Capstone Project:
Chain of Yoga Studios in Toronto

Introduction

- Toronto is the most populous city in Canada with 2,73 million people in 2016;
- Toronto is an international center for business and finance with high concertation of banks and brokerage firms;
- Toronto is the headquarter of many large Canadian and multinational corporations.

Intense work and high level of stress in such environment is harmful.

Regular yoga exercises prevent pain, increases body awareness, reduces stress and helps to restore physical and mental strength

Business Problem

- We are looking for to open a chain of yoga studios in Toronto;
- The objective of the capstone project to find the most suitable locations for yoga studious;

Target Audience

Entrepreneurs looking for to open various centers or studios of yoga or other wellness practices.

Data Description.

To solve the problem, we will use following data:

- List of neighborhoods in Toronto;

- Latitude and Longitude data of Toronto neighborhoods;

- Venue data related to yoga, gym or other wellness/fitness centers. This will help to find the neighborhoods more suitable to open yoga studious.

Data sources.

- Toronto neighborhoods from Wikipedia;

- Latitude and Longitude data of Toronto neighborhoods from Geocoder package;

- Venue data in Toronto neighborhoods from Foursquare API.

Methodology

- Visualization of geographic details of Toronto, its boroughs and neighborhoods using Python Folium library
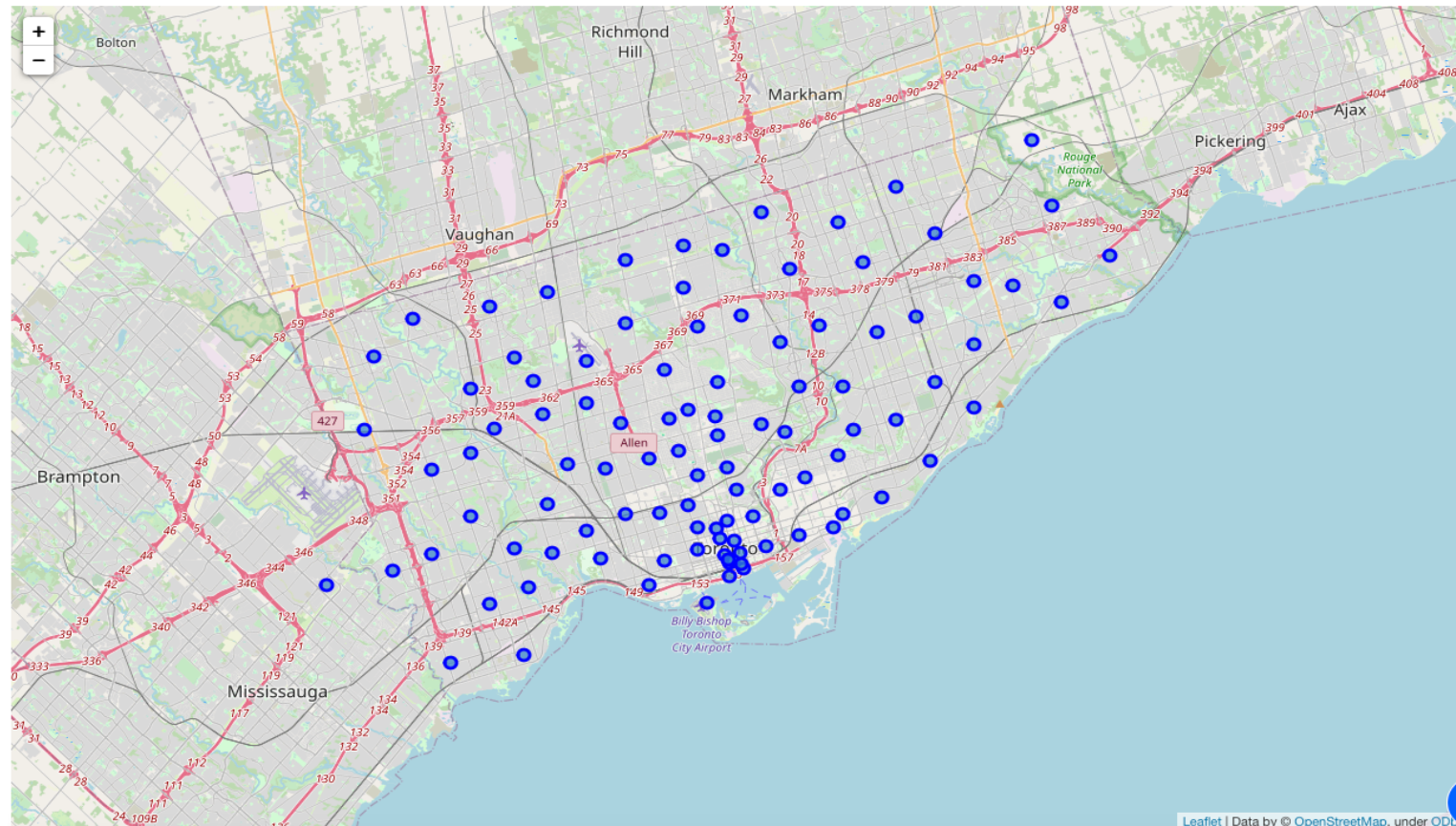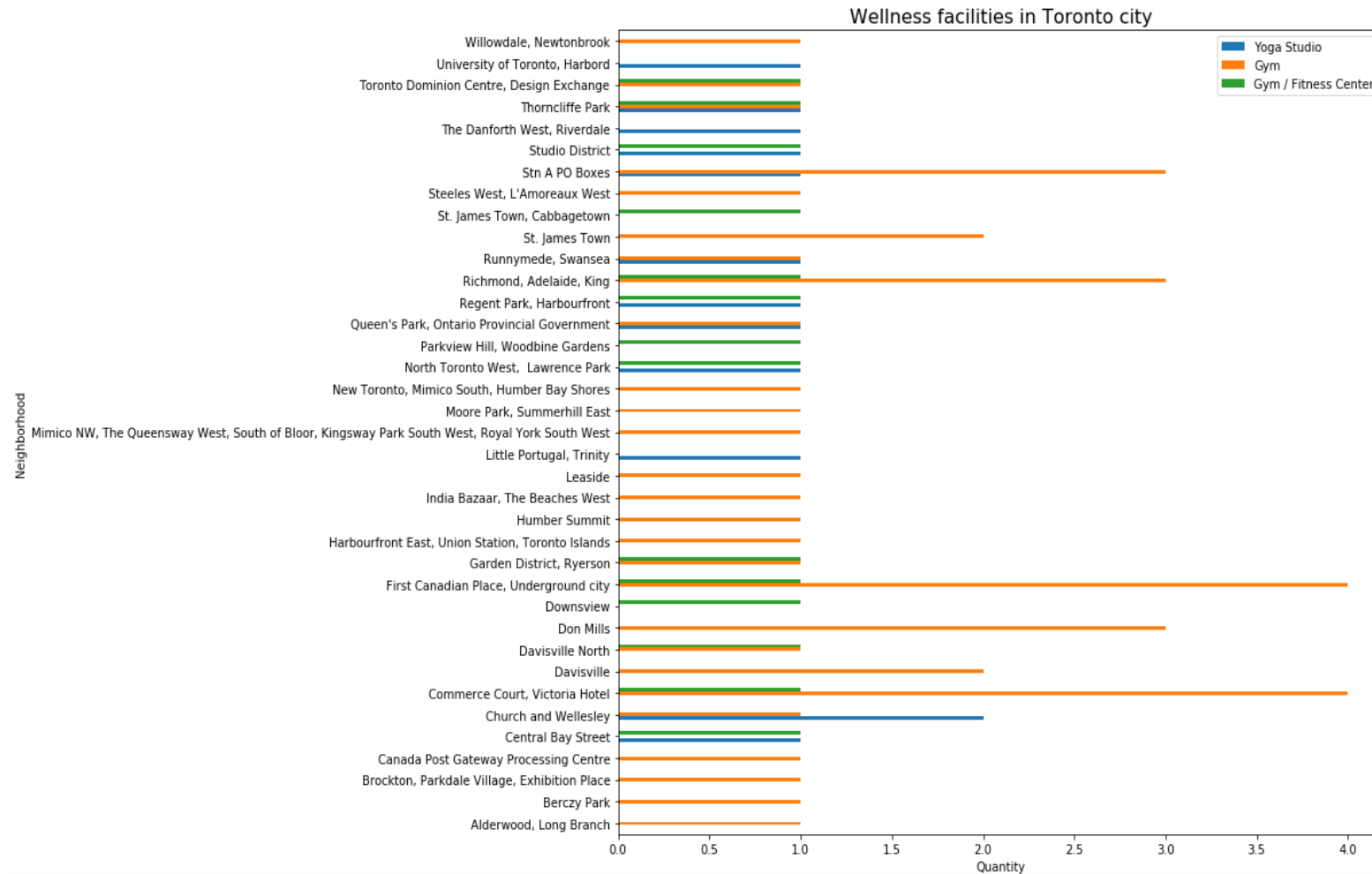
Methodology

- 2141 venues of 269 unique categories were found by Foursquare, using limit = 100 and radius=500 m for each postal code/neighborhood

	name	categories	lat	lng
0	Victoria Village Arena	Hockey Arena	43.723481	-79.315635
1	Portugril	Portuguese Restaurant	43.725819	-79.312785
2	Tim Hortons	Coffee Shop	43.725517	-79.313103
3	The Frig	French Restaurant	43.727051	-79.317418
4	Eglinton Ave E & Sloane Ave/Bermondsey Rd	Intersection	43.726086	-79.313620

	Borough	Borough Latitude	Borough Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Parkwoods	43.753259	-79.329656	Brookbanks Park	43.751976	-79.332140	Park
1	Parkwoods	43.753259	-79.329656	Variety Store	43.751974	-79.333114	Food & Drink Shop
2	Parkwoods	43.753259	-79.329656	Corrosion Service Company Limited	43.752432	-79.334661	Construction & Landscaping
3	Victoria Village	43.725882	-79.315572	Victoria Village Arena	43.723481	-79.315635	Hockey Arena
4	Victoria Village	43.725882	-79.315572	Portugril	43.725819	-79.312785	Portuguese Restaurant

Methodology

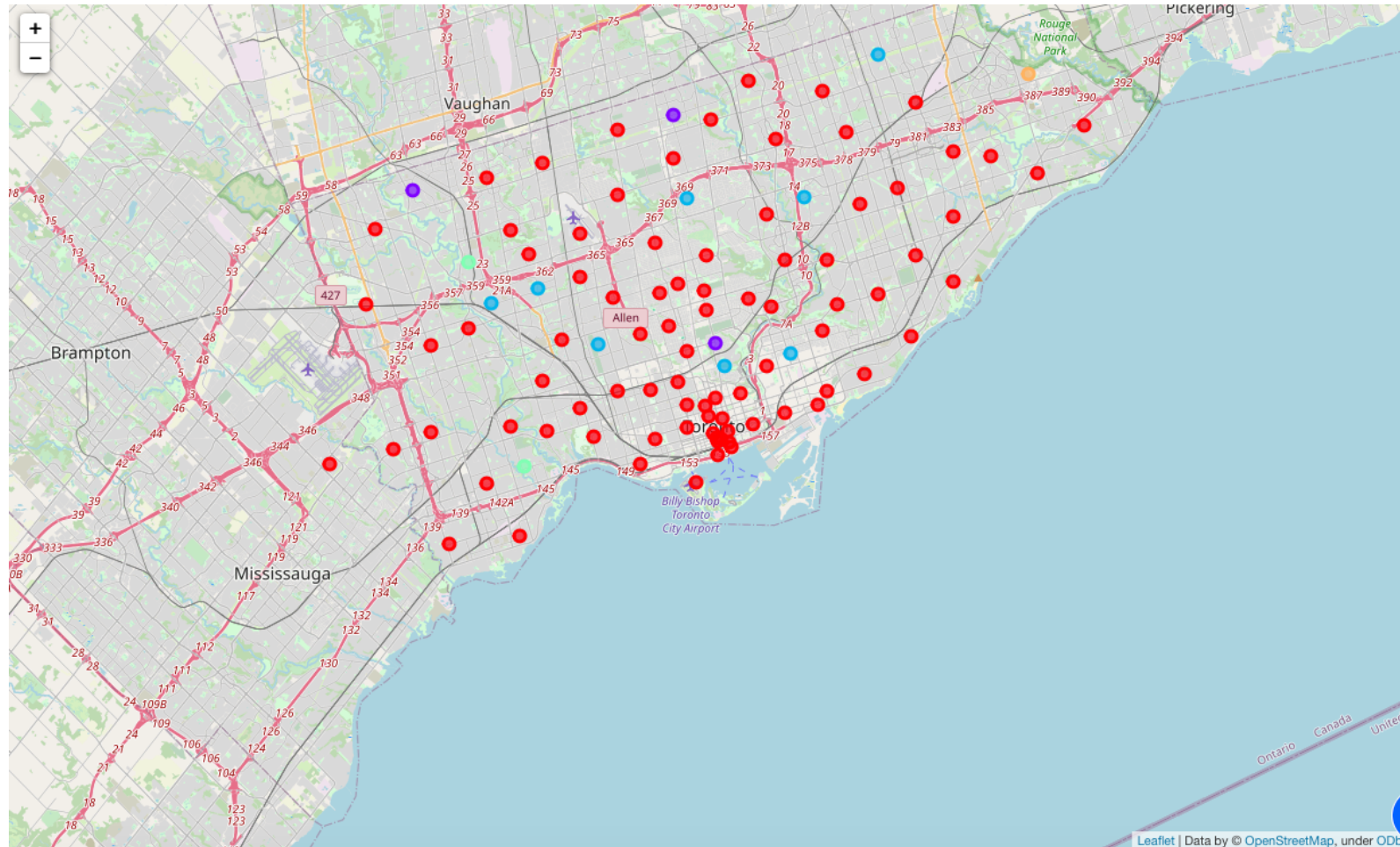- 37 neighborhoods have 'Yoga Studio' or "Gym" or "Gym/Fitness Center" venues

Methodology

- 59 neighborhoods do not have venues that provide wellness practices and they can be considered as right areas to open yoga studios

Neighborhood	Yoga Studio	Gym	Gym / Fitness Center
Agincourt	0	0	0
Bathurst Manor, Wilson Heights, Downsview North	0	0	0
Bayview Village	0	0	0
Bedford Park, Lawrence Manor East	0	0	0
Birch Cliff, Cliffside West	0	0	0
Business reply mail Processing Centre, South Central Letter Processing Plant Toronto	0	0	0
CN Tower, King and Spadina, Railway Lands, Harbourfront West, Bathurst Quay, South Niagara, Island airport	0	0	0
Caledonia-Fairbanks	0	0	0
Cedarbrae	0	0	0
Christie	0	0	0
Clarks Corners, Tam O'Shanter, Sullivan	0	0	0
Cliffside, Cliffcrest, Scarborough Village West	0	0	0
Del Ray, Mount Dennis, Keelsdale and Silverthorn	0	0	0
Dorset Park, Wexford Heights, Scarborough Town Centre	0	0	0
Dufferin, Dovercourt Village	0	0	0
East Toronto, Broadview North (Old East York)	0	0	0
Eringate, Bloordale Gardens, Old Burnhamthorpe, Markland Wood	0	0	0
Fairview, Henry Farm, Oriole	0	0	0
Forest Hill North & West, Forest Hill Road Park	0	0	0
Glencairn	0	0	0
Golden Mile, Clairlea, Oakridge	0	0	0
Guildwood, Morningside, West Hill	0	0	0
High Park, The Junction South	0	0	0
Hillcrest Village	0	0	0
Humberlea, Emery	0	0	0
Humewood-Cedarvale	0	0	0

Methodology

- K-means algorithm to cluster neighborhoods by 10 most common venues was used:

Results

- 59 neighborhoods that do not have venues that provide wellness practices and they can be considered as right areas to open yoga studios;

- Clusters showed high interest in different sport activities, including yoga and gym:

  - Cluster 1 (All-rounders) is the largest. Most common venues are Coffee Shops, restaurants and stores. However, gym, fitness and yoga are among 10 common venues also.

  - Cluster 2 (Sportsmen) has gym as the 1st common venue in all neighborhoods.

  - Cluster 3 (Joggers and Hikers) has park as the 1st common venue in most neighborhoods and as the 2nd common venue in the left.

  - Cluster 4 (Baseball Fans) consist of 2 neighborhoods and has Baseball Field as the 1st common venue.

  - Cluster 5 (Eaters and Buyers) consist of 1 neighborhood and prefers just stores and restaurants.

Conclusion

- The project to open yoga studios in Toronto city has high potentials.

- High population of Toronto city, strong interest in sport and wellness practices and lack of such facilities confirm the high potential of the project. Here are 59 neighborhoods/postal codes that do not have venues that provide wellness practices and can be considered as right areas to open yoga studios.

- This project can be used also by city managers to examine if there are enough sport and wellness facilities in Toronto city.