COURSERA CAPSTONE

IBM APPLIED DATA SCIENCE CAPSTONE

OPENING A NEW RESTAURANT IN AUCKLAND, NEW ZEALAND

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JULY 2020

BUSINESS PROBLEM

- Location of the restaurant is one of the most important decisions that will determine whether it will be a success or a failure
- Objective

➢ To analyze and select the best locations in the city of Auckland, New Zealand to open a new restaurant.

- Business question

➢ In Auckland, if an entrepreneur or investor is looking to establish a new restaurant, where would you recommend it?

DATA

- Data required

➢ List of neighborhoods in Auckland

➢ Latitude and longitude coordinates of the neighborhoods

➢ Venue data, particularly data related to restaurants

- Sources of data

➢ Wikipedia page for neighborhoods (https://en.wikipedia.org/wiki/Category:Suburbs_of_Auckland)

➢ Geocoder package for latitude and longitude coordinates

➢ Foursquare API for venue data

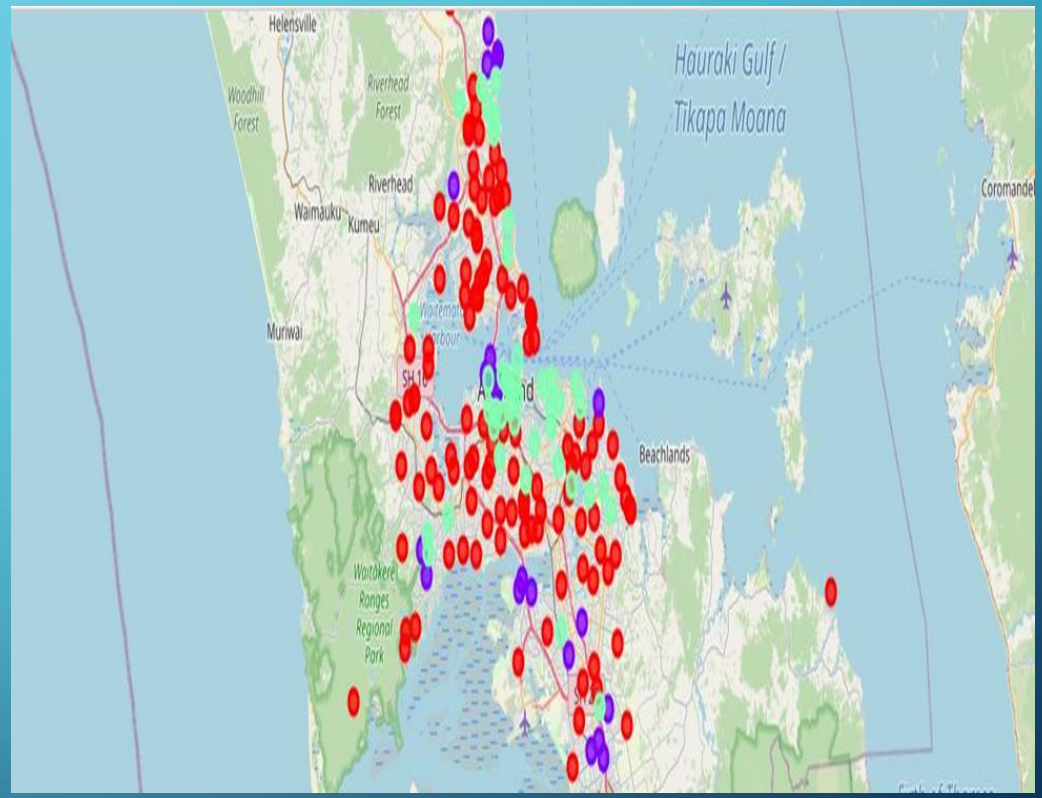
METHODOLOGY

- Web scraping 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 restaurant
- Perform clustering on the data by using k-means clustering
- Visualize the clusters in a map using Folium

FINDING

Neighborhood categorize in clusters

- Cluster 0: Neighborhoods with Low number of restaurants
- Cluster 1: Neighborhoods with moderate to a high number of restaurants
- Cluster 2: Neighborhoods with a high concentration of restaurants



DISCUSSION

- Most of the restaurants are concentrated in the central area of the city
- Highest number in cluster 2 and moderate to high number in cluster 1
- Cluster 0 has very low number to no restaurants in the neighborhoods
- Oversupply of restaurants mostly happened in the central area of the city, with the suburb area still have very few restaurant.

RECOMMENDATIONS

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

CONCLUSION

- Answer to business question: The neighborhoods in cluster 0 are the most preferred locations to open a new restaurant
- 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 restaurant

THANK YOU