# Capstone Project

IBM DATA SCIENCE

# FINDING THE OPTIMAL BUSINESS LOCATION USING GEOSPATIAL CLUSTER VISUALIZATION

Project by:-
Rahul Goswami

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# Problem description and Business Understanding

In this project the problem that will be attempted to be solved is as follows:-

A local business in our case is a reputed chain of Chineese Restaurants who wants to extend to Toronto which experiences a decent influx of chineese people every year. Henceforth, we have been tasked with a goal to demarcate the Optimal spot(hotspot in geospatial visualization) or rephrasing the above lines: Find out the best possible location for a restaurant which will lead to an increased profitability with minimum competition and regular customer influx from around different neighborhoods.

For, this situation we will be exploring the different neighbourhoods datasets and analysing them after we build a classification model based on machine learning algorithms taking all possible parameters into consideration. We will also be using the ‘Foursquare API’ to provide us with deep Insight into every neighborhood in Toronto which will label be used to cluster venues accordingly.

# Data Requirements

The dataset that will be used here is the list of all borough along with their neighbourhoods enlisted by Postal codes which can be found at: https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M

A web scraping tool will be utilized to scrape the tables on this page into a dataframe which can be used by our machine learning algorithms for further analysis.

Also an ethnic distributions of neighbourhoods which contain ‘Chineese’ people as one of the top three ethnic groups are required which is obtained from:
https://en.wikipedia.org/wiki/Demographics_of_Toronto

Further, Foursquare API will be used to find out the top venues for each neighbourhood and if there are competing local businesses in the area.This will serve as the basis for clustering the neighborhoods and hence each cluster will be analysed critically for risk evaluation for setting up businesses in the area.