IBM Capstone Project
(The Battle of Neighborhoods)

1. Problem

1.1. Description

Exploring venues in İstanbul, Turkey using Foursquare and Zomato API

İstanbul is a large city and trade capital of Turkey, which is composed of a number of sectors and has a total area of 5.461 square km. There are many venues (especially restaurants, hotels and cafes) which can be explored.

İstanbul is placed at the connection of Europa and Asia. City and continents are divided by the Bosphorus, that is connect the Black Sea to Marmara Sea. It was the capital city of famous empires, such as East Rome and Ottoman. So it has many historical places, and very attractive for tourists.

Whenever a tourist is visiting a city they start looking for places to visit during their stay. They primarily look for places based on the venue ratings across all venues and the average prices such that the locations fits in their budget.

This project explores various venues in İstanbul and attributes the data based on user ratings and average price. To explore this information, this project involves the data from both Foursquare API and the Zomato API to fetch complete information of various venues (including name, address, category, rating and price). Further, a map of the venues with specific color attributes will be plotted to highlight their position, and information about these venues.

1.2. Interested Audience

The target audience for such a project are two types:

- Firstly, any person who is visiting İstanbul, Turkey can use the plots and maps from this project to quickly select places that suit their budget and rating preferences.
- Secondly, a company can use this information to create a website or a mobile application, which is updated on a regular basis, to allow individuals to the city or even expand same functionality to other places.

2. Data

2.1. Data Sources

To get location and other information about various venues in İstanbul, a combination of data from the 2 API sources will be used together.

- Using the Four square's explore API (which gives venues recommendations), we obtained venues up to a range of 6 km from the centre of İstanbul.
- Using the name, latitude and longitude values, Zomato search API will be used to obtain venues. This API enables us to find venues based on search criteria (for us it is the name), latitude and longitude values and more.

2.2. Data Cleaning

Data collected from the 2 data sources, will be merged and cleaned carefully to get the final analyzable data.

From Foursquare API (https://api.foursquare.com/v2/venues/...), we will obtain the following information for each venue:

- Name: The name of the venue.
- Category: The category type as defined by the API.
- Latitude: The latitude value of the venue.
- Longitude: The longitude value of the venue.

From Zomato API (https://developers.zomato.com/api/v2.1/...), we will obtain the following additional information for each venue:

- Name: The name of the venue.
- Address: The complete address of the venue.
- Rating: The ratings as provided by many users.
- Price range: The price range the venue belongs to as defined by Zomato.
- Price for two: The average cost for two people dining at the place.
- Latitude: The latitude value of the venue.
- Longitude: The longitude value of the venue.