**INTRODUCTION**

**Problem Statement:**

To find the best location for the new opening of a luxury restaurant in Toronto, Canada and the preferred type of restaurants in various neighborhoods. Targeted customers are business entrepreneurs in the area of Toronto, Canada.

**Some important background about the problem statement:**

1. Opening up restaurant require a huge investment and time to identify an area and doing the setup.

2. If the area in which the restaurant is going to open is not having a good sale then it affects the business with a huge overhead cost.

3. There is cost involve in opening and closing restaurants.

4. To minimize this cost overhead we need to identify area where we should setup the restaurant.

5. Business has identified that opening up restaurant in neighborhood where visiting is high will generate better business and chances of closing it down is very less.

6. We have to come up with solution to identify the type of restaurant respective to the neighborhood in which to open the restaurant.

**DATA REQUIRED**

**Important Data required solving the problem and their source:**

* Neighborhood in Toronto: <https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M>
* Neighborhood's average income: <https://en.wikipedia.org/wiki/Demographics_of_Toronto_neighbourhoods>
* Neighborhood's criminality rate:

<https://www.toronto.ca/city-government/data-research-maps/open-data/open-data-catalogue/#6ff36980-d2f4-f438-d940-3e6a5c315588>

* Other similar restaurants in the vicinity: Foursquare.
* Neighborhood's geo position.

**METHODOLOGY**

* Basic skills which were thought in the week 3 lab.
* Scrapping the data from Wikipedia website of neighborhoods.
* Scrapping the data from Wikipedia website of average income.
* Scrapping the data from Wikipedia website of criminality rate.
* Then used Geo Location to add latitudes and longitudes.
* Majorly relied on Foursquare API to retrieve all venues of each neighborhoods, then group by each neighborhood and to count how many venues before filter top 10 most common venue types of each neighborhood.
* Used an HTTP client (requests) to get the document behind the URL
* Used soup object
* Used one hot encoding
* Analyzing the results and finding solution

**RESULTS**

The top five results in the table are as follows,

* Alderwood, Long Branch’s 1st Most Common Venue is PIZZA PLACE
* Bathurst Manor’s 1st Most Common Venue is COFFEE SHOP
* Bayview Village’s 1st Most Common Venue is JAPANESE RESTAURANT
* Cliffcrest’s 1st Most Common Venue is AMERICAN RESTAURANT
* Dorset Park’s 1st Most Common Venue is INDIAN RESTAURANT

**DISCUSSIONS & CONCLUSION**

As in the results we got the respective 1st, 2nd, 3rd and so on Most Common Venue in their neighborhoods, if we want to take a decision of setting up a restaurant in a particular neighborhood in Toronto, Canada, we should set up the 1st Most Common Venue for getting high returns as Business has identified that opening up restaurant in neighborhood where visiting is high will generate better business and chances of closing it down is very less. So, if we want to set up a restaurant in Alderwood, Long Branch, preferable type of restaurant is PIZZA PLACE. So, we can select the type of restaurant in their particular neighborhoods.