

# Battle of Neighborhoods

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# Problem Case

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Indian Restaurant chain Aladdin's wants to install a new franchise in Toronto

Find the best neighborhoods

- Neighborhoods with more Indian Restaurants;
- With low income average.

# Datas

Toronto list of boroughs and neighborhood with their postcode.

This data set was acquired by Wikipedia page

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	Postcode	Borough	Neighbourhood
2	M3A	North York	Parkwoods
3	M4A	North York	Victoria Village
4	M5A	Downtown Toronto	Harbourfront
5	M5A	Downtown Toronto	Regent Park
6	M6A	North York	Lawrence Heights

Table 01 – List of Neighborhood in Toronto

# Datas

Toronto list of incomes per neighborhood.

This data set was acquired by Wikipedia page

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	Neighborhood	Population	Average Income
0	Toronto CMA Average	5113149	40704
1	Agincourt	44577	25750
2	Alderwood	11656	35239
3	Alexandra Park	4355	19687
4	Allenby	2513	245592
5	Amesbury	17318	27546
6	Armour Heights	4384	116651
7	Banbury	6641	92319
8	Bathurst Manor	14945	34169
9	Bay Street Corridor	4787	40598
10	Bayview Village	12280	46752

Table 02 – list of incomes per neighborhood

# Datas

Neighborhood with the most Indian restaurant.

This dataset is provided by the Foursquare API

	Neighborhood	Indian Restaurant
0	Adelaide,King,Richmond	100
20	Chinatown,Grange Park,Kensington Market	100
81	St. James Town	100
78	Ryerson,Garden District	100
44	First Canadian Place,Underground city	100
32	Design Exchange,Toronto Dominion Centre	100
27	Commerce Court,Victoria Hotel	100
50	Harbourfront East,Toronto Islands,Union Station	100
82	Stn A PO Boxes 25 The Esplanade	97
22	Church and Wellesley	88
19	Central Bay Street	86
43	Fairview,Henry Farm,Oriole	66
65	Little Portugal,Trinity	64
8	Berczy Park	57
51	Harbourfront,Regent Park	51
87	The Danforth West,Riverdale	44
15	Cabbagetown,St. James Town	44

Table 03 – List of Neighborhood in Toronto

# Datas

Geo location dataset to visualize the best data with folium library.

This dataset is provided by [http://cocl.us/Geospatial\\_data](http://cocl.us/Geospatial_data)

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	Postcode	Borough	Neighborhood	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
5	M1J	Scarborough	Scarborough Village	43.744734	-79.239476
6	M1K	Scarborough	East Birchmount Park,Ionview,Kennedy Park	43.727929	-79.262029
7	M1L	Scarborough	Clairlea,Golden Mile,Oakridge	43.711112	-79.284577
8	M1M	Scarborough	Cliffcrest,Cliffside,Scarborough Village West	43.716316	-79.239476
9	M1N	Scarborough	Birch Cliff,Cliffside West	43.692657	-79.264848
10	M1P	Scarborough	Dorset Park,Scarborough Town Centre,Wexford He...	43.757410	-79.273304

Table 04 – Data set with coordinates.



# Methodology:

Data set with all informations necessary to make the model:

	Postcode	Borough	Neighborhood	Latitude	Longitude	Indian Restaurant	Population	Average Income	Clusters
0	M1B	Scarborough	Rouge,Malvern	43.806686	-79.194353	1	33524.000000	27453.500000	2
14	M2K	North York	Bayview Village	43.786947	-79.385975	4	12280.000000	46752.000000	2
1	M1C	Scarborough	Highland Creek,Rouge Hill,Port Union	43.784535	-79.160497	1	12156.666667	38205.000000	2
25	M4S	Central Toronto	Davisville	43.704324	-79.388790	39	23727.000000	55735.000000	2
23	M4K	East Toronto	The Danforth West,Riverdale	43.679557	-79.352188	44	31007.000000	40139.000000	2
22	M4H	East York	Thornccliffe Park	43.705369	-79.349372	19	17949.000000	25340.000000	2
20	M4E	East Toronto	The Beaches	43.676357	-79.293031	4	20416.000000	67536.000000	2
40	M6L	North York	Downsview,North Park,Upwood Park	43.713756	-79.490074	4	36613.000000	26751.000000	2
18	M3H	North York	Bathurst Manor,Downsview North,Wilson Heights	43.754328	-79.442259	19	14338.500000	36073.500000	2
17	M3C	North York	Flemingdon Park,Don Mills South	43.725900	-79.340923	24	21287.000000	23471.000000	2
16	M3A	North York	Parkwoods	43.753259	-79.329656	3	26533.000000	34811.000000	2
15	M2L	North York	Silver Hills,York Mills	43.757490	-79.374714	1	17564.000000	92099.000000	2
19	M4A	North York	Victoria Village	43.725882	-79.315572	6	17047.000000	29657.000000	2
5	M1K	Scarborough	East Birchmount Park,Ionview,Kennedy Park	43.727929	-79.262029	7	13025.000000	25078.000000	2
12	M1V	Scarborough	Agincourt North,L'Amoreaux East,Milliken,Steel...	43.815252	-79.284577	2	26272.000000	25243.000000	2
11	M1S	Scarborough	Agincourt	43.794200	-79.262029	4	44577.000000	25750.000000	2
10	M1R	Scarborough	Maryvale,Wexford	43.750072	-79.295849	7	13322.000000	29750.000000	2

Table 05 – Data set with all informations.

# Methodology:

Data set with all neighborhoods in cluster 0:

	Postcode	Borough	Neighborhood	Latitude	Longitude	Indian Restaurant	Population	Average Income	Clusters	Income
31	M5B	Downtown Toronto	Ryerson,Garden District	43.657162	-79.378937	100	8240.0	37614.0	0	37614.0
32	M5C	Downtown Toronto	St. James Town	43.651494	-79.375418	100	14666.0	22341.0	0	22341.0
33	M5J	Downtown Toronto	Harbourfront East,Toronto Islands,Union Station	43.640816	-79.381752	100	627.0	43344.0	0	43344.0
36	M5T	Downtown Toronto	Chinatown,Grange Park,Kensington Market	43.653206	-79.400049	100	6373.5	29306.0	0	29306.0
30	M4Y	Downtown Toronto	Church and Wellesley	43.665860	-79.383160	87	13397.0	37653.0	0	37653.0
13	M2J	North York	Fairview,Henry Farm,Oriole	43.778517	-79.346556	64	2790.0	56395.0	0	56395.0
38	M6J	West Toronto	Little Portugal,Trinity	43.647927	-79.419750	64	5013.0	29224.0	0	29224.0
29	M4X	Downtown Toronto	Cabbagetown,St. James Town	43.667967	-79.367675	45	12893.0	36369.5	0	36369.5

Table 06 – df\_toronto\_indian\_demo only 0 cluster neighborhoods.



# Results:

The result was five neighborhood in Toronto in the same borough who are low average income, similar close to each other end have one hundred Indian Restaurants in it, they are Ryerson,Garden Distric, St. James Town, Harbourfront East,Toronto Islands,Union Station.

	Postcode	Borough	Neighborhood	Latitude	Longitude	Indian Restaurant	Population	Average Income	Clusters	Income
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32	M5C	Downtown Toronto	St. James Town	43.651494	-79.375418	100	14666.0	22341.0	0	22341.0
33	M5J	Downtown Toronto	Harbourfront East,Toronto Islands,Union Station	43.640816	-79.381752	100	627.0	43344.0	0	43344.0

Table 7 – Top 3 boroughs.



