Battle of Neighborhoods

Bangalore Location Analysis: Setting up Hotel and Coffee Shop

Table of Contents

1. Introduction: Business Problem

Bangalore (also known as Bengaluru) is one of the fastest growing cities in India and a major IT hub. Bangalore has witnessed phenomenal growth in the past several years and many businesses have thrived. This has attracted related and new businesses to the area. For a business to succeed in Bangalore, it is very important to set it up in a location where it can do well. The analysis performed in this project helps identify such locations.

Let us take two specific cases and analyze them in this project –

a. what is the ideal location for setting up a hotel?
b. what is the ideal location for setting up a coffee shop?

2. Data

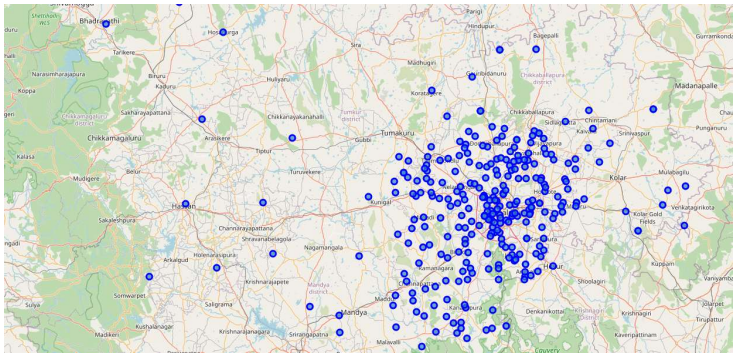
Following data sources are used to extract and analyze the data:

a) Kaggle data source for Neighborhood data: publicly available Kaggle data source that captures Neighborhood in Bangalore, its longitude and latitude

https://www.kaggle.com/rmenon1998/bangalore-neighborhoods

	Neighborhood	Latitude	Longitude
0	Agram	45.81318	15.97705
1	Amruthahalli	13.06651	77.59662
2	Attur	11.66371	78.53355
3	Banaswadi	13.01416	77.65185
4	Bellandur	58.23536	26.68312
5	Bhattarahalli	13.0258	77.71428
6	Bidrahalli	14.57743	74.92856
7	Byatarayanapura	13.06207	77.59639

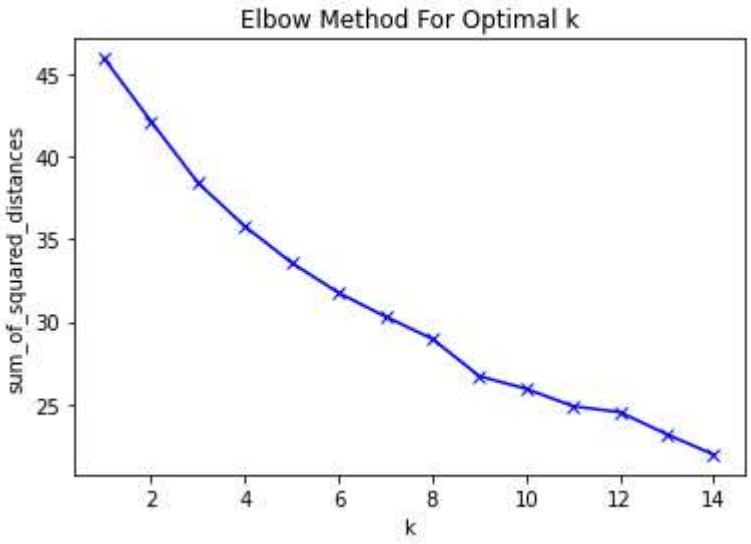
b) **Foursquare API:** is used to extract location information by passing latitude and longitude of the various neighborhoods in Bangalore. Foursquare API provides a rich API to extract different venues in the neighborhood. This data is very important as it forms the basis of analysis for clustering. Bangalore neighborhood locations are plotted on the map below:



3. Methodology

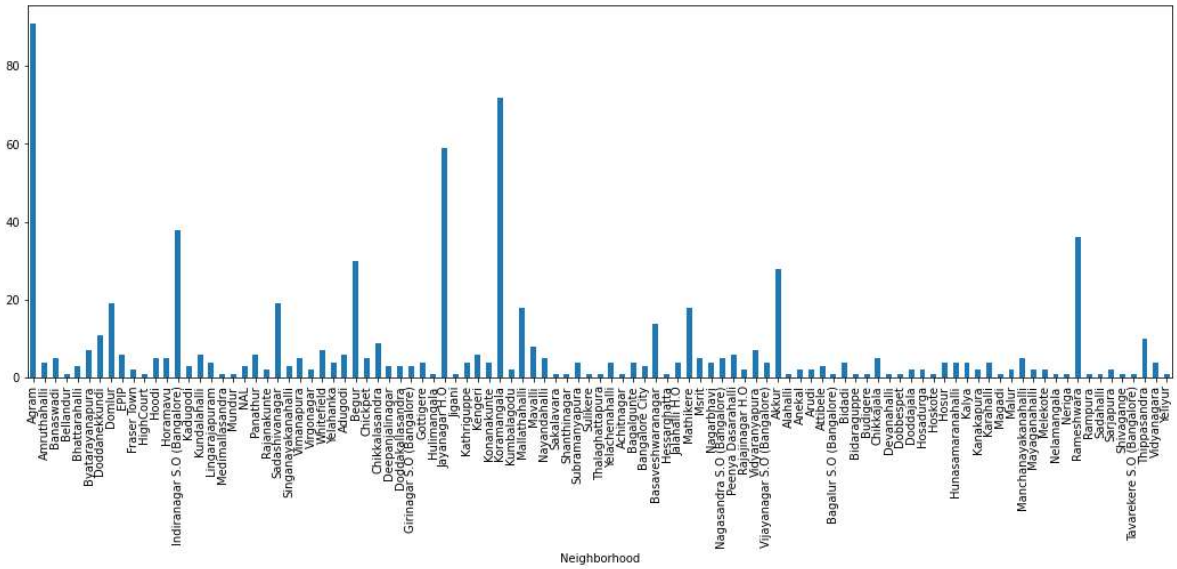
High-level methodology used for this project is provided below:

a) Both the data sets mentioned in section #2 are used to extract the nearby venues information for each of the neighborhoods in Bangalore
b) K-Means clustering is used to perform the analysis and determine the clusters.
c) Elbow method is used to find out the right "K" value. Optimal "k" value was determined to be "8" for this analysis.

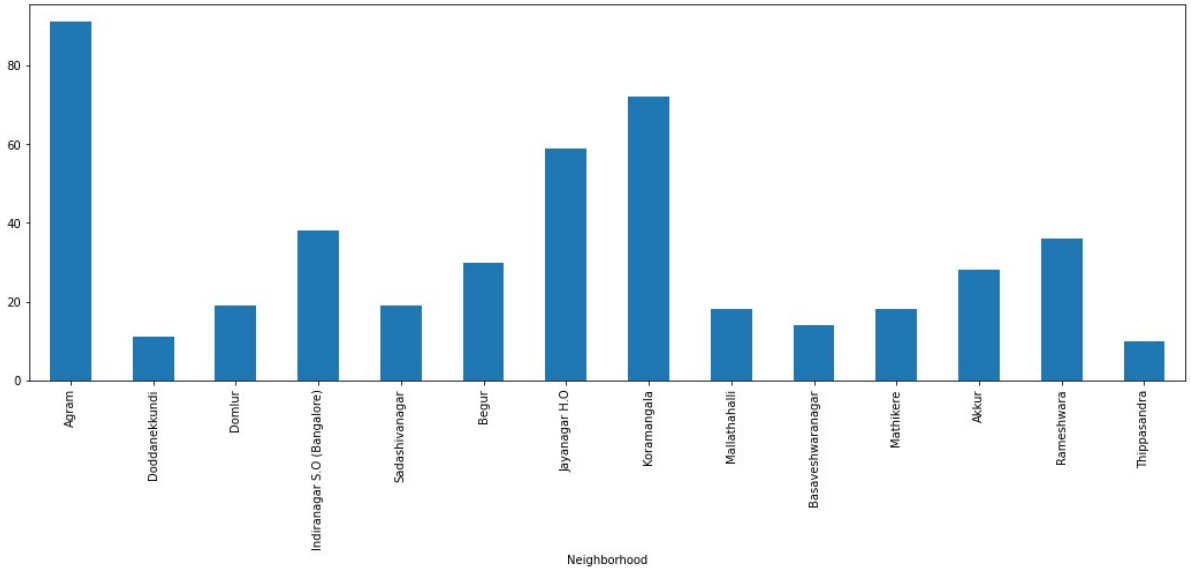


4. Analysis

Venue data is carefully analyzed with help of bar graphs to visualize the neighborhoods and the number of nearby venues. There are several neighborhoods that have very minimal number of venues.



The neighborhoods that have more than 10 venues have been considered for analysis to make the data set more relevant.



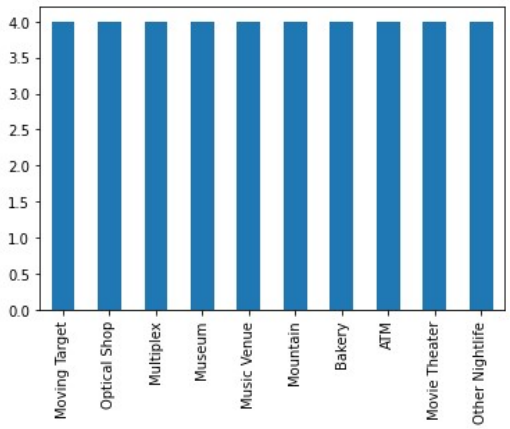
5. Results and Discussion

After clustering and segmenting following clusters have been created and analyzed graphically to identify the ideal locations to open:

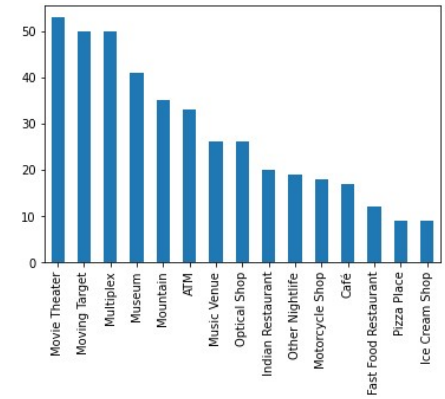
a) Hotel
b) Coffee Shop

Review below the graphs of the various clustering providing the number of venues by venue name.

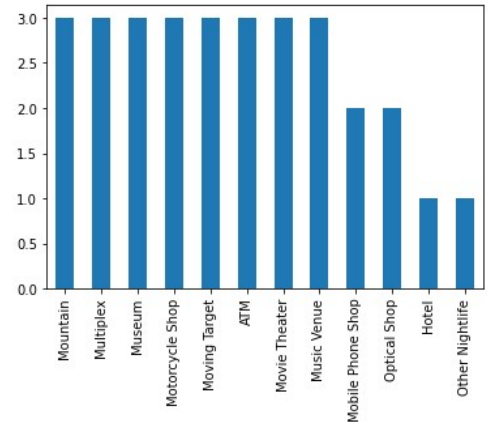
Cluster #1:



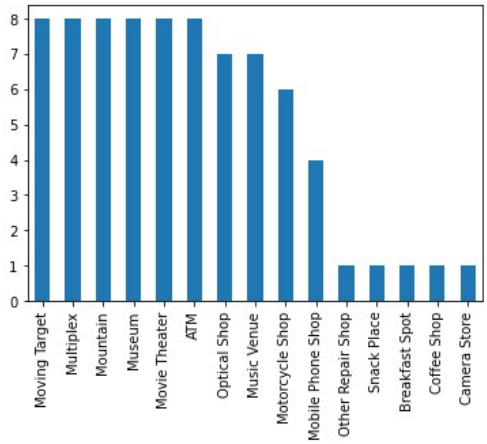
Cluster #2:



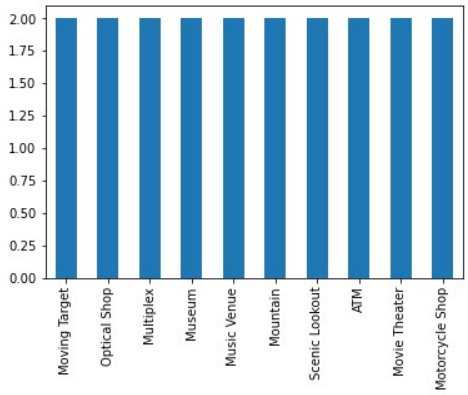
Cluster #3:



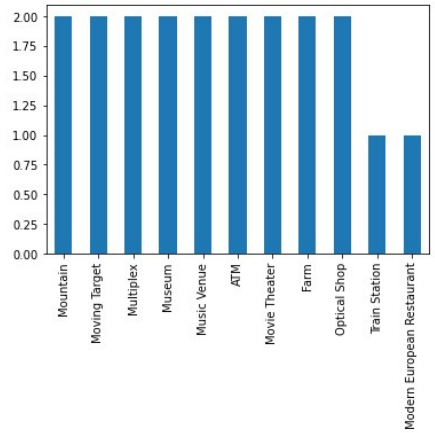
Cluster #4:



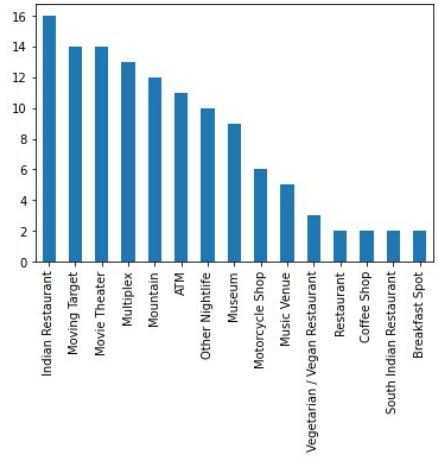
Cluster #5:



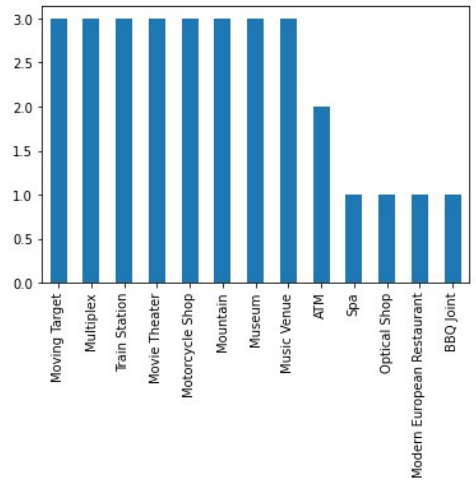
Cluster #6:



Cluster #7



Cluster #8:



6. Conclusion

By carefully analyzing the clusters, we can conclude that:

Hotel

Only *Cluster 3* has a hotel, so there is an opportunity to set up a hotel in other clusters *Cluster 1, Cluster 2, Cluster 4, Cluster 5, Cluster 6, Cluster 7, and Cluster 8.* Out of these clusters, only **Cluster 7** and **Cluster 2** have significant number of other attractions, making them ideal locations for setting up a hotel

Coffee Shop

There are no coffee shops in Cluster 1, Cluster 3, Cluster 5, Cluster 6 and Cluster 8, so they could be potential candidates for setting up a coffee shop. Out of them, **Cluster 1** is best suitable for setting up a coffee shop because of the proximity to other attractions.

Find below the map listing the different clusters