
COURSERA CAPSTONE
IBM APPLIED DATA SCIENCE CAPSTONE
***OPENING A NEW SHOPPING MALL IN KUALA
LUMPUR, MALAYSIA***

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 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 OPEN IT?



DATA

- **DATA REQUIRE**

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

(https://en.wikipedia.org/wiki/Category:Suburbs_in_Kuala_Lumpur)

GEOCODER PACKAGE FOR LATITUDE AND LONGITUDE COORDINATES

FOURSQUARE API FOR VENUE DATA



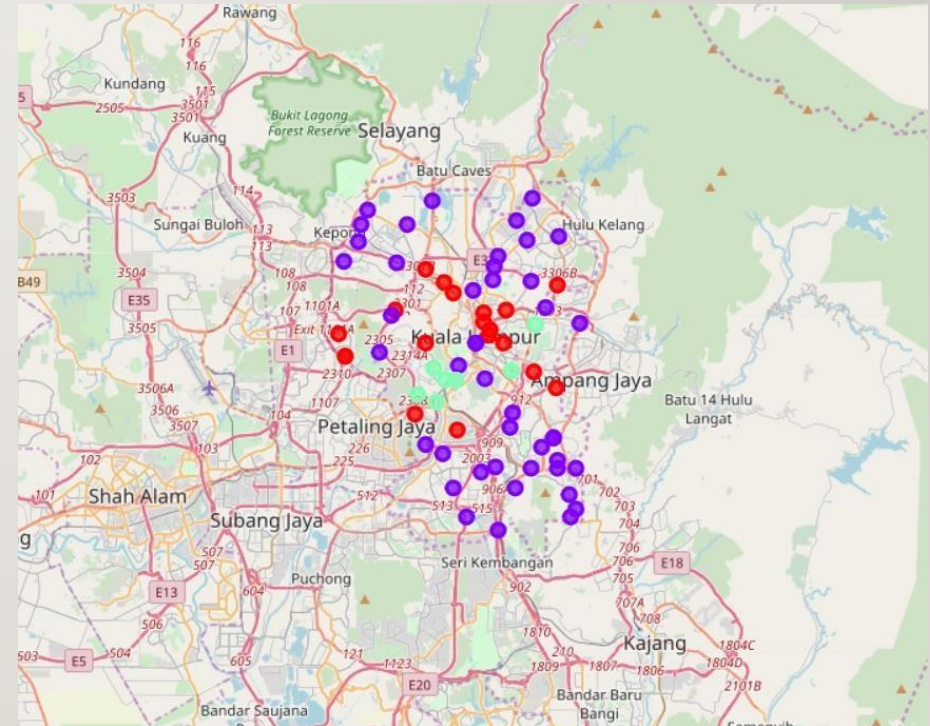
METHODOLOGY

- Web scraping Wikipedia page for 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 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

Recommendations

- 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 concentration of shopping malls and intense competition
- 

CONCLUSION

- Answer to business question: The neighbourhoods in cluster I 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