COURSERA CAPSTONE

IBM APPLIED DATA SCIENCE CAPSTONE

Opening a new Shopping Mall in Bangalore, India

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BUSINESS PROBLEM

- Location of the shopping mall is one of the most important decisions that will determine whether the mall will be a success or a failure

- Objective: To analyse and select the best locations in the city of Bangalore, to open a new shopping mall in particular area

- This project is timely as the city is currently suffering from oversupply of shopping malls

- Business question
  - In the city of Bangalore if a property developer is looking to open a new shopping mall, where would you recommend that they open it?

DATA

- Data required
  - List of neighbourhoods in Bangalore, India
  - Latitude and longitude coordinates of the neighbourhoods
  - Venue data, particularly data related to shopping malls
- Sources of data
  - Wikipedia page for neighbourhoods
    (https://commons.wikimedia.org/wiki/Category:Suburbs_of_Bangalore)
  - Geocoder package for latitude and longitude coordinates
 - Foursquare API for venue data

METHODOLOGY

- Web scraping Wikipedia page for neighbourhoods list.

- Get latitude and longitude coordinates using Geocoder.

- Use Foursquare API to get venue data.

- Group data by neighbourhood and taking the mean of the frequency of occurrence of each venue category.

- Filter venue category by Shopping Mall.

- Perform clustering on the data by using k-means clustering.

- Visualize the clusters in a map using Folium.

RESULTS

- **Categorized the neighbourhoods into 4 clusters :**

1. <u>Cluster 0:</u> Neighbourhoods with low number to no existence of shopping malls
2. <u>Cluster 1:</u> Neighbourhoods with high concentration of shopping malls
3. <u>Cluster 2:</u> Neighbourhoods with equal concentration shopping malls
4. <u>Cluster 3:</u> Neighbourhoods with moderate shopping malls
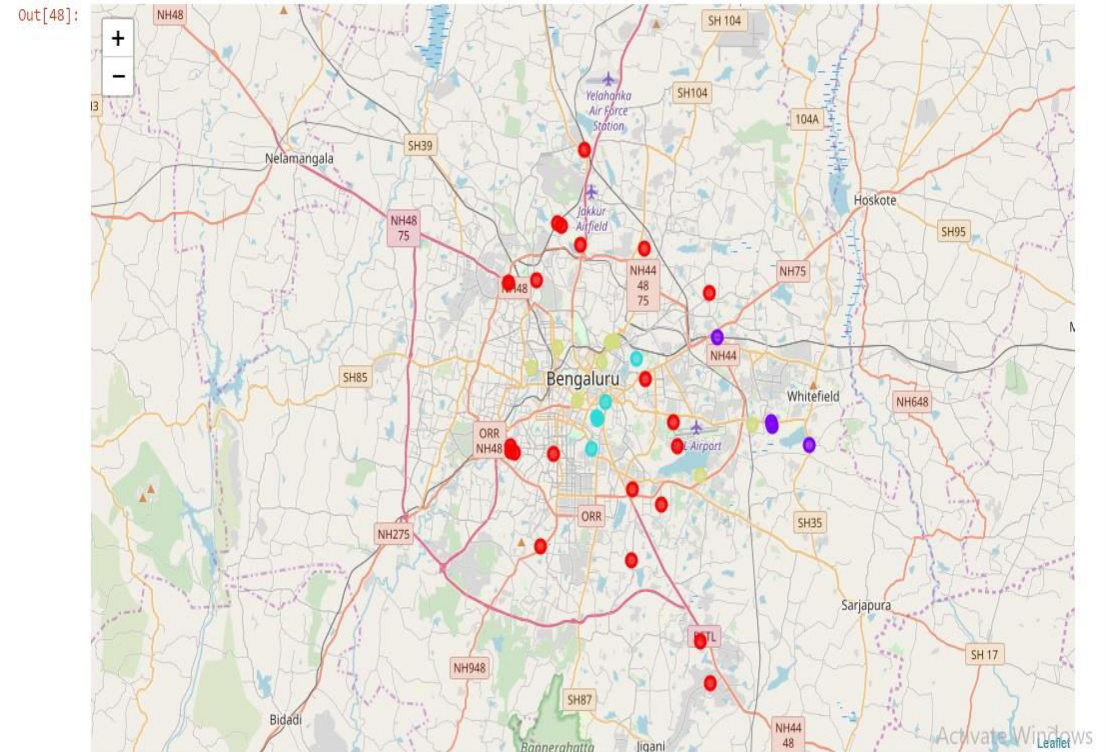
DISCUSSION

- Main focusing shopping Mall around the Bangalore city

- Highest number in cluster 1 and moderate number in cluster 3

- Cluster 2 has equal focusing area where the all area is good for openning.

- Cluster 0 has very low number to no shopping mall in the neighbourhoods

- Oversupply of shopping malls mostly happened in the central area of the city, with the suburb area still have very few shopping malls

- Property developers are advised to avoid neighborhoods in cluster 2 which already have high concentration of shopping malls and suffering from intense competition.

RECOMMENDATIONS

- Open new shopping malls in neighbourhoods in cluster 0 with little to no competition

- Can also open in neighbourhoods in cluster 3 with moderate competition if have unique selling propositions to stand out from the competition

- Avoid neighbourhoods in cluster 1, already high concentration of shopping malls and intense competition

- In cluster 2 is also a good area where the investors invest and start the business but one thing keep in mind that in this area sell the different things .

CONCLUSION

- Answer to business question: The neighbourhoods in cluster 0 are the most preferred locations to open a new shopping mall

- Findings of this project will help the relevant stakeholders to capitalize on the opportunities on high potential locations while avoiding overcrowded areas in their decisions to open a new shopping mall.

- Moreover , the start a new shopping complex or mall stakeholders should be checks and find the accurate area once again and then invest.

<!--Thank You!-->