



# Opening a new restaurant in Calgary

IBM Applied Data Science Capstone

# Business Problem

## Objective

The objective of this capstone project is to analyse and select the best locations in the city of Calgary, Canada to open a new restaurant. This will be a preliminary overview of the data providing the framework for a more detailed analysis later.

## Target Audience

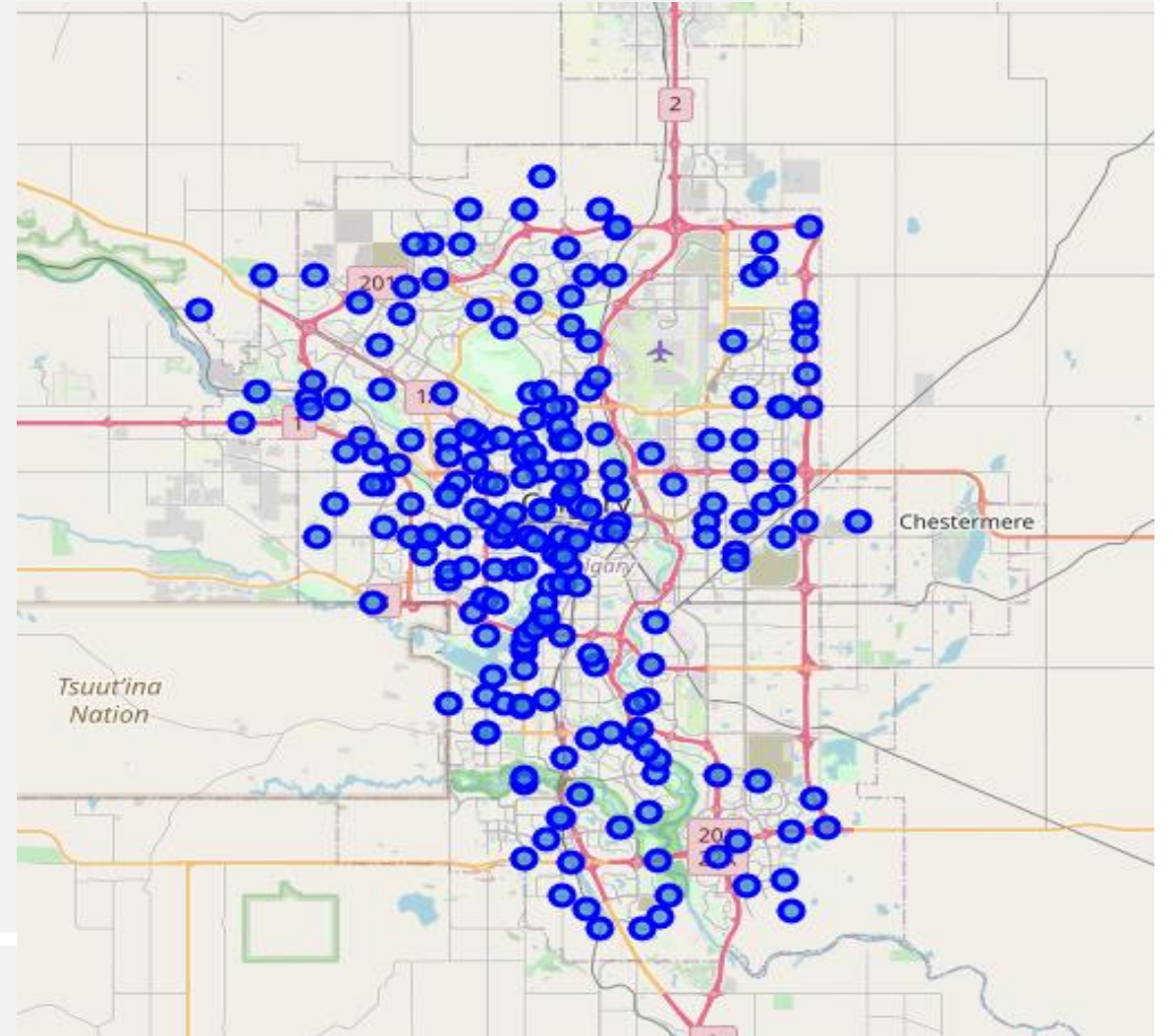
The target audience of this project is entrepreneurs looking to get an overview of the current restaurant scene in Calgary with the eventual goal of obtaining financing and/or investors to open a new establishment.





# Data Sources

- 2019 City of Calgary Census
- Foursquare API



Map showing all 212 Calgary Communities

# 2019 Calgary Census Data

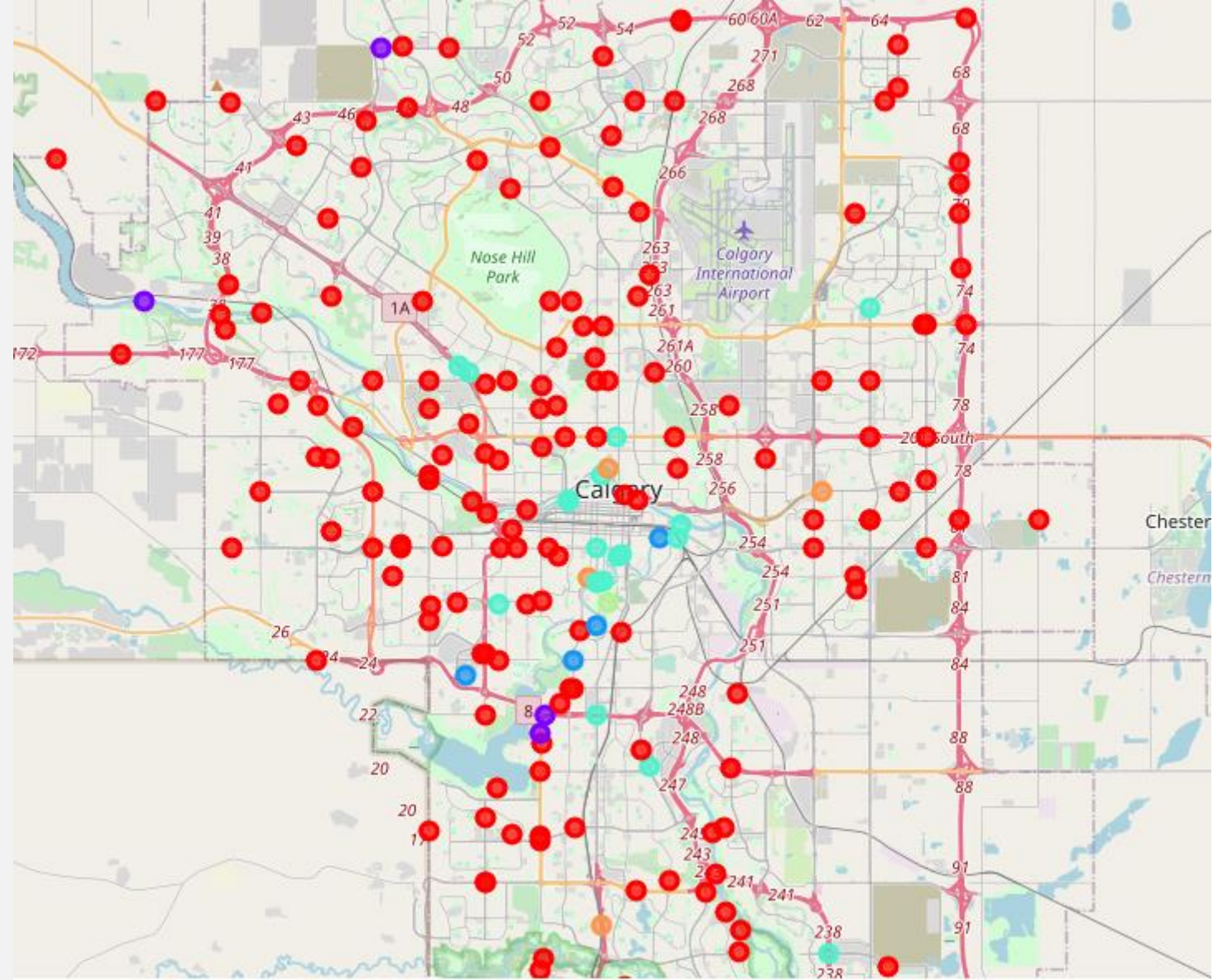
- Original data set contained 306 rows in 142 columns
- Data was cleaned and prepared using SQL queries

Queried census data sample set

	CLASS	CLASS_CODE	COMM_CODE	NEIGHBORHOOD	RES_CNT	LATITUDE	LONGITUDE
0	Residential	1	ABB	ABBNEYDALE	5957	51.066971	-113.935119
1	Residential	1	ACA	ACADIA	10520	50.980779	-114.050012
2	Residential	1	ALB	ALBERT PARK/RADISSON HEIGHTS	6997	51.045153	-113.981603
3	Residential	1	ALT	ALTADORE	6942	51.023194	-114.100546
4	Residential	1	APP	APPLEWOOD PARK	6981	51.045203	-113.921220

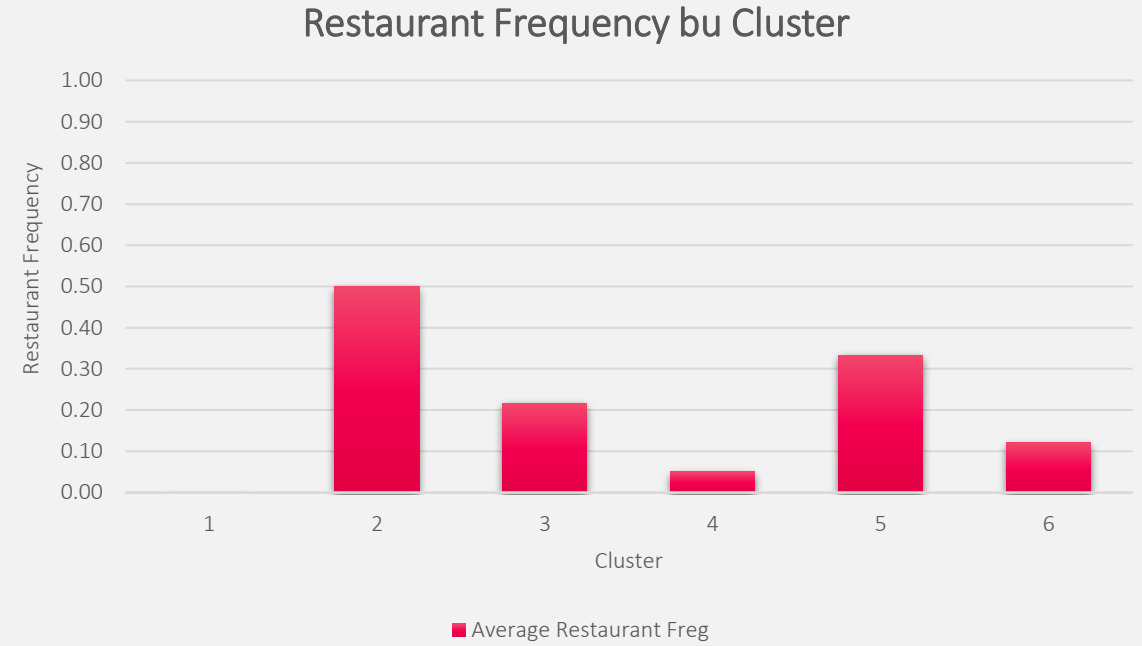
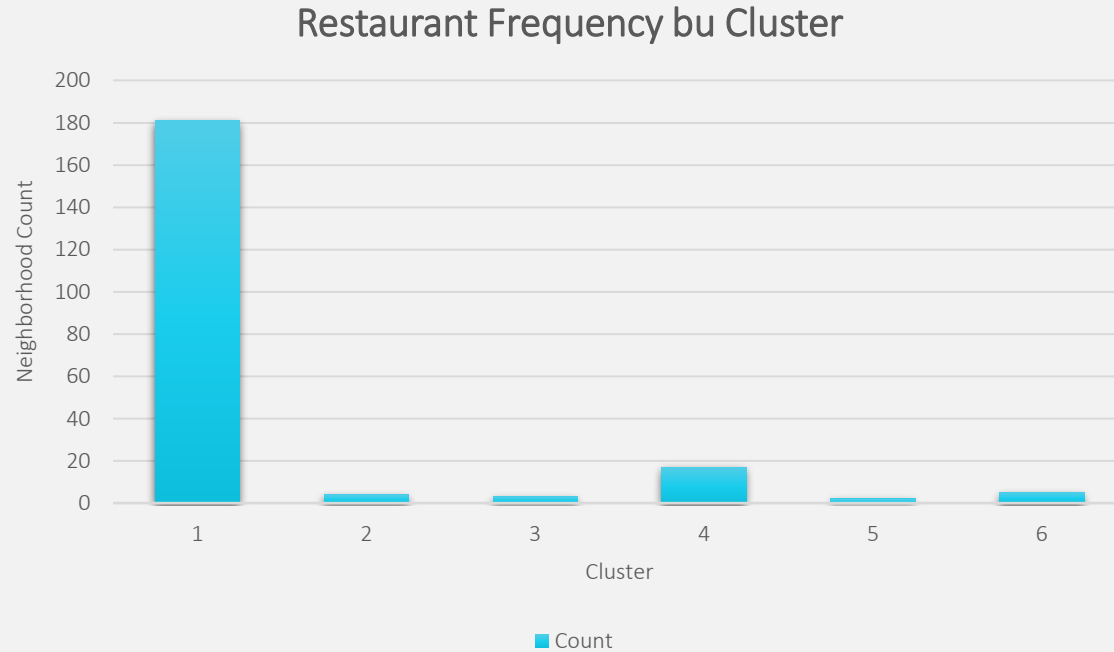
# Methodology

1. Census was cleaned, sorted, and filtered
2. Neighborhoods plotted on map using Folium
3. Restaurant venues retrieved from Foursquare API
4. Neighborhoods divided into 6 clusters using Scikit-Learn k-means clustering algorithm
5. Analyze cluster data to determine best location for new restaurant based on current distribution



Cluster map

# Cluster Results



- Cluster 1 contained the highest frequency with 0.5 and a total of 4 neighborhoods
- Most of the neighborhoods fell into cluster 0 with a frequency of 0 restaurants for 181 of the total 213 neighborhoods (85% of the neighborhoods).

# Discussion

- While most of the neighborhoods do not contain any restaurants, this does not make them a suitable candidate for a new restaurant.
- Further distribution analysis needs to be undertaken

# Conclusion

The 2019 City of Calgary census data, combined with Foursquare API data, provided enough information for a preliminary analysis of restaurant distribution. Most of the neighborhoods in Calgary do not contain any restaurants. This, however does not make them suitable candidates for a new restaurant. Further investigation needs to be completed to provide a complete picture of all the contributing factors.