Data Overview:

The data that will be required will be a combination of CSV files that have been prepared for the purposes of the analysis from multiple sources which will provide the list of neighbourhoods in Bangalore (via Kaggle), the Geographical location of the neighbourhoods (via Kaggle & Geocoder package) and Venue data pertaining to Italian restaurants (via Foursquare). The Venue data will help find which neighbourhood is best suitable to open an Italian restaurant

Data acquisition:

Source 1: Neighborhoods of Bangalore and Geographical Location via Kaggle

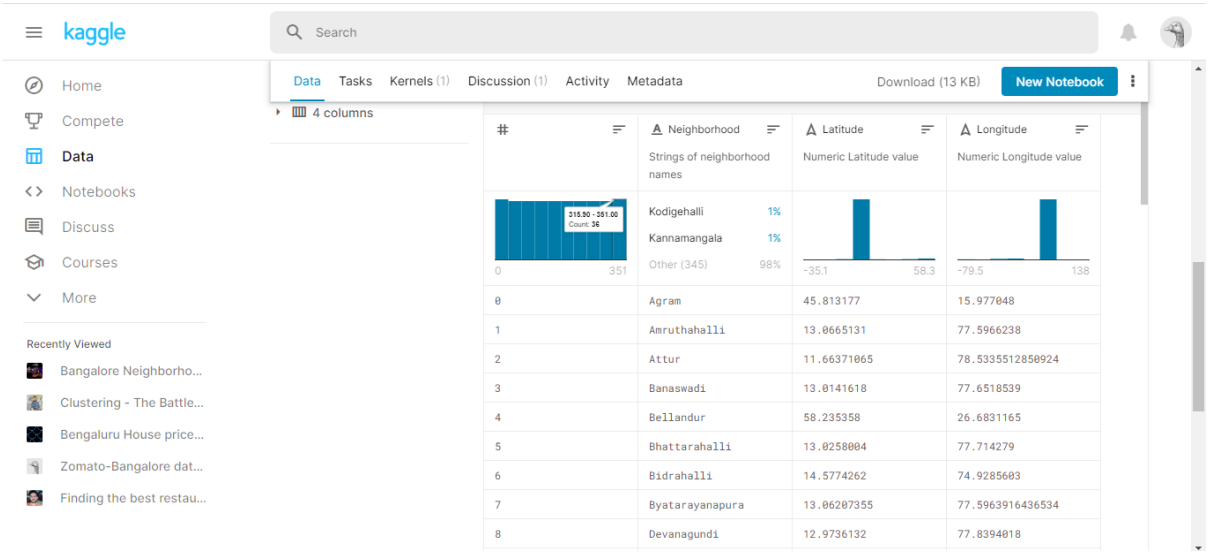

Figure - 1

1. https://www.kaggle.com/rmenon1998/bangalore-neighborhoods?select=blr_neighborhoods.csv

The Kaggle site shown above (Figure -1) provided all the information about the neighbourhood's, latitude's and longitude's present in Bangalore. The file was in the CSV format, so we had to attach to a pandas data frame (Figure – 2).

	City	Neighborhood	Latitude	Longitude
0	Bangalore	Agram	45.813177	15.977048
1	Bangalore	Amruthahalli	13.066513	77.596624
2	Bangalore	Attur	11.663711	78.533551
3	Bangalore	Banaswadi	13.014162	77.651854
4	Bangalore	Bellandur	58.235358	26.683116

Figure -2

Source 2: Venue Data using Foursquare:

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	venue	venue_categories	venue Latitude	venue longitude
0	Agram	45.813177	15.977048	Amélie	Dessert Shop	45.813842	15.979011
1	Agram	45.813177	15.977048	Corner bar	Bar	45.812930	15.979440
2	Agram	45.813177	15.977048	Trg bana Josipa Jelačića	Plaza	45.813032	15.976868
3	Agram	45.813177	15.977048	Tržnica Dolac	Farmers Market	45.814070	15.977261
4	Agram	45.813177	15.977048	Cremme Zagreb	Dessert Shop	45.814987	15.976296

Figure – 3

We performed a bit of data cleansing. It is seen through above figure (Figure -3) that the neighbourhood's are grouped by the name of the neighbourhood, so data clustering is made easier later on.

In order to analyse the data we must require type of restaurants that contain a particular venue for a neighbourhood. After an exploratory data analysis we get the mean(how often the Italian restaurants located) of Italian restaurants to their respective neighbourhood which we will further use to cluster them and make a decision for best neighbourhood in the city of Bangalore.

	Neighborhood	ATM	Accessories Store	Afghan Restaurant	Andhra Restaurant	Arcade	Arts & Entertainment	Asian Restaurant	Athletics & Sports	Auto Garage	...	Theme Park Ride / Attraction	Toy / Game Store	Train Station	T
0	Achitnagar	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.000000	0.0	...	0.000000	0.000000	0.0	
1	Adugodi	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.166667	0.0	...	0.000000	0.000000	0.0	
2	Agram	0.0	0.0	0.0	0.0	0.0	0.0	0.033333	0.000000	0.0	...	0.033333	0.000000	0.0	
3	Akkur	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.000000	0.0	...	0.000000	0.066667	0.0	
4	Alahalli	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.000000	0.0	...	0.000000	0.000000	0.0	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
97	Virgonagar	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.000000	0.5	...	0.000000	0.000000	0.0	
98	Whitefield	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.000000	0.0	...	0.000000	0.000000	0.0	
99	Yelachenahalli	0.0	0.0	0.0	0.0	0.0	0.0	0.000000	0.000000	0.0	...	0.000000	0.000000	0.0	

Frequency of Categories per neighborhood