Capstone Project - The Battle of Neighborhoods

Introduction

Hyderabad is the capital and largest city of the Indian state of Telangana.
With a population of over 12 million.
Hyderabad is one of the most ethnically diverse cities in the country, with over 51% of the city's population being migrants from other parts of India.
Hyderabad is having high information technology (IT) exporter.

Hyderabad has a unique food culture. Restaurants from all over the world can be found here in Hyderabad, with various kind of cuisines.
The food industry is always at a rise in Hyderabad, with 1000 plus restaurants currently active in the city, the number is still increasing.

The growing number of restaurants and dishes in Hyderabad is what attracts me to inspect the data to get some insights, some interesting facts and figures.
So, in this article I will be analyzing the near by restaurant in given neighborhood and also least number of restaurants in an area of Hyderabad so that will improve in food availability in lacking areas

Business Problem
The objective is to find near by restaurants at given location.
To get least and highest count of restaurants in Hyderabad Neighbourhood

Data
The data requires for the project:
- List of neighbourhoods in Hyderabad,Telangana.
- Coordinates of the neighbourhoods eg latitude and longtitude to visualize in term of map and to obtains the venue data.
- Venue data, data related to restaurants.

Methodology:

1. By using Wikipedia page (https://en.wikipedia.org/wiki/Category:Neighbourhoods_in_Hyderabad,_India), we will get a list of neighbourhoods in Hyderabad.
2. Use web scraping techniques to extract the data from the Wikipedia page, such as using beautifulsoup packages.
3. The coordinates of the neighbourhoods such as using Geocoder package will provide the latitude and longitude coordinates of the neighbourhoods.

4. Use Foursquare API to get the venue data for those neighbourhoods.

5. Foursquare API provides many categories of the venue data so extracted only restaurants data to solve the business problem.

6. Data cleaning, data Wrangling, feature engineering, etc before the machine learning to make sure the quality of data.

7. Apply machine learning, clustering and perform map visualization like Folium.

Results and Recommendations:

As per analysis of restaurants in Hyderabad, The number of restaurants was least in koti and other below areas. As koti is one shopping area and having huge flow of population it was recommended for food availability in this area.
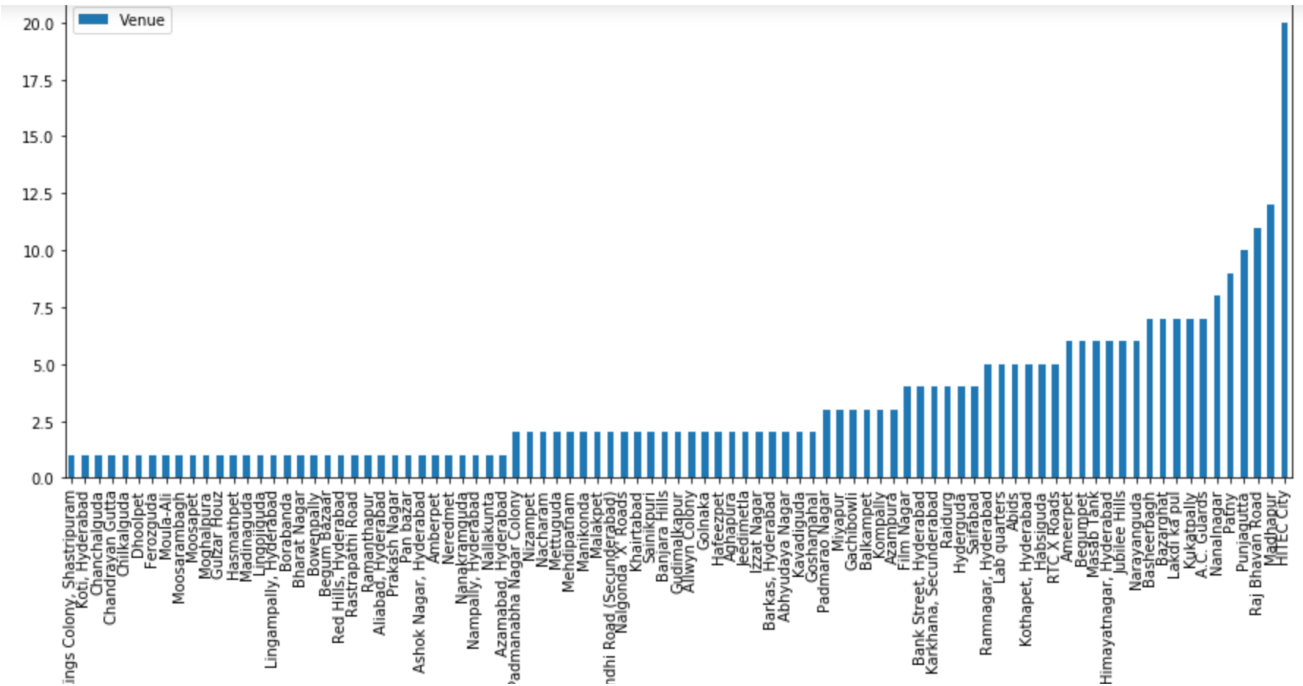
Overall Restaurants in Hyderabad area:
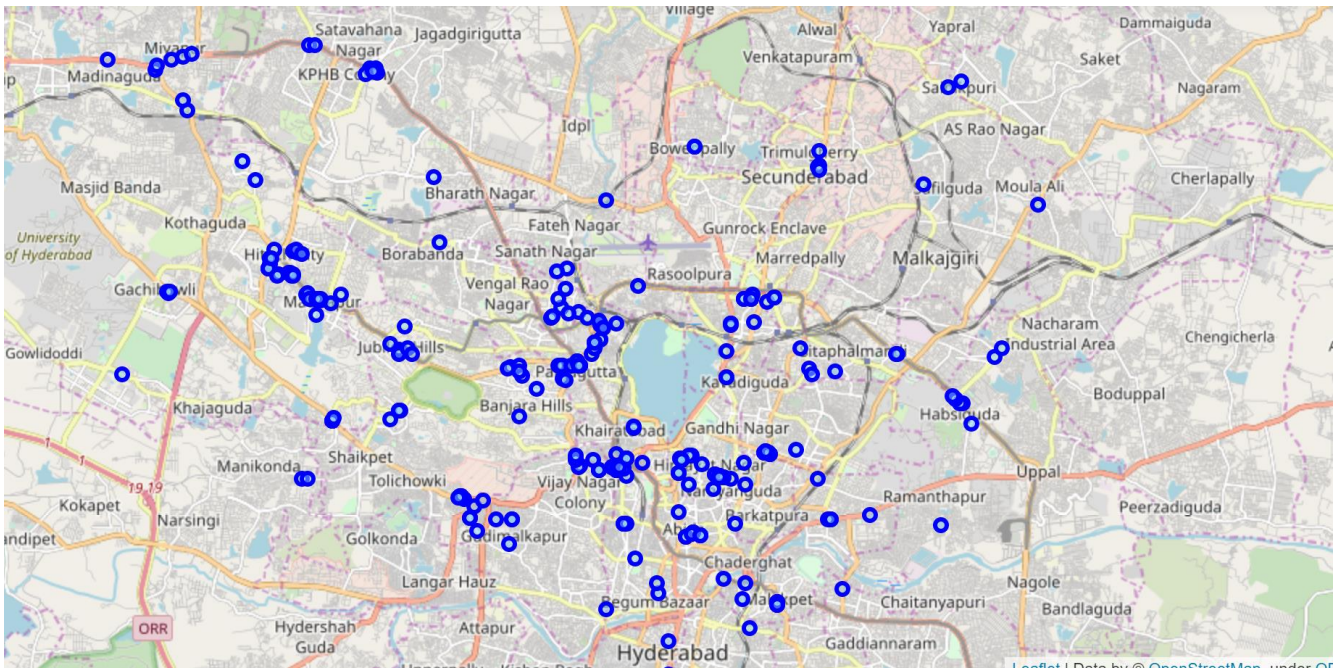
Clusters as per number of restaurants in Different Neighbourhood's: