Coursera Capstone

IBM Applied Data Science Capstone

Opening a new Shopping Mall in Kuala Lumpur

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Bussiness problem

- Location of th 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 Kuala Lumpur, Malaysia to open a new shopping mall.

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

- Bussiness question
  - In the city of Kuala Lumpur, Malaysia, 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 neighbourrhoods in Kuala Lumpur
  - ➢ Latitude and longitude coordinates of the neighbourhoods
  - ➢ Venue data, particularly data realted to shopping malls

- Sources of data
  - ➢ Wikipedia page for neighbourhoods(https://en.wikipedia.org/wiki/Category:Suburbs_in_Kuala_Lumpur)
  - ➢ Geocoder package for latitude and longtitude coordinates
  - ➢ Foursquare API for venue data

Methodology

- Web scraping Wikipedia page for neighbourhoods list

- Get latitude and llongitude 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 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 neighborhoods into 3 clusters:
  - ➢ Cluster 0: Neighborhoods with moderate number of shopping malls
  - ➢ Cluster 1: Neighborhoods with low number to no existence of shopping malls
  - ➢ Cluster 2: Neighbourhoods with high concentration of shopping malls
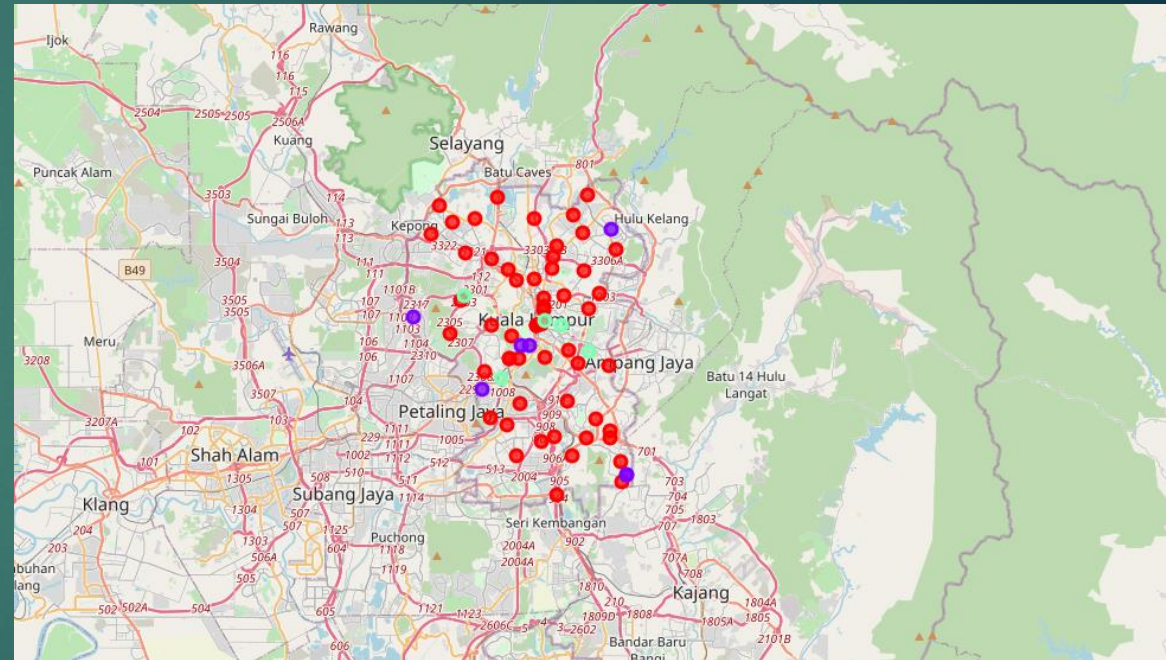
Discusion

- Most of the shopping malls are concentrated in the central area of the city

- Highest number in cluster 2 and moderate number in cluster 0

- Cluster 1 has very low number to no shopping mall in th eneighborhoods

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

Conclusion

▶ Answer to business question: The neighborhoods in cluster 1 are 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