- **Introduction**

This Report refers to the final project of the Coursera Course Applied Data Science Capstone, The Battle of Neighborhoods. For this supposed problem It was assumed that I am an employee living in SQN 109 neighborhood and I had a new job offer in a new location, SQNW 307.

To know if it is worth to take the job I needed to know information about the new neighborhood in order to compare them with the ones about my current address.

The challenge is to compare the two neighborhood in Brasilia downtown to know if it this worth im my case to change jobs.

- **Data**

The data required to resolve this challenge is available in Foursquare dataset and was gotten using the company's API.

- **Methodology**

In order to try a solution for the problem presented, the methodology adopted was to use data science tools and analytical considerations to compare the two locations based on the criteria considered.

For this task we needed to walk by the following stages:

1. Collect Inspection Data
2. Explore and Understand Data
3. Data preparation and preprocessing
4. Modeling

Collecting and inspecting data was accomplished using the main available python libraries.

```
import numpy as np # library to handle data in a vectorized manner

import pandas as pd # library for data analsysis
pd.set_option('display.max_columns', None)
pd.set_option('display.max_rows', None)

import json # library to handle JSON files

#!conda install -c conda-forge geopy --yes # uncomment this line if you haven't completed the Foursquare API lab
from geopy.geocoders import Nominatim # convert an address into latitude and longitude values

import requests # library to handle requests
from pandas.io.json import json_normalize # tranform JSON file into a pandas dataframe

# Matplotlib and associated plotting modules
import matplotlib.cm as cm
import matplotlib.colors as colors

# import k-means from clustering stage
from sklearn.cluster import KMeans

#!conda install -c conda-forge folium=0.5.0 --yes # uncomment this line if you haven't completed the Foursquare API lab
import folium # map rendering library

print('Libraries imported.')
```

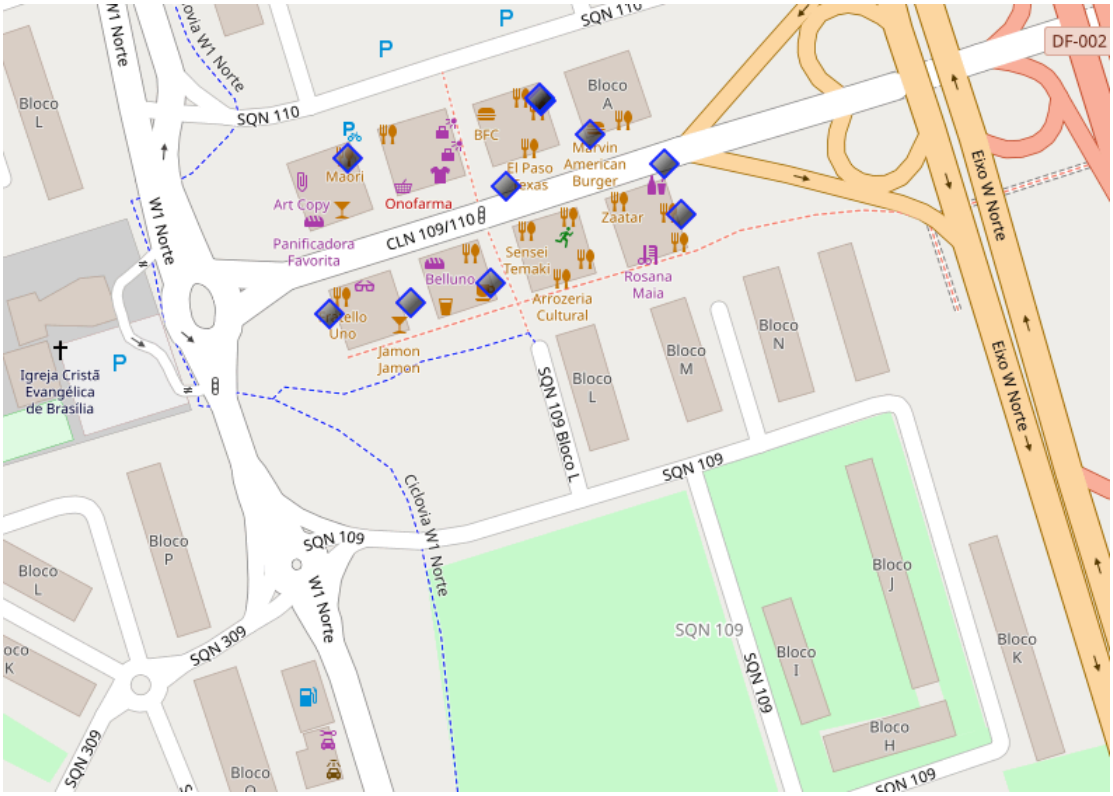
As mentioned in the sessions before, the data about the venues was supplied by Foursquare API with help of

	name	categories	lat	lng
0	Belgrado Burger	Burger Joint	-15.765269	-47.886073
1	Beirute	Bar	-15.765288	-47.886226
2	Sabor Glacê	Dessert Shop	-15.765050	-47.886070
3	Pedacinho Pizzas	Pizza Place	-15.764996	-47.885723
4	Ernesto Cafés Especiais	Café	-15.764533	-47.885339
5	Oba Hortifruti	Fruit & Vegetable Store	-15.768837	-47.887648
6	Feitiço Mineiro	Mineiro Restaurant	-15.768755	-47.887004
7	Santo Frango	Brazilian Restaurant	-15.769807	-47.888565
8	Dulce Patagonia	Café	-15.762403	-47.888881
9	Komboleria	Gluten-free Restaurant	-15.770808	-47.884292

- **Results and Conclusion**

The analysis has shown that SQN 109 area in Brasília is far more supplied with useful venues than SQNW 307. The comparison of the two locations. The first location has lots of venues available, while in the second one there are just a few.

SQN 109, Brasilia, Brazil - venues



SQNW 307, Brasilia, Brazil - venues

According to the results so the employee should not take the job offer.