

# Location Recommendation Engine for Restaurant

(in Mumbai)

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By

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# Introduction

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- The city of Mumbai consists of a large number of restaurants, but still there is always scope for new ones.
- Finding a suitable location for it to flourish is the most important factor for a restaurant.
- It has to be set up in a location where one can attract a good crowd as well as it must be located in an area where there is little or no competition.

# Data

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- The data that will be used in this projects is a csv file having data related to all neighborhoods in the city of Mumbai.
- Finding a suitable location for a restaurant to flourish is an important
- We explore the neighborhoods using Foursquare API to find the avenues within 500 meters of each neighborhood.
- The Foursquare API that will be used to explore the neighborhoods is <https://api.foursquare.com/v2/venues/explore>.
- This API returns json response which will be transformed into a Data Frame, taking only the required details into consideration.

# Methodology

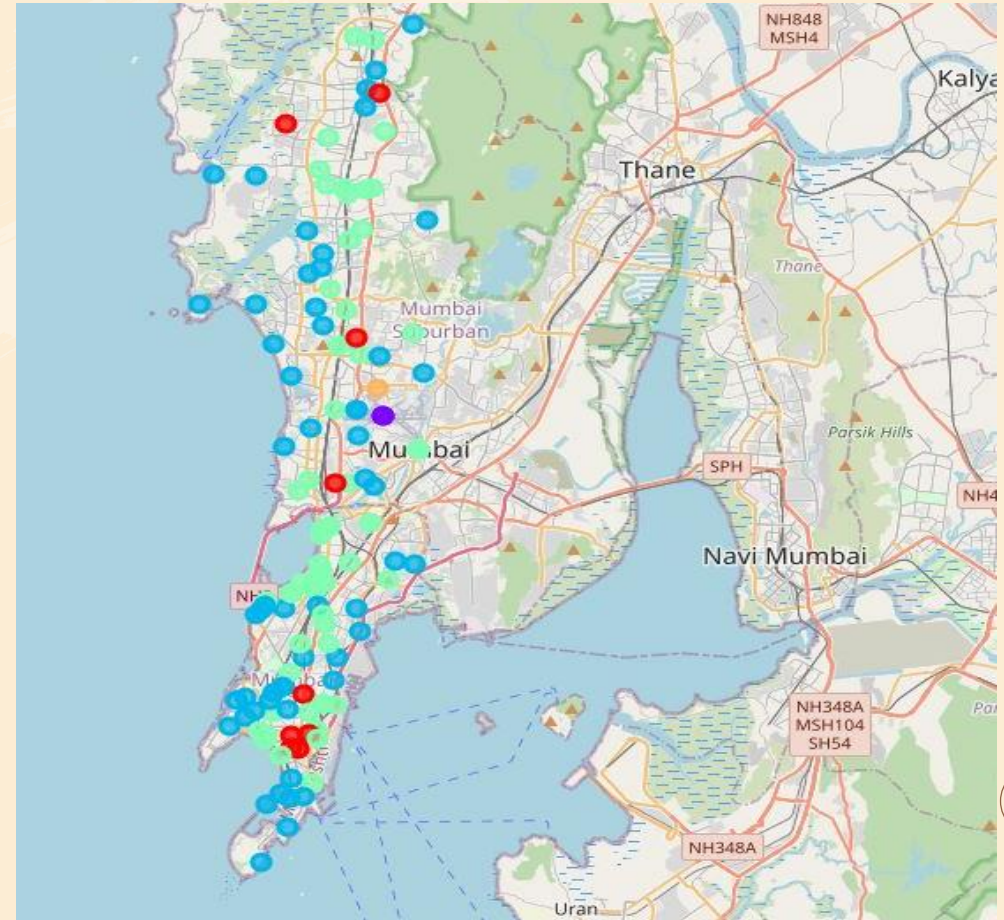
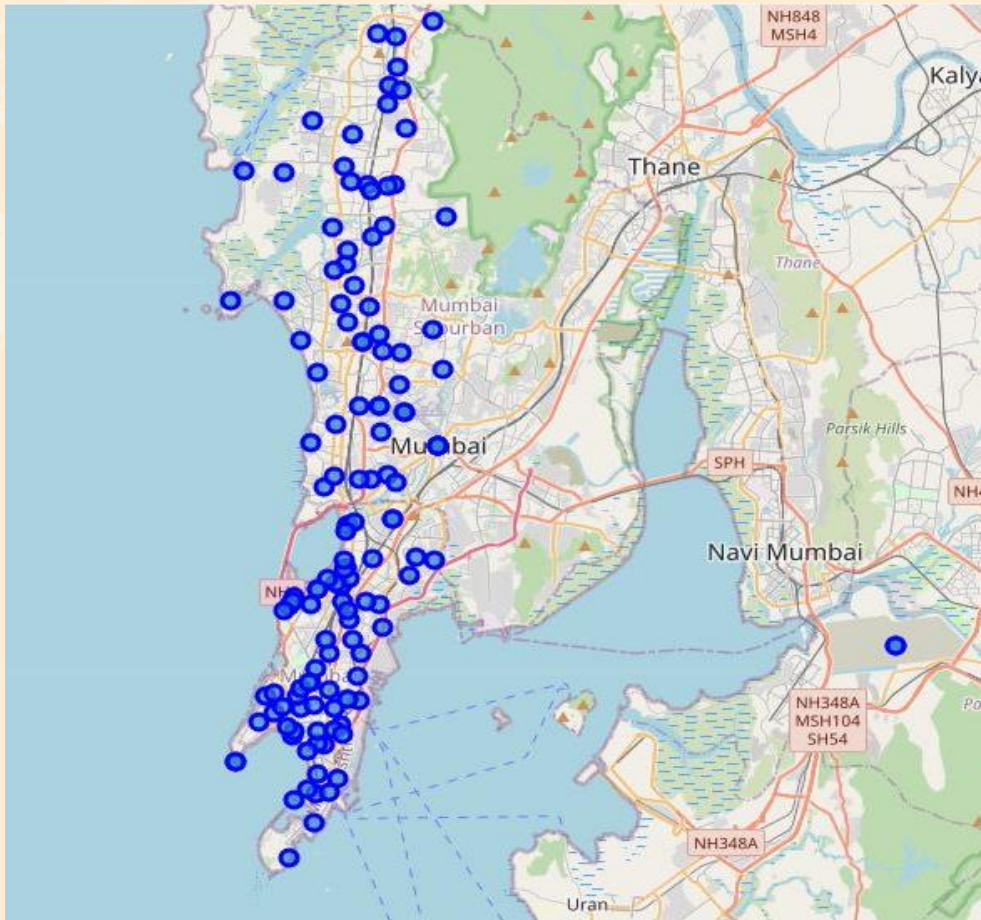
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- Using the Foursquare API venue information is obtained in nearby vicinity of postal locations in Mumbai.
- A radius is set to cover large neighborhoods in a particular area in Mumbai.
- This data is then merge with the Location dataset (Postal Codes) and a clustering algorithm is applied to the data.
- K-Means Clustering : The data points are clustered into 4 clusters using K-Means algorithm.



# Results

- By exploring the requirements we found three neighborhoods that match the requirements (Many restaurants in the vicinity/food store & only a few Chinese restaurants)



# Conclusion & discussion

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- According to results we observe that most common venues (Top 10) come out to be restaurants and Pizza places and Snack places, which means any new chef/business man can start a restaurant provided that they need to compete with existing restaurants (Other Types) but only if he provides top class facilities to get to top.
- Based on the Clusters formed it would be a good idea to open a restaurant in Clusters 0, 1 & 4 since the other clusters already have Chinese Restaurants in their vicinities.
- Also, cluster 0 has many restaurants in the vicinity (Pizza restaurants, European, Intercontinental, Indian) so one will be able to attract a good crowd.
- Also, there is no other competitors in this neighborhood who have set up Chinese restaurants nearby.
- These results have limitations - The venue data obtained is of top 10 venues in each neighborhood, where we might neglect Chinese restaurants with less frequency.



# THANK YOU!

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