APPLIED DATA SCIENCE CAPSTONE

PROJECT REPORT

Competitive Analysis of Restaurants in Toronto

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1. Introduction

(i) Background

Toronto is the most populous city of Canada. It is an international centre of business, finance, arts, and culture, and is recognized as one of the most multicultural and cosmopolitan cities in the world.

From a business perspective, there are a lot of opportunities because of the large and diverse consumer base.

(ii) Business Problem

Since Toronto is a well settled city, with a stable growth of almost 300 years, a lot of local businesses have already bloomed here. Therefore, it is difficult to find a neighborhood, with low competition and high growth opportunities.

Analyzing the concentration of a particular type of business will give insights about the feasibility of new establishments. For this project, the focus is on the restaurants or eateries only.

(iii) Target audience

Potential business owners, looking for opening up a new restaurant would benefit from this feasibility and competitive analysis of the various neighborhoods, as this will provide a filtered out result of the best possible locations for their new business.

2. Data Required

(i) List of Toronto neighborhoods – The list of the neighborhoods is obtained from the Wikipedia page for postal codes https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M This data is the starting point of this data analysis project. This list of neighborhoods will be analysed.

(ii) Latitude and Longitude values of each of these neighborhoods – This data is available at http://cocl.us/Geospatial_data This data will be useful to mark the various neighborhoods on a visual map for easy comprehension.

(iii) Latitude and Longitude values of Toronto City- Geopy library. This data will be used to mark the Toronto city, and further its neighborhoods.

(iv) Venue data – Data of different types of venues all around these neighborhoods of Toronto- This data is obtained by using Foursquare API. This data will be used to calculate the concentration of restaurant businesses around the various neighborhoods.

3. Methodology

Proposed Solution: The following steps will be used to perform the exploratory analysis

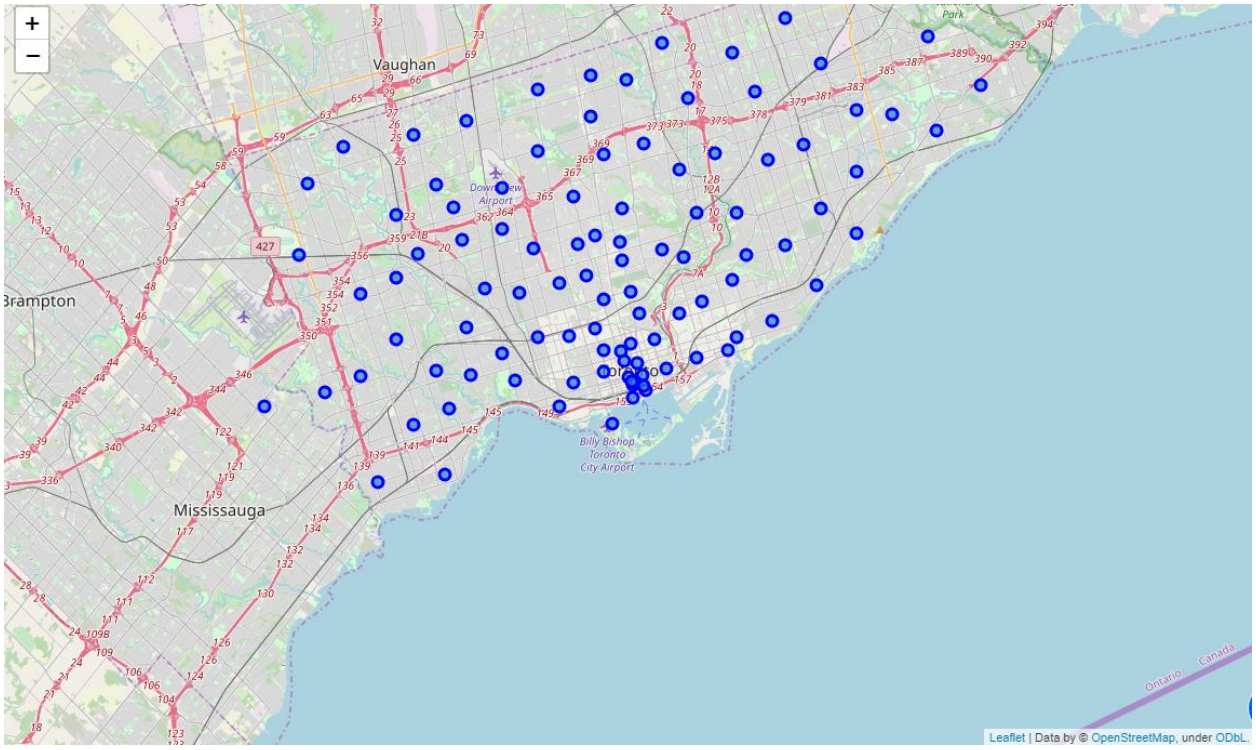
i. Explore the various neighborhoods of Toronto.
ii. Gather venue data of these neighborhoods.
iii. Filter out the venues that are eateries of some sort.
iv. Get count of eateries in each neighborhood. Sort the result.
v. The neighborhood with lowest eateries would be the best suited location for opening up a new restaurant.

Assumptions: The basic assumptions to plan the solution methodology and to reach the conclusion are as follows-

i. Areas which have low count of restaurants have better business growth opportunity for a new restaurant. The basis of this assumption is that low competition would amount to more opportunities.
ii. Areas which have no restaurants may have some incomprehensible problems. So any area where no restaurant is operating must be excluded.

4. Results

Exploring the Toronto neighborhoods gave the following result. The following map has various neighborhoods marked in blue colour.

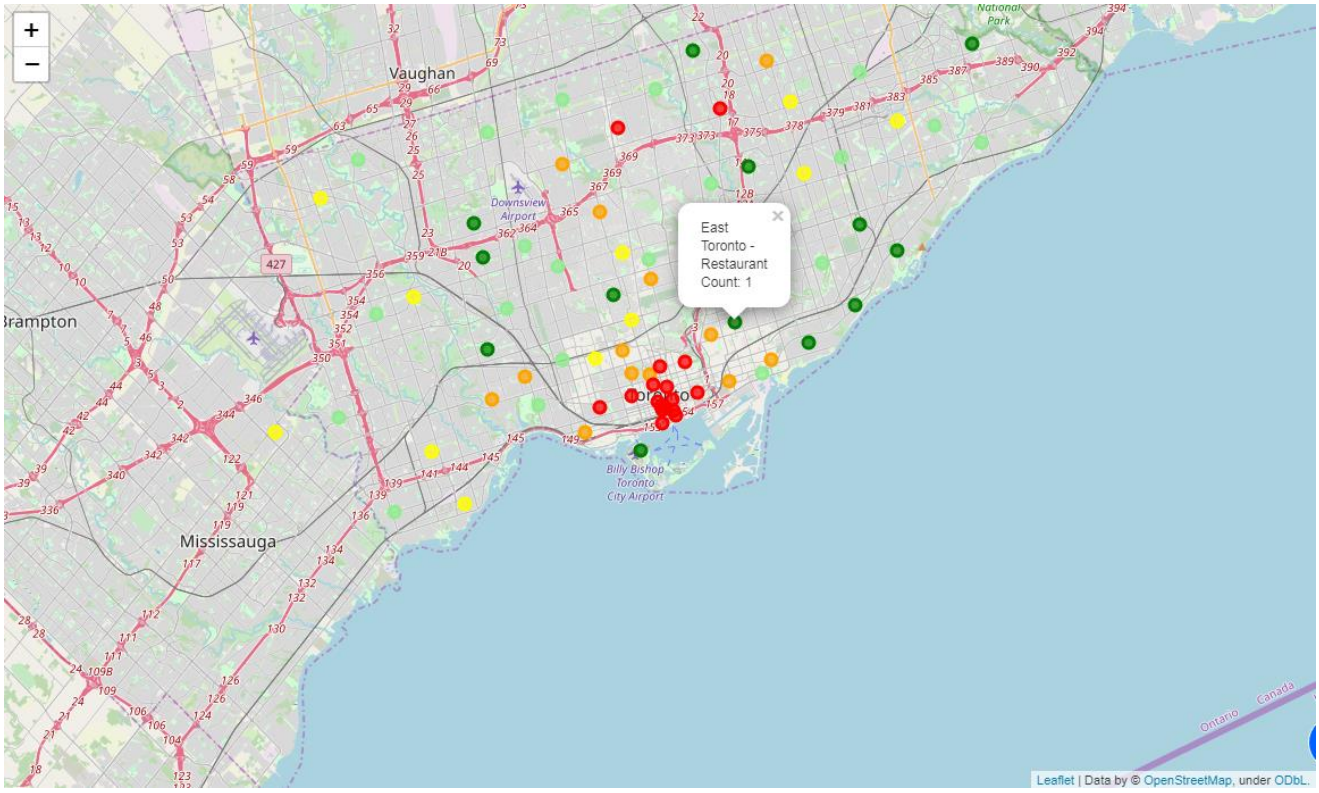


Further analysis revealed a number of potential neighborhoods, with at least 1 eatery venues. Following is a list of top few most feasible neighborhoods.

Neighborhood	Latitude	Longitude	Venue Count
Birch Cliff / Cliffside West	43.692657	-79.264848	1
CN Tower / King and Spadina / Railway Lands / ...	43.628947	-79.394420	1
Cliffside / Cliffcrest / Scarborough Village West	43.716316	-79.239476	1
Downsview	43.728496	-79.495697	1
East Toronto	43.685347	-79.338106	1
Forest Hill North & West	43.696948	-79.411307	1
Hillcrest Village	43.803762	-79.363452	1
Kennedy Park / Ionview / East Birchmount Park	43.727929	-79.262029	1
Malvern / Rouge	43.806686	-79.194353	1
North Park / Maple Leaf Park / Upwood Park	43.713756	-79.490074	1
Parkwoods	43.753259	-79.329656	1
Runnymede / The Junction North	43.673185	-79.487262	1
The Beaches	43.676357	-79.293031	1
Del Ray / Mount Dennis / Keelsdale and Silvert...	43.691116	-79.476013	2
Golden Mile / Clairlea / Oakridge	43.711112	-79.284577	2
Guildwood / Morningside / West Hill	43.763573	-79.188711	2
Humber Summit	43.756303	-79.565963	2
Kingsview Village / St. Phillips / Martin Grov...	43.688905	-79.554724	2
Lawrence Manor / Lawrence Heights	43.718518	-79.464763	2
Victoria Village	43.725882	-79.315572	2

The following map displays the above result on the map of Toronto. Various neighborhoods are color coded based on the number of eateries present, red having the most count and dark green having the least count.

On clicking the neighborhood, the respective name and count of eateries in that neighborhood is displayed in pop up text.


East
Toronto -
Restaurant
Count: 1
Vaughan
Brampton
Mississauga
Downsview
Airport
Billy Bishop
Toronto
City Airport
427
Leaflet | Data by © OpenStreetMap, under ODbL.

5. Discussion

The analysis provided a number of candidate locations to choose from, for opening a new restaurant in Toronto. As can be seen from the map above, there are a lot of neighborhoods with high density of eateries. A new business will definitely struggle to get established here.

In comparison, nearby neighborhoods with lower density of eateries provide much better growth opportunities.

6. Conclusion

The neighborhoods with lower number of eateries, given in the result section, would be the best suited for a new restaurant. These neighborhoods will provide ample growth opportunities, as well as least resistance from competitors.

Further analysis based on nearby venues is possible. For example, eateries which are nearby to a tourist destination would perform better than the ones in a residential neighborhood.