C. Rodriguez (2020)

Segmenting and Clustering Neighborhoods of Kuala Lumpur and Johor Bahru

Introduction

Kuala Lumpur and Johor Bahru are two major cities in Malaysia. Both cities become a center of attention for residential, job employment, tourism, education, shopping and sports activity. Both cities are well known in Malaysia, and become the top choice for local and foreign communities.

In this project, we will study in details the area classification using Foursquare data and machine learning segmentation and clustering.

Objective

The aim of this project is to segment areas of Kuala Lumpur and Johor Bahru based on the most common places captured from Foursquare.

Using segmentation and clustering, we hope we can determine:

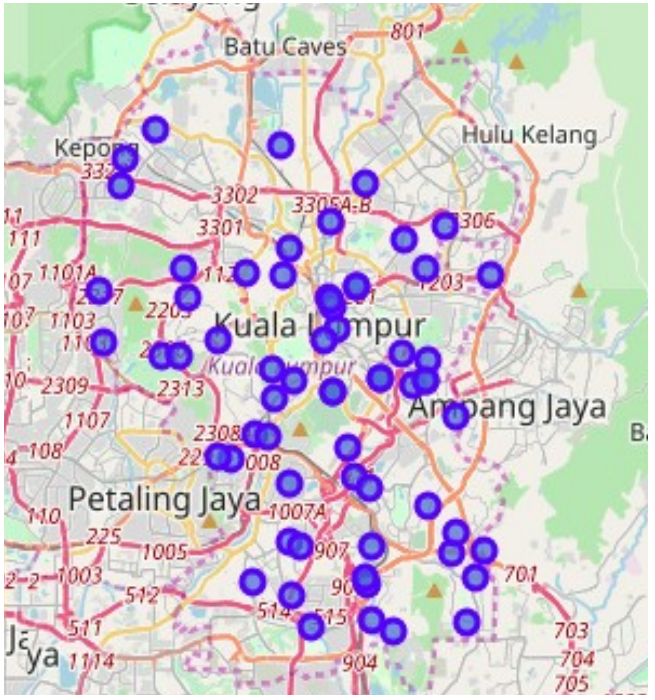
- The similarity or dissimilarirty of both cities
- Classification of area located inside the city whether it is residential, tourism places, or others

Data

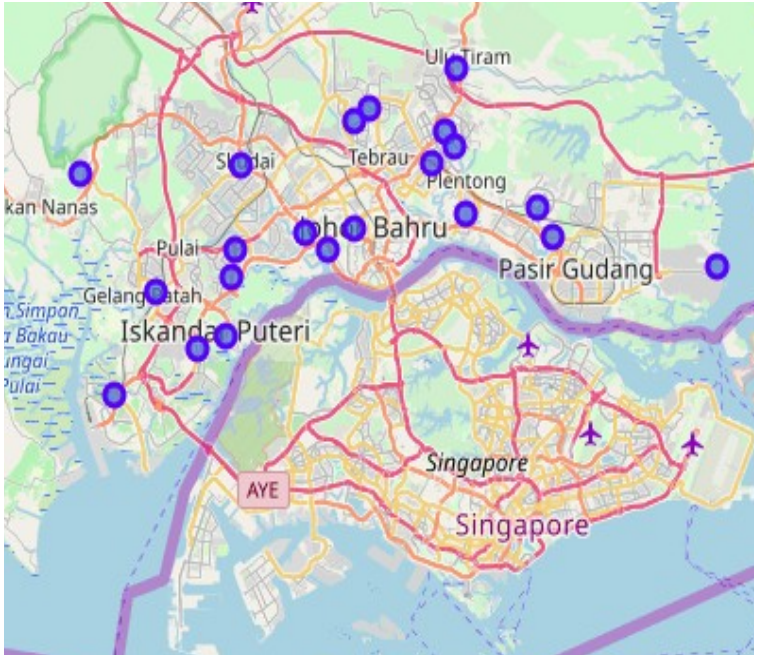
The data acquired from wikipedia pages and restructure to csv file for easier manipulation and reading. Both files uploaded to my github for references.

Another aspect to consider for this project is the Foursquare data. I believe that the data as good as provided, meaning although we are using Foursquare data for segmentation and clustering, the amount and accuracy of data captured can't 100% determine correct classification in real world.

Venues map



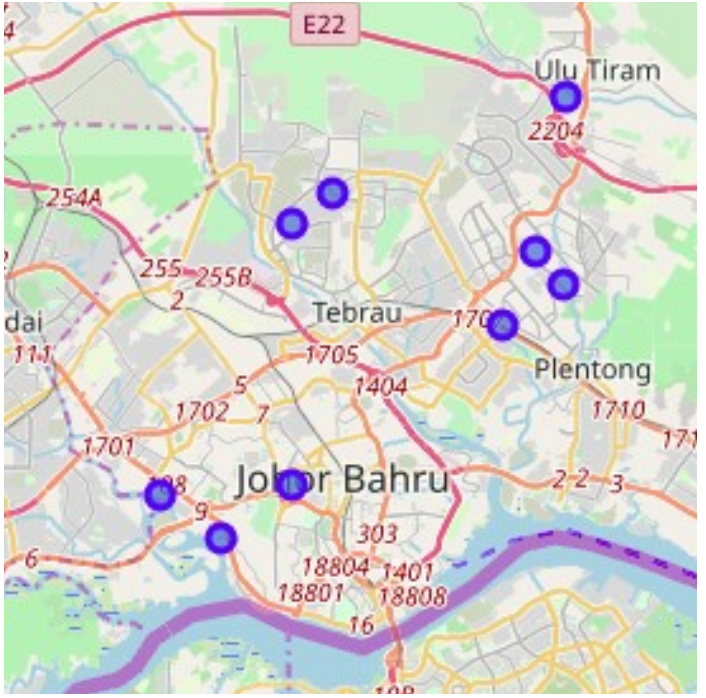
Kuala Lumpur Venues map



Johor Bahru Venues map

Venues map in Bukit Bintang & J. B. District

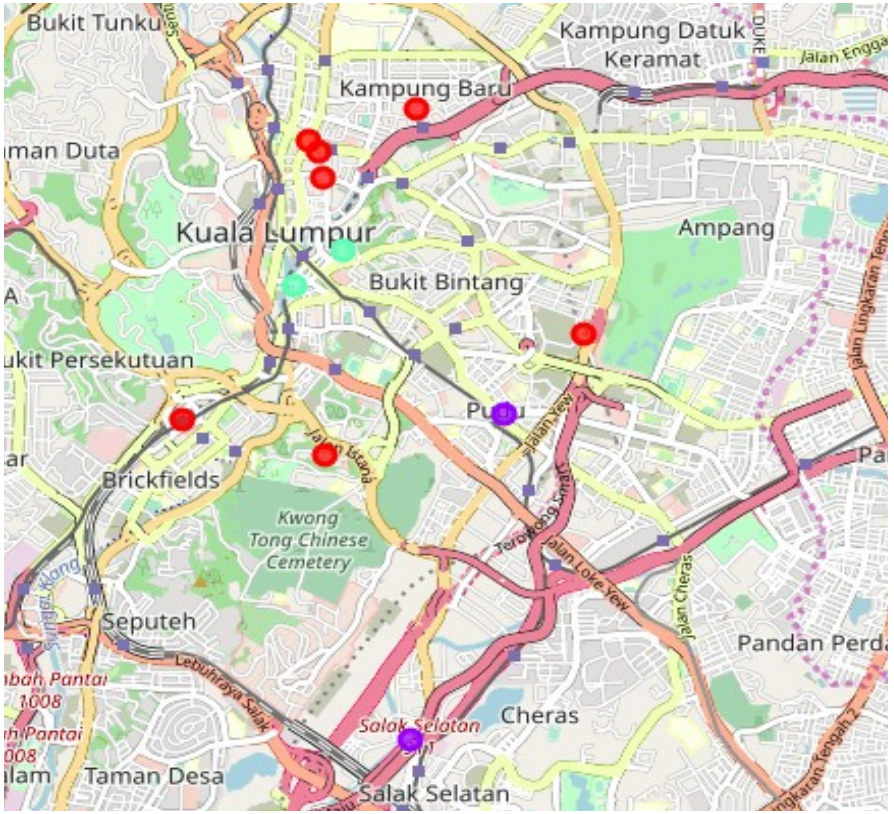
We found out that Bukit Bintang area in Kuala Lumpur and Johor Bahru area in Johor Bahru both have the highest number of area within it those district



Analyzing Kuala Lumpur

	Area	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue
0	Bukit Nanas	Indian Restaurant	Malay Restaurant	Café	Shopping Mall	Coffee Shop	Zoo	Hostel	Nature Preserve
1	Bukit Petaling	Malay Restaurant	Convenience Store	Asian Restaurant	Seafood Restaurant	Food Court	Falafel Restaurant	Restaurant	Museum
2	Chow Kit	Chinese Restaurant	Malay Restaurant	Asian Restaurant	Hotel	Coffee Shop	Indian Restaurant	Bakery	Shopping Mall
3	Dang Wangi	Malay Restaurant	Hotel	Shopping Mall	Chinese Restaurant	Coffee Shop	Asian Restaurant	Bakery	Food Court
4	KL City Centre	Chinese Restaurant	Indian Restaurant	Hotel	Coffee Shop	Asian Restaurant	Café	Food Truck	Restaurant

K-means cluster Kuala Lumpur

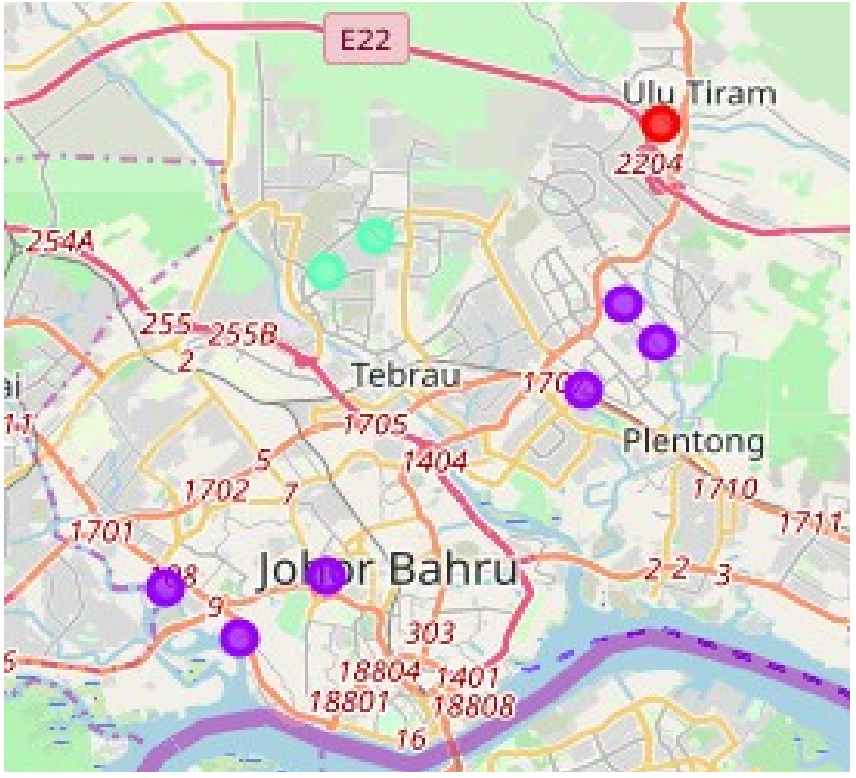


- Cluster 1: Tourism
- Cluster 2: Residental
- Cluster 3: Mix

Analyzing Johor Bahru

	Area	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue
0	Bandar Dato' Onn	Convenience Store	Track Stadium	Asian Restaurant	Thai Restaurant	Baseball Stadium	Basketball Stadium	Ice Cream Shop	Café
1	Danga Bay	Seafood Restaurant	Boat or Ferry	Zoo Exhibit	Castle	Chinese Restaurant	Waterfront	Hotel	Pub
2	Desa Jaya	Hotel	Malay Restaurant	Smoke Shop	Convenience Store	Restaurant	Zoo Exhibit	Chinese Restaurant	Food Court
3	Ehsan Jaya	Asian Restaurant	Convenience Store	Hookah Bar	Food	Malay Restaurant	Clothing Store	Grocery Store	Food Truck
4	Johor Bahru	Malay Restaurant	Café	Bus Station	Fast Food Restaurant	Thai Restaurant	Convenience Store	Donut Shop	Indonesian Restaurant

K-means cluster Johor Bahru



- Cluster 1: Residental
- Cluster 2: Tourism
- Cluster 3: Sport

Conclusion

In conclusion, both cities Kuala Lumpur and Johor Bahru are the center of attraction among Malaysian.

However, to declare both cities are similar or dissimilar base on common venues visited is quite difficult. Both cities is similar in some venues also dissimilar in certain venues.

And for classification based on common venues, again we must have more systematic or quantitative way to identify and declare this.

Comparison can be made, but no such method or quantitative data to determine this. We hope in the future, a method to determine it can be establish and explore for references.