Capstone Project - The Battle of the Neighborhoods - Prediction of an optimal location for a restaurant

1. *Introduction*

In this project we will try to find an optimal location for a restaurant.
Specifically, this report will be targeted to stakeholders interested in opening a French restaurant in Toronto, Canada.

1.1 *Background*

There are too many restro bars, coffeeshops etc. in the region. Therefore its is advantageous to use Data Science techniques to select an apt location in the region so that the business gets maximum returns.

2. *Problem*

Since there are lots of restaurants in Toronto we will try to detect locations that are not already crowded with restaurants.
We are also particularly interested in the areas with no French restaurants in the vicinity.
We will use our data science powers to generate a few most promising neighborhoods based on this criteria.
Advantages of each area will then be clearly expressed so that best possible final location can be chosen by stakeholders.

3. *Data*

Based on definition of our problem, factors that will influence our decision are:
- Number of existing restaurants in the neighborhood (any type of restaurant)
-Number of and distance to French restaurants in the neighborhood.

Following data sources will be needed to extract/generate the required information:
- Wikipedia page: https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M
- Geographical coordinates of each neighborhood
- Number of restaurants and their type and location in every neighborhood will be obtained using Foursquare API.

For example, we can use the latitude and longitude of the neighborhood restaurants as the centroids and the area of interest say around 25km radius within the city.