

IBM Applied Data Science Capstone

Opening Shopping Mall in Mumbai

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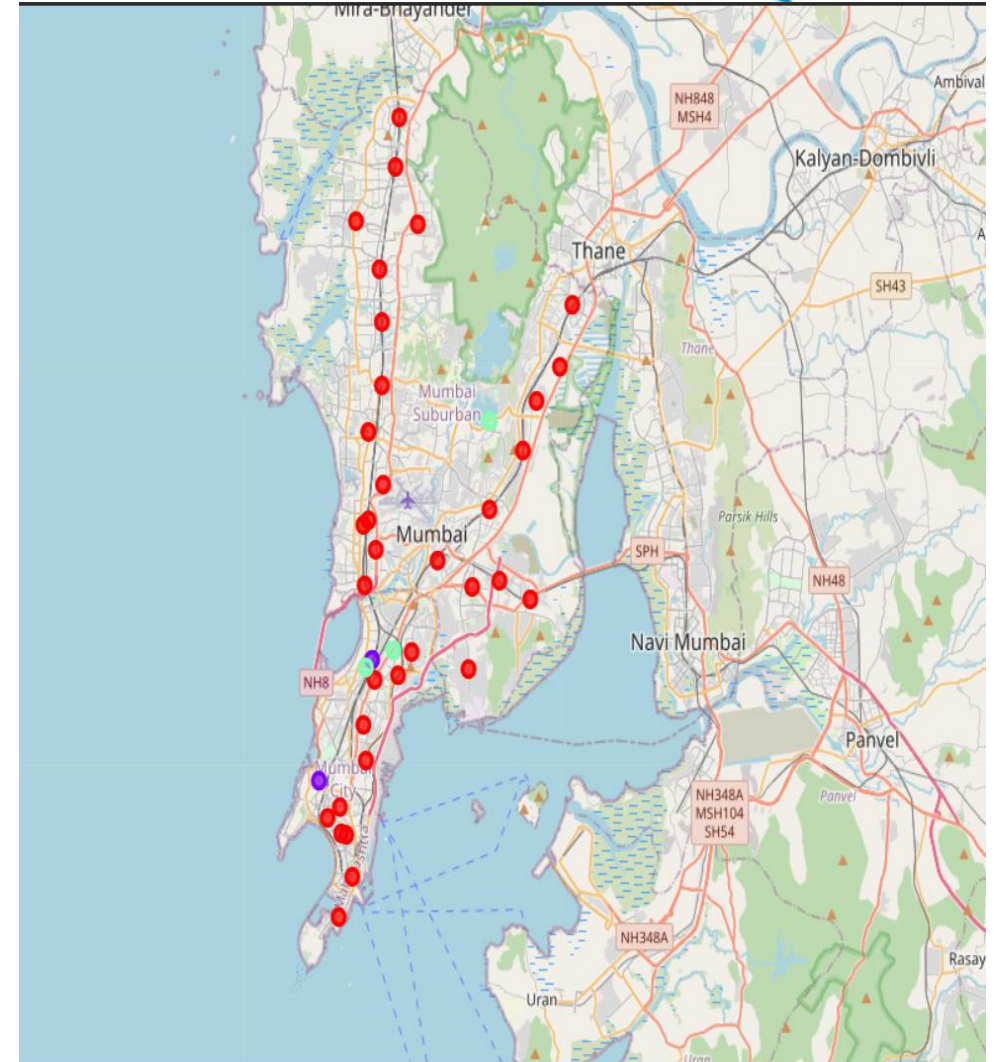
Problem Statement

- Location of shopping mall is important decision on success or failure
- Objective: To analyse & select the best location of Mumbai to open an new mall
- The project is timely as city is currently from shorage of rental places
- Business Question
 - In Mumbai, if the property developer is looking to open a new shopping mal, where would you recommend that should be opened?

- Data required
 - List of neighborhood in Mumbai
 - Latitude and longitude co-ordinates of the neighborhoods
 - Venus data, particularly data related to shopping malls
- Sources of data
 - Wikipedia :
https://en.wikipedia.org/wiki/List_of_neighbourhoods_in_Mumbai
 - Geocoder package for latitude and longitude of coordinates
 - Foursquare API for venue data

- Web scraping Wikipedia page for neighborhood list
- Get latitude and longitude co-ordinates using Geocoder
- Get venue data using foursquare API
- Group data by neighborhood & take mean frequency of occurrence of each venue category
- Filter venue category by shopping mall
- Perform clustering on data by using k-means clustering
- Visualize the clusters in the map using Folium

- Categorized the neighborhood into three clusters
 - Cluster 0: Neighborhood with large number shopping malls
 - Cluster 1: Neighborhood with low shopping malls
 - Cluster 2: Neighborhood with low shopping malls



- Most of the malls are concentrated in eastern & western suburbs of the city
- Highest number of shopping malls in cluster 0
- Low numbers of shopping malls in cluster 1 & 2
- Oversupply of shopping malls mostly in eastern & western suburbs and low shopping malls in the southern & central suburbs of mumbai

Recommendations

- Open new shopping malls in Cluster 1 & 2 where there is low competition
- Avoid neighborhoods in cluster 0, already high concentration of shopping malls & intense competition.

- Solution of the problem statement: The neighborhood in cluster 1 & 2 are the most preferred location to open a new shopping mall
- Findings will help property developers, investors & business community to capitalize on the opportunities on high potential location while avoiding the overcrowded areas in the decision to open a new mall.

Thank You

