Capstone Project:

Finding the best location to open a new restaurant in Nth York

Introduction:

In this project, we will try to find the best possible location (a neighborhood) for a restaurant in the city of North York, in Ontario, Canada.

The way we will find the best possible neighborhood to open a new restaurant in is by searching the neighborhood with the minimum number of alredy existing restaurants, we will know how many rastaurants are currently open by searching in the Foursquare API.

This information could be very useful to any person who is looking to open a new restaurant in the North York Borough. This notebook could be useful to see which neighborhood in North York is the one with the greatest number of currently open restaurants and consider it as another possible location due to it's characteristics.

Data description

For convinience reasons the data we will be using is a part of the one used in the last lab of the course. That data consisted on a dataframe with five columns, which were:

Postal code: Postal code of the area.

Borough: Borough to which the neighborhood(s) belongs.

Neighborhood: Name of the neighborhood(s), it can be more than one because the dataset was originally created based on the postal code.

Latitude: geographical latitude of the neighborhood.

Longitude:geographical longitude of the neighborhood.

I will add the .csv file to the repository so you cand find it eassier.

The final data set will look like this:

	Postal code	Borough	Neighborhood	Latitude	Longitude
0	M2H	North York	Hillcrest Village	43.803762	-79.363452
1	M2J	North York	Fairview, Henry Farm, Oriole	43.778517	-79.346556
2	M2K	North York	Bayview Village	43.786947	-79.385975
3	M2L	North York	York Mills, Silver Hills	43.757490	-79.374714
4	M2M	North York	Willowdale, Newtonbrook	43.789053	-79.408493

Methodology

To find the best possible location, we will simply use the Foursquare API to know the number of opened restaurants on each area using it's longitude and latitude.
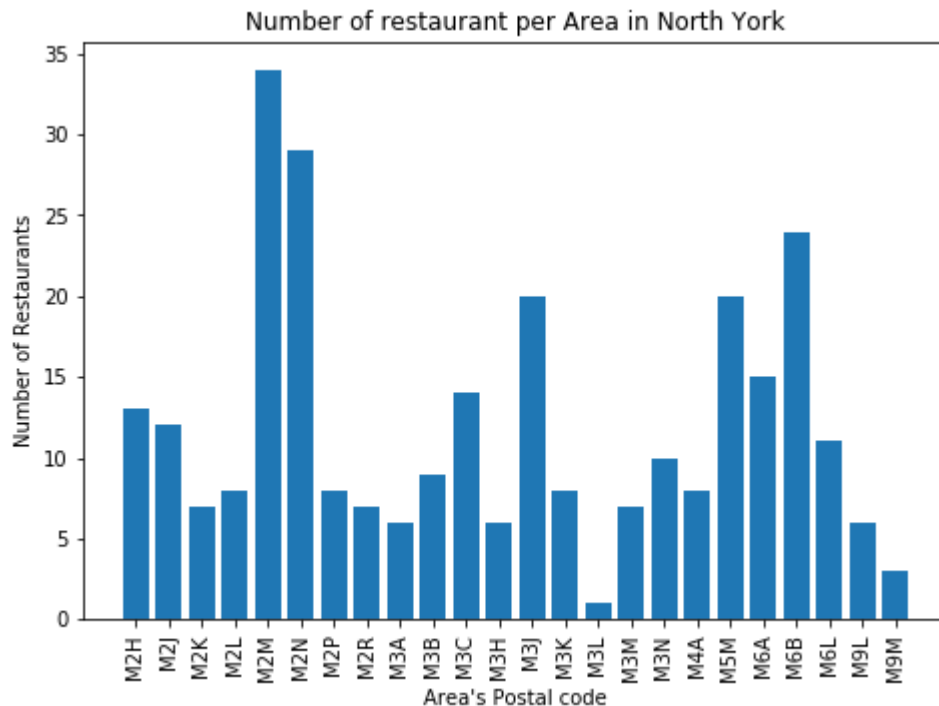
After we count the number of restaurants on each area, we will append them as a new column on our data set, and will look like this:

	Postal code	Borough	Neighborhood	Latitude	Longitude	Number
0	M2H	North York	Hillcrest Village	43.803762	-79.363452	13
1	M2J	North York	Fairview, Henry Farm, Oriole	43.778517	-79.346556	12
2	M2K	North York	Bayview Village	43.786947	-79.385975	7
3	M2L	North York	York Mills, Silver Hills	43.757490	-79.374714	8
4	M2M	North York	Willowdale, Newtonbrook	43.789053	-79.408493	34

Results

So now we know the number of alredy existing restaurant on each area based on the postal code of the North York Borrough. And by watching the bar graph, we know that the area with the minimum number of restaurants is the one with the M3L postal code, wich is in the Downsview neighborhood with latitude: 43.739015 and longitude -79.506944 with only one alredy existing restaurant.

Please notice that since we said at the introduction of this notebook, another interesting approachto find the best possible location to open a new restaurant could be finding the area with the biggest number of alredy existing restaurants, beacuause it can be considered as the most commercial area, so we did that too: we foud that there is an area with 34 existing restaurants, and is the one with the postal code M2M, with 2 different neighborhoods: Willowdale and Newtonbrook.

Number of restaurant per Area in North York

Discussion

One problem with this exercise was that the original data set we used was grouped by postal code, so in the case of a very big Neighborhood there are more than one postal codes for the same neighborhood.

Other problem with this data set is that there are some postal codes for more than one neighborhood so it's not the most accurate way to find the best possible location.

Conclusions

We found two interesting locations to open a new restaurant, depending on if we want to open it in the area with the most or least ammount of alredy existing restaurant on it.

If we want to have the least competitors in the area, we should open a new restaurant in the Downsview neighborhood, with only one opened restaurant.

On the other hand, if we want to open it on the "most commercial area", we should open it on Willowdale or Newtonbrook, and we will have 34 competitors in there.