
Capstone Project – Final report

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1 Introduction Section:

Discussion of the business problem and the audience who would be interested in this project.

1.1 Scenario and Background

I am a current resident of Paris, France. My current apartment offers me many advantages and assets, and the most important one is **the proximity** to many amenities and venues in the area, both for practical daily life matters (shops, gyms) and for entertainment (cafés, restaurant..).

We will consider a hypothetical scenario where i had been offered a job opportunity in Manhattan, NY. Although I am excited about it, I am concerned about the change that this implies, and I am mindful in keeping my same current. So, I need to find, in Manhattan, a comparable place where I can move in.

Instead of spending many hours reading articles and posts in google, I decided to use a data analysis approach based on exploration and clustering of both my current city (Paris) and the city I am planning to move in (NY), with the objective of f

1.2 Problem to be resolved:

The challenge to resolve is being able to **find a neighborhood** in Manhattan NY that offers similar characteristics and benefits to my current situation. Therefore, in order to set a basis for comparison, I want to place subject to the following conditions:

- Top amenities in the selected neighbourhood shall be similar to current residence (See item 2.1)
- Desirable to have venues such as coffee shops, restaurants Asian Thai, wine stores, gym and food shops
- As a reference, I have included a map of venues near current residence in Paris.

1.3 Interested Audience

This analysis might be of a good use (or at least inspiring) to each person or entity considering a similar move. The approach and methodologies used here are applicable in variety of cases. The use of FourSquare data and mapping techniques combined with data analysis will help resolve the key questions arisen.

2 Data Section:

Description of the data and its sources that will be used to solve the problem

2.1 Data of Current Situation

I Currently reside in the 14 th district of Paris, I use Foursquare to identify the venues around the area of residence which are then shown in the Paris map shown in methodology and execution in section 3. It serves as a reference for comparison with the desired future location in Manhattan NY

2.2 Data Required to resolve the problem

In order to make a good choice of a similar neighbourhood in Manhattan NY, the following data is required:

- List/Information on neighbourhoods which form Manhattan with their Geodata (latitude and longitude)
- Venues and amenities in the Manhattan neighbourhoods (e.g. top 10)

2.3 sources and manipulation

The list of Manhattan neighbourhoods is worked out during LAB exercise during the course. A csv file was created which will be read in order to create a dataframe and its mapping. The csv file 'mh_neigh_data.csv' has the following below data structure. The file will be directly loaded to the Jupiter Notebook. The clustering of neighbourhoods and mapping will be shown however. An algorithm was used to determine the geodata from Nominatim. The actual algorithm coding may be shown in 'markdown' mode because it takes time to run.

2.4 How the data will be used to solve the problem

The data will be used as follows:

- Foursquare and geopy data to map top 10 venues for all Manhattan neighbourhoods and clustered in groups (as per Course LAB)

2.5 Mapping of Data

The following maps were created to facilitate the analysis and the choice of the palace to live.

- Manhattan map of Neighbourhoods
- Manhattan map of clustered venues and Neighbourhoods