Coursera Capstone

IBM Applied Data Science Capstone

Opening a New Shopping Mall in Kuala Lumpur, Malaysia

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Business Problem

- Location of the shopping mall is one of the most important decisions thatwill determine whether the mall will be a success or a failure
- Objective: To analyze 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
- Business 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 openit?

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- Data required
  - List of neighborhoods in Kuala Lumpur
  - Latitude and longitude coordinates of the neighbourhoods
  - Venue data, particularly data related to shopping malls

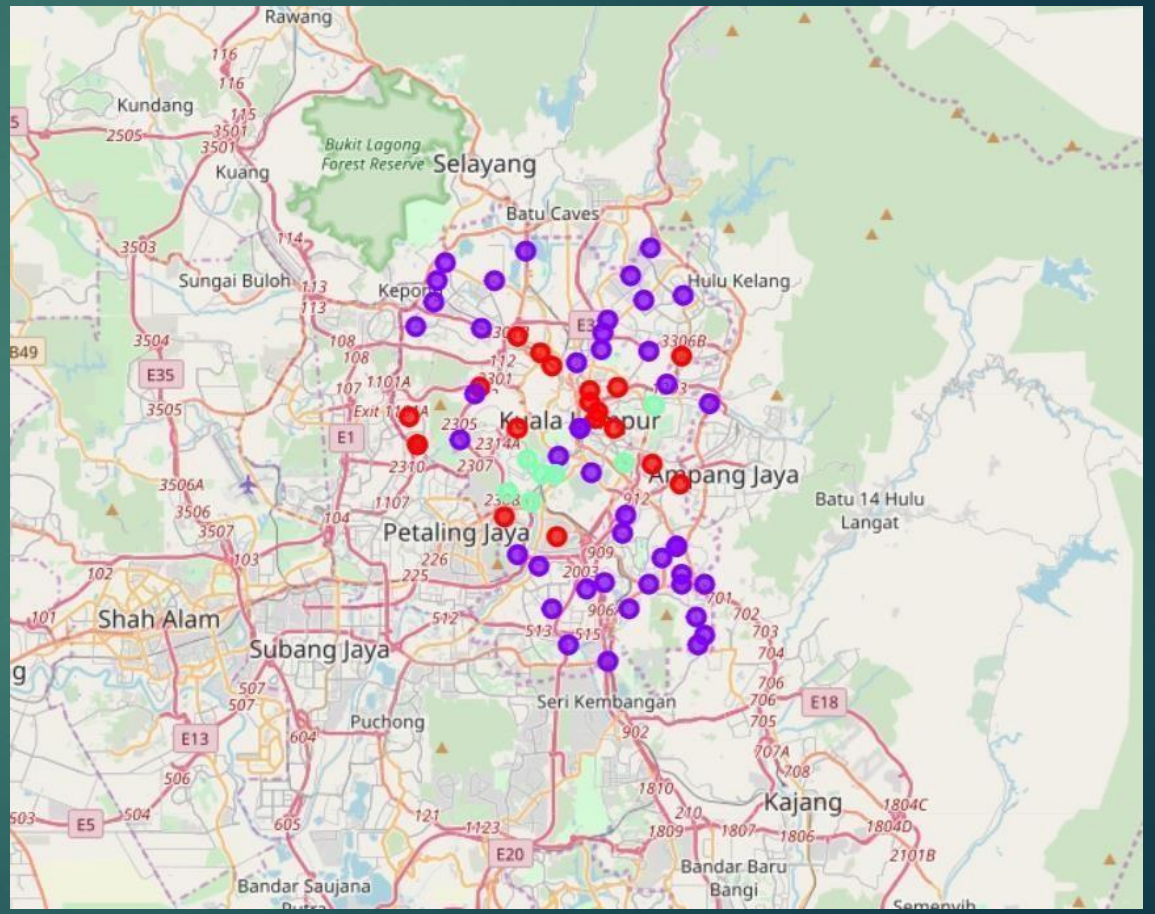
- Sources of data
  - Wikipedia page for neighborhoods (https://en.wikipedia.org/wiki/Category:Suburbs_in_Kuala_Lumpur)
  - Geocoder package for latitude and longitude coordinates
  - Foursquare API for venue data

Methodology

- Web scraping Wikipedia page for neighborhoods list
- Get latitude and longitude coordinates using Geocoder
- Use Foursquare API to get venue data
- Group data by neighborhood 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 neighborhoods into 3 clusters:
  - Cluster 2: Neighborhoods with moderate number of shopping malls
  - Cluster 2: Neighborhoods with low number to no existence of shopping malls
  - Cluster 0: Neighborhoods with high concentration of shopping malls



Discussion

- Most of the shopping malls are concentrated in the central area of the city
- Highest number in cluster 0 and moderate number in cluster 1
- Cluster 2 has very low number to no shopping mall in the neighborhoods
- Oversupply of shopping malls mostly happened in the central area of thecity, with the suburb area still have very few shopping malls

Recommendations

- Open new shopping malls in neighbourhoods in cluster 1 with little tono competition
- Can also open in neighborhoods in cluster 1 with moderate competition if have unique selling propositions to stand out from the competition
- Avoid neighborhoods in cluster 0, already high concentration of shopping malls and intense competition

Conclusion

- Answer to business question: The neighborhoods in cluster 2 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

Thank you!