

# COUSERA CAPSTONE PROJECT

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# INTRODUCTION AND BUSINESS PROBLEM

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**Background :** Safety is a top concern when moving to a new area. Lots of Canadian immigrants are having difficulty choosing a home.

**Problem :** This project aims to select the safest neighbourhood in Toronto based on crime rates

**Interest :** Those (Immigrants and citizens) that are hoping to relocate in Toronto will be interested to identify the safest neighbourhood in Toronto

# DATA HANDLING



**Data Acquisition :** The data acquired for this project is a combination of data from 2 sources

- 1) Toronto Crime Data of 2004 by the Toronto Police Department
- 2) Scraped data from a Wikipedia Page on the list of Toronto neighbourhoods

# Data Cleaning

## Toronto Crime

- 2004 data are selected
- Major categories are pivoted to get the total crimes per neighbourhood

## Wikipedia

- Data is scraped from Wikipedia using the Beautiful Soup Library in Python
- Using this library we can extract data as shown in the website

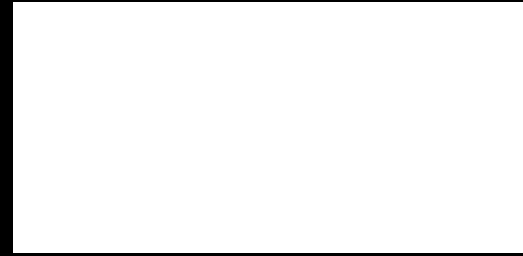
## Visualization

- Visualize crime rates in each neighbourhood and identify the neighbourhood with the lowest crime rate

# METHODOLOGY



# RESULTS





# Processing Data

	Crime_Number	Year	Division	Crime_Type	Hood_ID	Neighbourhood
0	111878	2004	D53	Other	98	Rosedale-Moore Park (98)
1	125755	2004	D42	Shooting	137	Woburn (137)
2	136086	2004	D42	Shooting	132	Malvern (132)
3	148623	2004	D13	Shooting	93	Dovercourt-Wallace Emerson-Junction (93)
4	148619	2004	D42	Shooting	131	Rouge (131)

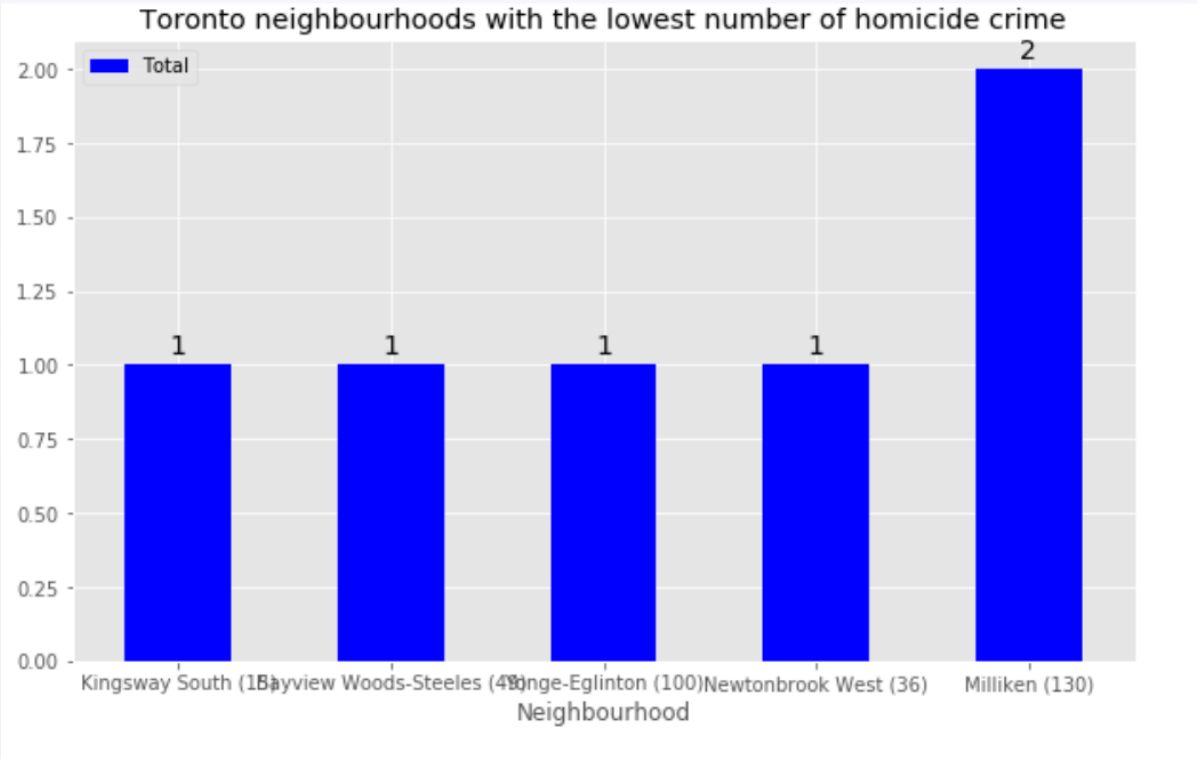
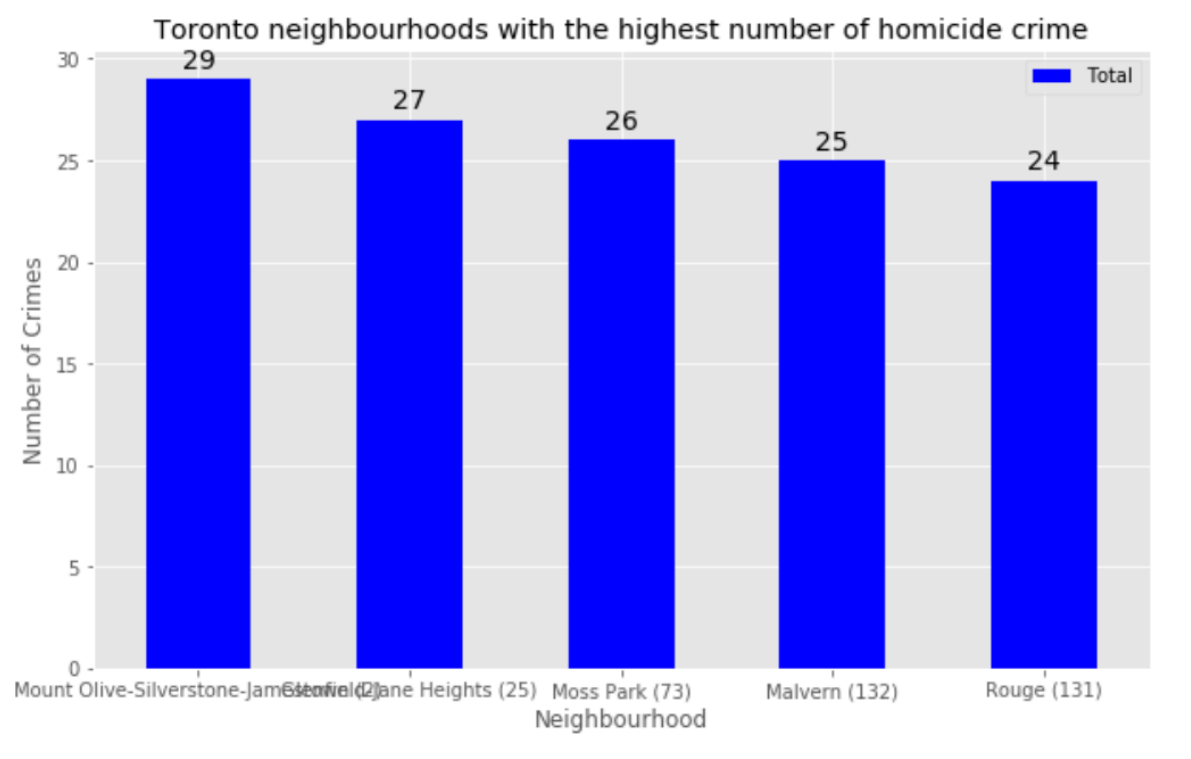
	Crime_Number	Year	Division	Crime_Type	Hood_ID	Neighbourhood	No_of_Crime
0	111878	2004	D53	Other	98	Rosedale-Moore Park (98)	1
1	125755	2004	D42	Shooting	137	Woburn (137)	1
2	136086	2004	D42	Shooting	132	Malvern (132)	1
3	148623	2004	D13	Shooting	93	Dovercourt-Wallace Emerson-Junction (93)	1
4	148619	2004	D42	Shooting	131	Rouge (131)	1

## Pivot Table After Preprocessing

	Neighbourhood	No_of_CrimeOther	No_of_CrimeShooting	No_of_CrimeStabbing	Total
0	Agincourt North (129)	3	1	1	5
1	Agincourt South-Malvern West (128)	1	5	1	7
2	Alderwood (20)	0	5	1	6
3	Annex (95)	1	3	4	8
4	Banbury-Don Mills (42)	1	3	2	6

	No_of_CrimeOther	No_of_CrimeShooting	No_of_CrimeStabbing	Total
count	130.000000	130.000000	130.000000	130.000000
mean	2.023077	4.046154	1.738462	7.807692
std	2.140294	4.332787	1.654469	6.277925
min	0.000000	0.000000	0.000000	1.000000
25%	1.000000	1.000000	0.250000	3.000000
50%	1.000000	2.000000	1.000000	6.000000
75%	2.000000	6.000000	3.000000	11.750000
max	11.000000	21.000000	8.000000	29.000000

# Final Results

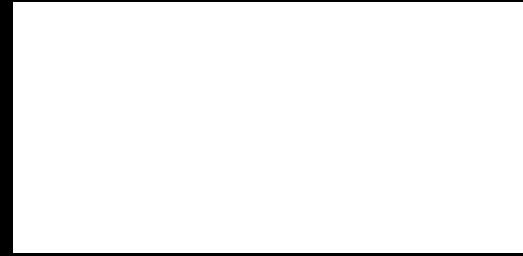


# DISCUSSION



- The aim of this project was to provide information to those (immigrants) who want to relocate to the safest neighbourhood in Toronto.
- Through observing the 2004 homicide data provided by the Toronto police department (in Kaggle) I was able to lead to the conclusion that Kingsway South, Bayview Woods-Steeles, Yonge-Eglinton, Newtonbrook West were the safest neighbourhoods within Toronto.
- Data showing results of 5 neighbourhoods with the highest crime rates have also been dealt with; Mount Olive-Silverstone-Jamestown, Glenfield-Jane, Heights, Moss, ParkMalvern and Rogue being the neighbourhoods.
- New immigrants arriving in Toronto will hopefully be able to choose neighbourhoods that suit their safety needs through these results

# CONCLUSION



- This project helps individuals and families get a better grasp at understanding Toronto neighborhoods with respect to crime rates as well as venues that are located within the neighborhood. It is always helpful to make use of technology to stay one step ahead, for instance, sufficiently examining and understanding a particular neighbourhood before moving in.
- Further progress of this project can be achieved by taking multiple other factors, such as cost of living in areas, into consideration in order to provide a much detailed and beneficial report to those in need.

**THANK YOU**