



# Buying a first home in Toronto



Data Science Capstone Project



# The Problem: Finding the ideal Neighborhood

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- A common problem many future first-time homeowners face is where they should buy their home. Where is the ideal location to put forth one of their largest investments?
- My goal is to arrive at a recommendation as to where a first-time homeowner should purchase their first home, based on a few assumptions I think first-home owners would look for when buying a house.
  - Wants to be close to as many restaurants as possible
  - Wants to be close to public transportation (Subway lines)
  - Wants to be close to downtown as possible

# Data Acquisition and Cleaning

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- In order to satisfy our assumptions we will require the following datasets
  - Toronto Neighborhood locations
  - Restaurant locations within Toronto
  - Subway locations in Toronto

# Toronto Neighborhood locations

- Here is the `.head()` data for the data set I'll be working with.

	Postcode	Borough	Neighbourhood	Latitude	Longitude
0	M4E	East Toronto	The Beaches	43.676357	-79.293031
1	M4K	East Toronto	The Danforth West, Riverdale	43.679557	-79.352188
2	M4L	East Toronto	The Beaches West, India Bazaar	43.668999	-79.315572
3	M4M	East Toronto	Studio District	43.659526	-79.340923
4	M4N	Central Toronto	Lawrence Park	43.728020	-79.388790

# Restaurant locations within Toronto

- Using the **Folium API** to identify the restaurants within Toronto, here is the `.head()` dataset I'll be working with.

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	The Beaches	43.676357	-79.293031	Domino's Pizza	43.679058	-79.297382	Pizza Place
1	The Beaches	43.676357	-79.293031	Fearless Meat	43.680337	-79.290289	Burger Joint
2	The Beaches	43.676357	-79.293031	Seaspray Restaurant	43.678888	-79.298167	Asian Restaurant
3	The Danforth West, Riverdale	43.679557	-79.352188	Pantheon	43.677621	-79.351434	Greek Restaurant
4	The Danforth West, Riverdale	43.679557	-79.352188	Mezes	43.677962	-79.350196	Greek Restaurant

# Subway locations in Toronto

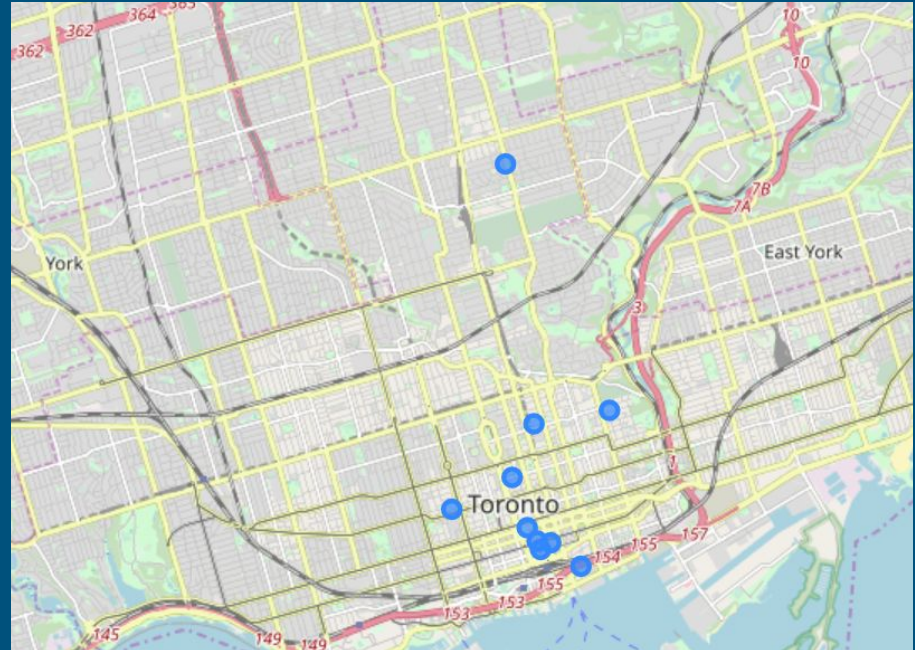
- Here is the `.head()` data for the data set I'll be working with.

	Longitude	Latitude	Station
0	43.750054	-79.462343	Downsview
1	43.734581	-79.449929	Wilson
2	43.724813	-79.447509	Yorkdale
3	43.716381	-79.444029	Lawrence West
4	43.709820	-79.441528	Glencairn

# Analysis: Identifying the neighborhoods with the most amount of restaurants

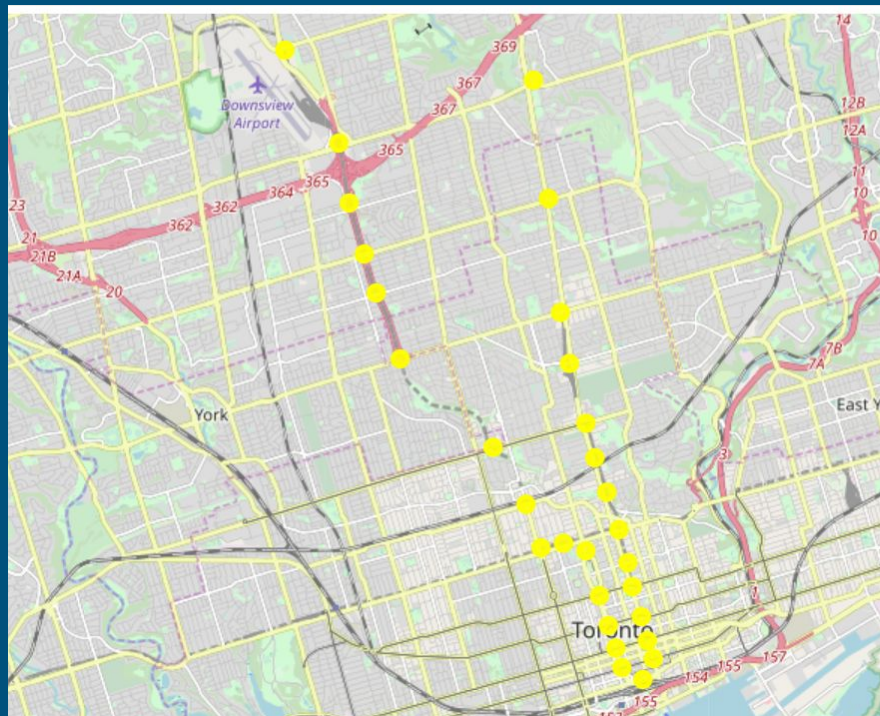
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- I grouped the neighborhoods in order of which had the greatest number of restaurants.
- I then created a map showcasing them, can be seen on the right.



# Analysis: Locating the subway stations with Toronto

- Using the data set, I plotted the points on a map to better visualise them, to help with future analysis.





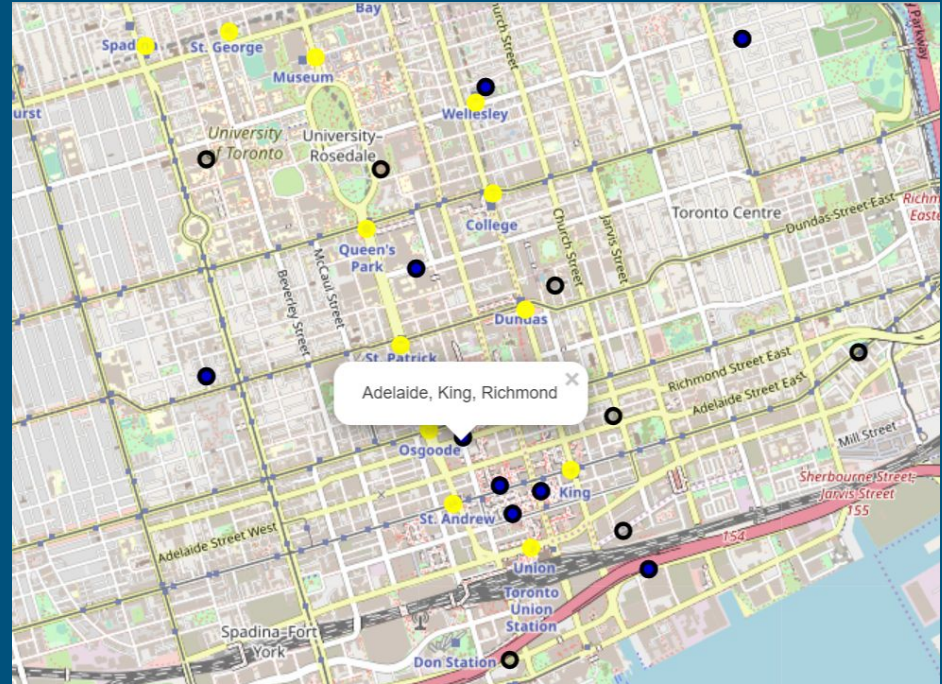
# Analysis: Locating the Downtown neighborhood

- In order to satisfy the need to want to live downtown, I created a map to help visualise where all of the downtown locations, this will help with future analysis.



# Analysis: Identifying the Ideal Neighborhood

- I finally superimposed all of the previous maps in order to identify the neighborhood that meets all the requirements.



# Results

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- As we could see from our previous slide, the **Adelaide, King, Richmond** neighborhood is the ideal location to buy a first-home for the following reasons
  - It is very close to **Osgoode** subway station
  - Meets our requirements of being a downtown location
  - Meets our requirements of having the one of the most restaurant dense neighborhoods

# Conclusion

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- The problem I was solving was : To identify the ideal location for a first-time home owner in Toronto, Ontario
- This was achieved through using data that utilised subway location, restaurant location and downtown locations to satisfy our assumptions
- I then analyzed our data and superimposed the information to view in a map to conclude our final recommendation.
- Final recommendation would be to look for a neighborhood in the **Adelaide, King, Richmond** neighborhood.
- Next Steps: Consider first-time first owners annual income and finding a location that is also affordable.