

IBM Data Science Professional Certificate – Coursera Capstone

Planning to open a New Shopping Mall in Kuala Lumpur, Malaysia

By,

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Problem Statement:

- The retail mall's location is one of the most crucial considerations that will decide whether the mall succeeds or fails.
- **Our Goal:** To research and pick the best locations in Kuala Lumpur, Malaysia, for the opening of a new retail complex.
- **Relevance:** This initiative comes at a good moment because the city is currently experiencing an overstock of shopping malls.
- **Question to be addressed?**

“If a property developer wanted to build a new retail mall in Kuala Lumpur, Malaysia, where would you suggest they build it? “

Data:

- **Data Required**

- Neighborhood List of Kuala Lumpur
- The neighborhoods' latitude and longitude coordinates
- Statistics on venues, notably data on retail malls

- **Data Sources**

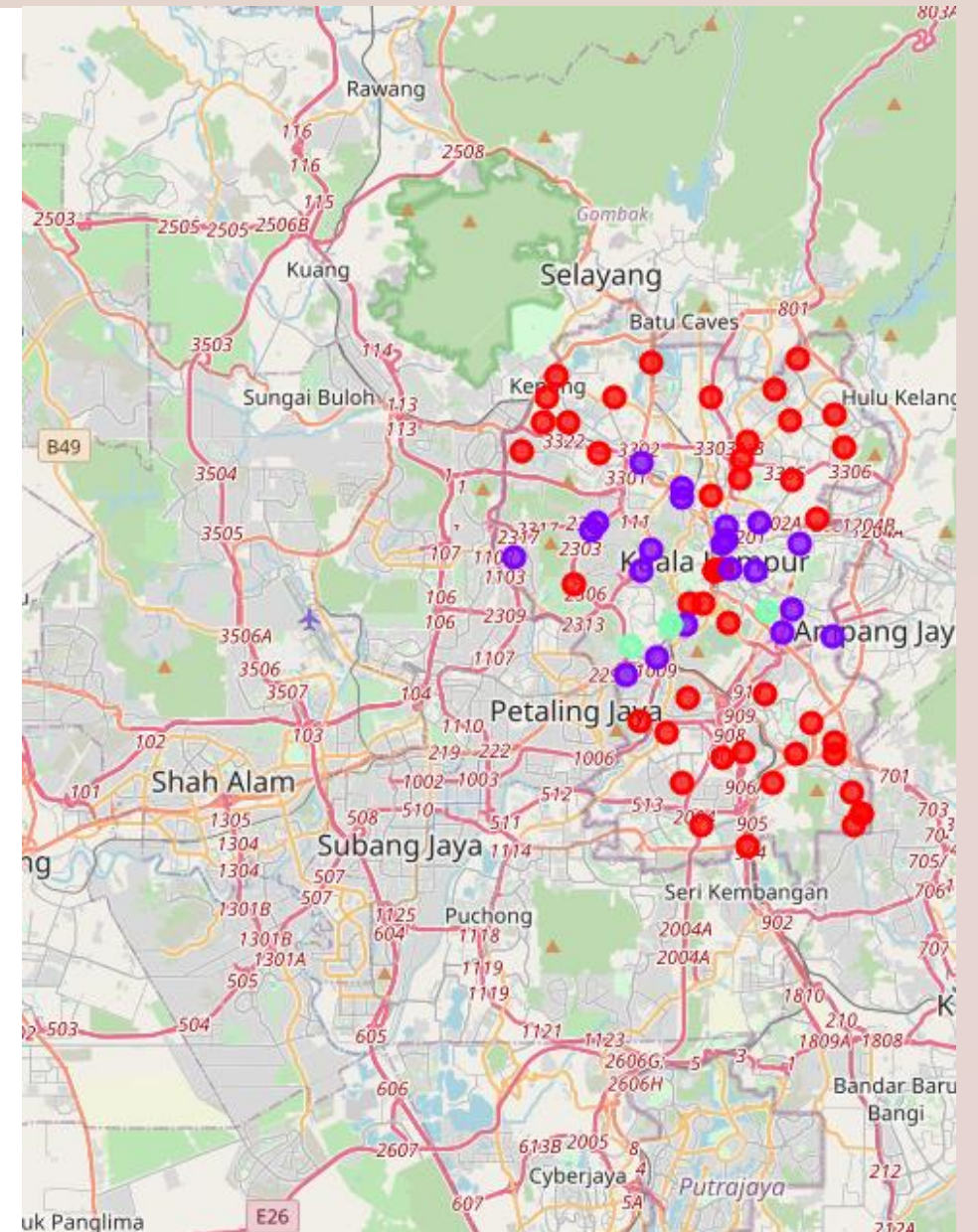
- Wikipedia's neighborhood page
(https://en.wikipedia.org/wiki/Category:Suburbs_in_Kuala_Lumpur)
- For latitude and longitude coordinates, there is a geocoder package.
- For venue data, use the Foursquare API.

Methodology:

- Wikipedia page was scraped for a list of neighborhoods.
- Geocoder can be used to obtain latitude and longitude coordinates.
- To access venue information, use the Foursquare API.
- Data is grouped by neighborhoods, and the mean of the frequency of occurrence of each venue category is calculated.
- Shopping Mall is a great way to narrow down your venue options.
- Using k-means clustering, do data clustering.
- Using Folium, see the clusters on a map.

Results:

- Categorized the neighborhoods into 3 clusters:
 - **Cluster 0:** Shopping malls are found in rather densely populated areas.
 - **Cluster 1:** Shopping malls are few or non-existent in some neighborhoods.
 - **Cluster 2:** Shopping malls are concentrated in high-density areas.



Discussion:

- Most shopping malls are centered in the city's central area.
- Cluster 2 has the highest number, whereas cluster 0 has a moderate number.
- Cluster 1 has a small number of shopping malls in its communities, if any at all.
- The oversupply of shopping malls occurred mostly in the city's core area, with the suburbs still having a scarcity of shopping malls.

Recommendation:

- Open new shopping complexes in cluster 1 neighborhoods with little or no competition.
- If you have unique selling propositions to stand out from the competition, you can open in cluster 0 communities with moderate rivalry.
- Avoid cluster 2, which has a significant concentration of shopping centres and fierce rivalry.

Conclusion:

- **Answer to business question:** Cluster 1 communities are the most popular places to build a new shopping mall.
- The outcomes of this project will aid key parties in their decisions to establish a new retail mall by allowing them to capitalize on opportunities in high-potential sites while avoiding overcrowding.

Thank You