

Battle of Neighbourhood City of Toronto

Pizza places in

North York

vs

Downtown Toronto



Introduction

- Overview of Toronto
- Optimum location for new Pizza Places

Business Problem:

- Choice of best neighbourhood to start Pizza place
- Easy to expand
- Lesser competition
- High in popularity
- Popular venues around

Success Criteria:

Best neighbourhood which meets the above criteria

City of Toronto

- Toronto is the capital of Ontario, one of the major cities in Canada
- Estimated population of over 6million
- Multiculturalism
- Opportunity for new business
- Well known for great food

Factors to study to choose location

- Toronto population
- Demographics
- Popularity of the Cusine -Pizza
- Competitors in the location
- Popular venues around like Parks, Entertainment zones,Cinema etc.

Data Description

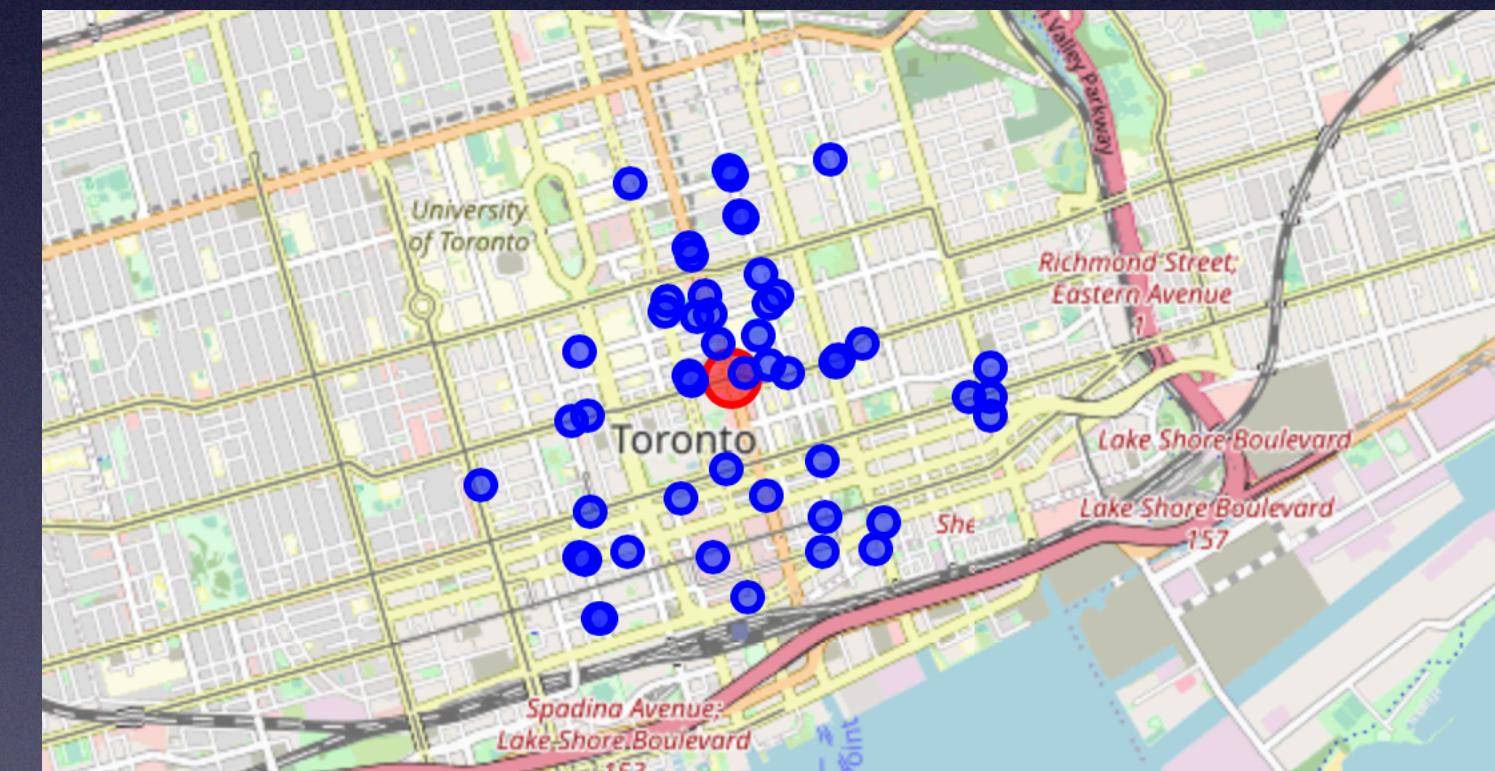
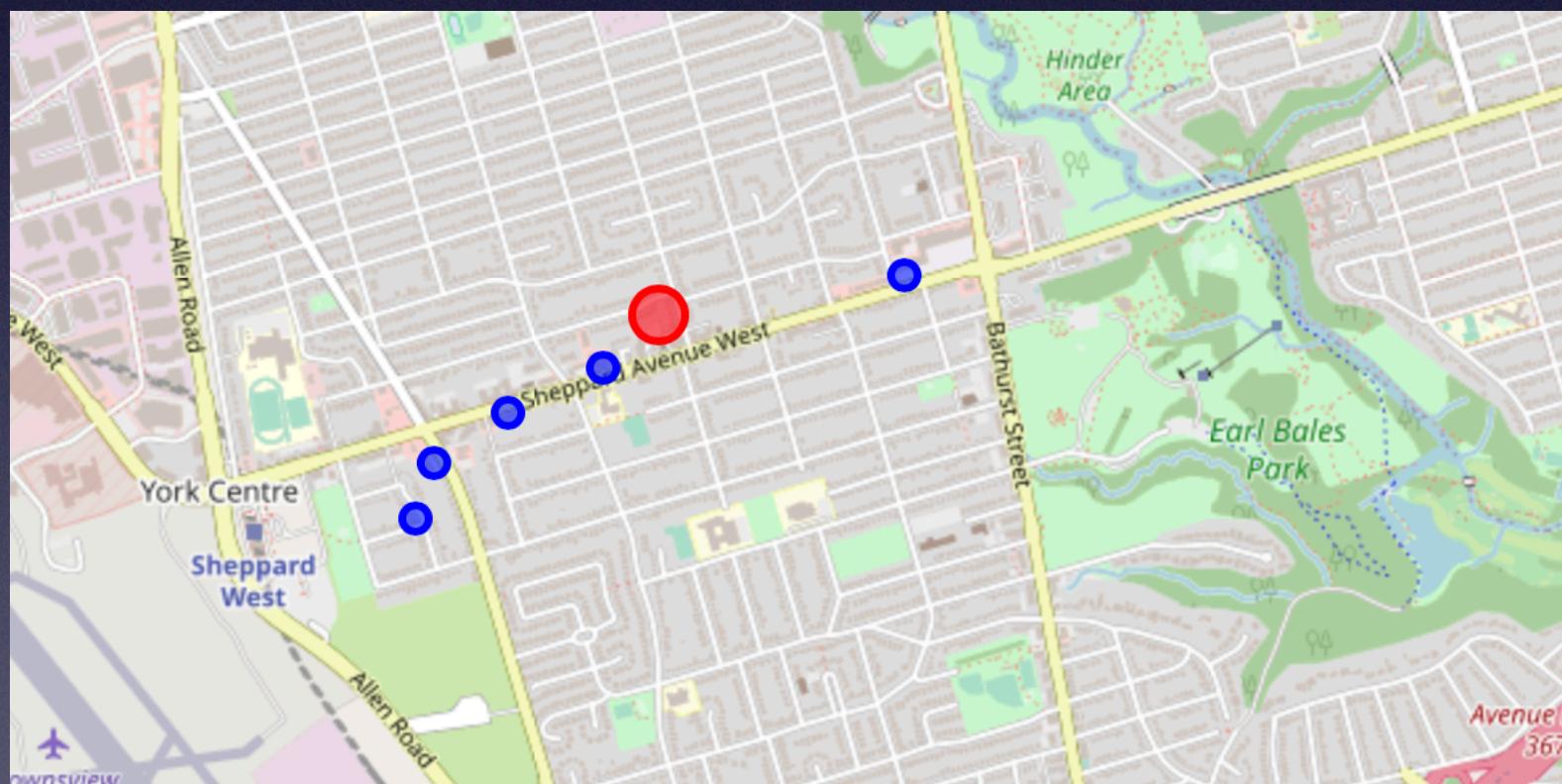
- Data required: geographical location data and postal codes of boroughs
- Data sources :
- https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M
- pgeocode library to extract geographical information

- Foursquare API

	Postcode	Borough	Neighbourhood	Latitude	Longitude
0	M3A	North York	Parkwoods	43.7545	-79.3300
1	M4A	North York	Victoria Village	43.7276	-79.3148
2	M5A	Downtown Toronto	Harbourfront	43.6555	-79.3626
3	M6A	North York	Lawrence Heights, Lawrence Manor	43.7223	-79.4504
4	M7A	Downtown Toronto	Queen's Park	43.6641	-79.3889

Exploratory Data Analysis

Pizza places in North York and Downtown Toronto are compared for competition



Downtown Toronto has more competition than North York

Methodology

- One-hot encoding

Both of the borough as analysed using one-hot encoding and mean of the frequency of occurrence of each category is calculated and picked top ten venues on that basis for each neighbourhood.

- K-means Clustering

Most common venues in both North York and Downtown Toronto are compared with using clustering approach

Cluster of Neighbourhood in North York

Cluster 1

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In [39]: NorthYork_merged.loc[NorthYork_merged['Cluster Labels'] == 0, NorthYork_merged.columns[[1] + list(range(5, NorthYork_merged.shape[1]))]]
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Out[39]:

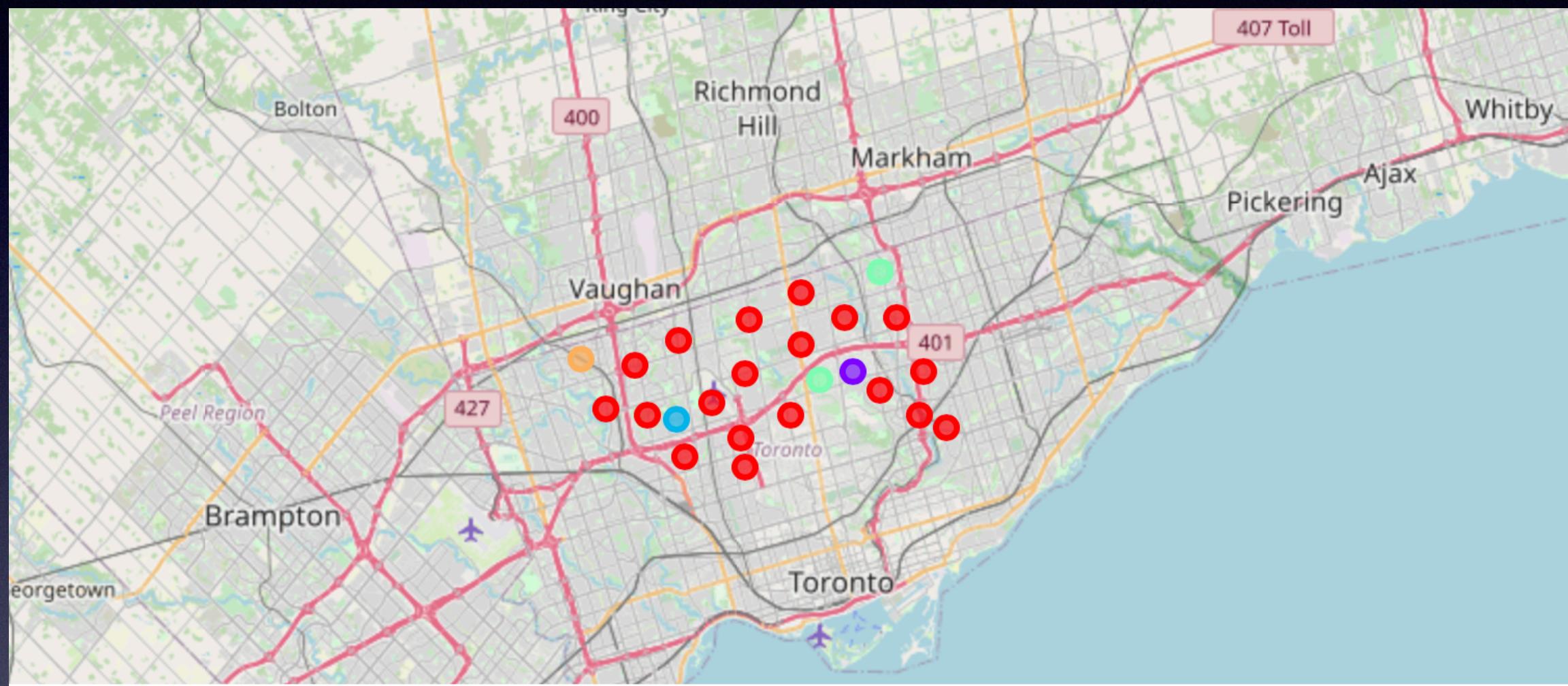
	Borough	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
1	North York	0	Pizza Place	Intersection	Portuguese Restaurant	Coffee Shop	Hockey Arena	Park	Accessories Store	Middle Eastern Restaurant	Pharmacy	Pastry Shop
2	North York	0	Clothing Store	Coffee Shop	Shoe Store	Women's Store	Cosmetics Shop	Bakery	Restaurant	Food Court	Sushi Restaurant	Toy / Game Store
4	North York	0	Grocery Store	Gas Station	Latin American Restaurant	Pizza Place	Asian Restaurant	Ice Cream Shop	Fast Food Restaurant	Pharmacy	Pastry Shop	Park
7	North York	0	Pizza Place	Coffee Shop	Mediterranean Restaurant	Grocery Store	Fried Chicken Joint	Accessories Store	Middle Eastern Restaurant	Pharmacy	Pastry Shop	Park
8	North York	0	Clothing Store	Fast Food Restaurant	Coffee Shop	Baseball Field	Food Court	Lingerie Store	Electronics Store	Shoe Store	Japanese Restaurant	Bakery
9	North York	0	Pizza Place	Metro Station	Middle Eastern Restaurant	Sports Bar	Sandwich Place	Pharmacy	Pastry Shop	Park	Nightclub	Moving Target
11	North York	0	Airport	Coffee Shop	Food Court	Shoe Store	Accessories Store	Middle Eastern Restaurant	Pizza Place	Pharmacy	Pastry Shop	Park

Cluster of neighbourhood in Downtown Toronto

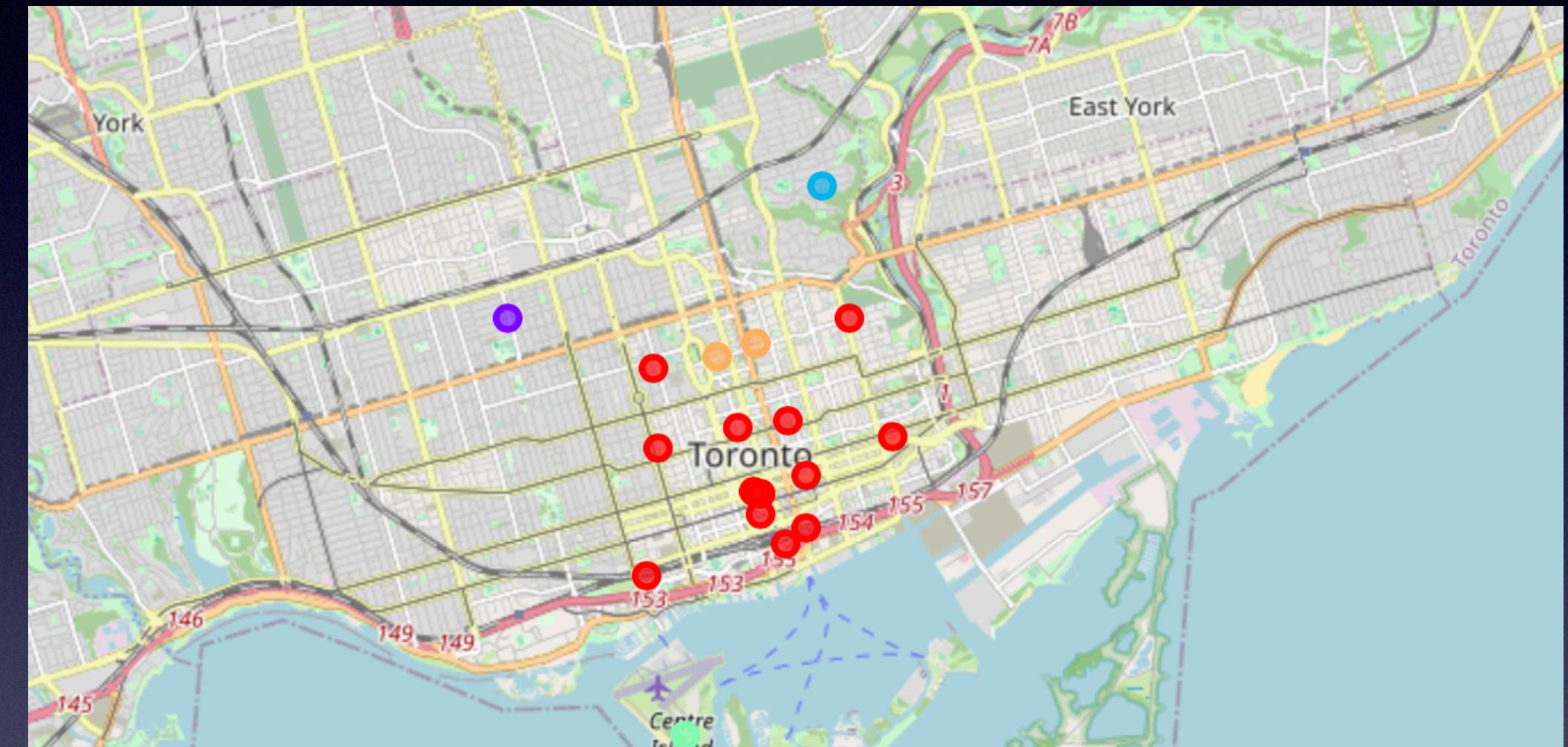
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1	Downtown Toronto	0 Sushi Restaurant	Burrito Place	Gym	Gym / Fitness Center	Escape Room	Ethiopian Restaurant	Coffee Shop	Restaurant	College Cafeteria	Ramen Restaurant
	click to unscroll output; double click to hide		Café	Italian Restaurant	Cocktail Bar	Restaurant	Clothing Store	Department Store	Beer Bar	American Restaurant	Japanese Restaurant
4	Downtown Toronto	0 Sandwich Place	Cocktail Bar	Coffee Shop	Hotel	Japanese Restaurant	Café	Beer Bar	Bakery	Bank	Sporting Goods Shop
12	Downtown Toronto	0 Café	Vegetarian / Vegan Restaurant	Gaming Cafe	Burger Joint	Art Gallery	Arts & Crafts Store	Mexican Restaurant	Coffee Shop	Bakery	Caribbean Restaurant
13	Downtown Toronto	0 Coffee Shop	Italian Restaurant	Gym / Fitness Center	Bar	Speakeasy	Sandwich Place	Restaurant	Pub	Pizza Place	Park
16	Downtown Toronto	0 Coffee Shop	Pizza Place	Italian Restaurant	Restaurant	Bakery	Café	Gym / Fitness Center	Snack Place	Pharmacy	Plaza
18	Downtown Toronto	0 Sushi Restaurant	Japanese Restaurant	Gay Bar	Restaurant	Dance Studio	Coffee Shop	Mediterranean Restaurant	Burrito Place	Indian Restaurant	Fast Food Restaurant

Result

Clusters in North York



Clusters in Downtown Toronto



Segmentation and Clustering of the two boroughs and their neighbourhoods have resulted in the maps as shown above .

Discussion

- North York is borough in Toronto with 289 venues and only 5 Pizza Places, with frequency of Pizza places occur in 1st, 3rd and 4th most common venues, and having good number of restaurants around for a healthy competition.
- Downtown Toronto at the same time has 1108 venues with 50 pizza places with frequency of occurrence is hardly 2 in first five most common venue and very high in competition.

So with the help of k-means clustering its concluded that North York is the better choice for opening up a new pizza place as it is identified to be one of the most popular venue in the borough.

Conclusion

So with the help of segmentation and clustering its concluded that North York is the better choice for opening up a new pizza place as it is identified to be one of the most popular venue in the borough.

Project could further be used for analysing the opportunity open up any kind of business anywhere in the world, also could be extended to analyse based on other parameters depending on the investors.