IBM Data Science Capstone Project

Battle of Neighbourhood

Exploring business opportunities in setting up Food joint by exploring venues of Bengaluru, India.

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1. Introduction

India being a food-loving country with each region having its own special cuisine, Indians have never been very big on eating out. But the scenario is changing now. The restaurant industry in India and in Bengaluru as well has been growing at a rapid pace over the past few years or so and the growth story is set to continue for the next foreseeable future.

This project aims to explore venue related to food joints in various regions of Bengaluru city using Foursquare API. This project would help all those interested in setting up food joint such as Restaurant, Pizza Place, café etc. in various region pf Banglore city. This would help to analyse which type of food joint and its number are already there in a particular region so as to decide the type of food joint to set up in that particular region.

2. Data Section

I have used the FourSquare API to collect data about various regions and neighbourhood locations of Bengaluru, India. Using the Foursquare API it was found that there are eight regions viz. Central, Eastern, North-Eastern, Northern, South-Eastern, Southern, Southern suburbs and Western region. The number of neighbourhood were determined along its Latitude and Longitude coordinates to show various neighbourhoods in the map.

How will we be solving using this data?

I will be looking for latitude and longitude coordinate of each region and this will be used to calculate the distance from the point to the food joint of interest. Before that our major focus will be on all venues present in and around the various regions of Bengaluru city.

Just a heads up on how many hotels are distributed around each region of Bengaluru. I will use Fousqaure API various venues specially food joint present in the region. On furthur notebook we will use Foursquare data to determine other venues as well.

3. Methodology

This section of the report includes process of data collection, preparation and analysis. The tools described are used here and the Notebook cells indicates the execution of steps.

My main target here is to find various venues and neighbourhoods and the best location to set up food joint in a given region of the Banglore city.

I have got the 'Neighbourhood' data from Wikipedia page (https://en.wikipedia.org/wiki/List_of_neighbourhoods_in_Bangalore).
Finding the latitude and longitude of Banglore various and and Neighbourhoods are shown by generating the map of Banglore city using 'folium'. The map is shown below:

I have used the Four Square API through the Region and its Neighbourhoods. Regions and Venue category have also been obtained by making Foursqaure API call. Count of region wise venue category was also obtained as given below:

4. Results

Various Regions of Banglore city and the unique Venue:

Out[110]:

Region	Venue Category
Central	134
South-Eastern	98
Southern	93
Eastern	90
Western	79
Northern	60
North-Eastern	59
Southern suburbs	57

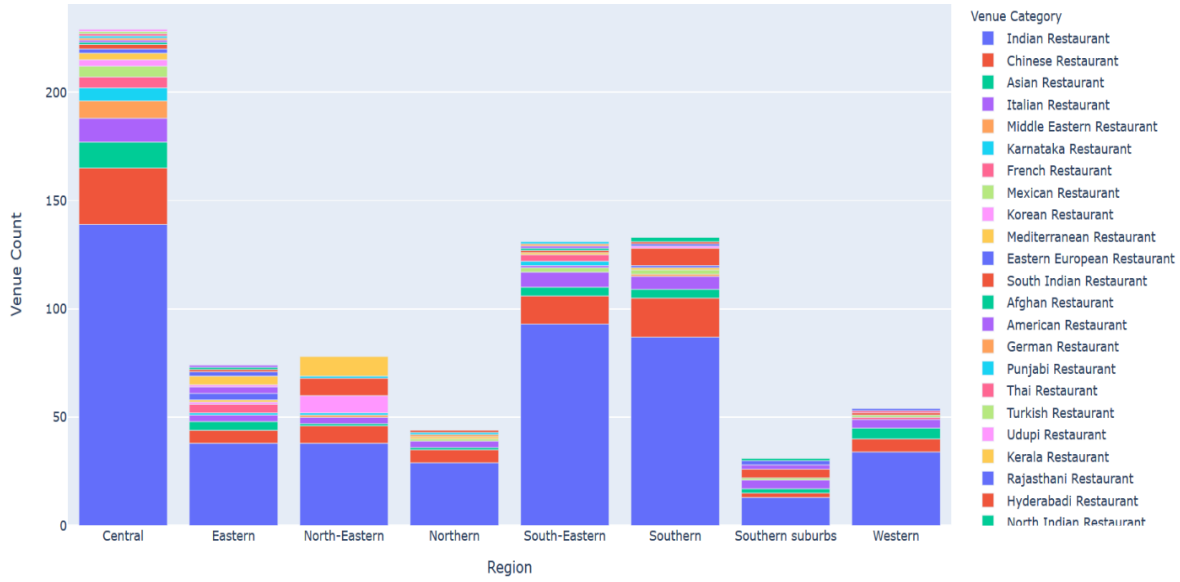
Venue categories and their count were also determined as follows:

Out[111]:

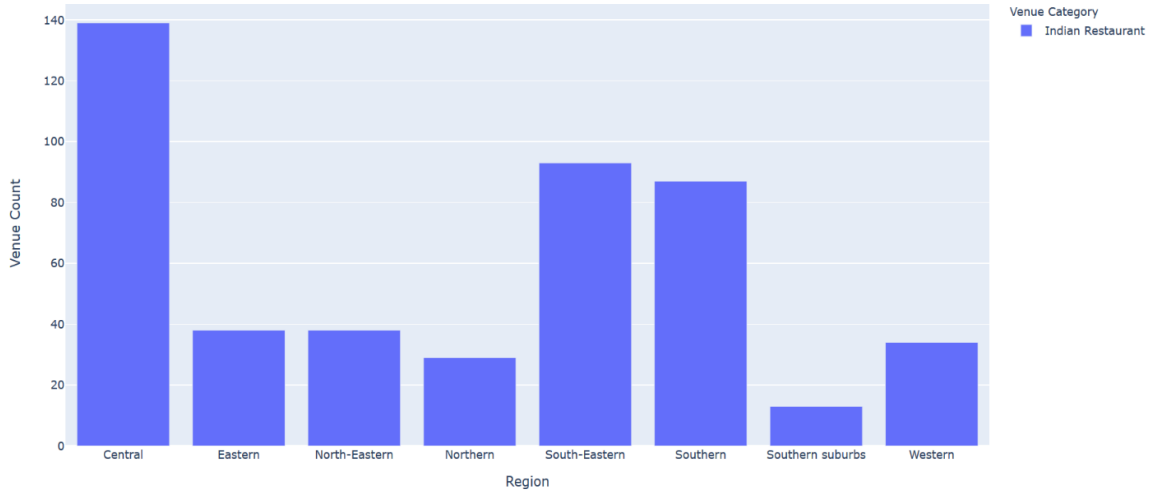
Region	Venue Category	Venue Count
Central	Indian Restaurant	139
	Café	59
	Hotel	33
	Chinese Restaurant	26
	Pub	25
...	...	...
Western	Supermarket	1
	Tea Room	1
	Thai Restaurant	1
	Theme Park	1
	Travel & Transport	1

668 rows × 1 columns

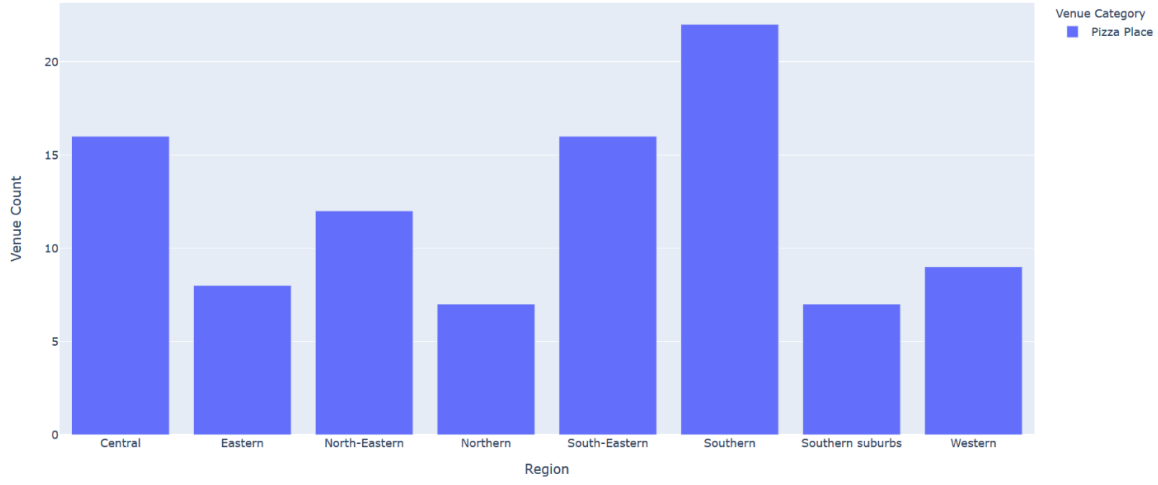
Region wise distribution of various food joints (Venue categories) were also plotted:



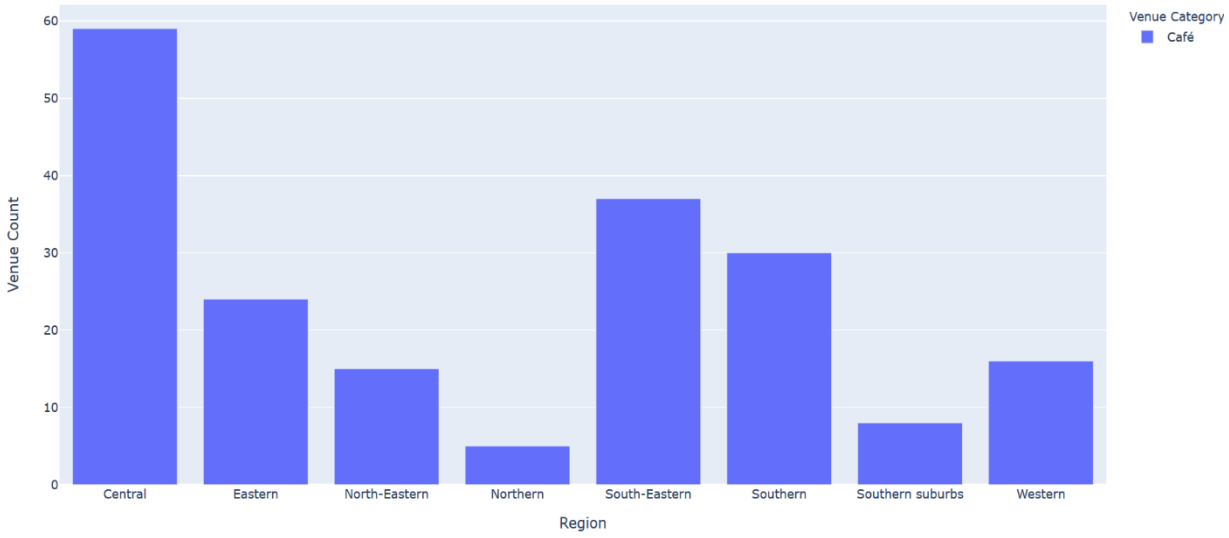
Region wise distribution of Indian Restaurants



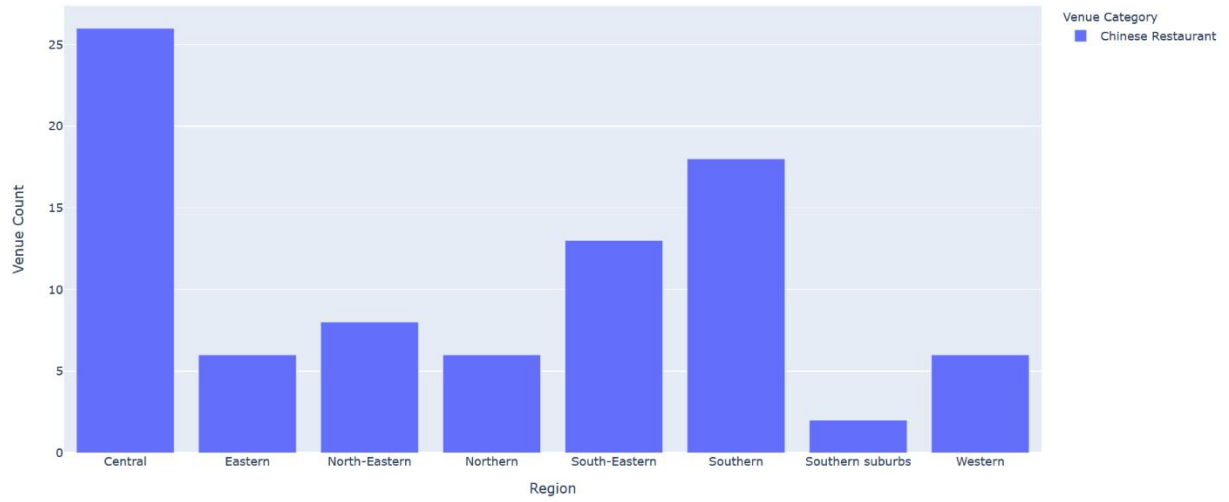
Region wise distribution of Pizza Places:



Region wise distribution of Café:

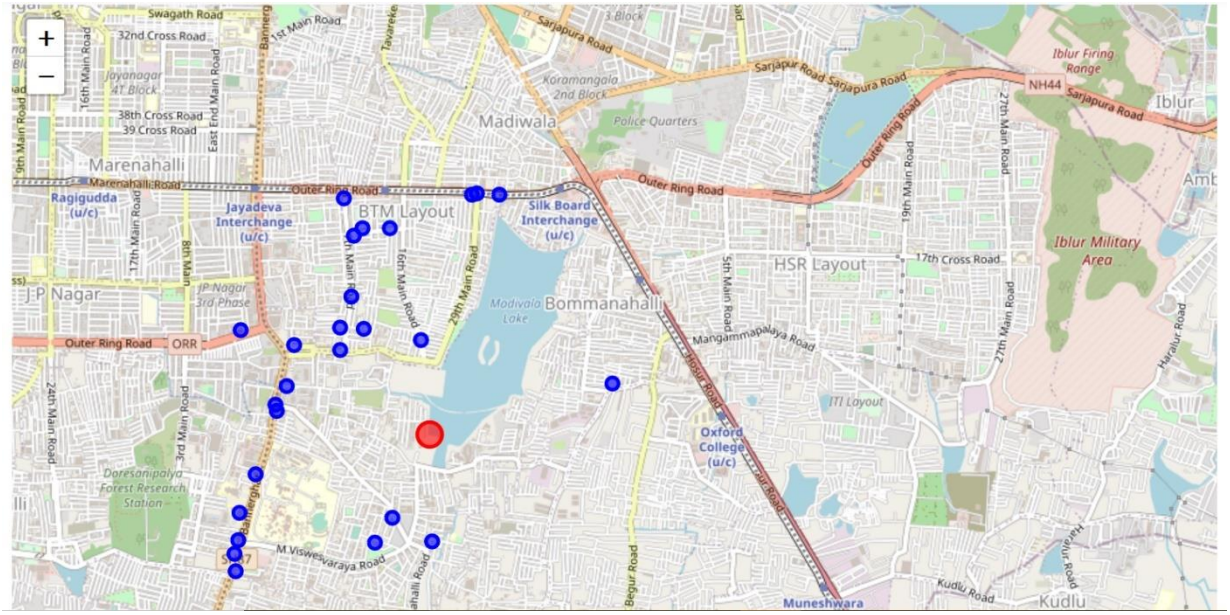


Region wise distribution of Chinese Restaurants

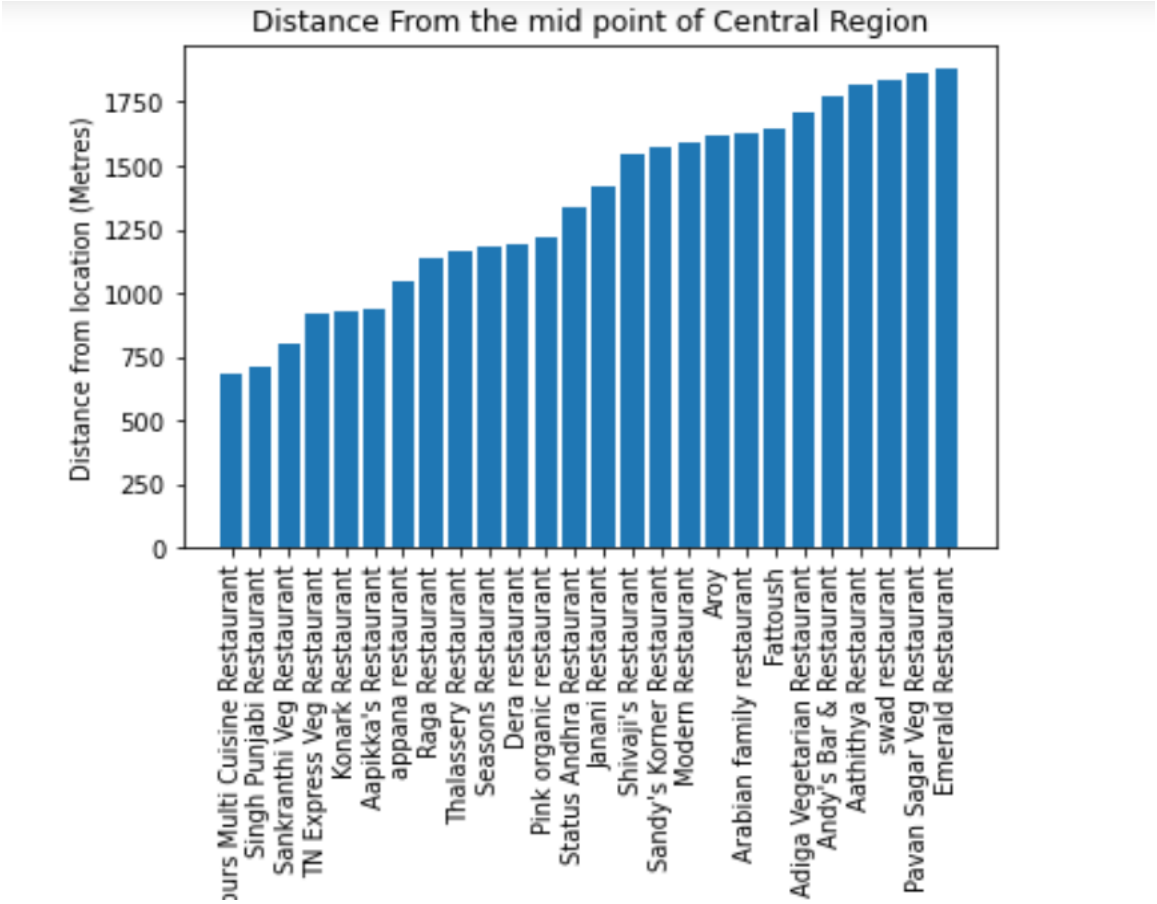


Determining the best place in the Central region to set up 'Chinese Restaurant'

I am interested to set up Chinese Restaurant in the Central Regions and therefore using Foursquare API call I have obtained number of Chinese Restaurants that already exist in the Central Region. Then mean of latitude and longitude coordinate was obtained to find the neighbourhood Restaurants By running Foursquare query I found there are 26 Chinese Restaurants are there in Central region. By finding the location of theses Chinese Restaurants these are then plotted in the map as follows:



At the end I have calculated the distance of all 26 Chinese Restaurants from Central Region and then distance to the nearest Restaurant was also calculated.



5. Discussion

The above result section showed the locations and number of food joints exists in various regions of Banglore city. We have seen that the distance of a particular type of food joint from the middle of the given region. From various results we have obtained as above we could get an idea which type of food joint can be set up in the given region. This would help the new entrepreneur to start a business venture in a particular region.

6. Conclusion

As a business person, one would be able to set up a food joint at a suitable location. This analysis would definitely help them to set a successful venture which will bring revenue and prosperity.

My views about the course and journey of learning:

It was wonderful learning experience for me in IBM Applied Data Science capstone and other courses. It gave me an opportunity to think, learn and apply Data science to the real-life problems.

A Big Thank to Coursera and all my fellow learners!