

# **Battle of neighborhood-Bangalore**

## **1. Introduction:**

Bangalore is one of the metropolitan cities in India and the capital of Karnataka state. Bangalore is third most populated city in India. So many multinational companies are having their offices in Bangalore. Especially major Information technology companies have presence in Bangalore, often called as Silicon Valley of India or IT capital of India. In one of the article published in 2018 mentioned that Bangalore has one of the most highly educated workforces in the world. Bangalore also home to many educational and research institutions, such as Indian Institute of Science (IISc), Indian Institute of Management (Bangalore) (IIMB), International Institute of Information Technology, Bangalore (IIITB), National Institute of Fashion Technology, Bangalore, National Institute of Design, Bangalore (NID R&D Campus), National Law School of India University (NLSIU) and National Institute of Mental Health and Neurosciences (NIMHANS). Numerous state-owned aerospace and defense organizations, such as Bharat Electronics, Hindustan Aeronautics and National Aerospace Laboratories are located in the city. The city also houses the Kannada film industry also called Sandalwood.

Because of these above distinct features of the city many people from other states of India as well as from other countries will come and work in Bangalore. From the people who are coming from other place want to explore the neighborhoods of Bangalore for their residence. Also, because of distinct culture of people present there provides the opportunity of starting a new business in a locality.

I would like to explore the neighborhoods of Bangalore, India. Also, I am interested in segmenting the neighborhoods into clusters. If someone relocating to Bangalore required to find a suitable place to stay. It will help me in identifying which neighborhoods are good for housing etc. As a new person to Bangalore, it will help in identifying good location. The good location like nearby schools, colleges, hospitals etc.

## **2. Data Section:**

We need to get the neighborhoods of the city Bangalore. Sign up into the foursquare api account. Get the credentials and secret of the developer api account in foursquare. Using the foursquare api, get the latitude and longitudes of all the neighborhoods of Bangalore. A request has to be send to foursquare. Results are in the format of json. Observing the format

of the data, required information need to be extracted. Then we need to analyze the data finally use clustering algorithm for segmentation.

### **3. Methodology**

#### **3.1 Import all required libraries.**

- i) Get requests library to get then data
- ii) Import json library to handle json files
- iii) Import normalize method to transform json file into pandas dataframe
- iv) Import numpy and pandas library to do array operations and data wrangling, analysis
- v) Import the visualization library and its modules of matplotlib
- vi) Import nominatim to convert location address to latitude and longitude
- vii) Import machine learning library sklearn to cluster the data
- viii) Import folium map rendering library

#### **3.2 Get the geographical coordinates of bangalore**

#### **3.3 Foursquare data**

#### **3.4 Data Analysis**

#### **3.5 Print nearby venues**

#### **3.6 Get the top venues**

#### **3.7 Return the most common venue**

#### **3.8 Clustering**

### **4. Results**

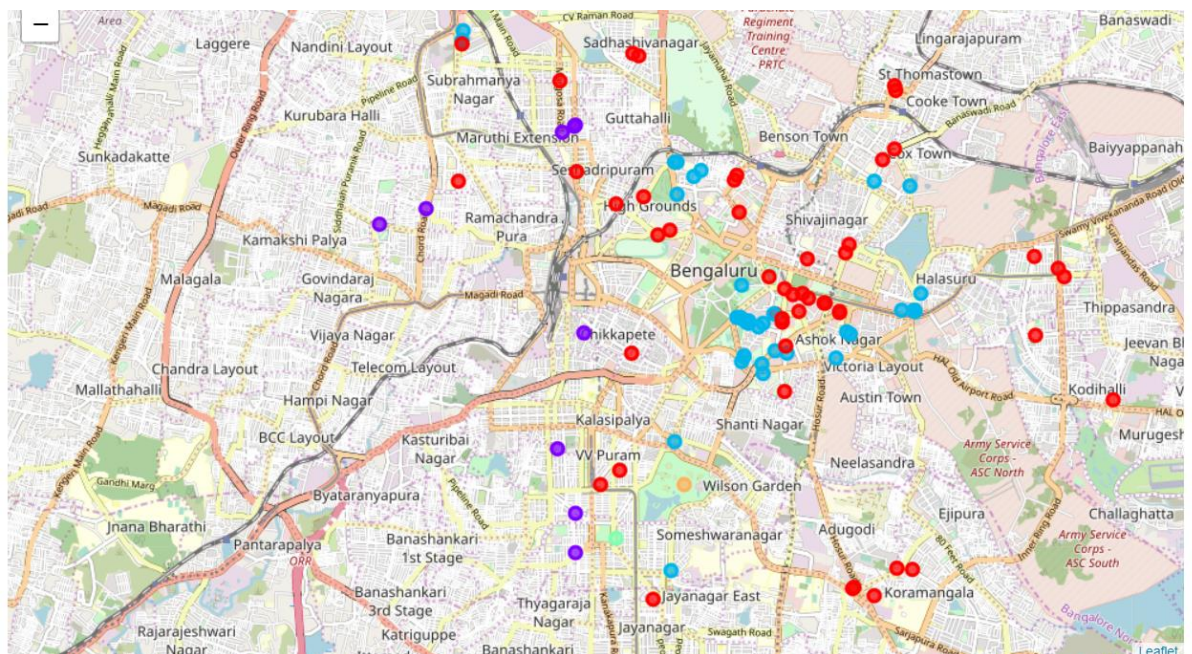
In each neighborhood all top venues are created in a proper format

Out[33]:

	categories	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
2	Hotel	Indian Restaurant	Hotel	Snack Place	Juice Bar	Gym	Garden	Office	Park	Hotel Pool	Coffee Shop
5	Tea Room	Indian Restaurant	Chinese Restaurant	Hotel	Coffee Shop	Pizza Place	Italian Restaurant	Café	Optical Shop	Hookah Bar	Fast Food Restaurant
6	American Restaurant	Indian Restaurant	Lounge	Ice Cream Shop	Breakfast Spot	Steakhouse	Movie Theater	Music Store	Cricket Ground	Pizza Place	Pub
7	Burger Joint	Indian Restaurant	Ice Cream Shop	Brewery	Breakfast Spot	Bubble Tea Shop	Steakhouse	Café	Restaurant	Burger Joint	Deli / Bodega
9	Ice Cream Shop	Indian Restaurant	Ice Cream Shop	Italian Restaurant	Lounge	Hotel	Chinese Restaurant	Mexican Restaurant	Pub	Clothing Store	Cocktail Bar
10	Cricket Ground	Indian Restaurant	Lounge	Bar	Cricket Ground	Plaza	Pub	Chinese Restaurant	Fast Food Restaurant	Sandwich Place	Movie Theater
14	Plaza	Indian Restaurant	Lounge	Café	Pub	Coffee Shop	Bubble Tea Shop	Burger Joint	Road	Clothing Store	Pizza Place
17	Indian Restaurant	Indian Restaurant	Chinese Restaurant	Italian Restaurant	Coffee Shop	Snack Place	Steakhouse	Juice Bar	Fast Food Restaurant	Electronics Store	Music Venue
18	Ice Cream Shop	Indian Restaurant	Ice Cream Shop	Italian Restaurant	Lounge	Hotel	Chinese Restaurant	Mexican Restaurant	Pub	Clothing Store	Cocktail Bar
20	Bookstore	Pub	Indian Restaurant	Café	Bookstore	Coffee Shop	Electronics Store	Lounge	Fried Chicken Joint	Fast Food Restaurant	Music Store
24	Steakhouse	Indian Restaurant	Coffee Shop	Chinese Restaurant	Italian Restaurant	Snack Place	Steakhouse	Juice Bar	Fast Food Restaurant	Electronics Store	Concert Hall
26	Afghan Restaurant	Indian Restaurant	Clothing Store	Hotel	South Indian Restaurant	Afghan Restaurant	American Restaurant	Bar	Burger Joint	Donut Shop	Fast Food Restaurant
29	Indian Restaurant	Indian Restaurant	Ice Cream Shop	Brewery	Breakfast Spot	Pub	Bubble Tea Shop	Parsi Restaurant	Furniture / Home Store	South Indian Restaurant	Steakhouse
31	Coffee Shop	Indian Restaurant	Café	Coffee Shop	Pub	Bar	Chinese Restaurant	Ice Cream Shop	Lounge	Hotel	Pizza Place
32	Racetrack	Indian Restaurant	Hotel	Seafood Restaurant	Juice Bar	Gym	Garden	Fast Food Restaurant	Office	Hotel Pool	Coffee Shop
33	Art Gallery	Indian Restaurant	Asian Restaurant	Ice Cream Shop	Hotel	Nightclub	Karnataka Restaurant	Seafood Restaurant	Fast Food Restaurant	Garden	Chaat Place
35	Pub	Indian Restaurant	Ice Cream Shop	Lounge	Breakfast Spot	Steakhouse	Movie Theater	Music Store	Cricket Ground	Pizza Place	Pub

## 5. Discussion

Segementaion done on the neighborhoods of bangalore



## 6. Conclusion

Its easy to choose a location where all facilities are there