

# Report:

## Clustering Toronto boroughs and neighborhoods by restaurants' cuisines



Coursera capstone project by Eve Belyaeva

### 1. Introduction.

Previously we explored neighborhoods in Toronto and segmented and clustered them.

I thought that it would be interesting if we could add tags to the neighborhoods for people who are looking for a place to visit if they are looking for new tastes in food.

For example, combine different places by cuisines they have. We could use statistics about restaurant count at all and cuisines distribution across the places. So, when a customer wants a travel agent to advise the best place to spend time and eat great food it should be easier to provide comfortable variants according to the customer's tastes.

I think that it would be useful not only for me but for many people who travel to taste different food and experience the variety of flavors.

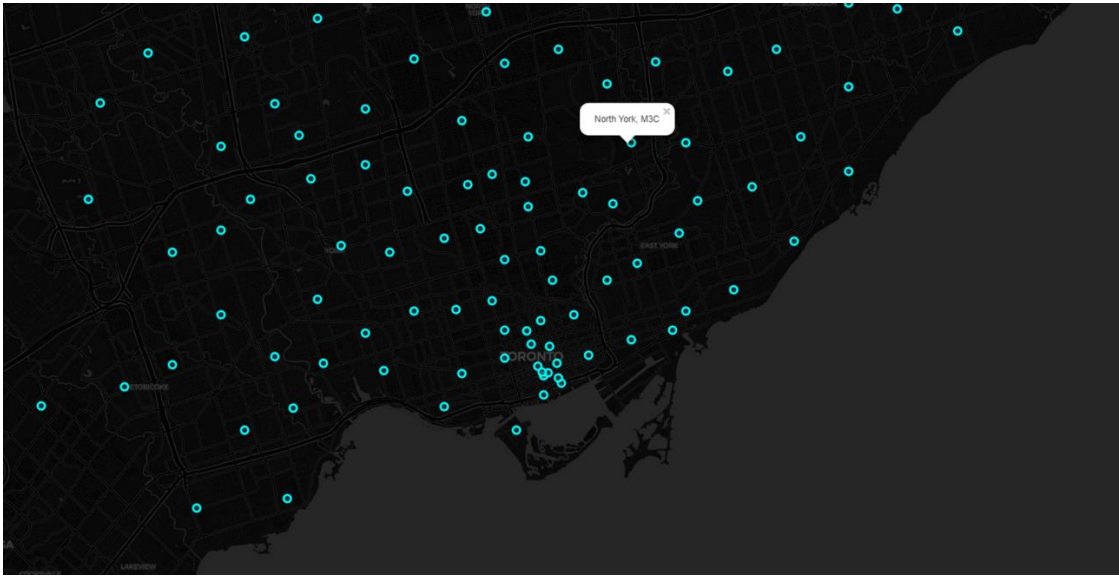
### 2. Data

To do the cuisine sorter we need to gather information about places from Foursquare such as restaurants and cuisines and make the table containing different cuisines.

Then we should find how many venues are contained in one place and calculate the most common venues for each. For example, if in place there are a lot of restaurants with Chinese cuisines then we could add it to other Chinese-oriented places. For each place we can add tags based on venue information and location: for example, combine them into great cluster with mark. And after that we should be able to get ranked list of neighborhoods on the choropleth map showing which places are suitable.

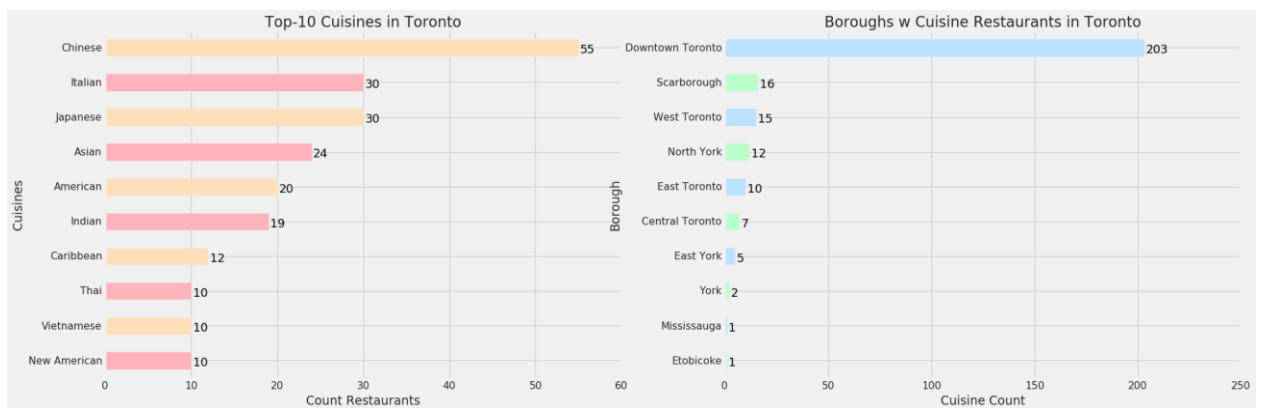
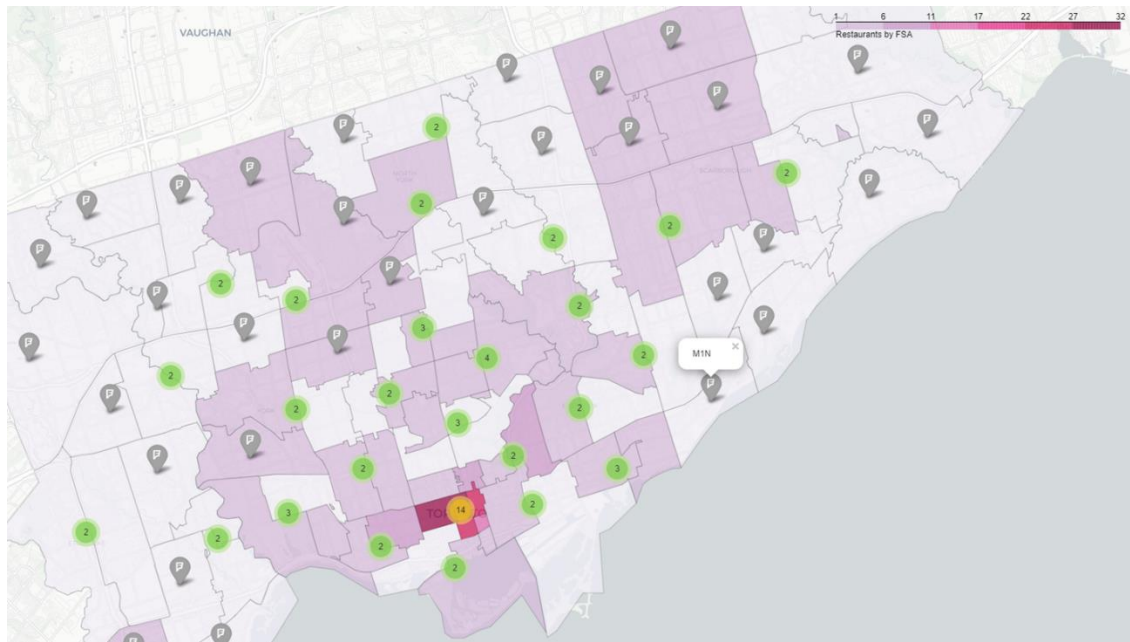
3. Methodology section which represents the main component of the report where you discuss and describe any exploratory data analysis that you did, any inferential statistical testing that you performed, if any, and what machine learnings were used and why.

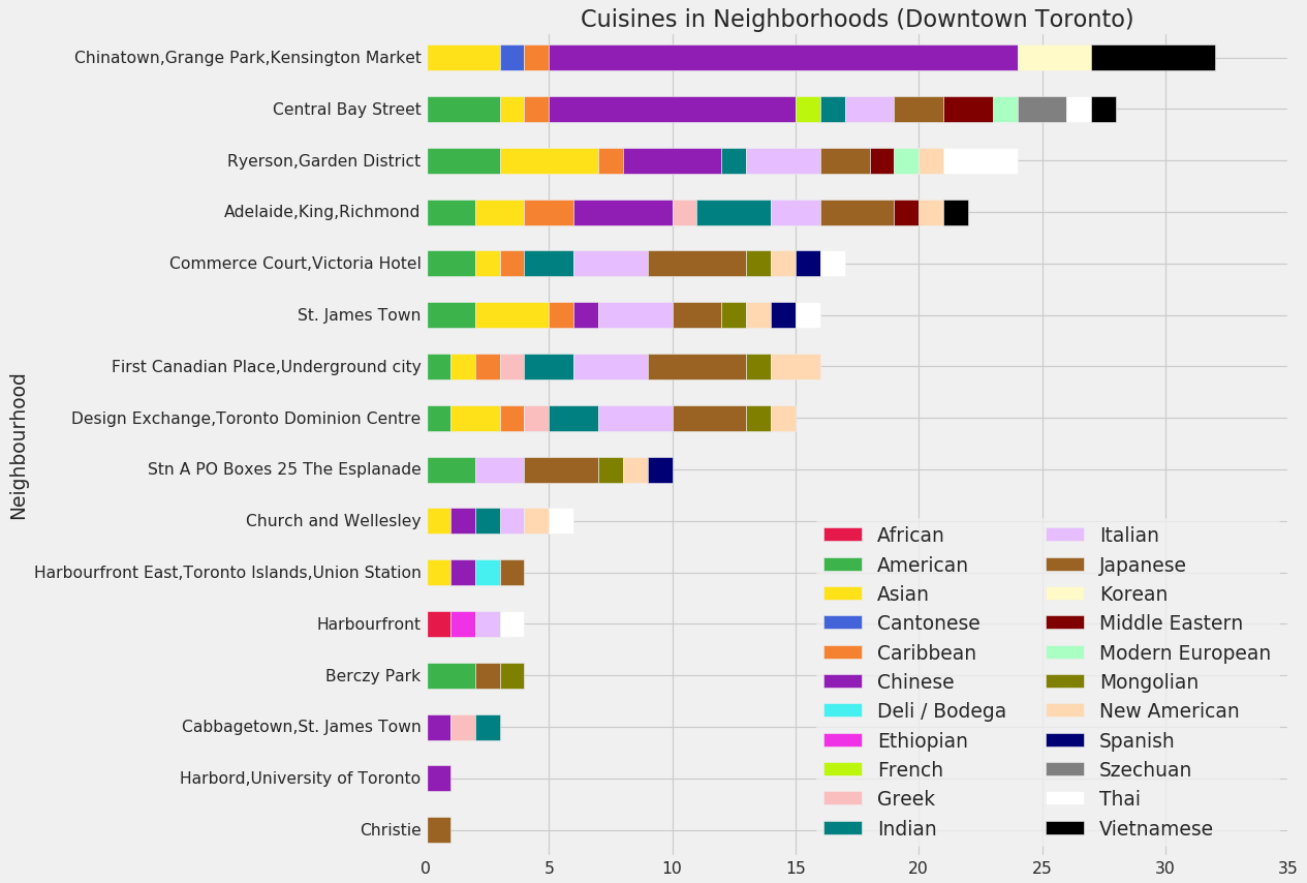
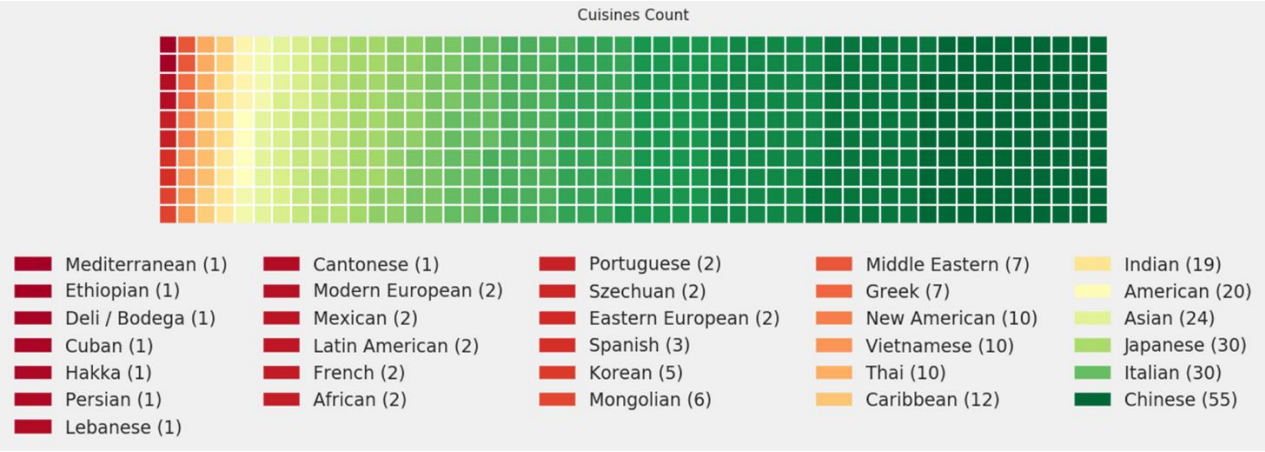
	Postcode	Borough	Neighbourhood	Latitude	Longitude
0	M1B	Scarborough	Rouge,Malvern	43.806686	-79.194353
1	M1C	Scarborough	Highland Creek,Rouge Hill,Port Union	43.784535	-79.160497
2	M1E	Scarborough	Guildwood,Morningside,West Hill	43.763573	-79.188711
3	M1G	Scarborough	Woburn	43.770992	-79.216917
4	M1H	Scarborough	Cedarbrae	43.773136	-79.239476

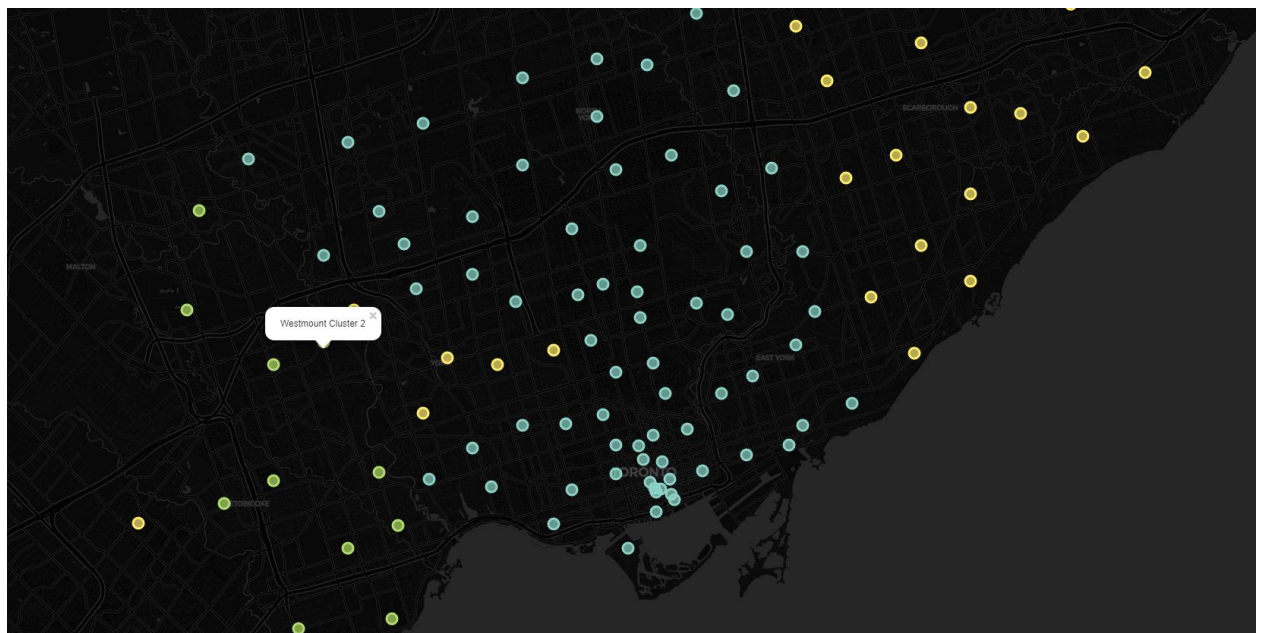
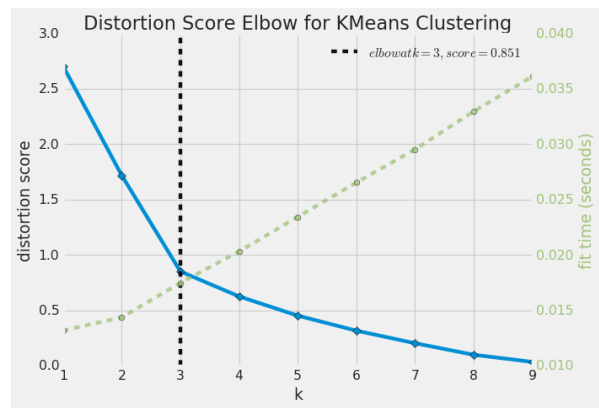
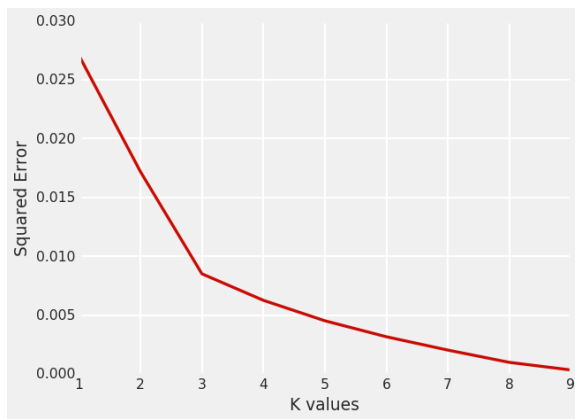


	FSA	Borough	Neighbourhood	Neighbourhood Latitude	Neighbourhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
2	M1H	Scarborough	Cedarbrae	43.773136	-79.239476	Federick Restaurant	43.774697	-79.241142	Halkia
3	M1H	Scarborough	Cedarbrae	43.773136	-79.239476	Terry's Restaurant & Bar	43.774780	-79.241043	Restaurant
4	M1H	Scarborough	Cedarbrae	43.773136	-79.239476	terry's restaurant	43.774969	-79.240872	Italian
5	M1H	Scarborough	Cedarbrae	43.773136	-79.239476	Thai One On	43.774468	-79.241268	Thai
6	M1P	Scarborough	Dorset Park,Scarborough Town Centre,Wexford He...	43.757410	-79.273304	Karakudi Chettinad South Indian Restaurant	43.756042	-79.276276	Indian

	FSA	Count		Postcode	Borough	Latitude	Longitude
0	M1H	3	0	M1B	Scarborough	43.806686	-79.194353
1	M1P	2	1	M1C	Scarborough	43.784535	-79.160497
2	M1R	1	2	M1E	Scarborough	43.763573	-79.188711
3	M1S	2	3	M1G	Scarborough	43.770992	-79.216917
4	M1T	3	4	M1H	Scarborough	43.773136	-79.239476







4. Results section where you discuss the results.

	Neighbourhood	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Rouge, Malvern	0	Chinese	Indian	Italian	Thai	Korean
1	Highland Creek, Rouge Hill, Port Union	0	Chinese	Indian	Italian	Thai	Korean
2	Guildwood, Morningside, West Hill	0	Chinese	Indian	Italian	Thai	Korean
3	Woburn	0	Chinese	Indian	Italian	Thai	Korean
4	Cedarbrae	0	Chinese	Indian	Italian	Thai	Korean
5	Scarborough Village	0	Chinese	Indian	Italian	Thai	Korean
6	East Birchmount Park, Ionview, Kennedy Park	0	Chinese	Indian	Italian	Thai	Korean
7	Clairlea, Golden Mile, Oakridge	0	Chinese	Indian	Italian	Thai	Korean
8	Cliffcrest, Cliffside, Scarborough Village West	0	Chinese	Indian	Italian	Thai	Korean
9	Birch Cliff, Cliffside West	0	Chinese	Indian	Italian	Thai	Korean
10	Dorset Park, Scarborough Town Centre, Wexford He...	0	Chinese	Indian	Italian	Thai	Korean
11	Maryvale, Wexford	0	Chinese	Indian	Italian	Thai	Korean
12	Agincourt	0	Chinese	Indian	Italian	Thai	Korean
13	Clarks Corners, Sullivan, Tam O'Shanter	0	Chinese	Indian	Italian	Thai	Korean
14	Agincourt North, L'Amoreaux East, Milliken, Steel...	0	Chinese	Indian	Italian	Thai	Korean
15	L'Amoreaux West	0	Chinese	Indian	Italian	Thai	Korean
16	Upper Rouge	0	Chinese	Indian	Italian	Thai	Korean
73	Humewood-Cedarvale	0	Caribbean	Chinese	Vietnamese	Italian	American
74	Caledonia-Fairbanks	0	Caribbean	Chinese	Vietnamese	Italian	American
80	Del Ray, Keele, Mount Dennis, Silverthorn	0	Caribbean	Chinese	Vietnamese	Italian	American
81	The Junction North, Runnymede	0	Caribbean	Chinese	Vietnamese	Italian	American
86	Canada Post Gateway Processing Centre	0	Chinese	Vietnamese	Italian	American	Asian
98	Weston	0	Caribbean	Chinese	Vietnamese	Italian	American

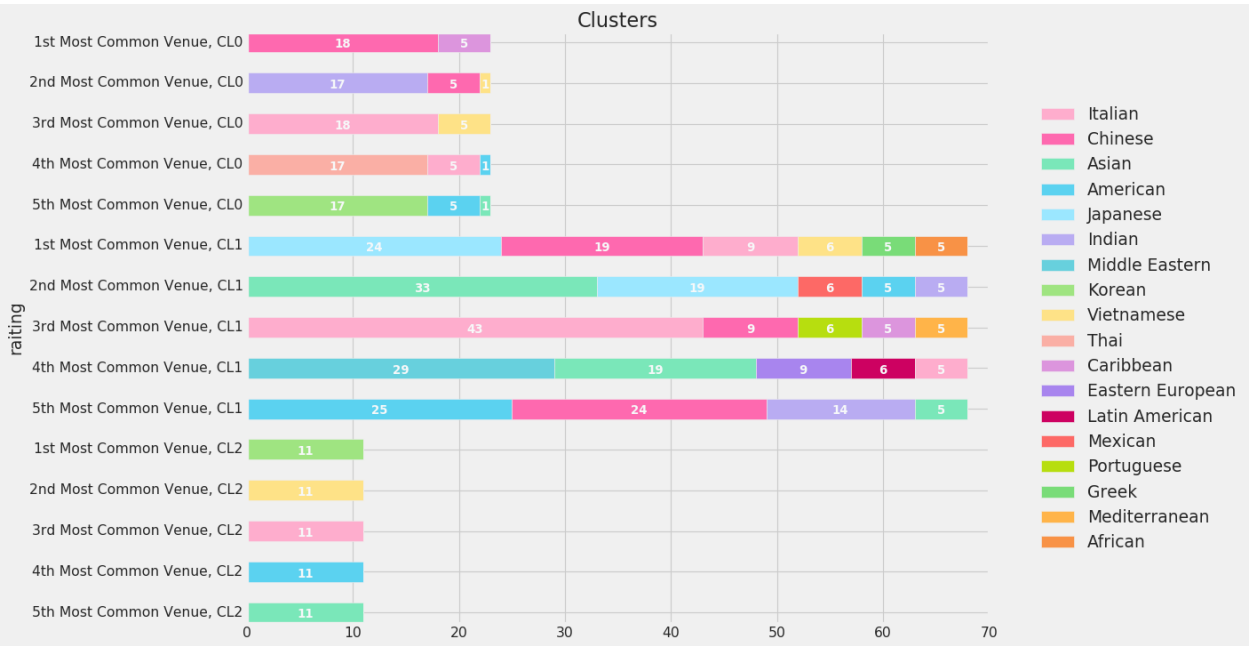


	Neighbourhood	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
17	Hillcrest Village	1	Japanese	Asian	Italian	Middle Eastern	Chinese
18	Fairview, Henry Farm, Oriole	1	Japanese	Asian	Italian	Middle Eastern	Chinese
19	Bayview Village	1	Japanese	Asian	Italian	Middle Eastern	Chinese
20	Silver Hills, York Mills	1	Japanese	Asian	Italian	Middle Eastern	Chinese
21	Newtonbrook, Willowdale	1	Japanese	Asian	Italian	Middle Eastern	Chinese
22	Willowdale South	1	Japanese	Asian	Italian	Middle Eastern	Chinese
23	York Mills West	1	Japanese	Asian	Italian	Middle Eastern	Chinese
24	Willowdale West	1	Japanese	Asian	Italian	Middle Eastern	Chinese
25	Parkwoods	1	Japanese	Asian	Italian	Middle Eastern	Chinese
26	Don Mills North	1	Japanese	Asian	Italian	Middle Eastern	Chinese
27	Flemingdon Park, Don Mills South	1	Japanese	Asian	Italian	Middle Eastern	Chinese
28	Bathurst Manor, Downsview North, Wilson Heights	1	Japanese	Asian	Italian	Middle Eastern	Chinese
29	Northwood Park, York University	1	Japanese	Asian	Italian	Middle Eastern	Chinese
30	CFB Toronto, Downsview East	1	Japanese	Asian	Italian	Middle Eastern	Chinese
31	Downsview West	1	Japanese	Asian	Italian	Middle Eastern	Chinese
32	Downsview Central	1	Japanese	Asian	Italian	Middle Eastern	Chinese
33	Downsview Northwest	1	Japanese	Asian	Italian	Middle Eastern	Chinese
34	Victoria Village	1	Japanese	Asian	Italian	Middle Eastern	Chinese
35	Woodbine Gardens, Parkview Hill	1	African	American	Caribbean	Middle Eastern	Indian
36	Woodbine Heights	1	African	American	Caribbean	Middle Eastern	Indian
37	The Beaches	1	Greek	Indian	Mediterranean	Italian	Asian
38	Leaside	1	African	American	Caribbean	Middle Eastern	Indian
39	Thorncliffe Park	1	African	American	Caribbean	Middle Eastern	Indian
40	East Toronto	1	African	American	Caribbean	Middle Eastern	Indian
41	The Danforth West, Riverdale	1	Greek	Indian	Mediterranean	Italian	Asian
42	The Beaches West, India Bazaar	1	Greek	Indian	Mediterranean	Italian	Asian
43	Studio District	1	Greek	Indian	Mediterranean	Italian	Asian
44	Lawrence Park	1	Italian	Asian	Chinese	Eastern European	Indian
45	Davisville North	1	Italian	Asian	Chinese	Eastern European	Indian
46	North Toronto West	1	Italian	Asian	Chinese	Eastern European	Indian

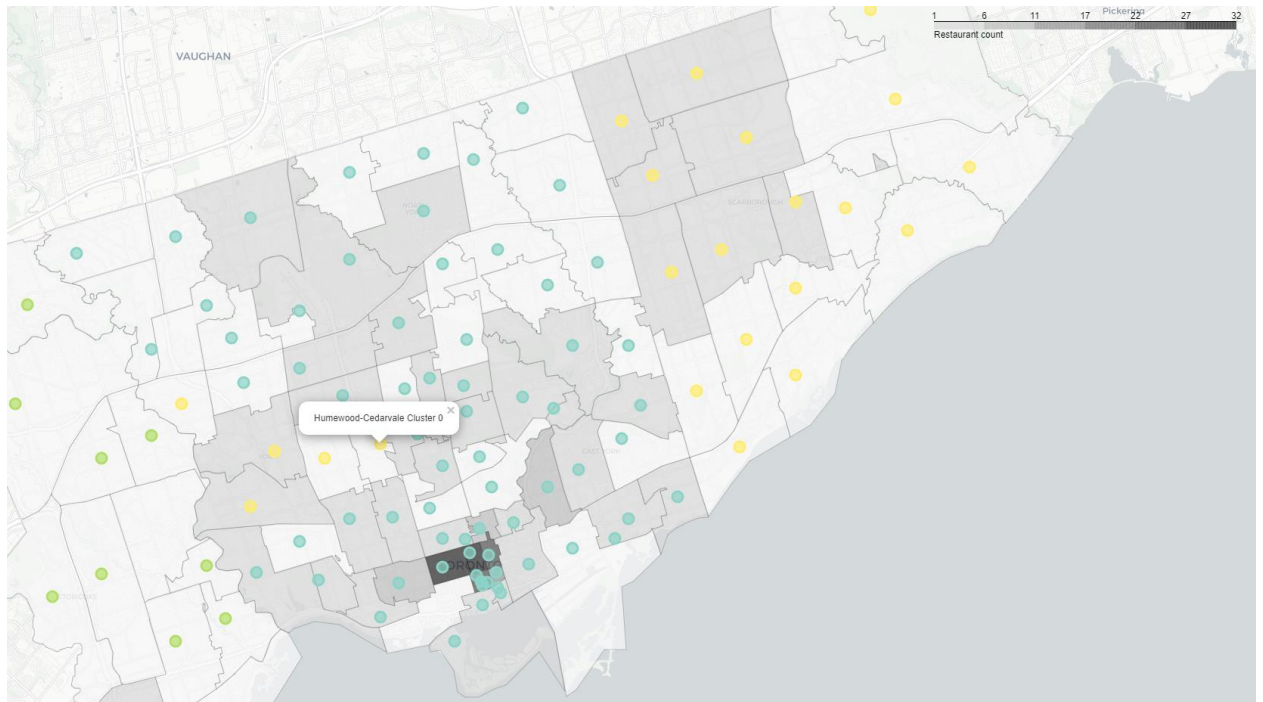


	Neighbourhood	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
88	Humber Bay Shores, Mimico South, New Toronto	2	Korean	Vietnamese	Italian	American	Asian
89	Alderswood, Long Branch	2	Korean	Vietnamese	Italian	American	Asian
90	The Kingsway, Montgomery Road, Old Mill North	2	Korean	Vietnamese	Italian	American	Asian
91	Humber Bay, King's Mill Park, Kingsway Park South	2	Korean	Vietnamese	Italian	American	Asian
92	Kingsway Park South West, Mimico NW, The Queensway	2	Korean	Vietnamese	Italian	American	Asian
94	Cloverdale, Islington, Martin Grove, Princess Gardens	2	Korean	Vietnamese	Italian	American	Asian
95	Bloordale Gardens, Eringate, Markland Wood, Old Bloor	2	Korean	Vietnamese	Italian	American	Asian
99	Westmount	2	Korean	Vietnamese	Italian	American	Asian
100	Kingsview Village, Martin Grove Gardens, Richview	2	Korean	Vietnamese	Italian	American	Asian
101	Albion Gardens, Beaumont Heights, Humbergate, Jamieson	2	Korean	Vietnamese	Italian	American	Asian
102	Northwest	2	Korean	Vietnamese	Italian	American	Asian









5. Discussion section where you discuss any observations you noted and any recommendations you can make based on the results.
6. Conclusion section where you conclude the report.