The Battle of the Neighborhoods - Report

1.Introduction & Business Problem :

Description of the Data:

The following data is required to answer the issues of the problem:

- List of Boroughs and neighborhoods of Mumbai with their geodata (latitud and longitud)
- List of Subway metro stations in Mumbai with their address location
- List of apartments for rent in Mumbai area with their addresses and price
- Preferably, a list of apartment for rent with additional information, such as price, address, area, # of beds, etc
- Venues for each Mumbai neighborhood (than can be clustered)
- Venues for subway metro stations, as needed

How the data will be used to solve the problem

The data will be used as follows:

- Use Foursquare and geopy data to map top 10 venues for all Mumbai neighborhoods and clustered in groups (as per Course LAB)
- Use foursquare and geopy data to map the location of subway metro stations , separately and on top of the above clustered map in order to be able to identify the venues and ammenities near each metro station, or explore each subway location separately
- Use Foursquare and geopy data to map the location of rental places, in some form, linked to the subway locations.
- create a map that depicts, for instance, the average rental price per square ft, around a radious of 1.0 mile (1.6 km) around each subway station - or a similar metrics. I will be able to quickly point to the popups to know the relative price per subway area.
- Addresses from rental locations will be converted to geodata(lat, long) using Geopy-distance and Nominatim.
- Data will be searched in open data sources if available, from real estate sites if open to reading, libraries or other government agencies , etc.

The procesing of these DATA will allow to answer the key questions to make a decision:

- what is the cost of rent (per square ft) around a mile radius from each subway metro station?
- what is the area of Mumbai with best rental pricing that meets criteria established?
- What is the distance from work place and the tentative future home?
- What are the venues of the two best places to live? How the prices compare?
- How venues distribute among Manhattan neighborhoods and around metro stations?
- Are there tradeoffs between size and price and location?
- Any other interesting statistical data findings of the real estate and overall data.

- **Problem Background:**
- Mumbai is the capital city of the Indian state of Maharashtra. According to United Nations, as of 2018, Mumbai was the second most populous city in India after Delhi and the seventh most populous city in the world with a population of 19.98 million. As per Indian government population census of 2011, Mumbai was the most populous city in India with an estimated city proper population of 12.5 million living under Municipal Corporation of Greater Mumbai. Mumbai is the center of the Mumbai Metropolitan Region, the sixth most populous metropolitan area in the world with a population of over 23.64 million. Mumbai lies on the Konkan coast on the west coast of India and has a deep natural harbor. In 2008, Mumbai was named an alpha world city. and has the highest number of millionaires and billionaires among all cities in India.

- I am a data scientist residing in Navi Mumbai , India .I enjoy many ammenities and venues in the area, such as various international cousine restaurants, cafes, food shops and entertainment. I have been offered a great opportunity to work for a leader firm in Mumbai Dalal Street Stock market,I am very excited and I want to use this opportunity to practice my learnings in Coursera in order to answer relevant questions arisen. The key question is : How can I find a convenient and enjoyable place similar to mine now in India? Certainly, I can use available real estate apps and Google but the idea is to use and apply myself the learned tools during the course. In order to make a comparison and evaluation of the rental options in Mumbai, I must set some basis, therefore the apartment in Mumbai must meet the following demands:

- apartment must be 2 or 3 bedrooms desired location is near a metro station in the Chhatrapati Shivaji Maharaj Terminus (CST)area and within 2 km radius price of rent not exceed 30,000 per month top ammenities in the selected neighborhood shall be similar to current residence 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 Mumbai.

- **Problem Description:**
- The challenge is to find a suitable apartment for rent in Mumbai that complies with the demands on location, price and venues. The data required to resolve this challenge is described in the following section 2, below.

- **Target Audience:**
- I believe this is a relevant challenge with valid questions for anyone moving to other large city in India, EU or Asia. The same methodology can be applied in accordance to demands as applicable. This case is also applicable for anyone interested in exploring starting or locating a new business in any city. Lastly, it can also serve as a good practical exercise to develop Data Science skills.

DATA:
One city will be analysed in this project : Mumbai City.
We will be using the below datasets for analysing Mumbai city

CONCLUSION:

This analysis is performed on limited data. This may be right or may be wrong. But if good amount of data is available there is scope to come up with better results. If there are lot of restaurants probably there is lot of demand. To relocate to Mumbai is getting easier with this process