Capstone Project – The Battle of Neighborhoods

Discovering Top Venues in Scarborough, Toronto, Ontario, Canada

Introduction:

Scarborough is an administrative division in Toronto, Ontario, Canada. Situated atop the Scarborough Bluffs, it occupies the eastern part of the city. As of the 2011 Census, it had a population of 625, 698. Scarborough is contained within the borders of Victoria Park Avenue on the west, Steeles Avenue to the north, Rouge River and the city of Pickering to the east, and Lake Ontario to the south. It borders Old Toronto, East York and North York in the west and the city of Markham in the north. The neighbourhood of Scarborough has various sights for visitors thanks to its population of high diversity and different cultures, making it a good place for people to hang out.

This project is aimed at recommending places to chill out (entertainment, accommodation, restaurant, etc.) for people visiting the neighborhood of Scarborough. The recommendation system is built on Foursquare dataset, geographical data, and venue information of Scarborough from the internet.
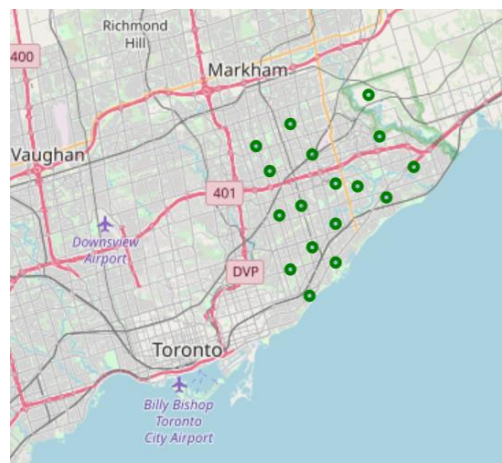
Data Overview:

The datasets used in this project mainly come Wikipedia page in tabular format, including postcodes and neighborhoods, as well as geographical information from Geospatial_Coordinates.csv. Detailed information of local venues obtained from Foursquare.com are the core materials of this analysis. Reshaping the geographical data and adjusting the venue information allow us to make comparisons based on the location, the name, and the category of assorted venues.

Methodology:

1. Downloading and transposing the data into python pandas dataframe.

2. Cleaning the data (dropping and regrouping).

3. Combining the neighbourhood data with the geographical data based on shared postcode.

4. Using python built in libraries to create a map with markers showing all the neighborhoods in Scarborough.

5. Searching and creating a new dataset containing venue information in the neighborhoods of Scarborough with the help of Foursquare website.

6. Collating venue data with regard to categories.

7. Using k-means clustering to cluster the neighborhoods based on the number of venues and connecting the cluster group level with neighborhood names.

8. Creating a map with markers of the neighborhoods with lower cluster group.

9. Exploring top 10 venues in these neighorhoods.

Results:

Most of the sixteen neighborhoods explored have at least one eating spot and one chill-out spot in their top three common venues, while shopping spots are much less common.

Observations and Discussions:

	Neighborhood	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue	Common Venue
0	Agincourt	Clothing Store	Skating Rink	Breakfast Spot	Lounge	Vietnamese Restaurant	General Entertainment	Fried Chicken Joint	Fast Food Restaurant	Electronics Store	Department Store
1	Agincourt North, L'Amoreaux East, Milliken, St...	Playground	Park	Vietnamese Restaurant	Chinese Restaurant	General Entertainment	Fried Chicken Joint	Fast Food Restaurant	Electronics Store	Department Store	Cosmetics Shop
2	Birch Cliff, Cliffside West	General Entertainment	Skating Rink	Café	College Stadium	Vietnamese Restaurant	Clothing Store	Grocery Store	Fried Chicken Joint	Fast Food Restaurant	Electronics Store
3	Cedarbrae	Thai Restaurant	Athletics & Sports	Bakery	Bank	Fried Chicken Joint	Lounge	Caribbean Restaurant	Hakka Restaurant	Convenience Store	Grocery Store
4	Clairlea, Golden Mile, Oakridge	Bus Line	Soccer Field	Bakery	Intersection	Fast Food Restaurant	Bus Station	Park	Metro Station	Vietnamese Restaurant	Coffee Shop
5	Clarks Corners, Sullivan, Tam O'Shanter	Pizza Place	Fried Chicken Joint	Thai Restaurant	Bank	Fast Food Restaurant	Italian Restaurant	Pharmacy	Noodle House	Chinese Restaurant	Vietnamese Restaurant
6	Cliffcrest, Cliffside, Scarborough Village West	American Restaurant	Motel	Hobby Shop	Grocery Store	General Entertainment	Fried Chicken Joint	Fast Food Restaurant	Electronics Store	Department Store	Cosmetics Shop
7	Dorset Park, Scarborough Town Centre, Wexford ...	Indian Restaurant	Pet Store	Chinese Restaurant	Latin American Restaurant	Vietnamese Restaurant	Sandwich Place	Soccer Field	Fried Chicken Joint	Fast Food Restaurant	Electronics Store
8	East Birchmount Park, Ionview, Kennedy Park	Chinese Restaurant	Department Store	Coffee Shop	Hobby Shop	Clothing Store	Grocery Store	General Entertainment	Fried Chicken Joint	Fast Food Restaurant	Electronics Store
9	Guildwood, Morningside, West Hill	Intersection	Electronics Store	Rental Car Location	Breakfast Spot	Pizza Place	Medical Center	Mexican Restaurant	Vietnamese Restaurant	Coffee Shop	Fried Chicken Joint
10	Highland Creek, Rouge Hill, Port Union	Moving Target	Bar	Vietnamese Restaurant	Grocery Store	General Entertainment	Fried Chicken Joint	Fast Food Restaurant	Electronics Store	Department Store	Cosmetics Shop
11	L'Amoreaux West	Fast Food Restaurant	Chinese Restaurant	Indian Restaurant	Pharmacy	Cosmetics Shop	Coffee Shop	Grocery Store	Bubble Tea Shop	Nail Salon	Pizza Place
12	Maryvale, Wexford	Smoke Shop	Bakery	Breakfast Spot	Middle Eastern Restaurant	Vietnamese Restaurant	Coffee Shop	General Entertainment	Fried Chicken Joint	Fast Food Restaurant	Electronics Store
13	Rouge, Malvern	Fast Food Restaurant	Vietnamese Restaurant	Clothing Store	Grocery Store	General Entertainment	Fried Chicken Joint	Electronics Store	Department Store	Cosmetics Shop	Convenience Store
14	Scarborough Village	Playground	Convenience Store	Vietnamese Restaurant	Clothing Store	Grocery Store	General Entertainment	Fried Chicken Joint	Fast Food Restaurant	Electronics Store	Department Store
15	Woburn	Coffee Shop	Korean Restaurant	Pharmacy	Vietnamese Restaurant	Clothing Store	General Entertainment	Fried Chicken Joint	Fast Food Restaurant	Electronics Store	Department Store

It is fairly obvious that western restaurants and Asian cuisines are most common (and likely to be popular) in all these neighborhoods. In addition, lite shopping spots and places to chill out are also welcomed in all the areas, indicating that these neighborhoods should be visitor-friendly and sportive.

Conclusion:

The neighborhoods of Scarborough are indeed of high cultural diversity and have well established public constructions that suit both visitors and residents for their needs. Tourists fond of outdoor activities, lite shopping, and Asian/American cuisines should be able to enjoy their trips to Scarborough.