# This is the notebook for Coursera Applied Data Science Capstone Project

## 1- Introduction

Open a new business can be a challenge. Will it be a sucess or will it fail? What kind of business I can open here? Where is the best place to open this kind of business?

This are some questions that motivated this project. With some data and knwoledge, we will try to awnser some of this questions.

This project uses **Foursquare Database** to find Toronto's nearby restaurants and its rates trying to understand where is the best place to open a new restaurant and what cuisine to focus.

## 2- Data

For this example, I will use Toronto as baseline, but it can be use with any city that exist in Foursquare database.

I will use more venues' informations than previous projects, such as price, popularity, if its clean or if its require any dress code.

Following data sources will be needed to extract/generate the required information:

* centers of areas will be generated algorithmically and approximate addresses of centers of those areas will be obtained using **Google Maps API reverse geocoding**
* information about restaurants as their type and location in every neighborhood will be obtained using **Foursquare API**
* coordinate of Toronto's neighborhoods will be obtained using **Google Maps API geocoding**

## 3- Methodology

For this project, our focus is to indentify each restaurant and cluster then in categories, identify it's location and show the occurency of each for each neighborhood and show its rating to try to understand each neighborhood preferency.

## 4- Results and Discussion

The study shows that there are concentration of some types of restaurants. There is some density in restaurants is some streets.

One tendency shown on this study is that, where there are similar restaurants, the rating of each usally is lower than where there are only one type of each cuisine. With this we can conclude that diversity in cuisine types benefits all restaurants around some area.

As a side effect of the study, we found areas which are lacking restaurant services, which can be good places to start some fresh new, without competition.

## 5- Conclusion

The purpose of this study was to help new business deciding where and what to do. Although we face some adversities with lack of data, or API related problems, this study gave us some usefull information. By analizing the distribution of some service we could find some tendency and correlations that can help new restaurants.

This study was the first idea in this field and it should be used as an example. The main idea is that we can use this core concepts to work with any type of business, not only restaurants, and anywhere. With good database and some effort, this idea can be implemented for any situation.

​