Coursera Applied Data Science Capstone
The battle of neighborhoods (week 1)

Subject: Find a suitable location to establish a burger restaurant in Athens metropolitan area, Greece

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1. Introduction

The concept:
Athens metropolitan area is famous for the variety of food and it is an expandable industry.

The objective:
In this project, our objective is to find the most suitable locations for investing in order to establish a new burger restaurant.

The selecting criteria:
We have to define the specifications for a location to be suitable:

- Be close to a metro railway station, in order to be easily accessible by the mass since Athens has a huge problem concerning the car parking
- Total number of similar restaurants with a radius of 1,000 meters around each metro station
- The nearest burger restaurant to the metro line station should also have some impact on the results

Tools that should be used:
We'll use the following tools:

- Watson studio Jupyter notebook with Python 3
- Foursquare developer API
- Install python libraries (conda and geopy)
- Import python libraries:
    - Pandas, for dataset modification
    - Numpy for handling numerical operations
    - Matplotlib, for generating meaningful charts
    - Folium, for map visualizations
- K-means machine learning unsupervised learning algorithm

2. Data

In order to meet the above requirements, we do need to download the following datasets from foursquare developer API:

- Metro stations in Athens and its suburbs. This is the venue category 4bf58dd8d48988d1fd931735 in foursquare.
- The burger restaurants around them (1,000 meters radius distance should be enough). This is the venue category 4bf58dd8d48988d1df931735 in foursquare.

For obtaining the correct data set, we should consider that a distance of 20 kilometers radium around the center of Athens (Syntagma square, a point which is being used as a benchmark for all the distances count from/to the city of Athens).