

## Capstone Project – Battle of the Neighborhoods

### INTRODUCTION/BUSINESS PROBLEM

In this project, I will analyze different neighborhoods in the Toronto area and determine which neighborhood will be most fit for a large company to start a new branch in. The company caters towards families with young children, so it will want to build its new branch in a neighborhood in Toronto that is family friendly. It will also want to be in a neighborhood that will provide a good quality of life for its employees, with a wide variety of restaurants and venues surrounding the workplace. The target audience is any high-level official in a large company looking to expand.

### DATA

I will be using data on Toronto's neighborhoods from the Wikipedia page:

[https://en.wikipedia.org/wiki/List\\_of\\_postal\\_codes\\_of\\_Canada:\\_M](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M) . This dataset contains information regarding the postal code, borough, and neighborhoods of different areas in Toronto. The Foursquare API will also be used to gather more information about each neighborhood regarding what venues are in each one. This information will be used to determine which neighborhood is best fit for a new branch of a large, successful company.

### METHODOLOGY

In order to go about analyzing the data, I first cleaned the data using Beautiful Soup in order to turn it into a table that could be analyzed using the “pandas” library. I took out all postal codes in which a borough was not assigned. If there was a borough assigned, but no neighborhood assigned, I used the borough name as the neighborhood name. I then used geocoder to get the

latitude and longitude values for every postal code. Then, in order to limit the number of data points I was working with, I found all boroughs that contained the word “Toronto”, ensuring that we were solely looking at neighborhoods in Toronto. Using the Foursquare API, I then found defined a method that could be used to find nearby venues in each neighborhood. I used this method on my data of Toronto neighborhoods, to get a list of all venues near different neighborhoods in Toronto. I defined yet another method to return the most common venues for a given neighborhood, and using this method, I was able to create a table that listed the 10 most common venues for every neighborhood. Using k-Means, I also was able to form clusters of neighborhoods that let me better analyze all of my data.

## RESULTS

Between the 38 neighborhoods in Toronto, there are 237 different types of venues. The two venues that are most often the “1<sup>st</sup> Most Common Venue” in any given neighborhood are coffee shops and cafés. Given the relaxed nature of both of these venues, it is easy to deduce why they are so successful in a big city. Some neighborhoods, like the CN Tower area, are clearly more commercial, given that its most common venues are airport services, airport lounges, airport terminals, etc., while others are more touristy, like the Victoria Hotel area.

## DISCUSSION

The 38 neighborhoods in Toronto all seem to be pretty similar. Many of the neighborhoods’ most common venues are different types of restaurants or gyms or grocery stores. However, if a company wanted to branch out into a family-friendly neighborhood, after analyzing my data, I would recommend either Rosedale or Lawrence Park neighborhoods. Rosedale’s 10 most

common venues include parks, playgrounds, trails, restaurants, and diners. Distribution centers are also quite common in the neighborhood, which means other companies have found success in the neighborhood. There are no bars or any venues that are conducive to nightlife, which means it is probably a pretty quiet neighborhood, good for employees to raise a family in too. On the other hand, I would also recommend Lawrence Park because its 10 most common venues include parks, swim schools, college rec centers, and different types of restaurants. Whereas Rosedale's playgrounds and trails might be good for younger children, Lawrence Park's venues seem to cater to older teenagers and high-schoolers. Similar to Rosedale though, there are no venues that would seem to encourage a busy nightlife, so it seems to be a nice residential area for employees to settle. However, there is no sign of distribution centers, which makes it unsure if a company could successfully expand here.

## CONCLUSION

If a large, family-oriented company wanted to expand to Toronto to build a new branch, I would recommend the expand to either the Rosedale or Lawrence Park neighborhood. These two neighborhoods could benefit from new job opportunities and as seen by the venues present in each neighborhood, would be a great spot for employees to raise a family. Additionally, since the company's target audience is young children, these two neighborhoods would provide the greatest opportunity for the company to directly reach its consumers.