Crime rates in neighbourhoods in Toronto

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Background

- Safety is one of the top considerations when deciding where to rent a house or purchase a property. It is important for a business owner to be aware of the safety concerns in a neighbourhood before making the decision to open a business in that neighbourhood.

Problem

- The aim of the project is to rank how dangerous these neighbourhoods, thereby serving as caution to people who might want to move into these places in the future.

Data Acquisition

- This data was provided by the Toronto Police Service. The dataset includes all Major Crime Indicators (MCI) 2014 to 2018 occurrences by reported date and related offences.
- The Major Crime Indicators categories are Assault, Break and Enter, Auto Theft, Robbery and Theft Over (Excludes Sexual Assaults).

Data Cleaning

- There were over 160,000 crimes reported to the Toronto Police Service which were included in this dataset.
- Unnecessary columns were removed

Data Cleaning

- Two groups of data were created from the original dataset

- One group was a total of crimes per year per neighbourhood

- The other group has a total of crimes per neighbourhood (year 2014 - 2018)

Neighbourhood	Year	Assault	Auto Theft	Break and Enter	Robbery	Theft Over	Total
Agincourt North	2014	72.0	16.0	52.0	35.0	1.0	176.0
Agincourt North	2015	81.0	29.0	57.0	38.0	6.0	211.0
Agincourt North	2016	82.0	17.0	56.0	18.0	4.0	177.0
Agincourt North	2017	69.0	31.0	58.0	24.0	12.0	194.0
Agincourt North	2018	88.0	40.0	71.0	47.0	4.0	250.0
...	...	...	...	...	...	...	...
Yorkdale-Glen Park	2014	106.0	63.0	51.0	23.0	24.0	267.0
Yorkdale-Glen Park	2015	136.0	53.0	57.0	21.0	14.0	281.0
Yorkdale-Glen Park	2016	174.0	41.0	66.0	24.0	26.0	331.0
Yorkdale-Glen Park	2017	161.0	52.0	58.0	34.0	23.0	328.0
Yorkdale-Glen Park	2018	176.0	59.0	65.0	44.0	20.0	364.0

Group One

| Neighbourhood	Assault	Auto Theft	Break and Enter	Robbery	Theft Over	Total
Agincourt North	392	133	294	162	27	1008
Agincourt South-Malvern West	580	159	381	148	63	1331
Alderwood	182	84	124	36	34	460
Annex	1523	115	782	314	174	2908
Banbury-Don Mills	398	84	341	70	45	938

Group Two

Methodology

The Top 5 (**Church-Yonge Corridor, Waterfront Communities - The Island, West Humber - Clairville, Moss Park, Bay Street Corridor**) kept increasing every year and had steep increase from year 2016 till 2018.
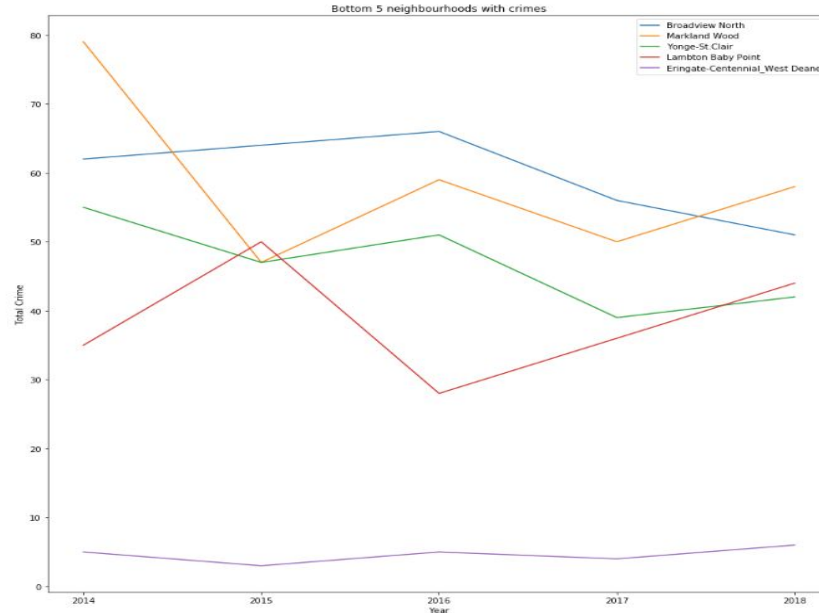

Top 5 neighbourhoods with highest crimes
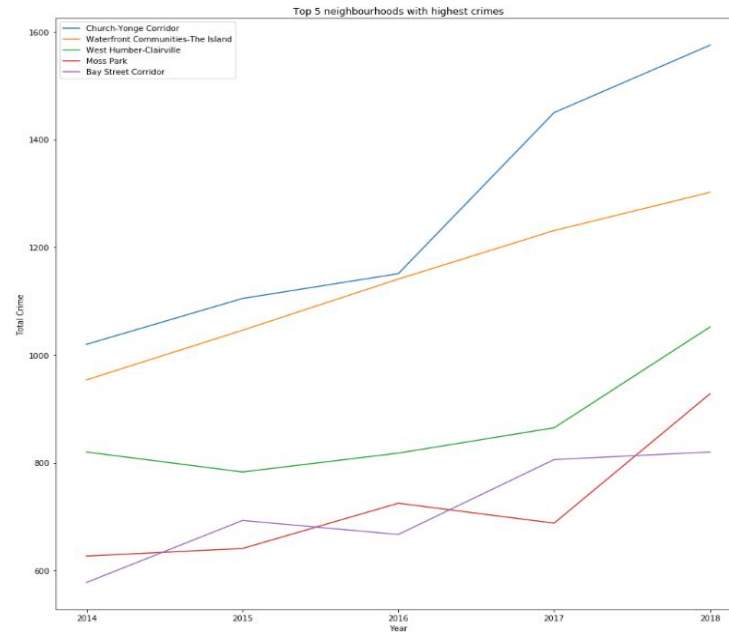
Methodology

The middle 5 (**St.Andrew-Windfields, Greenwood-Coxwell, Englemount-Lawrence, Morningside, Mount Dennis**) experienced a rise and fall in crime rates, with the year 2018 almost at par with 2014 but with highs and lows in between those years.
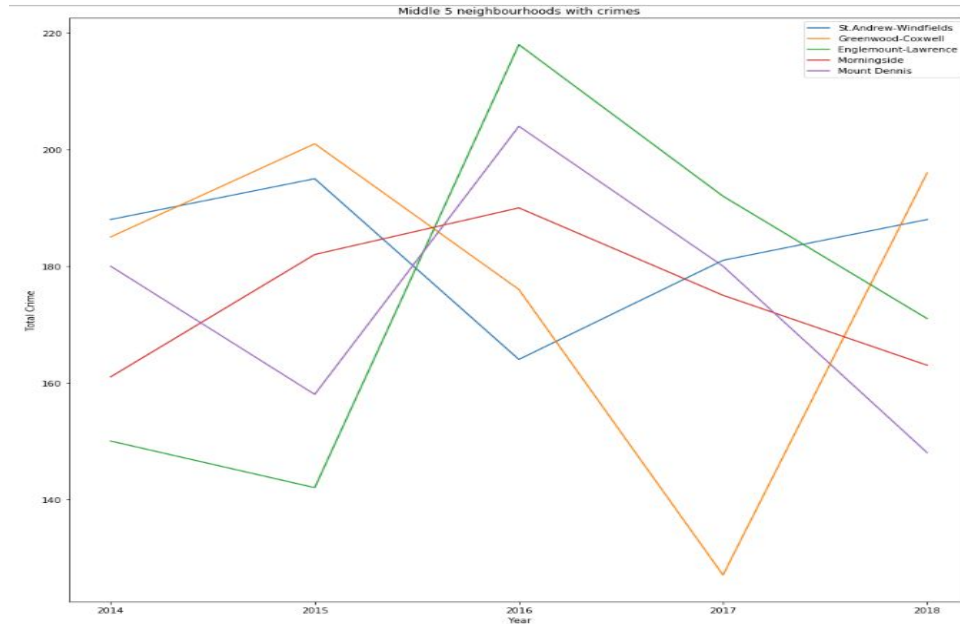
Methodology

The bottom 5 (**Broadview North, Markland Wood, Yonge-St.Clair, Lambton Baby Point, Eringate-Centennial West Deane**) experienced highs and lows in crime rate but the rate across the years were lower than the first year (2014). The last year (2018) generally had lower rate compared to 2014.

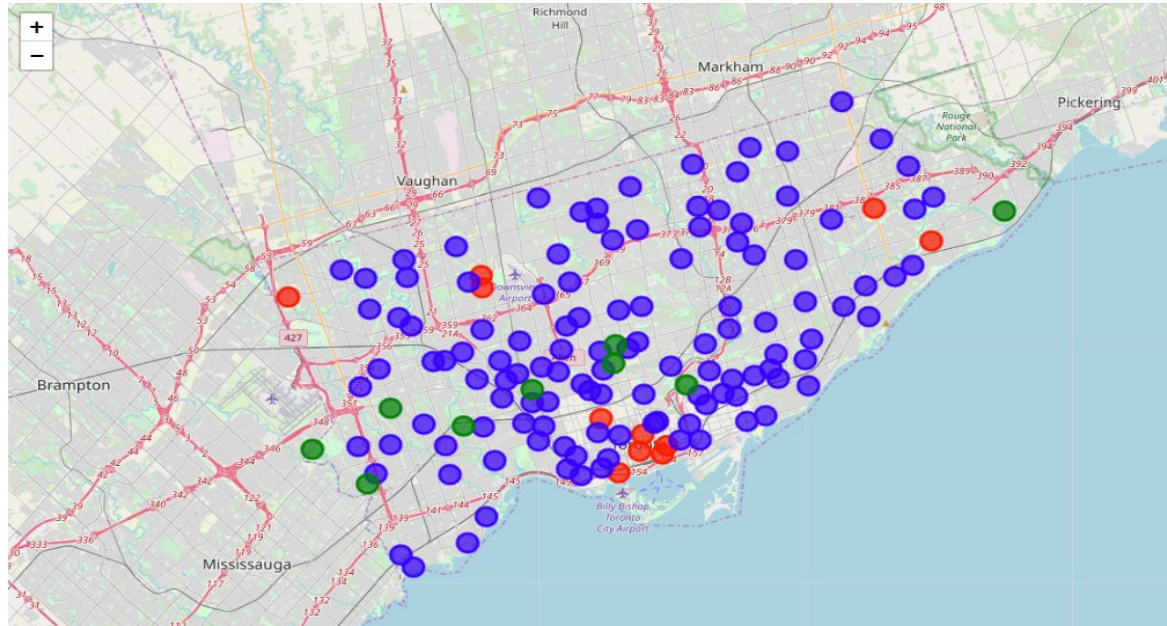Bottom 5 neighbourhoods with crimes

Neighbourhoods in Toronto

The 141 neighbourhoods that were analyzed:

Neighbourhoods in Toronto

The 141 neighbourhoods analyzed in this project are displayed on the map of Toronto, Ontario. The top 10 neighbourhoods with highest crimes are indicated with red circles, the 10 neighbourhoods with lowest crimes are indicated with green circles and other neighbourhoods are marked with blue circles.

Results

141 neighbourhoods were analyzed, the neighbourhoods with the highest crimes were: **Church-Yonge Corridor, Waterfront Communities - The Island, West Humber - Clairville, Moss Park, Kensington-Chinatown**. The neighbourhoods with the lowest crimes were: **Centennial Scarborough, Broadview North, Lambton Baby Point, Yonge-St.Clair, Eringate-Centennial_West Deane.**

Discussion

- The crime rate in 2018 to the total years that were examined (2014 - 2018), the average percentage was 21%, this means that the crime rate was balanced through the years because 5 years were analyzed.

- The neighbourhoods with high crimes had increasing crime rate across the years. The neighbourhoods in the middle on the scale had rise and fall in crime rates through the years. The neighbourhoods at the bottom had a more constant increase across the years.

- The top 3 crimes committed across the neighbourhoods in descending order were: **Assault, Break and Enter, Auto Theft**. These are crimes that the city might want to pay close attention to.

Conclusion

- This project sheds more light into the crimes that are being committed in the different neighbourhoods across the city, which could possibly help a visitor or immigrant determine where to stay or rent. Safety is of utmost concern in determining where to live or establish a business. It is good to see how technology could help us make better or insightful decisions.

- The future of this project is to examine the conditions of living in these neighbourhoods. Looking closely into job opportunities, proximity of police station, level of education etc. In depth study could help us determine the reasons behind the findings from this analysis.