THE BATTLE OF NEIGHBORHOOD

(IBM Applied Data Science Capstone)

Opening a New Shopping Mall in Kuala Lumpur, Malaysia

By : Sumit Prakashrao Mohod

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Business Problem :

Location of Shopping Mall is one of the most important decision that will 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 open it?

Data :

Data Required :

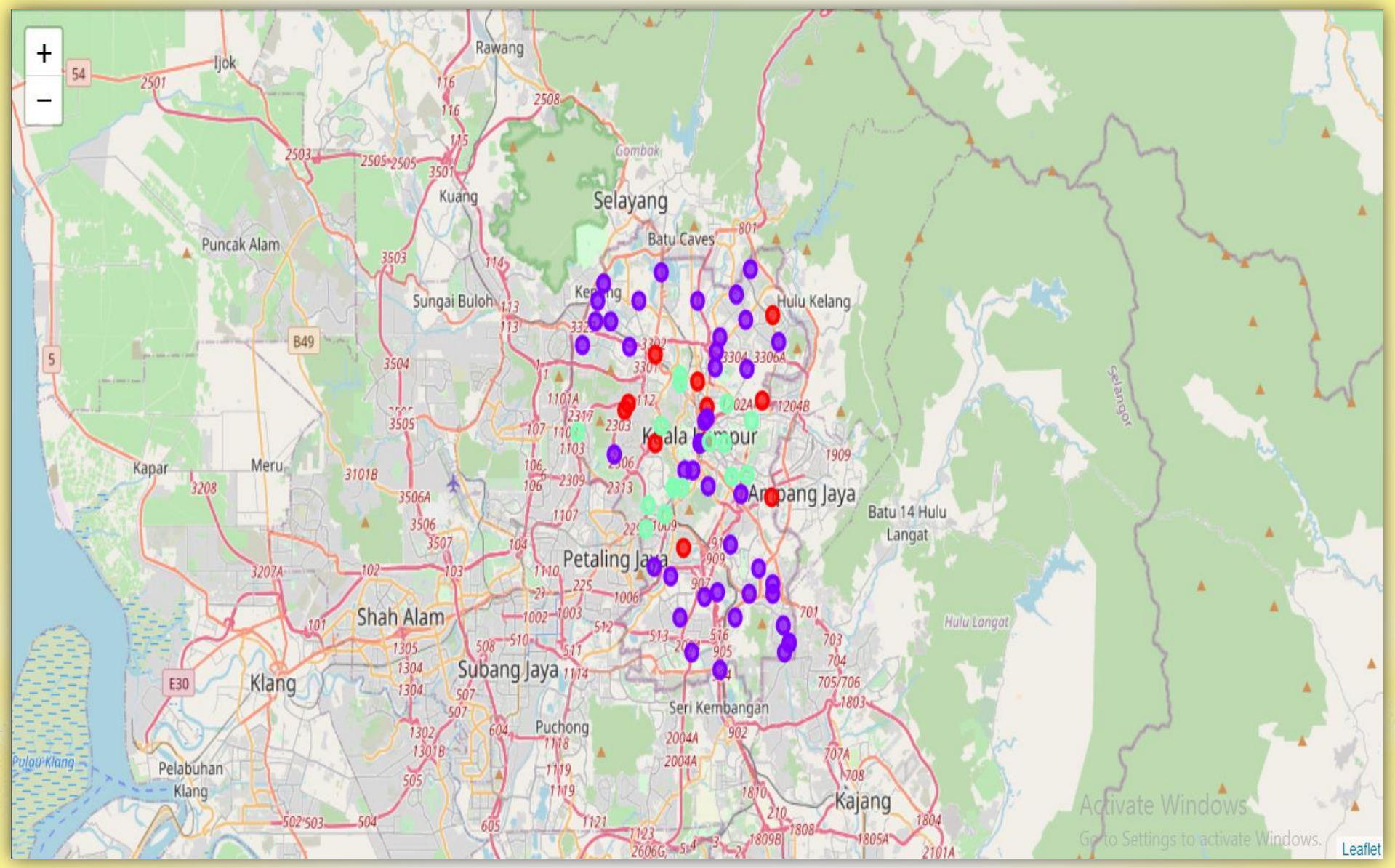
- List of neighborhoods in Kuala Lumpur, Malaysia
- Latitude and Longitude coordinates of the neighborhoods
- Venue data, particularly data related to Shopping Malls

Sources of Data :

- Wikipedia page of neighborhoods of Kuala Lumpur, Malaysia (https://en.wikipedia.org/wiki/Category:Suburbs_in_Kuala_Lumpur)
- Geocoder library for latitude and longitude coordinates
- Foursquare API for venue data

Methodology :

- Web Scrapping 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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Result :

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

Recommendations :

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

Conclusion :

- **Answer to business question** : The neighborhoods in cluster 1 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


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