Data Science Course – Final Capstone

Title: Area study for a new boutique café in the Toronto area

Introduction and Business Problem:
Our client, a startup boutique coffee shop and cafe, would like to open their flagship location near Berczy Park in Toronto. They believe that this location within Toronto will provide good foot traffic and ultimately help establish the brand. They are aware of competition from other existing local and franchise coffee shops in the neighborhood, but they feel their unique ambience and custom coffee and pastry selections will provide a different experience for their customers. They have asked me to do a market study of existing cafes in the area as well as other businesses to determine if this is a good location for their store.
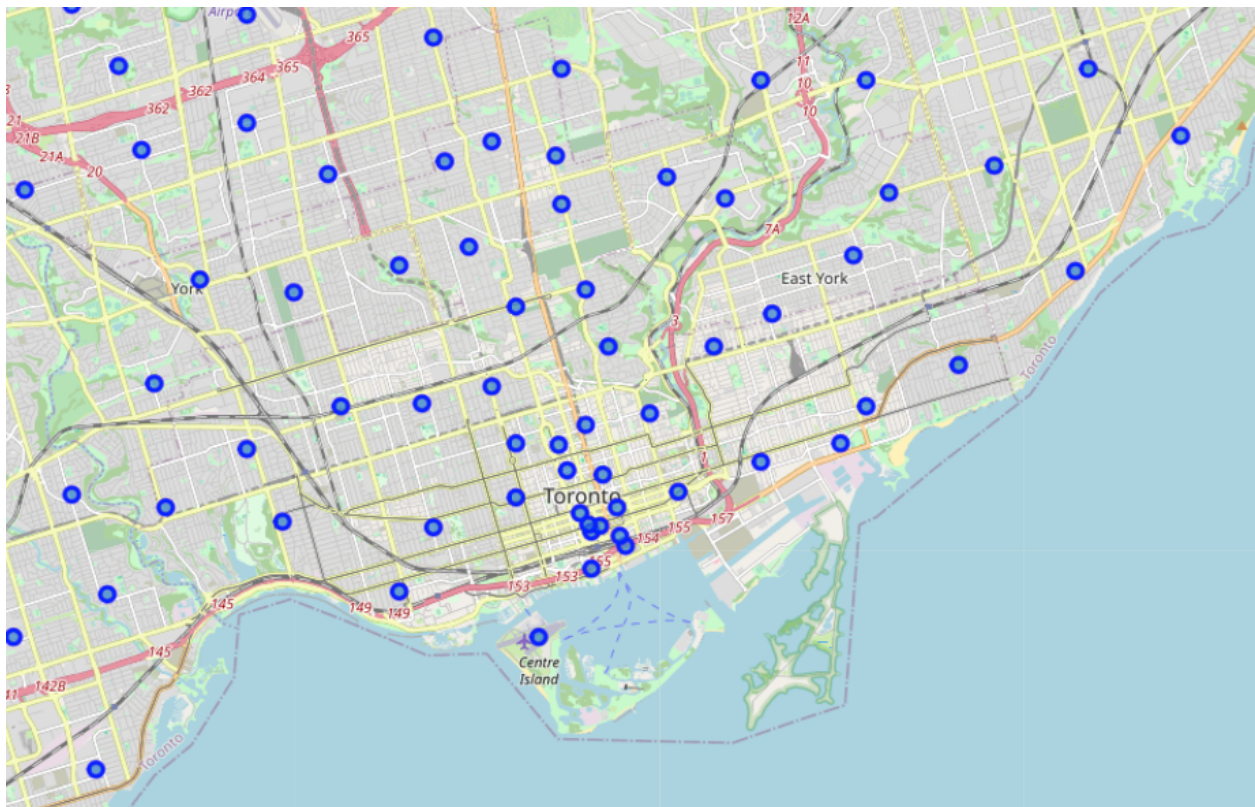
Data:
For this analysis, we will use the Borough and Neighborhood information from Wikipedia, along with location data for the area from Four Square. The analysis will produce the relevant areas and neighborhoods (specifically Berczy Park) and provide the nearby businesses. Evaluation of these businesses will produce the nearby competitor cafes to better understand the market situation.

This data is available in the "Capstone_Data" Jupyter notebook at the following GitHub link: https://github.com/AliGitHub2020/DataScience_Capstone_Final

	PostalCode	Borough	Neighborhood
0	M3A	North York	Parkwoods
1	M4A	North York	Victoria Village
2	M5A	Downtown Toronto	Regent Park, Harbourfront
3	M6A	North York	Lawrence Manor, Lawrence Heights
4	M7A	Downtown Toronto	Queen's Park, Ontario Provincial Government
5	M9A	Etobicoke	Islington Avenue, Humber Valley Village
6	M1B	Scarborough	Malvern, Rouge
7	M3B	North York	Don Mills
8	M4B	East York	Parkview Hill, Woodbine Gardens
9	M5B	Downtown Toronto	Garden District, Ryerson
10	M6B	North York	Glencairn
11	M9B	Etobicoke	West Deane Park, Princess Gardens, Martin Grov...

Methodology:

To assist the client in their request, we had to pull data from different sources, namely Wikipedia and Four Square, to first identify the main boroughs and neighborhoods in the Toronto area and correlate them with their respective postal codes. Further analysis and merging with available Four Square data allowed for further details about the area, specifically providing information about the neighborhood in question, Berczy Park. Analysis indicated the most frequented shops in the neighborhood, which would give our client a good idea of the caliber of competition. Although an area with zero competition may be desirable, but this also poses a challenge, as the area may not be receptive to such an establishment. Healthy competition is preferred, which will be see in the results section of this report.

Results:

Analysis of the data produced the top ten common venues in each neighborhood. For the Berczy Park area specifically, the top ten most common venues are listed below:

1. Coffee Shop
2. Cocktail Bar
3. Beer Bar
4. Farmers Market
5. Seafood Restaurant
6. Bakery

7. Cheese Shop
8. Restaurant
9. Butcher
10. Shopping Mall

```
In [107]:  # Let's check how many venues were returned for each neighborhood

           Toronto_venues.groupby('Neighborhood').count()
Out[107]:
```

Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Berczy Park	57	57	57	57	57	57

```
In [113]:  # Let's print each neighborhood along with the top 5 most common venues

           num_top_venues = 5

           for hood in Toronto_grouped['Neighborhood']:
               print("----"+hood+"----")
               temp = Toronto_grouped[Toronto_grouped['Neighborhood'] == hood].T.reset_index()
               temp.columns = ['venue','freq']
               temp = temp.iloc[1:]
               temp['freq'] = temp['freq'].astype(float)
               temp = temp.round({'freq': 2})
               print(temp.sort_values('freq', ascending=False).reset_index(drop=True).head(num_top_venues))
               print('\n')

           ----Berczy Park----
                        venue  freq
           0       Coffee Shop  0.09
           1     Cocktail Bar  0.05
           2         Beer Bar  0.04
           3   Farmers Market  0.04
           4       Restaurant  0.04
```

Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
Berczy Park	Coffee Shop	Cocktail Bar	Beer Bar	Farmers Market	Seafood Restaurant	Bakery	Cheese Shop	Restaurant	Butcher	Shopping Mall

Discussion:
This detailed analysis of the available information and specifically the Berczy Park neighborhood indicates that the area is a very popular location for dining (food and beverage establishments). Of the top ten most common venues (as indicated by Four Square data), the top eight are food and beverage venues, and only one of these is a coffee shop. A simple analysis of some of the other neighborhoods in the Toronto area shows a variety of different types of establishments.

This study was commissioned for the purpose of qualifying the Berczy neighborhood from a competitive perspective. Other factors, like property rental prices, zoning restrictions, etc. were not taken into consideration, and should be evaluated prior to any agreements.

Conclusion:
The Berczy Park neighborhood is a trendy area of Toronto with various food and beverage options. The proximity of these establishments means that there is a lot of foot traffic, which was one of the initial requests from the client. Additionally, analysis of the data indicates

healthy competition in the coffee shop and café business, as only one of the top ten venues in the area has such a classification.

Taking this information into consideration, and not withstanding other considerations, it is the recommendation of this report that a coffee shop and café in the Berczy Park neighborhood of Toronto will be a good location for this flagship shop.