



# COURSERA DATA SCIENCE CAPSTONE

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*Singapore*

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# IBM APPLIED DATA SCIENCE CAPSTONE

## Introduction:

Singapore has some of the best infrastructure facilities in South East Asia. Making it one of the most attractive places for people to set up businesses or start a company. Individuals who are interested in living here are also motivated by the various job opportunities available here.

However, it is almost impossible to ensure that a city is saturated with world-class infrastructure facilities. In this project, I will analyse Singapore infrastructure and try to draw meaningful conclusions from it.

# BUSINESS PROBLEM

1. List and visualise all major areas of Singapore with top existing infrastructure
2. What are the best areas in Singapore as per infrastructure
3. Which areas have the potential for the development of infrastructure of various kinds
4. Which areas lack infrastructure facilities
5. Where is the best place to stay within Singapore for all vital infrastructure facilities

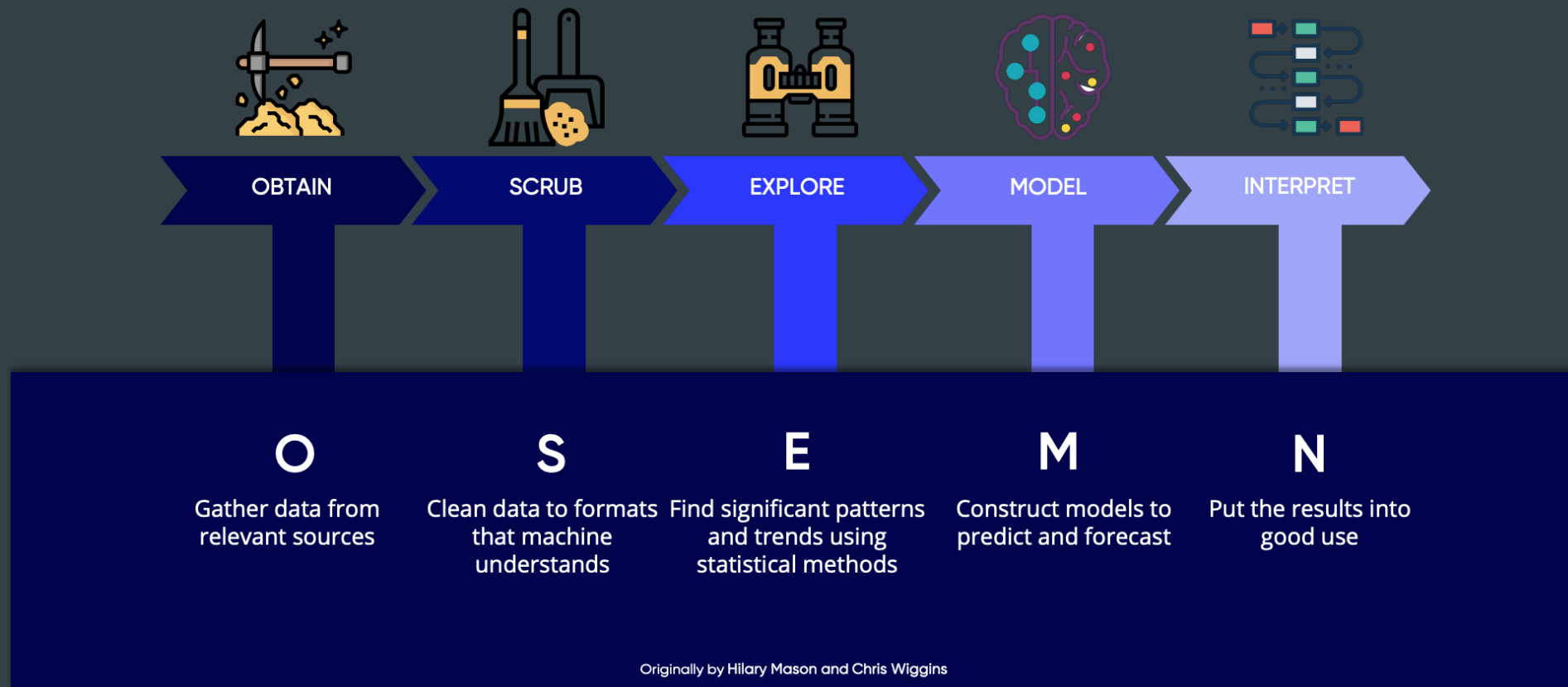
# DATA DESCRIPTION

For this project we need the following data:

- Data containing postal codes of various areas in Singapore, along with their latitude and longitude.
  - Data source: [data.gov.sg](https://data.gov.sg)
  - Description: With the postal codes of areas in Singapore, we can convert it into GPS Coordinates.
- Data on the different types of infrastructure in the different areas of Singapore.
  - Data source: Foursquare API
  - Description: With the API we can get information on the venues in the area.

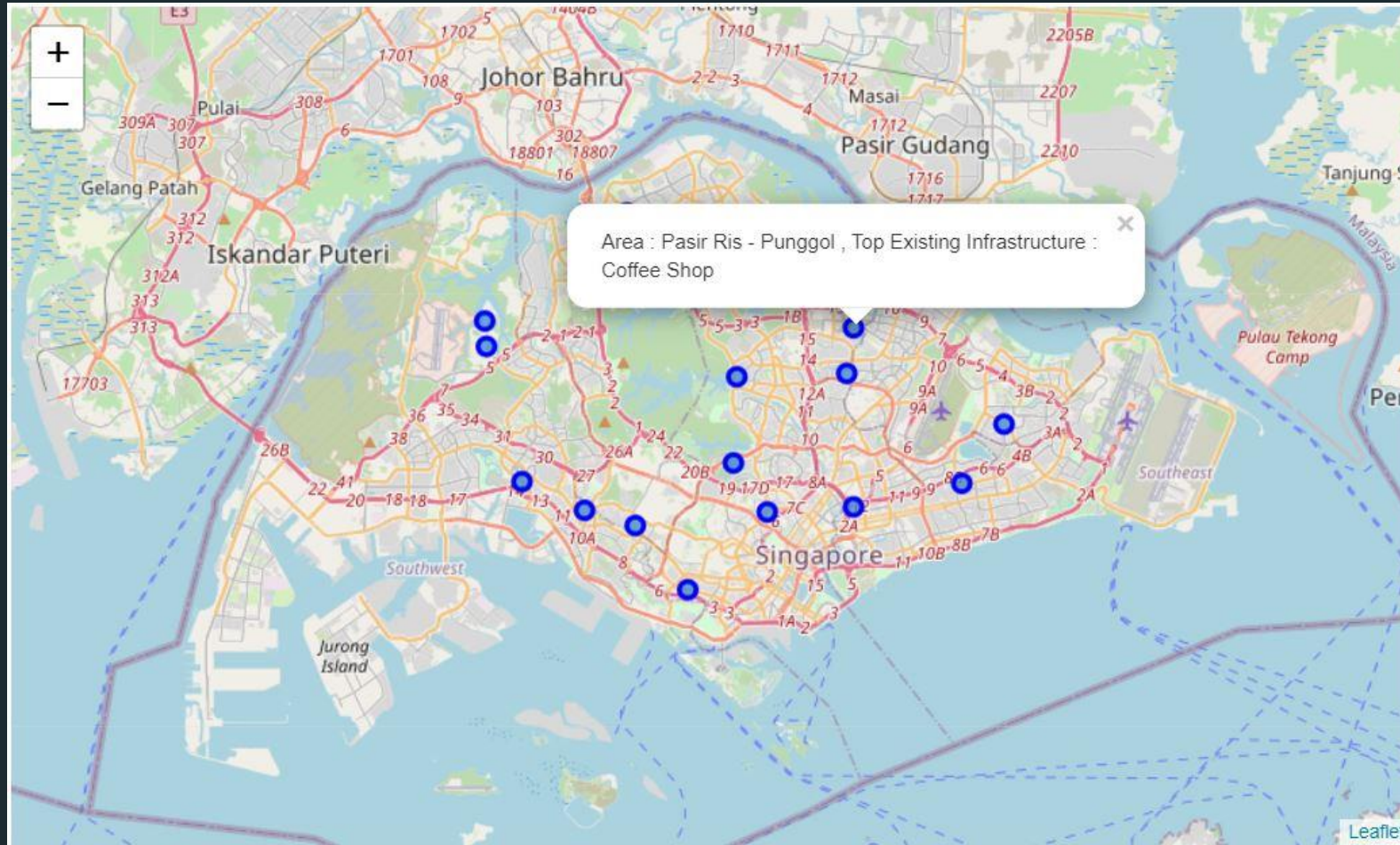
# METHODOLOGY

## Data Science Process



# RESULTS

1. Display top existing infrastructure for each area in Singapore.



# RESULTS

2. What are the best locations in Singapore as per infrastructure?

Gym / Fitness Center	0	6	
Hotel	3	Area	Jalan Besar
Movie Theater	0	Postal Code	328127
Park	0	City	Singapore
Pharmacy	1	Bus Station	1
Playground	1	Business Service	0
Restaurant	2	Café	5
Shopping Mall	0	Electronics Store	0
Supermarket	2	Farmers Market	0
Theater	0	Garden	0
Total infrastructure	16	Gym	1

# RESULTS

3. Which of your choice areas have the potential for the development of infrastructure of various kinds?

These are infrastructures with highest potential in Jalan Besar area :

- Business Service
- Electronics Store
- Farmers Market
- Garden
- Gym / Fitness Center
- Movie Theater
- Park
- Shopping Mall
- Theater



# RESULTS

4. Which areas lack infrastructure facilities?

	Area	Postal Code	Total infrastructure
9	Marsiling - Yew Tee	689286	1
10	Nee Soon	760234	1

5. Where is the best place to stay within Singapore for all vital infrastructure facilities?

	Area	Total infrastructure
6	Jalan Besar	14

# DISCUSSION

- Jalan Besar is the best location in Singapore as per infrastructure
- Most of the areas with high number of infrastructures are located in the South of Singapore.
- This could be due to the more developed and “matured” areas located in the South.

# RECOMMENDATIONS

- Cluster 1 has low number of vital infrastructures – Open new vital infrastructures.
- Cluster 2 has moderate number of vital infrastructures – Competitive market for new infrastructure, cheaper alternative for residents as compared to Cluster 0.
- Cluster 0 has high number of vital infrastructures – Extremely competitive market for new infrastructures, best area to settle in if price is not a major factor.
- If a company is interested in building new vital infrastructures, they may look for areas in the North and West of Singapore.
- If an individual wants to stay in areas with relatively more infrastructures, he might consider areas in the South of Singapore.

# CONCLUSION

- With the results of this project, we are able to provide solutions to the business problems.
- Business developers are able to identify suitable areas to build new infrastructure.
- Visitors and immigrants can obtain insights on the areas of Singapore that may bring about a higher quality of life.