Business Problem

Toronto, Ontario, Canada and Manhatten, New York, USA are both financial centers of their respective countries. Many individuals travel between these two cities, both for business and for pleasure. When travelling for pleasure, two scenarios exists. One could find oneself in a neighborhood that feels like home or one that feels very different.

So, the first question before us is which neighborhoods in Toronto are most similar to neighborhoods in Manhatten? A traveller from Toronto to Manhatten would feel most at home in these neighborhoods and vice versa.

The second question is one of bein someplace new and different. If one is travelling from Toronto to Manhatten, which neighborhoods in Manhatten are least like neighborhoods in Toronto? And then if one is travelling from Manhatten to Toronto, which neighborhoods in Toronto are least like neighborhoods in Manhatten.

Data

In order to find the comparisons/dissimilarities, I will be using the Toronto and Manhatten neighborhood breakdown. Using the latitude/longitude values, I will find an appropriate number of business within an appropriate distance from the center lat/long of the neighborhood. This will be done for both Toronto and Manhatten.

The data will then be stripped of the latitude and longitude numbers so that all neighborhoods in both cities are treated as neighborhoods in one city.

The data will be run through a k-means algorithm to find the clusters of similar neighborhoods. An appropriate value of k will be determined based on the results in order to get all three distinct categories: at least one cluster that contains neighborhoods from both cities, at least one cluster containing only neighborhoods in Toronto, and at least one cluster containing only neighborhoods in Manhatten.

Methodology

The data for neighborhoods in both Manhattan and Downtown Toronto were ingested into a dataframe and combined together as if they were in one city. Using foursquare, 100 venues were aquired for each neighborhood. These were then limited down to the 10 most common venue category for each neighborhood. Then a kMeans clustering algorithm was applied to the neighborhoods, separating them into 10 clusters.

Looking at these clusters, some contained neighborhoods from only Manhattan. Some contained neighborhoods from only Downtown Toronto. And some contained neighborhoods from both Downtown Toronto and Manhattan. This gives light on the similarities and differences between the two cities.

Results

Cluster 0 has the following neighborhoods:

in Manhattan: Marble Hill, Washington Heights, Hamilton Heights, Central Harlem, Midtown, Lower East Side, Little Italy, Soho, Manhattan Valley, Carnegie Hill

in Downtown Toronto: Ryerson/Garden District, Adelaide/King/Richmond, Harbord/University of Toronto, Chinatown/Grange Park/Kensington Market, Church and Wellesley

Cluster 1 has the following neighborhoods:

in Manhattan: Stuyvesant Town

Cluster 2 has the following neighborhoods:

in Manattan: Chinatown, Clinton, Murray Hill, Chelsea, East Village, Tribeca, Gramercy, Battery Park City, Financial District, Midtown South, Tudor City, Hudson Yards

Cluster 3 has the following neighborhoods:

in Downtown Toronto: Rosedale

Cluster 4 has the following neighborhoods:

in Manhattan: Inwood, East Harlem

Cluster 5 has the following neighborhoods:

in Manhattan: Morningside Heights

in Downtown Toronto: Harbourfront/Regent Park, St. James Town, Berczy Park, Central Bay Street, Harbourfront East/Toronto Islands/Union Station, Design Exchange/Toronto Dominion Centre, Commerce Court/Victoria Hotel, STN A PO Box 25 The Esplanade, Cabbagetown/St. James Town, First Canadian Place/Underground   city

Cluster 6 has the following neighborhoods:

in Manhattan: Roosevelt Island

Cluster 7 has the following neighborhoods:

in Manhattan: Manhattanville, Upper East Side, Yorkville, Lenox Hill, Upper West Side, Lincoln Square, Greenwich Village, West Village, Noho, Civic Center, Sutton Place, Turtle Bay, Flatiron

Cluster 8 has the following nieghborhoods:

in Downtown Toronto: CN Tower/Bathurst Quay/Island airport/Harbourf...

Cluster 9 has the following nieghborhoods:

in Downtown Toronto: Christie

Discussion

For residents of Toronto wanting to visit places in Manhattan that feel like downtown Toronto, the following nieghborhoods are recommended:

Marble Hill, Washington Heights, Hamilton Heights, Central Harlem, Midtown, Lower East Side, Little Italy, Soho, Manhattan Valley, Carnegie Hill

For residents of Manhattan wanting to visit places in Downtown Toronto that feel like Manhattan, the following neighborhoods are recommended:

Ryerson/Garden District, Adelaide/King/Richmond, Harbord/University of Toronto, Chinatown/Grange Park/Kensington Market, Church and Wellesley

For residents of Toronto wanting to visit places in Manhattan that are different from places in downtown Toronto, the following neighborhoods in Manhattan would be recommended:

Stuyvesant Town, Chinatown, Clinton, Murray Hill, Chelsea, East Village, Tribeca, Gramercy, Battery Park City, Financial District, Midtown South, Tudor City, Hudson Yards, Inwood, East Harlem, Manhattanville, Upper East Side, Yorkville, Lenox Hill, Upper West Side, Lincoln Square, Greenwich Village, West Village, Noho, Civic Center, Sutton Place, Turtle Bay, Flatiron

For residents of Manhattan wanting to visit places in Downtown Toronto that are different from places in Manhattan, the following neighborhoods in Downtown Toronto are recommended:

Christie, Rosedale, arbourfront/Regent Park, St. James Town, Berczy Park, Central Bay Street, Harbourfront East/Toronto Islands/Union Station, Design Exchange/Toronto Dominion Centre, Commerce Court/Victoria Hotel, STN A PO Box 25 The Esplanade, Cabbagetown/St. James Town, First Canadian Place/Underground city

Conclusion

The Boroughs of Downtown Toronto (in Toronto) and Manhattan (in New York) are very similar areas. While there are some neighborhoods unique to each, the majority of neighborhoods were in common, falling into one of the clusters. Overall visitors from one city will probably feel comfortable in the other with only a few exceptional areas. If a resident of one of these cities wanted to visit something unique, I would recommend not going to the other.