



Clustering the city of Chennai

Coursera Capstone Project



Clustering Chennai based on distribution of essential accessories

- Job opportunities in Chennai attracts a lot of migrants from towns and villages.
- Such people usually find Chennai to be an expensive place to live.
- This means they can't make wrong choices in regards to selecting their residence.
- Offering guidance could be an effective solution for this problem.



Business Objective

- Objective here is to offer guidance to such migrants.
- The same project could also be used by people planning to start a new business to estimate competition.
- To provide guidance we would have to analyze location data.



Data Acquisition and Cleaning

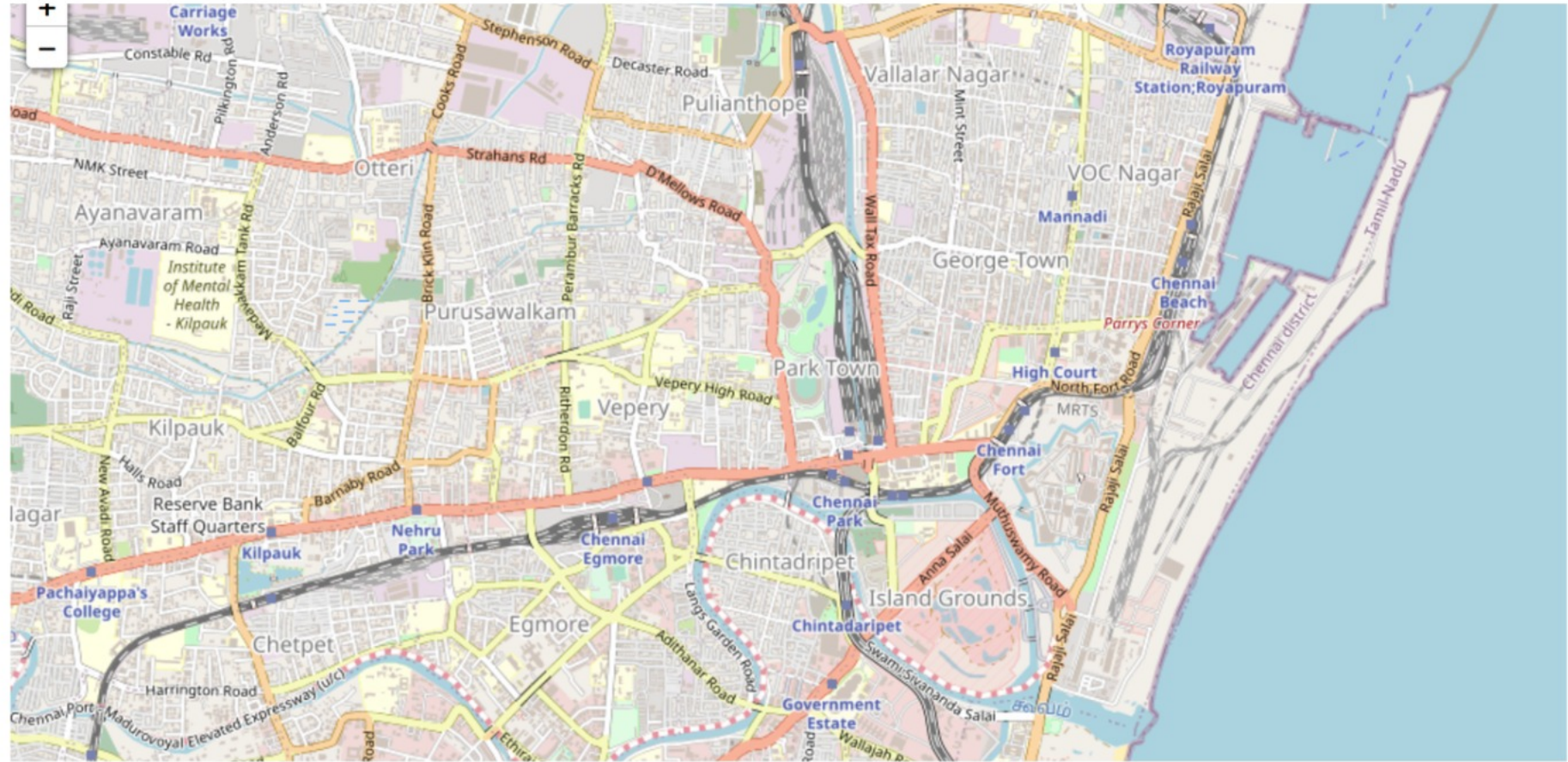
- Location data is obtained using foursquare APIs.
- Location data is the data that describes a specific location.
- The response of the API would be in JSON format.
- Hence we should work on the API response and get only the required information.
- This requires knowledge on working with JSON objects.

```
results=requests.get(url).json()
results
```

[illegible]

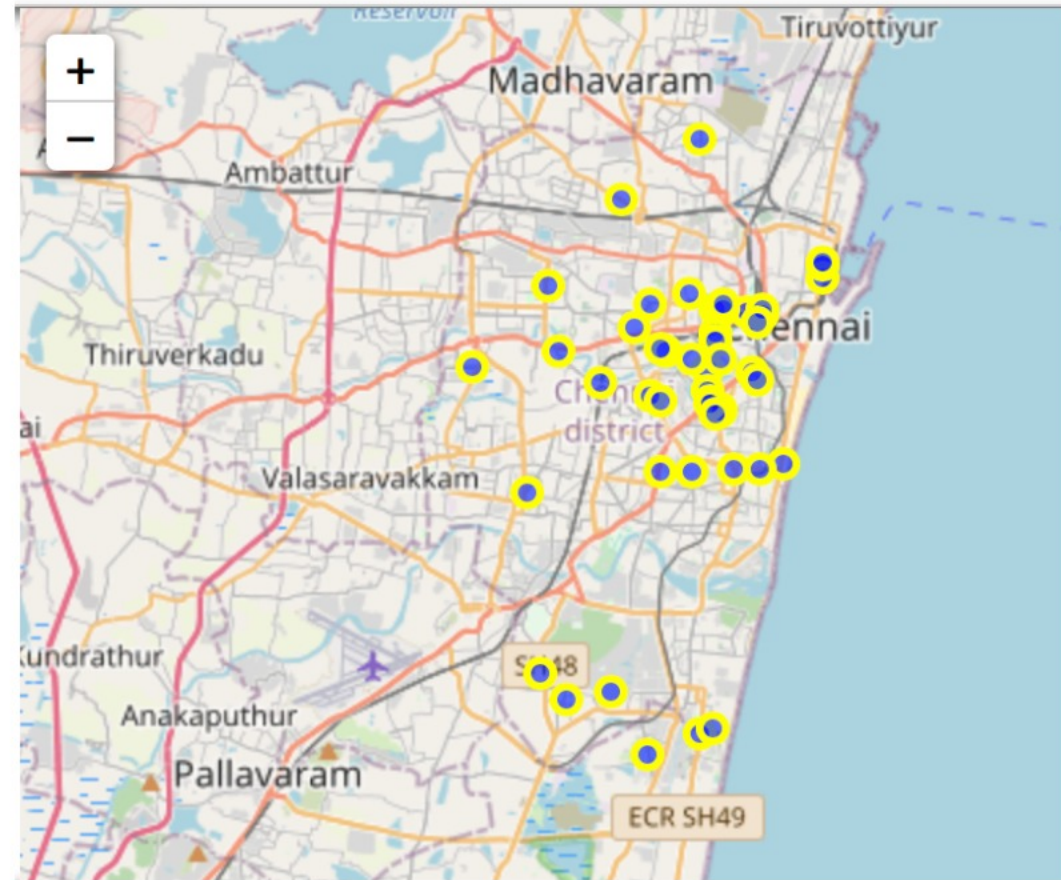


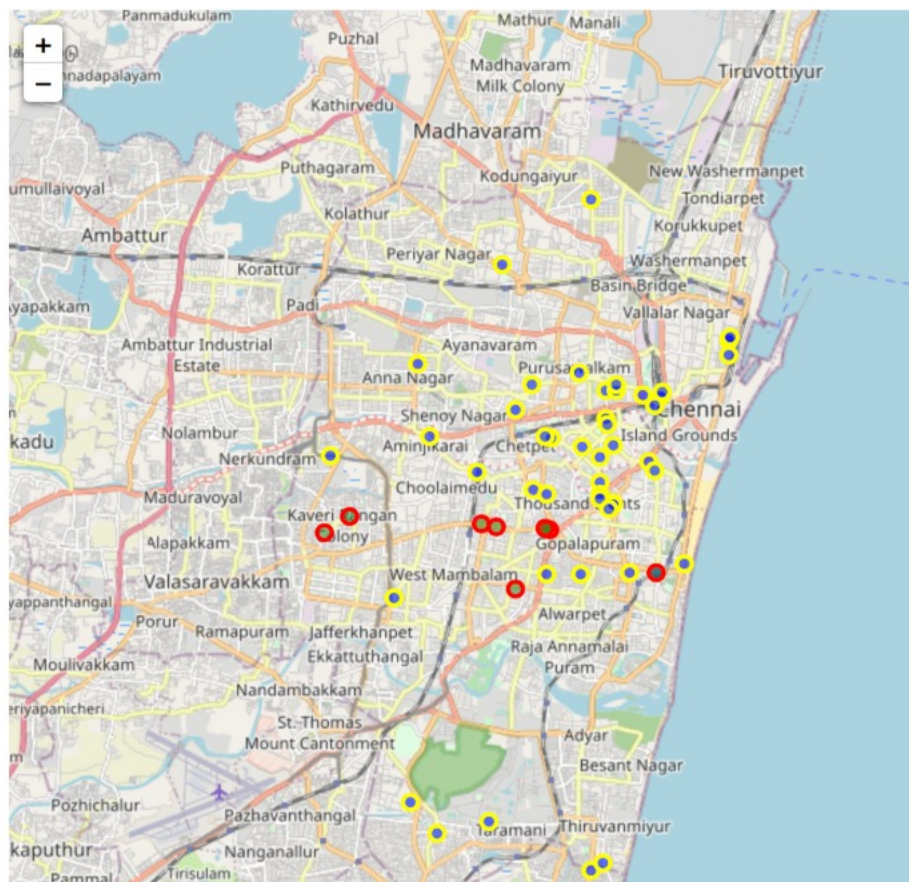
EDA





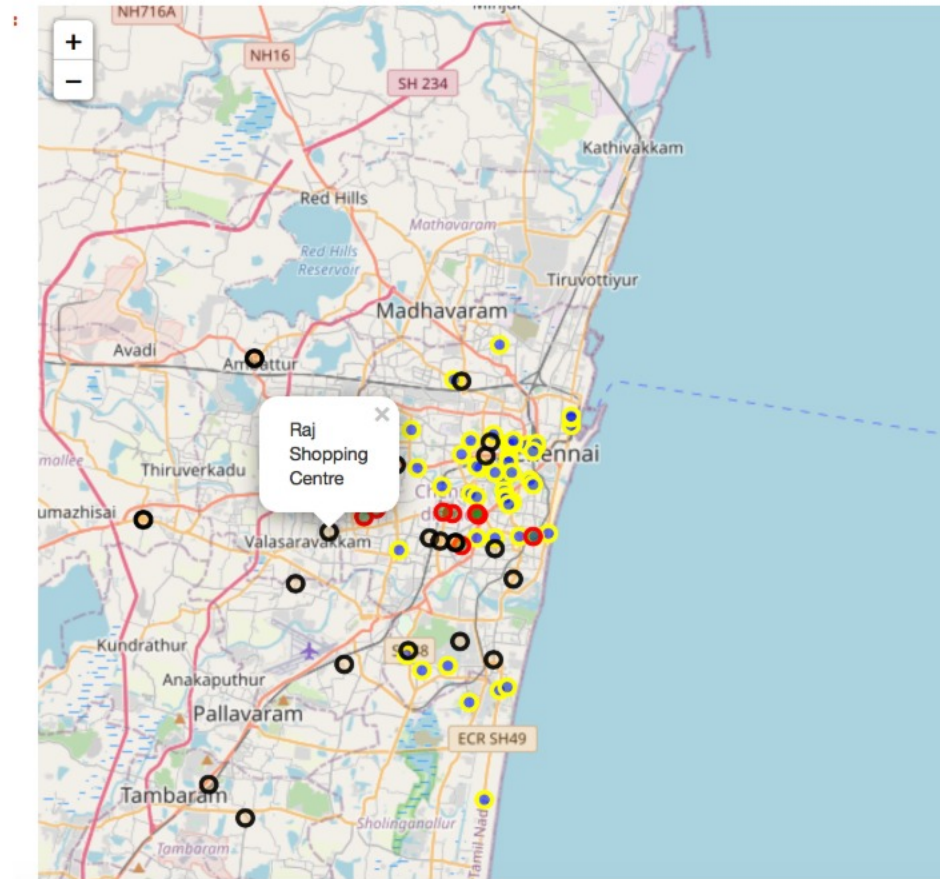
After adding Restaurants

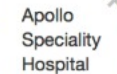






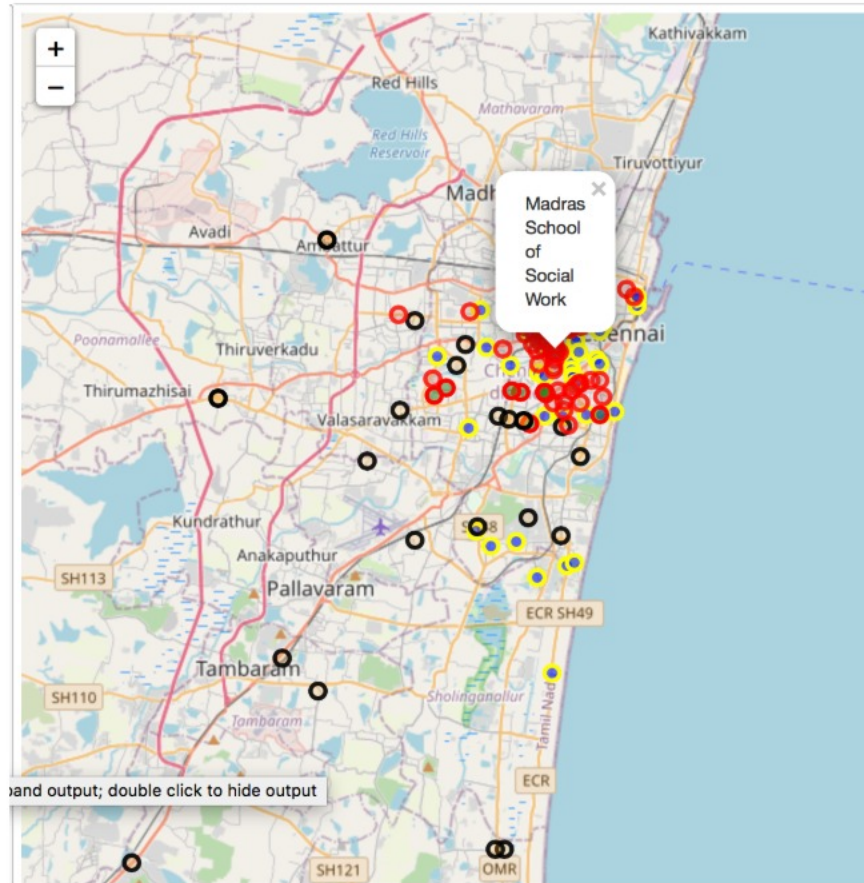
With Shopping Complexes







With Schools





Methodology

- Technique of K means clustering is used.
- This technique has the following advantages:
 1. Easy to implement
 2. Easy to Understand
 3. Easy to interpret
- We would be using the inbuilt python modules to achieve this.



Inbuilt model

→ The inbuilt model "sklearn" is used in this project

```
import random # library for random number generation
import numpy as np # library for vectorized computation
import pandas as pd # library to process data as dataframes

import matplotlib.pyplot as plt # plotting library
# backend for rendering plots within the browser
%matplotlib inline

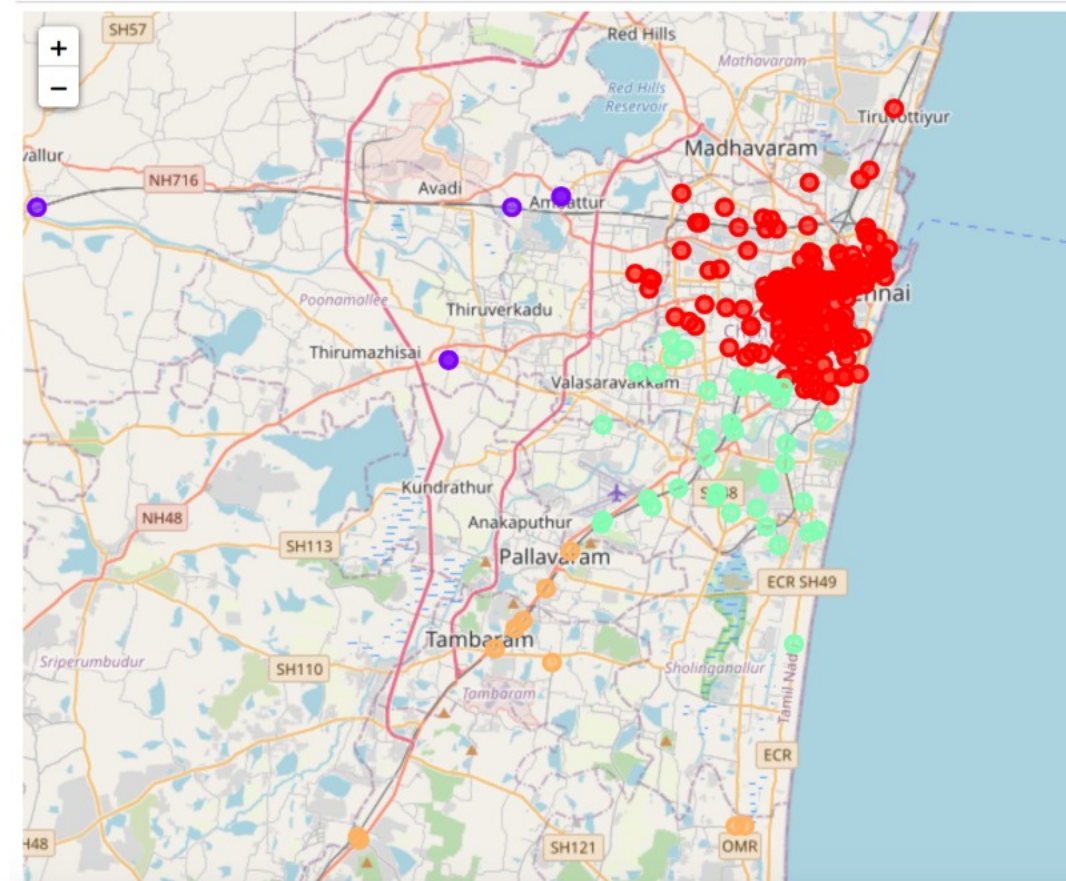
from sklearn.cluster import KMeans

print('Libraries imported.')
```

Libraries imported.



Results and Conclustions





Continue...

- The idea of this project was to cluster the city of Chennai into various zones based on the density of distribution of essential accessories to help people who are new to the city in choosing the right residential location.

We were able to achieve this by clustering the places into different zones based on distribution density. The interesting thing with this project is its data source. As this project uses APIs to perform the clustering, we can stay assured that this project would get updated with time automatically.



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