



Coursera capstone

IBM Applied Data Science Capstone

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Business Problem

1. Location of the shopping mall is one of the most important decision that will determine whether the mall will be a success or a failure.
2. Objectives : To analyse and select the best location in the city of Kuala Lumpur, Malaysia to open a new shopping mall.
3. This project is timely as the city is currently suffering from oversupply of shopping malls.\
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5. 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 open it.

Data

- **Data required**
 - List of neighbourhoods in Kuala Lumpur
 - Latitude and longitude coordinates of the neighbourhoods.
 - Venue data, particularly data related to shopping malls.
- **Sources of Data**
 - Wikipedia page for neighbourhoods
 - Geocoder package for latitude and longitude coordinates
 - Foursquare API for venue data

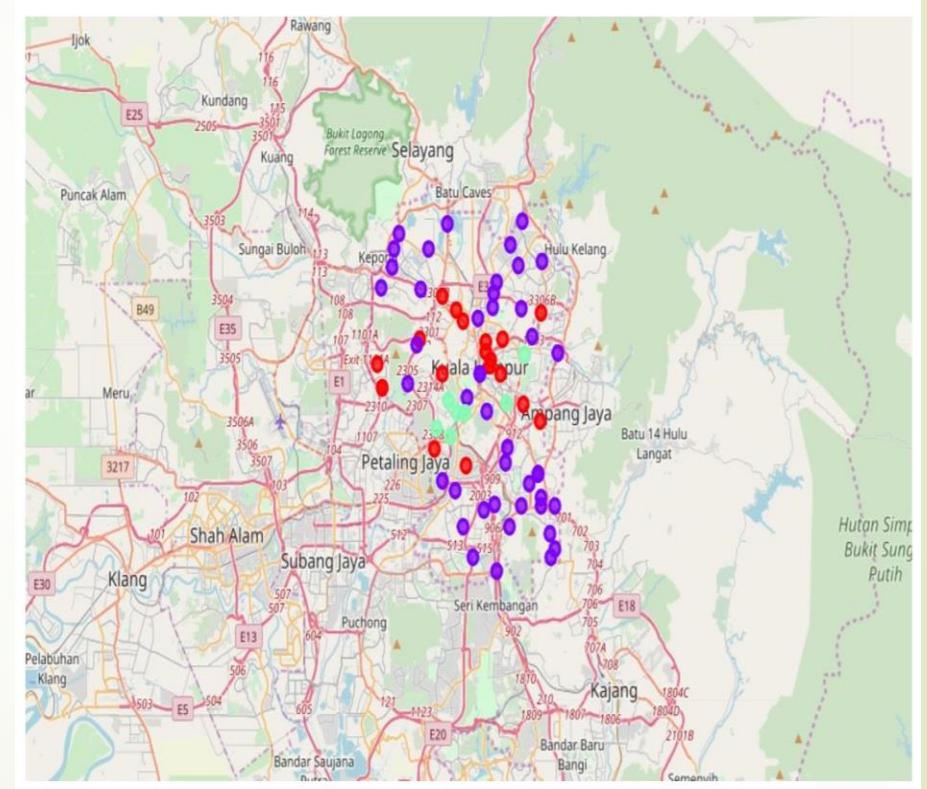
Methodology

- Web sceaping 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 occurance of each venue category
- Filter venue category by shoping mall
- Perform clustering on the data by using K-means clustering
- Visualize the clusters in a map using folium

Result

Categorised the neighbourhoods into 3 clusters:

- ✓ Cluster 0 : Neighbourhoods with moderate number of shopping malls
- ✓ Cluster 1 : Neighbourhoods with low number to no existence of shopping malls
- ✓ Cluster 2 : Neighbourhoods 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 2 and moderate number in cluster 0
- Cluster 1 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.

Recomendations

- Open new shopping malls in neighbourhoods in cluster 1 with little to no competition
- Can also open in neighbourhoods in cluster 0 with moderate competition if have unique selling propositions to stand out from the competition
- Avoid neighbourhoods in cluster 2, already high concentrations of shopping malls and intense competition



Conclusion

Answer to business question: The neighbourhoods in cluster 1 are the most preferred locations to open a new shopping mall

Finding 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.