



# FEASIBILITY STUDY OF OPENING NEW KOREAN RESTAURANT IN JAKARTA, INDONESIA

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BANGKIT DANA SETIAWAN

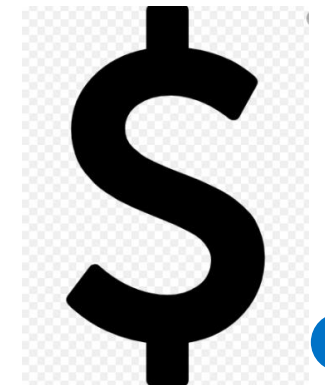
*APPLIED DATA SCIENCE CAPSTONE WITH IBM*

# INTRODUCTION

- High influence of Korean culture affects global business
- Korean food industry is growing in Indonesia
- Jakarta as the capital city of Indonesia shows rapid economic growth in the last few years



**Great time to open new  
Korean Restaurant**



But  
Where  
????



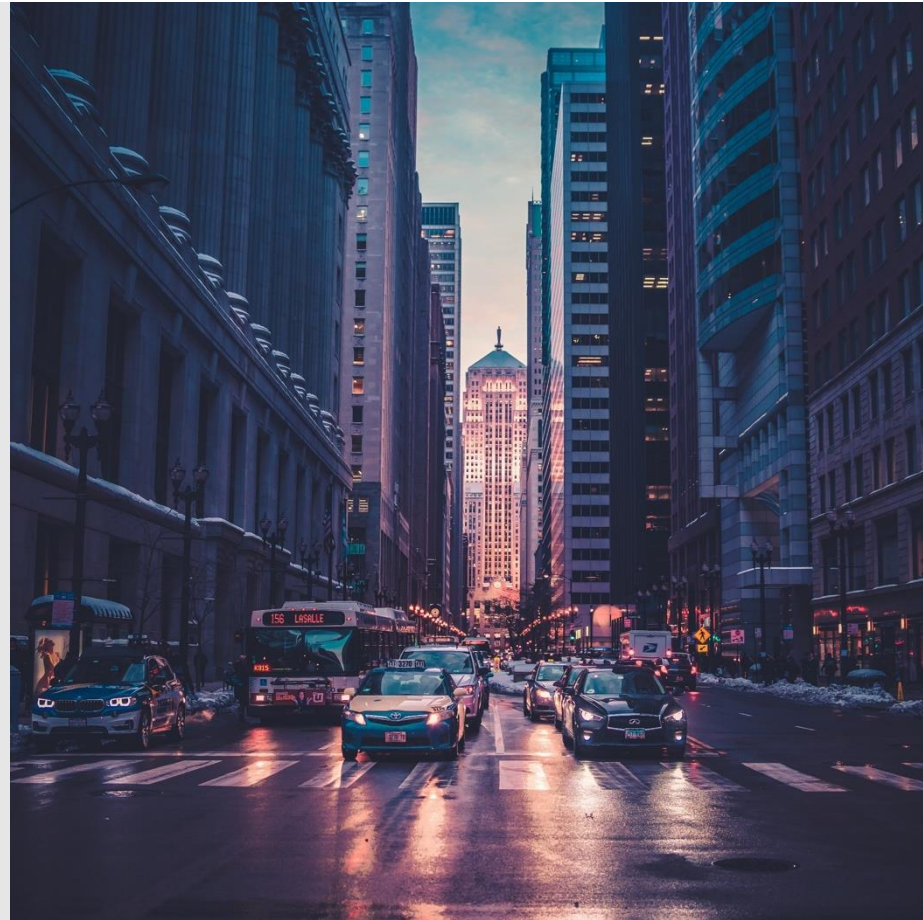


# OBJECTIVE



## OBJECTIVE

The objective this capstone project is to **analyze and select the best location** in the **Jakarta**, as the capital city in Indonesia, to **open a new Korean Restaurant**.



# AUDIENCE



## AUDIENCE

This project is particularly useful to **property developers and investors** looking to open or invest in new Korean Restaurant in Jakarta, Indonesia.

- **DATA**



## LIST OF NEIGHBORHOODS IN JAKARTA.



- This defines the scope of this project which only focus on the city of **Jakarta, the capital city of Indonesia.**
- The neighborhoods data in Jakarta will be taken from Wikipedia page [https://en.wikipedia.org/wiki/Category:South Jakarta](https://en.wikipedia.org/wiki/Category:South_Jakarta)
- This contains of **63 neighborhoods**
- This data will be utilized through **web scrapping techniques to extract** the data from Wikipedia page with the help of **Python requests and beautifulsoup packages**

## LATITUDE AND LONGITUDE COORDINATES OF THOSE NEIGHBORHOODS.

- This will be required to **plot the map and also get the venue data**
- After data from wikipedia already extracted, then latitude and longitude of the neighborhoods will be determined using the **Python Geocoder package**

## VENUE DATA THROUGH FOURSQUARE API

- This will be used for **performing clustering** in the Neighborhoods
- Foursquare API will provide many **categories of the venue data**, we are particularly interested in the **Korean Restaurant category** in order to help us to solve the business problem.

# METHODOLOGY

**START**

Web scrapping and extraction using list of neighborhood from Wikipedia by request and beautiful soup package



Get geographical latitude and longitude using Geocoder Package



All of data neighborhoods with latitude and longitude will be put in Pandas Dataframe

**X**

**X**

Dataframe will be visualized using folium map package



Foursquare ID and secret key need to be obtained by registering Foursquare Developer



100 Venues from 2000 m radius will be extracted using Foursquare API

**X**

**X**

Venue data in JSON format will be acquired from calling Foursquare API



Venues JSON format will be extracted based on venue name, category, and geographical



Each neighborhood will be grouped based on the mean of occurrence frequency of each category

**X**

**X**

Data will be filtered for only "Korean Restaurant"



Data will be performed clustering by using k-Means clustering into 3 cluster based on frequency occurrences



Each cluster will be analyzed the frequency of occurrence for "Korean Restaurant"

**END ●**

# RESULT

## Dataframe of Neighborhoods in Jakarta with Latitude and Longitude

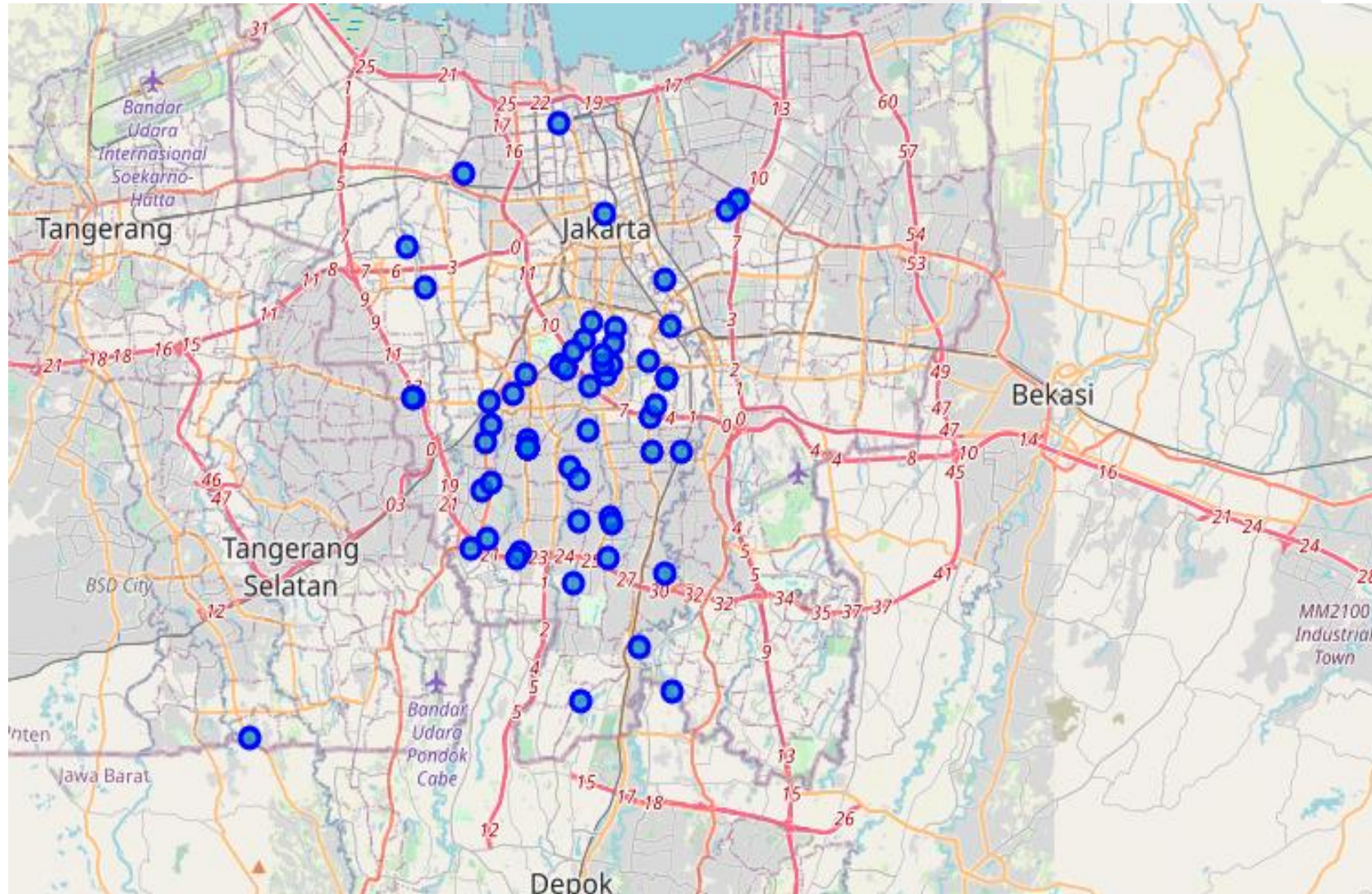
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In [ ] :
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	Neighborhood	Latitude	Longitude
0	South Jakarta	-6.25374	106.79731
1	AMS Indonesia	-6.27824	106.82858
2	ASEAN MRT station	-6.16624	106.87657
3	Atma Jaya Catholic University of Indonesia	-6.19417	106.84914
4	Balai Sarbini	-6.25374	106.79731
...	...	...	...
58	Tanjung Barat railway station	-6.29827	106.84905
59	Tebet Honda Park	-6.23891	106.84519
60	Tebet railway station	-6.22939	106.84971
61	Tebet, South Jakarta	-6.22939	106.84971
62	The Plaza Semanggi	-6.21959	106.81440



# RESULT

## Map Visualization of Neighborhoods in Jakarta





# RESULT

## 100 Venues within radius 2000 meters in Neighborhoods

	Neighborhood	Latitude	Longitude	VenueName	VenueLatitude	VenueLongitude	VenueCategory
0	South Jakarta	-6.25374	106.79731	Nasi Uduk Pak Joko Putro	-6.254641	106.796036	Indonesian Restaurant
1	South Jakarta	-6.25374	106.79731	Sopo Ngiro Japanese Food	-6.251255	106.797441	Japanese Restaurant
2	South Jakarta	-6.25374	106.79731	Chung Gi Wa 청기와	-6.252591	106.800207	Korean Restaurant
3	South Jakarta	-6.25374	106.79731	Nasi Campur Kenanga	-6.253358	106.800189	BBQ Joint
4	South Jakarta	-6.25374	106.79731	All Fresh	-6.249712	106.797916	Fruit & Vegetable Store
...	...	...	...	...	...	...	...
5921	The Plaza Semanggi	-6.21959	106.81440	Okuzono	-6.233408	106.812024	Japanese Restaurant
5922	The Plaza Semanggi	-6.21959	106.81440	Fairmont Jakarta	-6.225578	106.799239	Hotel
5923	The Plaza Semanggi	-6.21959	106.81440	Loewy	-6.227236	106.826087	Bistro
5924	The Plaza Semanggi	-6.21959	106.81440	PEPeNERO	-6.215197	106.821084	Italian Restaurant
5925	The Plaza Semanggi	-6.21959	106.81440	Legend of Noodles (취강해물짬뽕)	-6.233139	106.812124	Korean Restaurant

Based on the data, it is known that in the neighborhood in Jakarta have 234 unique venues categories.

# RESULT

## Occurrence Frequency Venues Category For Each Neighborhood In Jakarta

	Neighborhoods	Accessories Store	Acehnese Restaurant	African Restaurant	American Restaurant	Arcade	Art Gallery	Art Museum	Asian Restaurant	Athletics & Sports	...	Veterinarian	Video Game Store	Video Store	Vietnamese Restaurant	Water Park	Wine Bar	Wings Joint
0	AIS Indonesia	0.0	0.00	0.0	0.00	0.00	0.02	0.01	0.03	0.00	...	0.0	0.0	0.0	0.0	0.0	0.00	0.01
1	ASEAN MRT station	0.0	0.01	0.0	0.00	0.00	0.00	0.00	0.07	0.01	...	0.0	0.0	0.0	0.0	0.0	0.00	0.01
2	Atma Jaya Catholic University of Indonesia	0.0	0.00	0.0	0.00	0.02	0.01	0.00	0.01	0.00	...	0.0	0.0	0.0	0.0	0.0	0.00	0.00
3	BTPN Towers	0.0	0.00	0.0	0.00	0.00	0.01	0.00	0.01	0.00	...	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4	Balai Sarbini	0.0	0.00	0.0	0.00	0.00	0.01	0.00	0.01	0.00	...	0.0	0.0	0.0	0.0	0.0	0.00	0.00
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
58	Tebet railway station	0.0	0.00	0.0	0.00	0.00	0.02	0.00	0.01	0.00	...	0.0	0.0	0.0	0.0	0.0	0.00	0.00
59	Tebet, South Jakarta	0.0	0.00	0.0	0.00	0.00	0.02	0.00	0.01	0.00	...	0.0	0.0	0.0	0.0	0.0	0.00	0.00
60	The Pakubuwono	0.0	0.00	0.0	0.00	0.01	0.00	0.00	0.01	0.00	...	0.0	0.0	0.0	0.0	0.0	0.01	0.01
61	The Peak Twin Towers	0.0	0.00	0.0	0.00	0.00	0.01	0.00	0.01	0.00	...	0.0	0.0	0.0	0.0	0.0	0.00	0.00
62	The Plaza Semanggi	0.0	0.00	0.0	0.01	0.00	0.00	0.00	0.02	0.01	...	0.0	0.0	0.0	0.0	0.0	0.01	0.00

# RESULT

## Filtered Data for “Korean Restaurant” in Jakarta

	Neighborhoods	Korean Restaurant
0	AIS Indonesia	0.00
1	ASEAN MRT station	0.00
2	Atma Jaya Catholic University of Indonesia	0.00
3	BTPN Towers	0.01
4	Balai Sarbini	0.01
...	...	...
58	Tebet railway station	0.02
59	Tebet, South Jakarta	0.02
60	The Pakubuwono	0.02
61	The Peak Twin Towers	0.01
62	The Plaza Semanggi	0.04



# RESULT

## Clustered Data for Korean Restaurant in Neighborhood in Jakarta: Cluster 0

]:		Neighborhood	Korean Restaurant	Cluster Labels	Latitude	Longitude
0		AIS Indonesia	0.0	0	-6.278240	106.828580
28		Lebak Bulus Grab MRT station	0.0	0	-6.289210	106.776030
37		Pancoran, South Jakarta	0.0	0	-6.255480	106.843910
38		Pasar Minggu Baru railway station	0.0	0	-6.171480	106.826490
39		Pasar Minggu railway station	0.0	0	-6.292650	106.827910
41		Pejaten Village	0.0	0	-6.280500	106.829050
43		Pesanggrahan, South Jakarta	0.0	0	-6.236400	106.754470
21		Jeruk Purut Cemetery	0.0	0	-6.279910	106.816500
44		Pondok Indah	0.0	0	-6.268570	106.780560
45		Pondok Indah Mall	0.0	0	-6.266260	106.783350
18		Jakarta Intercultural School	0.0	0	-6.286060	106.782530
17		Jagakarsa	0.0	0	-6.343080	106.817450
46		Ragunan Zoo	0.0	0	-6.301940	106.814380
29		Lenteng Agung railway station	0.0	0	-6.323830	106.839080
15		Golden Triangle of Jakarta	0.0	0	-6.139410	106.809250
13		Fatmawati MRT station	0.0	0	-6.292530	106.793400

Cluster 0:

Neighborhoods in Jakarta  
with low number of Korean  
Restaurant

# RESULT

## Clustered Data for Korean Restaurant in Neighborhood in Jakarta: Cluster 1

[56]:

	Neighborhood	Korean Restaurant	Cluster Labels	Latitude	Longitude
55	Sudirman Central Business District	0.06	1	-6.22577	106.81183
36	Pacific Place Jakarta	0.06	1	-6.22450	106.80974
62	The Plaza Semanggi	0.04	1	-6.21959	106.81440
7	Capital Place Jakarta	0.05	1	-6.23201	106.82067

Cluster 1:

Neighborhoods in Jakarta with high number of Korean Restaurant

# RESULT

## Clustered Data for Korean Restaurant in Neighborhood in Jakarta: Cluster 2

	Neighborhood	Korean Restaurant	Cluster Labels	Latitude	Longitude
30	List of regencies and cities in Jakarta	0.010000	2	-6.253740	106.797310
60	The Pakubuwono	0.020000	2	-6.234881	106.791954
59	Tebet, South Jakarta	0.010000	2	-6.229390	106.849710
58	Tebet railway station	0.010000	2	-6.229390	106.849710
3	BTPN Towers	0.010000	2	-6.253740	106.797310
4	Balai Sarbini	0.010000	2	-6.253740	106.797310
6	Blok M, Jakarta	0.010000	2	-6.157031	106.773199
53	South Jakarta	0.010000	2	-6.253740	106.797310
52	Singapore International School, Indonesia	0.011236	2	-6.197270	106.758760
9	Ciputra World Jakarta	0.010000	2	-6.253740	106.797310
50	Setiabudi Astra MRT station	0.010000	2	-6.209560	106.821590
49	Setiabudi	0.010000	2	-6.221240	106.825280
14	Gandaria City	0.020000	2	-6.245720	106.783930
61	The Peak Twin Towers	0.010000	2	-6.253740	106.797310
47	Senayan City	0.020000	2	-6.228000	106.796760
19	Jalan H.R. Rasuna Said	0.020000	2	-6.211365	106.830520

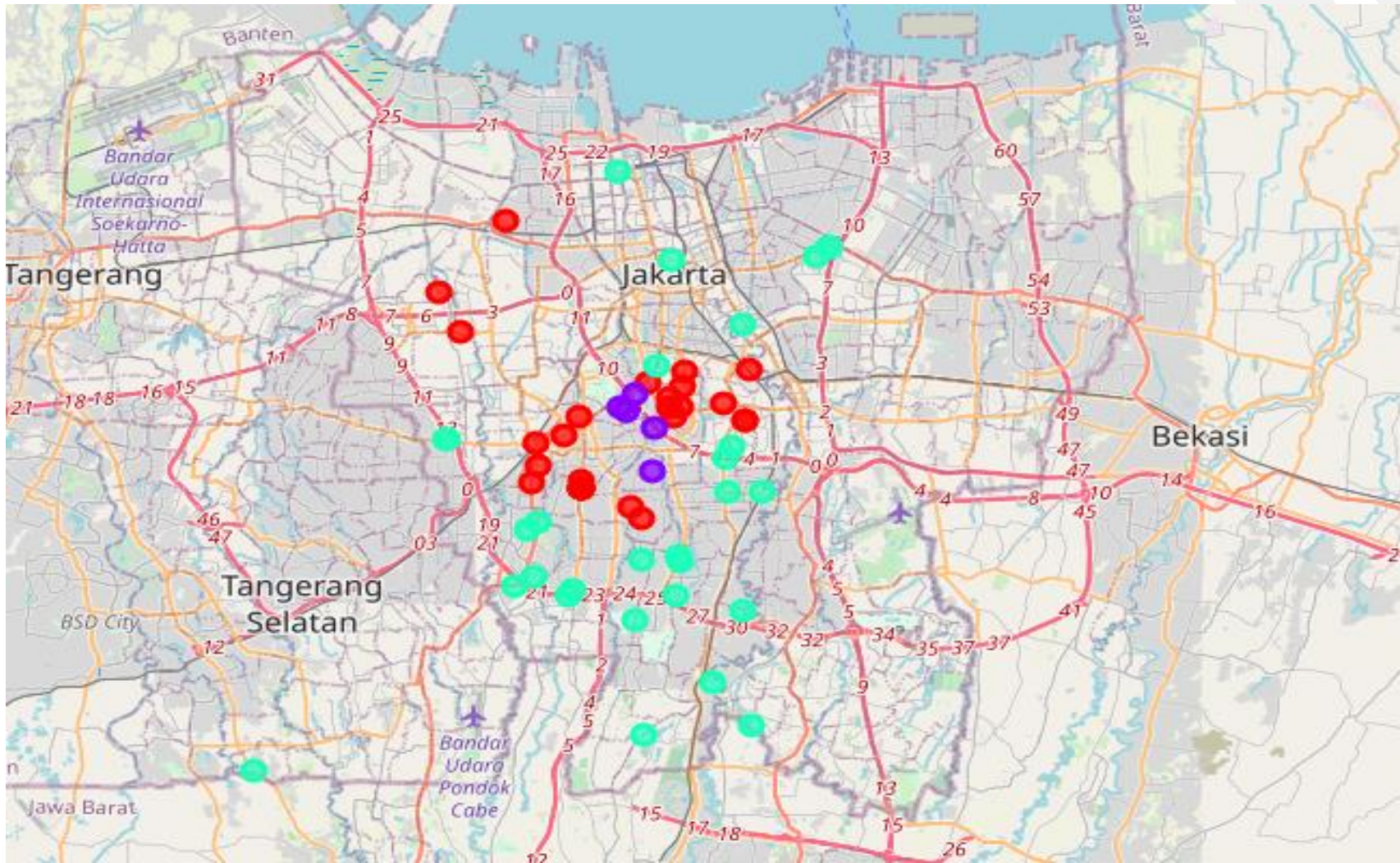
### Cluster 2:

Neighborhoods in Jakarta with moderate number of Korean Restaurant



# RESULT

## Clustered Data for Korean Restaurant in Neighborhood in Jakarta: Visualization Map



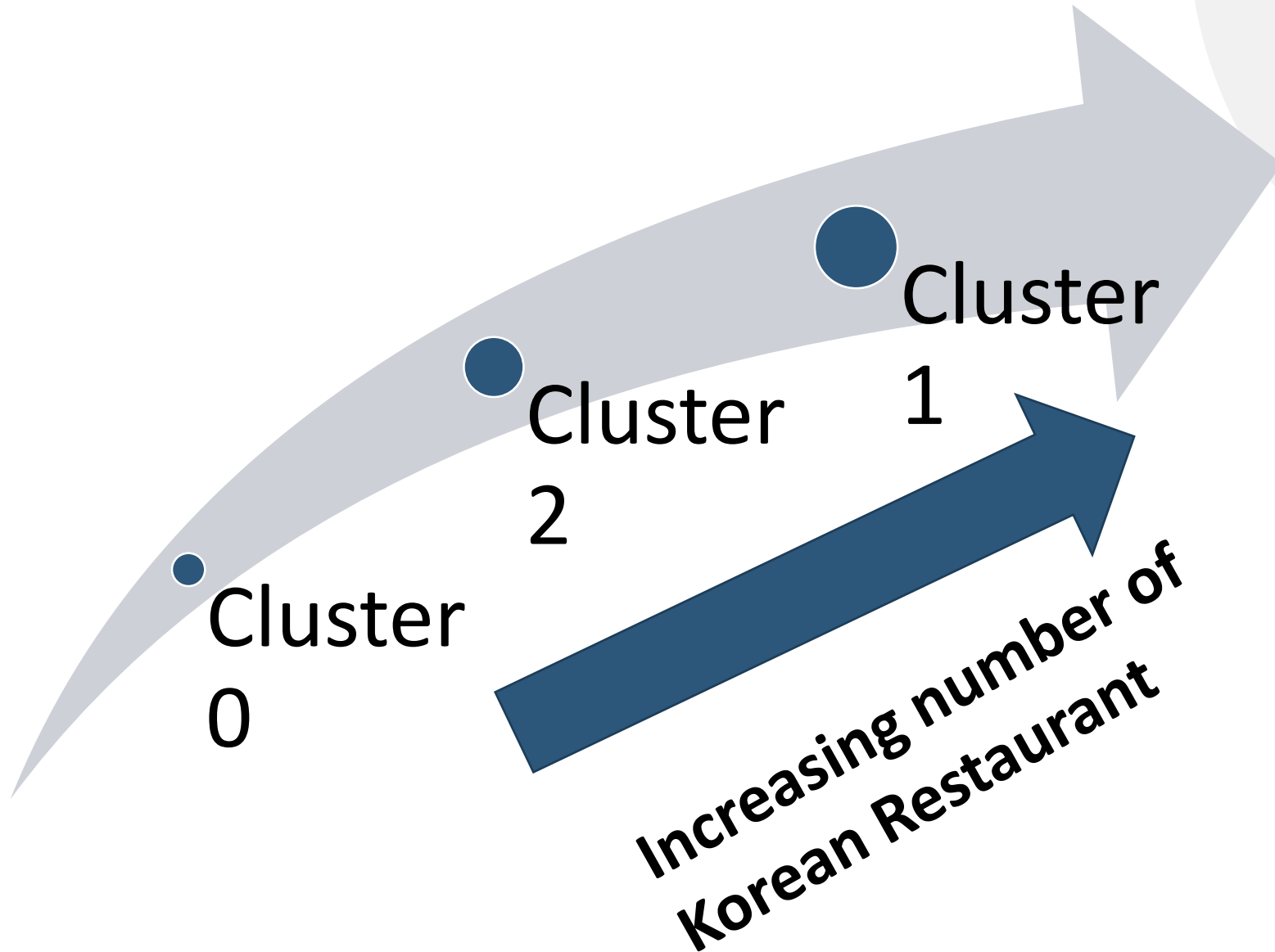
### Legends

**Red Color: Cluster 0**

**Purple Color: Cluster 1**

**Mint Color: Cluster 2**

# DISCUSSION



- This **project recommends** property developers to capitalize on these findings to open new Korean restaurant in neighborhoods **in cluster 0** with little to no competition.
- Property developers with unique selling propositions to stand out from the competition can also open new Korean restaurant in neighborhoods in cluster 2 with moderate competition.
- Lastly, property developers are advised to **avoid neighborhoods in cluster 1** which already have high concentration of Korean restaurant and suffering from intense competition.

# CONCLUSION

- This **project recommends** property developers to capitalize on these findings to open new Korean restaurant in neighborhoods **in cluster 0** with little to no competition.
- Property developers **with unique selling propositions to stand out from** the competition **can also open** new Korean restaurant in neighborhoods in cluster 2 with moderate competition.
- Lastly, property developers are advised to **avoid neighborhoods in cluster 1** which already have high concentration of Korean restaurant and suffering from intense competition.





# THANK YOU

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***APPLIED DATA SCIENCE CAPSTONE WITH IBM***