Capstone Project – Advice restaurant owners on neighbourhoods of Colombo, SriLanka to open new restaurants

Business Problem

- Identifying appropriate location to open restaurants based on the neighbourhood is very critical factor to determine if the restaurant will be successful or failure

- **Business requirement –** If a restaurant owner wants to open new restaurants in Colombo, SriLanka to expand the business, where would you advise them to open?

- **Objective**: Analyse different neighbourhoods in Colombo, SriLanka to advise restaurant owners on best locations to open new restaurants to expand business

Data

Data required

- Neighbourhood details in Colombo, SriLanka
- Geographical coordinates of the neighbourhoods
- Venue data related to restaurants in Colombo

Sources of data

- Wikipedia page for neighbourhoods (https://en.wikipedia.org/wiki/Category:Suburbs_of_Colombo)
- Geocoder package for geographical coordinates
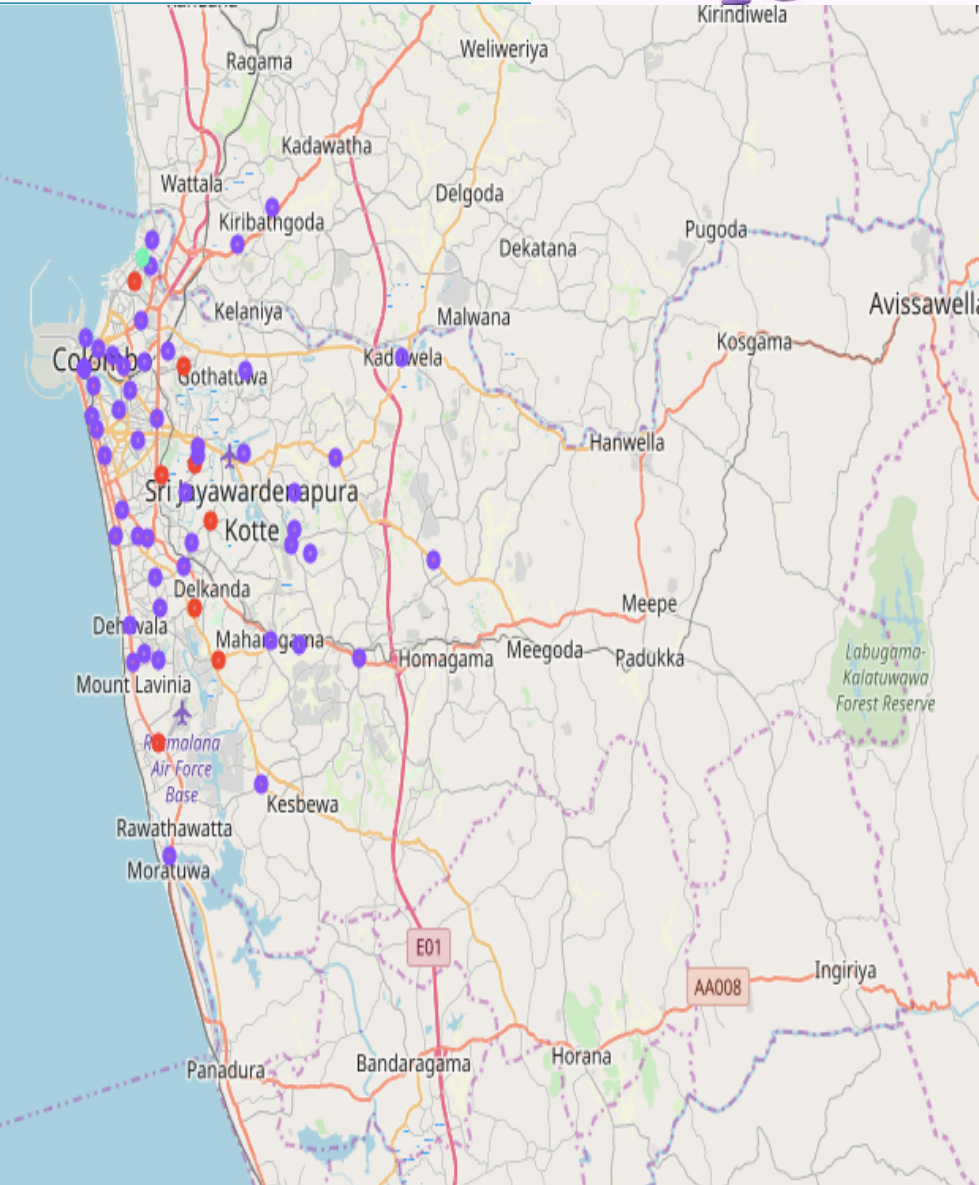- Foursquare API

Methodology

- Webscrape Colombo neighbourhoods wikipedia page for neighbourhoods list
- Extract geographical coordinates using Geocoder
- Explore neighbourhoods using Foursquare API
- Group data by neighbourhood by taking mean of the frequency of each venue category
- Analyse each neighbourhood as per the venue category and filter venue category by restaurants
- Perform clustering by using k-means clustering
- Visualize the clusters details in a map generated

Observations

Neighbourhoods are clustered into 3 clusters :

- Cluster 1: Neighbourhoods with approx 13% (moderate number) of restaurants

- Cluster 2: Neighbourhoods with approx 85% (high concentration) of restaurants

- Cluster 3: Neighbourhoods with only one restaurant

Discussion

- High number of restaurants(approx 85%) are concentrated in a single cluster of Colombo that might be going through intense competition

- Highest number in second cluster and moderate number in first cluster

- Third cluster has only 1 restaurant in the neighbourhood so has a great business potential

- Surplus restaurants in a single cluster neighbourhood of Colombo with other neighbourhoods still have very few restaurants

Recommendations

- Restaurant owners are advised to open new restaurants in Third cluster neighbourhoods that has negligible competition so that they can attract customers quickly as they need not go to far away places

- Restaurants owners with exclusive cuisines who stand out from competition can also open restaurants in First cluster neighbourhoods that has moderate competition

- Shun neighbourhoods in Second cluster that already has high number of restaurants and going through intense competition

Conclusion

- **Business requirement proposition**: Neighbourhoods in Third cluster are the most preferred location to open new restaurants

- Observation of this project will help restaurant business owners in their decisions to open new restaurants by taking advantage of high business potential locations while avoiding intense competition areas