



Simple Venue Analysis of Edmonton

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Edmonton

- Capital city of Alberta
- Second most populous city in Alberta
- Just under 1 Million residents in 2016
- Overall area of nearly 690 square km
- Significant development in recent years



Source: https://www.edmonton.ca/projects_plans/walterdale-bridge.aspx

Questions of Interest

1. How easy is it to access indoor physical activities?
2. How easy is it to access food options in a given neighbourhood?
3. Is there a good coverage of furniture and home stores in the city?



Source: https://www.edmonton.ca/activities_parks_recreation/clareview.aspx

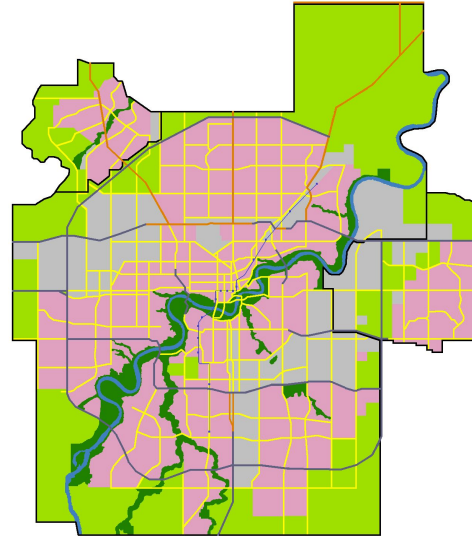


Questions of Interest

- By determining the spread of each of these types of venues we can find if there are any neighbourhoods that would require significant transportation to access these services.
- Not everyone moving to the city necessarily has a vehicle so ease of access to these venues can play a significant role in deciding where to live.

Neighbourhood Data

- Data related to the cities neighbourhoods and postal codes were scraped from Wikipedia:
 - https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_T
- Only kept data that were within the borough of “Edmonton”
- Allowed us to generate a map of the neighbourhoods using the postal codes



Source: https://en.wikipedia.org/wiki/List_of_neighbourhoods_in_Edmonton



FourSquare API

- Using the Foursquare API we could search for venues in a given neighbourhood.
- This allows us to search for types of venues that would relate to our analysis



Source: <https://twitter.com/Foursquare/photo>



Methodology

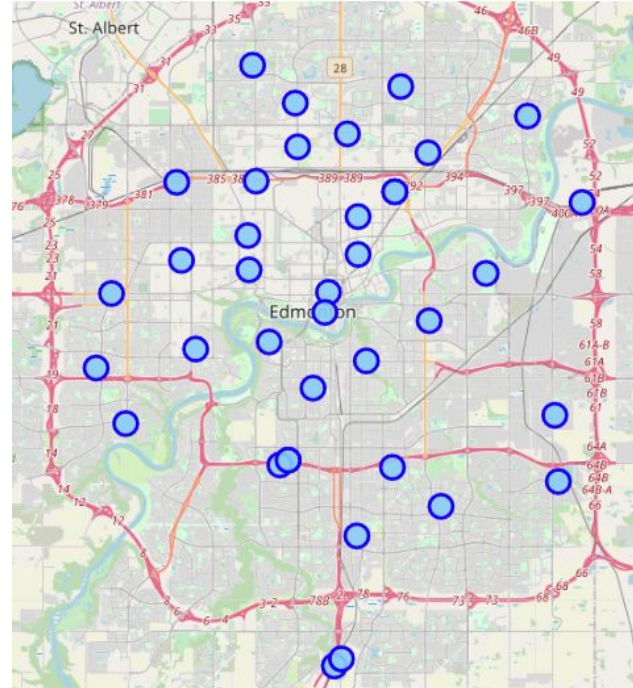
- Perform analysis using Jupyter Notebooks
 1. Generate the dataframes by scraping wikipedia
 2. Explore the neighbourhoods using FourSquare
 3. Search the venue data for relevant venues



Source: https://en.wikipedia.org/wiki/Project_Jupyter

Scraping the Wikipedia Data

- Scrape wikipedia for the postal codes
- Filter postal codes to boroughs that contain the name "Edmonton"
- Remove any rows where we're missing data
- Ensure the longitude and latitude values are floats





Explore the Neighbourhoods

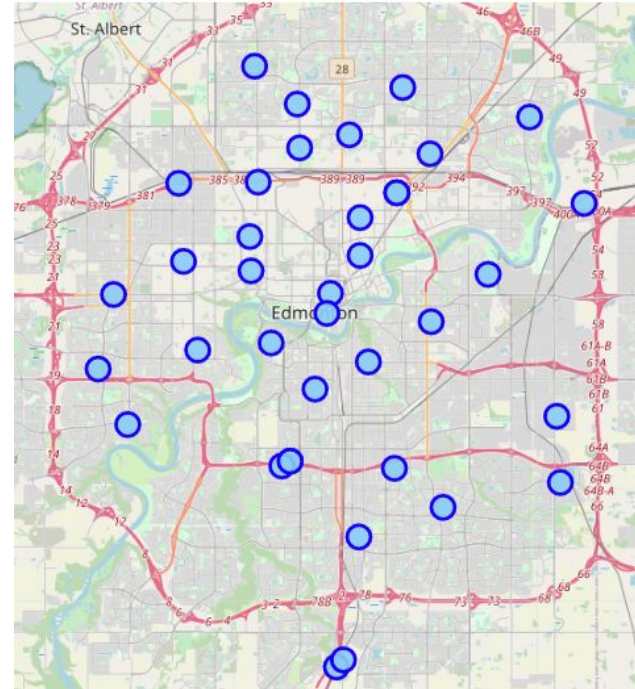
- Approximate a useful search radius to find venues
 - Use a search radius of ~ 2.4 km
- Search each neighbourhood in our list for venues



Source: <https://twitter.com/Foursquare/photo>

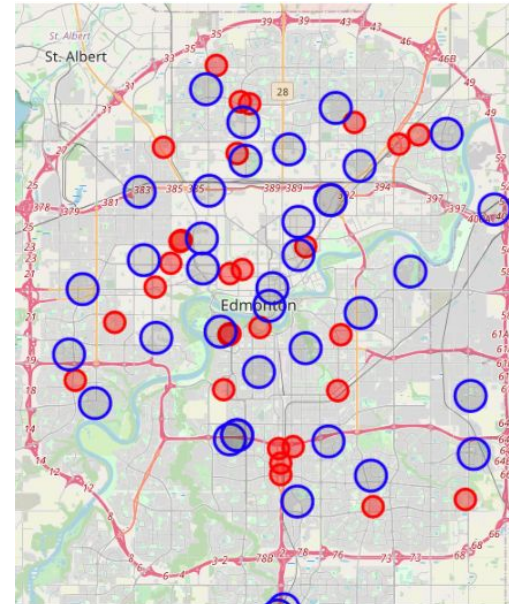
Searching the Venue Data

- Define which venues are relevant to our search, this varies depending on the property of interest.
- Remove any duplicates that were found in multiple search radii.
- Determine which neighbourhoods have easy access to these venues.
- Generate a plot with our venues of interest and the locations of the neighbourhoods to ensure we don't have any false positives.



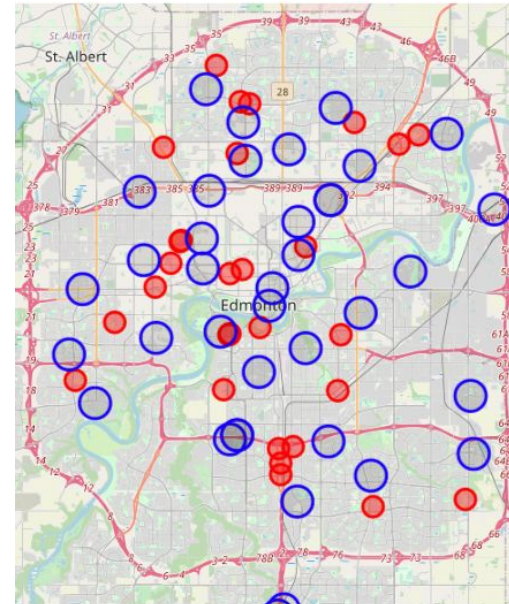
Indoor Physical Activity Data

- There are quite a few different venue categories that can fit:
 - Climbing Gym
 - College Gym
 - Gym / Fitness Center
 - Recreation Center



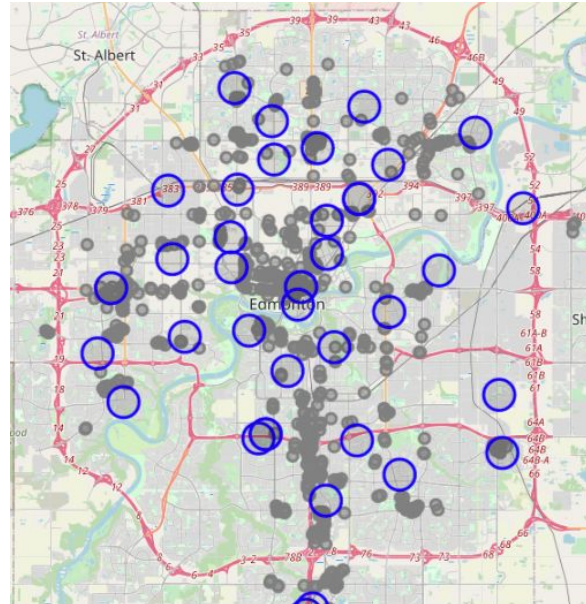
Indoor Physical Activity Results

- The neighbourhood with the most recreation centers:
 - South Bonnie Doon
 - East University
- 6 neighbourhoods are lacking a gym/rec center
 - North Clover Bar
 - North Capilano
 - SE Capilano, West Southeast Industrial, East Bonnie Doon
 - East Southeast Industrial, South Clover Bar
 - Ellerslie
 - Heritage Valley



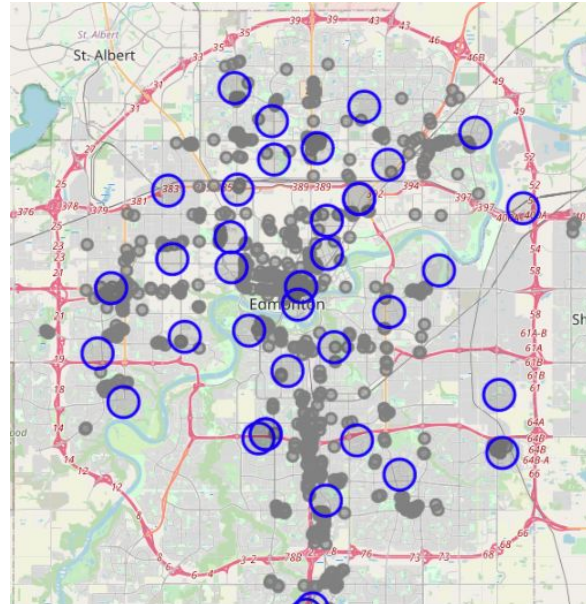
Restaurant Data

- There are a significant number of possible venue categories that can be a restaurant, they fit into a few categories:
 - "Restaurants"
 - "Joints"
 - "Places"
 - "Other"
 - The other categories are a number of venues that serve food but don't fit the previous 3



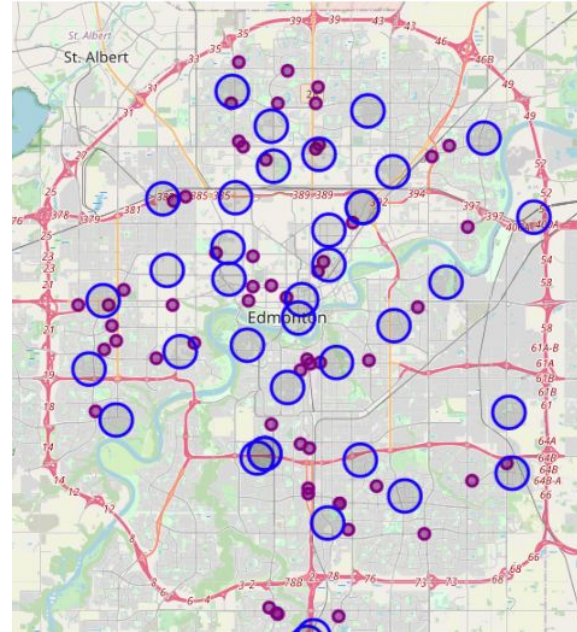
Restaurant Results

- Restaurants almost cover the entire city of Edmonton
- There do appear to be two gaps in the restaurant coverage, one clear gap in the southwest region and another in the eastern-central region of the city.



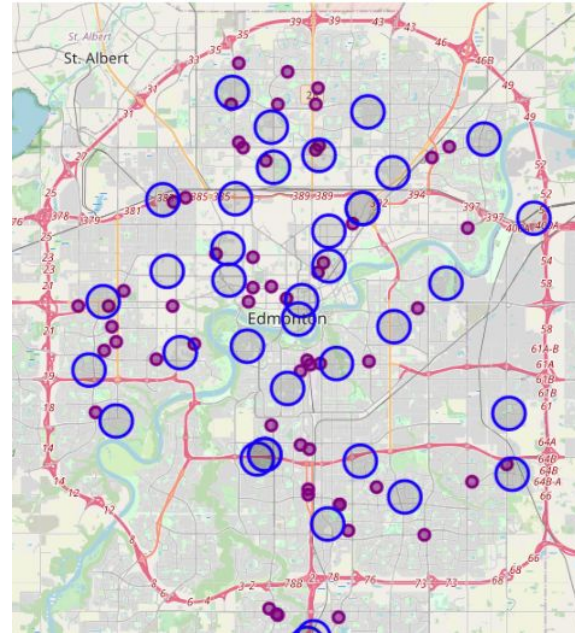
Grocery Store Data

- Clearly there are a significant number of different types of restaurants. Luckily, there are fewer possible choices for grocery stores:
 - Farmers Market
 - Fruit & Vegetable Store
 - Grocery Store
 - Market
 - Supermarket
 - Warehouse Store



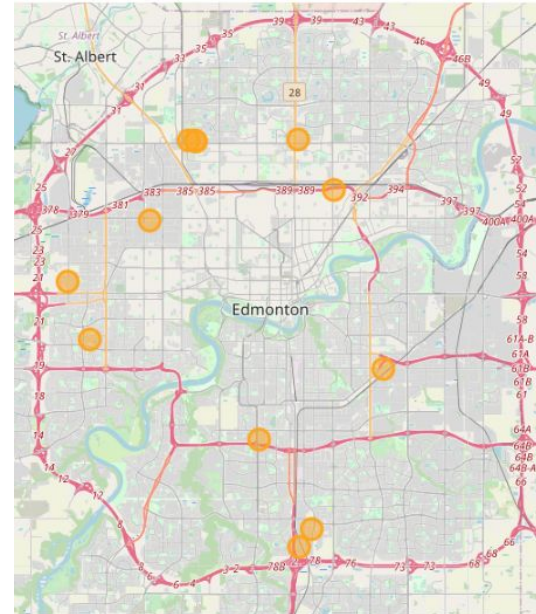
Grocery Results

- It appears as though all neighbourhoods have a grocery store nearby
- The southwest and east-central regions both appear to be lacking grocery stores



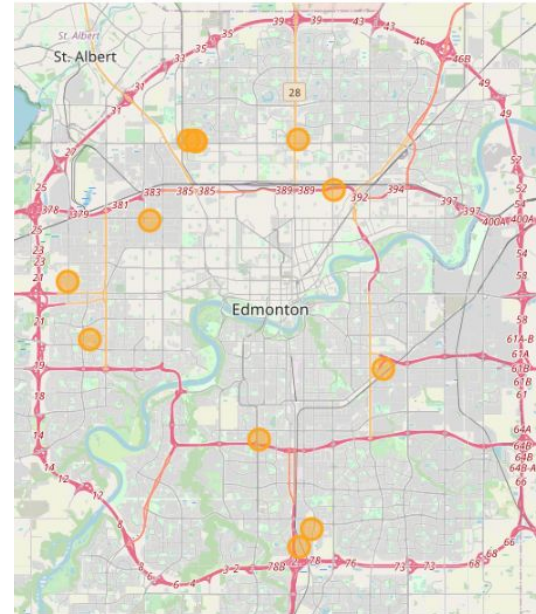
Furniture Store Data

- Unlike the previous categories, furniture stores are self contained in the single category:
 - Furniture / Home Store



Furniture Store Results

- Only a handful of furniture stores in Edmonton.
 - Four in the North
 - Two on the West
 - Three in the South
- It can be argued that the East portion of the city or Downtown could benefit from a furniture store





Conclusion

- Based on our results, there is a good distribution of physical activities, restaurants, grocery stores and furniture / housing stores throughout most of Edmonton.
- **There are clear gaps in all venue types in the South West and East Central portion of the city.**
- **These gaps would make it difficult for anyone living in the area without a vehicle to access these venues**
- In the analysis of furniture stores we also find there is a gap in the city centre which could benefit from one of these stores.