Calgary Neighborhoods Comparison

Unsupervised Learning

- Detects patterns in a data set.
- find features for categorization
- Split the dataset into groups according to similarity

Foursquare

a social networking service:

- Connect with friends,
- Check-in to a location
- Find attraction
- Retrieve useful information about different businesses

Data

In this study data is downloaded from: https://data.calgary.ca; a platform that increases public access to The City of Calgary Data.

The crime data was filtered to access downtown and east neighborhoods.

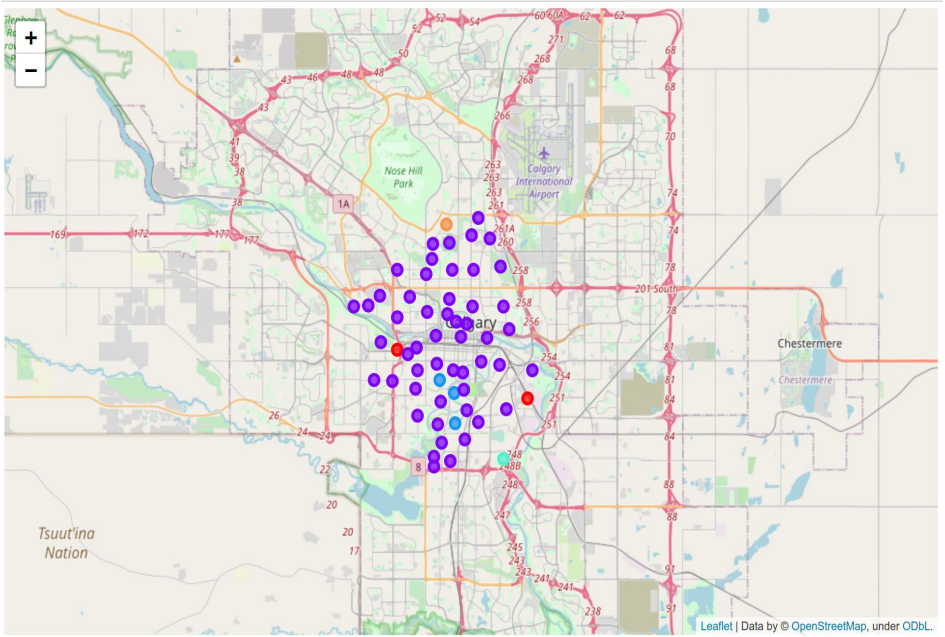
Venues in downtown and east was extracted using a GET Request to Foursquare API.

Methodology

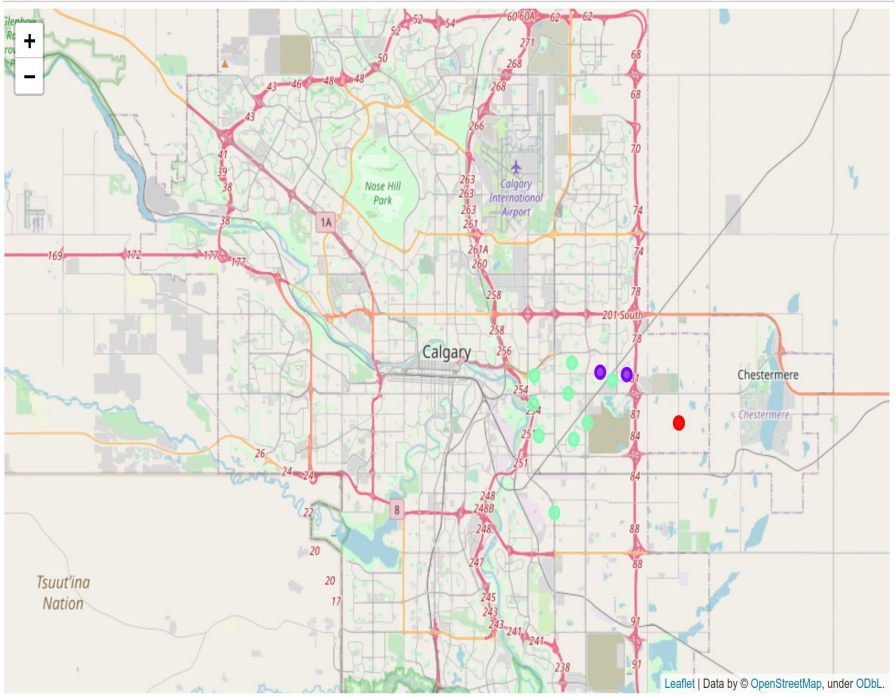
- One Hot Encoding is used for feature extraction of categories.
- To indicate each feature as a category that belongs to a venue, each feature becomes binary
- To find a proper the number of clusters the elbow method was implemented and used.
- In order to find similarities between neighborhoods, a clustering algorithm, specifically K-Means was implemented

Result

Downtown clustering



East:


Calgary
Chestermere
Nose Hill Park
Calgary International Airport
Tsuut'ina Nation
Leaflet | Data by © OpenStreetMap, under ODbL.

The most active business location in downtown is cluster one. The number of crime is so high with the number of 260679 out of 268014 in this location.

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In [23]: downTown_merged.loc[downTown_merged['Cluster Labels'] == 1, downTown_merged.columns[[1] + list(range(5, downTown_me
```

Community Name	Category	Long	Total Crime Count	Cluster Labels	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	9th Most Common Venue
BELTLINE	Social Disorder	-114.055189	57692	1	Pharmacy	Bakery	Comedy Club	Restaurant	Sports Bar	Stadium	Music Venue	Racetrack	Nightclub
DOWNTOWN MMERCIAL CORE	Social Disorder	-114.069592	46676	1	Restaurant	Coffee Shop	Hotel	Pub	Sandwich Place	Mediterranean Restaurant	Bar	Japanese Restaurant	Café
LAND/RIVERSIDE	Social Disorder	-114.035072	8555	1	Sushi Restaurant	Moving Target	Italian Restaurant	Grocery Store	Deli / Bodega	Train	Gym / Fitness Center	Coffee Shop	Yoga Studio
TUXEDO PARK	Social Disorder	-114.061045	4478	1	Italian Restaurant	Chinese Restaurant	Grocery Store	Pub	Tea Room	Dim Sum Restaurant	Convenience Store	Restaurant	Coffee Shop
IEY/GLENGARRY	Social Disorder	-114.131702	5424	1	School	Pharmacy	Convenience Store	Home Service	Hobby Shop	Yoga Studio	Gastropub	Gas Station	Furniture / Home Store

The most active business location in east is cluster two. The number of crime is 57717 out of 67704 in this location.

Out[52]:

Community Name	Category	Long	Total Crime Count	Cluster Labels	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 Mo Comm Venu
FOREST LAWN	Social Disorder	-113.971230	18556	2	Vietnamese Restaurant	Pizza Place	Ice Cream Shop	Indonesian Restaurant	Fast Food Restaurant	Mediterranean Restaurant	Department Store	Convenien Sto
DOVER	Social Disorder	-113.993151	10010	2	Home Service	Baseball Field	Playground	Diner	Vietnamese Restaurant	Convenience Store	Gas Station	Furnitur Home Sto
ALBERT PARK/RADISSON HEIGHTS	Social Disorder	-113.996784	9306	2	Vietnamese Restaurant	Light Rail Station	Home Service	Train Station	Bar	Baseball Field	Gas Station	Athletics Spor
ERIN WOODS	Social Disorder	-113.967607	3522	2	Park	Health Food Store	Construction & Landscaping	Gas Station	Furniture / Home Store	Fried Chicken Joint	Food Truck	Fo Servi
SOUTHVIEW	Social Disorder	-113.997338	4576	2	Golf Course	Bus Station	National Park	Convenience Store	Gas Station	Furniture / Home Store	Fried Chicken Joint	Food Tru
FOREST LAWN INDUSTRIAL	Social Disorder	-113.956970	2585	2	Convenience Store	Liquor Store	Vietnamese Restaurant	Gas Station	Furniture / Home Store	Fried Chicken Joint	Food Truck	Fo Servi
RED CARPET	Social Disorder	-113.938773	1270	2	Vietnamese Restaurant	Tea Room	Bar	Business Service	Convenience Store	Gas Station	Furniture / Home Store	Fri Chick Jo
FOREST HEIGHTS	Physical Disorder	-113.968772	5667	2	Bank	Skating Rink	Vietnamese Restaurant	Convenience Store	Gas Station	Furniture / Home Store	Fried Chicken Joint	Food Tru
FOOTHILLS	Physical Disorder	-113.981989	2225	2	Vietnamese Restaurant	Taco Place	Sandwich Place	Japanese Restaurant	Paper / Office Supplies Store	Construction & Landscaping	Furniture / Home Store	Fri Chick Jo