Battle of Neighborhoods

Long Island City (Queens), NY and Harbourfront East (Toronto), ON comparison

Long Island City, NY

Harbourfront East

Problem and discussion:

In September of 2017, Amazon announced via a request for proposal (RFP) that it was seeking a second North American headquarters in which it could potentially hire up to 50,000 employees. Over 200 cities and municipalities responded to Amazon’s RFP with a multitude of options and tax incentives.

In January of 2018 the list of 200+ was reduced to 20 finalists. Among those finalists were New York and Toronto. In November 2018 Amazon made its decision by splitting it’s second headquarters in two, one part in New York, the other in Northern Virginia.

Although Toronto lost, they did make it to the finalist list and are still a very desirable location and competitor for other large technology corporations seeking to expand their operations not only to the East Coast, but also to one of Canada’s technology hubs.

Assuming the role of a real estate developer, or that of a restaurateur, it may be interesting to know what kinds of venues are located in the areas that both New York and Toronto chose as potential sites for Amazon’s HQ2. Any location that could potentially host up to 50,000 people would definitely provide opportunities for opening or expanding small businesses like eateries, restaurants, bars, and more. In the case of New York, the neighborhood of Long Island City was chosen. As for Toronto, Harbourfront East was one of their primary choices.

There are many factors that must have gone into Amazon’s decision as to what site to choose for HQ2. This project will only look at these neighborhoods from the perspective of what types of venues are located within these neighborhoods and rank how common certain venues are. We’ll then compare those of Long Island City and Harbourfront to see any similarities or differences. The resulting data may or may not help to inform future business planning or investment in Harbourfront based on what worked for Long Island City.

Description of the data:

The data used for this project will be acquired from Wikipedia, publicly available geospatial data, as well as from FourSquare via their API. The sources are listed below:

Toronto Data: <https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M>

New York Data: <https://ibm.box.com/shared/static/fbpwbovar7lf8p5sgddm06cgipa2rxpe.json>

Foursquare: [https://api.foursquare.com/v2/venues/explore?&client\_id={}&client\_secret={}&v={}&ll={},{}&radius={}&limit={}](https://api.foursquare.com/v2/venues/explore?&client_id=%7b%7d&client_secret=%7b%7d&v=%7b%7d&ll=%7b%7d,%7b%7d&radius=%7b%7d&limit=%7b%7d)

These data will be ingested, transformed, and assessed within IBM Watson Studio using a Python v3.5 notebook. The planned libraries for use are the following:

Numpy-Library for handing vectored data

Pandas- Library for data analysis

JSON- Library for managing JSON file types

Geopy- Library for location retrieval

Requests- Library for handing http queries

Matplotlib- Library for Python plotting

Sklearn- Library for Python machine learning

Folium- Library for map rendering

First the New York data will be assessed to find the specific location parameters for Long Island City. Then the Foursquare API will be leveraged to bring in information pertaining to venues within Long Island City. At the end of the assessment we’ll see the top ranked venue types within Long Island City utilizing k-mean clustering. Once complete, the same process will be applied to the Toronto data. In this case though we will be focusing our assessment on Harbourfront East.

The end result will be a list of most common venue types within both locations for us to compare and contrast.

Methodology:

In order to compare Long Island City and Harbourfront East, it was necessary to acquire both their central GPS coordinates in order to leverage the Foursquare API. The following steps were undertaken:

1. New York City geographic data was loaded from an available open source as a JSON file.
2. Those data were organized into a table based on Borough, Neighborhood, Latitude, and Longitude.
3. Long Island City was pulled out by itself in order to query the Foursquare API.
4. The results sent back from Foursquare were then organized into a table organized by venue.
5. One hot coding was applied to convert strings to integers.
6. The results were then used to rank the prevalence of venues.
7. Kmeans clustering was preformed to rank the venues.
8. The same process above was applied to the Toronto data with the exception of Toronto geographic data being web scraped from Wikipedia.
9. Once both data sets for Long Island City and Harbourfront East were transformed, then the two were combined via concatenation to form one composite data set.
10. The above processes were applied again to this new data set in order to cluster the two neighborhoods with k-means.

Results:

The results are listed as following:

1. The most common venues located within Long Island City are Coffee Shops, Hotels, Pizza places, Cafes, Mexican Restaurants, Bars, Donut Shops, Cocktail Bars, Mediterranean Restaurants, and Convenience stores.

2. The most common venues located within Harbourfront East are Coffee Shops, Hotels, Aquariums, Pizza places, Cafes, Restaurants (general), Breweries, Scenic lookouts, Italian Restaurants, and Sports Bars.

3. Long Island City and Harbourfront East appear to be similar in that they both have a similar concentration of Coffee shops, hotels, Pizza places, and Cafes.

Discussion:

It would appear that Long Island City and Harbourfront East are not too dissimilar compared to the venue data we analyzed. The largest difference noted was the prevalence of aquariums and scenic lookouts located within Harbourfront East. These locations by their nature may be very difficult to repurpose or otherwise utilize for retail or hotel space. Also, there were a larger number of unclassified restaurants listed within Harbourfront East. It may be work further investigation to determine what types of restaurants these are and what their varieties may be.

Conclusion:

In conclusion it does appear that Harbourfront East and Long Island City are very similar, but with some unique differences in regard to the concentration of aquariums and scenic lookouts in Harbourfront East. It would be worth further exploration to determine if these venues provide inflexible real estate constraints when considering the placement of a large corporate headquarters within the same vicinity. Also, it would be worth further investigation to classify the general restaurants listed within Harbourfront East to better determine the diversity of cuisine in the area. If a real estate developer were looking to emulate similar business found in Long Island City, they may consider investigating whether opening a convenience store or a donut/pastry shop would be worthwhile.