice Cream Shop
3	East Toronto	0	Café	Coffee Shop	Bakery
5	Central Toronto	0	Gym	Food & Drink Shop	Pub
6	Central Toronto	0	Sporting Goods Shop	Clothing Store	Coffee Shop
7	Central Toronto	0	Devent Shop	Sandwich Place	Sushi Restaurant
9	Central Toronto	0	Coffee Shop	Pub	Health & Beauty Service
11	Downtown Toronto	0	Coffee Shop	Pet Store	Restaurant
12	Downtown Toronto	0	Coffee Shop	Sushi Restaurant	Japanese Restaurant
13	Downtown Toronto	0	Coffee Shop	Park	Café
14	Downtown Toronto	0	Coffee Shop	Clothing Store	Cosmetics Shop
15	Downtown Toronto	0	Café	Coffee Shop	Restaurant
16	Downtown Toronto	0	Coffee Shop	Cocktail Bar	Café
17	Downtown Toronto	0	Coffee Shop	Café	Italian Restaurant
18	Downtown Toronto	0	Coffee Shop	Café	Bar
19	Downtown Toronto	0	Coffee Shop	Hotel	Aquarium
20	Downtown Toronto	0	Coffee Shop	Café	Hotel
21	Downtown Toronto	0	Coffee Shop	Hotel	Café
23	Central Toronto	0	Trail	Mexican Restaurant	Jewelry Store
24	Central Toronto	0	Sandwich Place	Café	Pizza Place
25	Downtown Toronto	0	Café	Bar	Sandwich Place
26	Downtown Toronto	0	Café	Vegetarian / Vegan Restaurant	Chinese Restaurant
27	Downtown Toronto	0	Airport Lounge	Airport Service	Boat or Ferry
28	Downtown Toronto	0	Coffee Shop	Café	Restaurant
29	Downtown Toronto	0	Coffee Shop	Café	Hotel
30	Downtown Toronto	0	Grocery Store	Café	Park
31	West Toronto	0	Pharmacy	Supermarket	Bakery
32	West Toronto	0	Bar	Men's Store	Coffee Shop
33	West Toronto	0	Breakfast Spot	Café	Coffee Shop
34	West Toronto	0	Café	Mexican Restaurant	Thai Restaurant
25	West Toronto	0	Breakfast Spot	Gift Shop	Bookstore
36	West Toronto	0	Coffee Shop	Café	Bookstore
177	East Toronto	0	Light Rail Station	Yoga Studio	Recording Studio

Toronto

	County	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
0	Cook	-87.6948	0	Mexican Restaurant	Grocery Store	Taco Place
6	Cook	-87.7639	0	Pharmacy	Cuban Restaurant	Pet Store
23	Cook	-87.7241	0	Mexican Restaurant	Ice Cream Shop	Gas Station
25	Cook	-87.6579	0	Mexican Restaurant	Bar	Bakery
27	Cook	-87.6803	0	Food	Playground	Breakfast Spot
31	Cook	-87.7916	0	Polish Restaurant	Czech Restaurant	Gas Station
37	Cook	-87.7342	0	Mexican Restaurant	Supermarket	Check Cashing Service
45	Cook	-87.7307	0	Cosmetics Shop	Grocery Store	Discount Store
58	Cook	-87.6419	0	Fast Food Restaurant	Cosmetics Shop	American Restaurant
64	Cook	-87.6189	0	Fast Food Restaurant	Train Station	Farmers Market
67	Cook	-87.5629	0	Convenience Store	Mexican Restaurant	Construction & Landscaping
76	Cook	-87.8733	0	Bar	Seafood Restaurant	Grocery Store
84	Cook	-87.8634	0	Pizza Place	Mexican Restaurant	Cosmetics Shop
87	Cook	-87.7238	0	Mexican Restaurant	Bank	Discount Store
89	Cook	-87.6951	0	Convenience Store	Mexican Restaurant	Asian Restaurant
94	Cook	-87.7245	0	Ice Cream Shop	Bowling Alley	Fast Food Restaurant
99	Cook	-87.6673	0	Mexican Restaurant	Grocery Store	Bank
110	Cook	-87.7256	0	Mobile Phone Shop	Mexican Restaurant	Gas Station
116	Cook	-87.7107	0	Eye Doctor	Mexican Restaurant	Sandwich Place
119	Cook	-87.8391	0	Bar	Cosmetics Shop	Skating Rink
129	Cook	-87.6945	0	Fast Food Restaurant	Intersection	Business Service
130	Cook	-87.6579	0	Mexican Restaurant	Bar	Bakery
156	Cook	-87.7172	0	Mexican Restaurant	Pizza Place	Bank
158	Cook	-87.7591	0	Mexican Restaurant	Convenience Store	Fast Food Restaurant
161	Cook	-87.8626	0	Fast Food Restaurant	Cosmetics Shop	Train Station
166	Cook	-87.5816	0	Burger Joint	Boutique	Fast Food Restaurant
170	Cook	-87.7916	0	Polish Restaurant	Czech Restaurant	Gas Station
175	Cook	-87.7947	0	Wings Joint	Home Service	Financial or Legal Service
176	Cook	-87.7501	0	Mexican Restaurant	Donut Shop	Ice Cream Shop
181	Cook	-87.6943	0	Coffee Shop	Bar	Mexican Restaurant
183	Cook	-87.7372	0	Fast Food Restaurant	Grocery Store	Restaurant
202	Cook	-87.7172	0	Mexican Restaurant	Pizza Place	Bank
213	Cook	-87.5742	0	Convenience Store	Fried Chicken Joint	Sandwich Place
221	Cook	-87.7724	0	Mexican Restaurant	Fast Food Restaurant	Liquor Store
223	Cook	-87.5362	0	Seafood Restaurant	Hot Dog Joint	Harbor / Marina
227	Cook	-87.7817	0	Sporting Goods Shop	Sandwich Place	Pizza Place

Chicago

RESULTS

- Even in the other clusters, Toronto has far less restaurants in the ‘1st most’ or ‘2nd most’ visited columns:

	Borough	Cluster Labels	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
8	Central Toronto	1	Gym	Playground	Trail	Wings Joint	Dumpling Restaurant	Diner	Discount Store	Dog Run	Doner Restaurant	Donut Shop
	Borough	Cluster Labels	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
22	Central Toronto	2	Pool	Garden	Wings Joint	Dessert Shop	Falafel Restaurant	Event Space	Ethiopian Restaurant	Electronics Store	Eastern European Restaurant	Dumpling Restaurant
	Borough	Cluster Labels	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
4	Central Toronto	3	Bus Line	Park	Swim School	Wings Joint	Falafel Restaurant	Event Space	Ethiopian Restaurant	Electronics Store	Eastern European Restaurant	Dumpling Restaurant
	Borough	Cluster Labels	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
10	Downtown Toronto	4	Park	Playground	Trail	Building	Wings Joint	Donut Shop	Diner	Discount Store	Dog Run	Doner Restaurant

CONCLUSION

- Toronto would be an overall better city to open a restaurant in – due to less competition
- The neighborhood would be downtown Toronto near the Rosedale cluster.

