Capstone Project - The Battle of Neighborhoods (Week 1)

INTRODUCTION：

This is a capstone project proposal base on Foursquare API. The entrepreneurs Always find the location in groups instead of being found the location spreadly throughout a community. This is because the entrepreneurs can maximize income in the market by Hotelling model theorem[1], so the entrepreneurs might think of opening its business in areas where Cafés nearby. With the purpose in mind, finding the location to open such a Café is one of the most important decisions for the entrepreneur. I am leveraging k-means algorithm to help him find the most suitable location[2].

BUSINESS PROBLEM：

The objective of this capstone project is to find the most suitable location for the entrepreneurs to open a new Café in Kaohsiung, Taiwan. By using data science methods and statistics tools to analyze Latitude and Longitude for the best location to open a new Café. Machine learning algorithms such as k-means is the best solution for this project. For example set k groups and fit the geo data with k-means algorithm, and then we will find k centers in the end. These centers are candidate location for a new Café. This project aims to provide solutions to answer the business question : In Kaohsiung, if an entrepreneur wants to open a Café, where should they consider opening it?

TARGET AUDIENCE：

The entrepreneur who wants to find the best location to open a new Café.

DATA SECTION：

To solve this problem, we will need below data:

- List of neighborhoods in in Kaohsiung, Taiwan.
- Latitude and Longitude of these neighborhoods.
- Venue data related to Café. This will help us find the neighborhoods that are more suitable to open a new Café.

EXTRACTING THE DATA：

- Scrapping of Kaohsiung neighborhoods via Google maps API.
- Getting Latitude and Longitude data of these neighborhoods via Geocoder package.
- Using Foursquare API to get venue data related to these neighborhoods.

REFERENCE：

[1] Why do competitors open their stores next to one another?, Jac de Haan , https://www.youtube.com/watch?v=jILgxeNBK_8&feature=emb_title.

[2] Data Science Project Week 4th, Rupeshvins, https://github.com/rupeshvins/IBM-Applied-Data-Science-Capstone/blob/master/Data%20Science%20Project%20Week%204th%20-%20IBM.pdf.