

Coursera Capstone Project – The Battle of Neighbourhoods



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Coursera Capstone Project

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As part of the final project, I have chosen to explore the influence of criminality and ethnic diversity, at the educational level of each school in the city of Toronto.

1. Description of the Problem and Background

1.1 Introduction

- The intention of the study is the evaluation of the situation of the educational centers, the degree of crime or racial classification, the sexual influences on the educational level of the schools of the Toronto neighborhoods.
- We will identify the most conflictive neighborhoods, with the highest criminality, these data on the well-being of Toronto — Security .The data was provided by the Toronto Police Services, the Fire Services, the Paramedical Services (formerly EMS) and the Community Housing Corporation most conflictive neighborhoods
- Using a study carried out in the different schools in Toronto, which identifies the academic levels of each Toronto Neighborhoods Education Center. This dataset contains information related to the education of the 140 neighborhoods that make up the city of Toronto. Education includes 9th-grade graduation rates, college applications, attendance at library, you etc.academic levels of each educational center

a. *Toronto's secular public school system of English language education is administered by the Toronto District School Board (TDSB). In total, this system manages 427 schools (an estimated 300,000 students study there annually, making the TDSB the largest school district in Canada and the fourth largest in North America).*

b. *Toronto has three universities. The central campus of the University of Toronto (U of T) is located in the city center and is the largest university in Canada, employing nine thousand people, and responsible for the education of more than 53,000 students. The U of T also has two smaller campuses, one in Scarborough and one in Mississauga. The three boards serve about 71,500 students a year. Two other universities are located in Toronto: York University, located in North York, and Ryerson University, located in the city center. The first serves 45,000 students a year, and the second serves 20,000.*

- We can classify schools according to neighborhood profiles. Obtained in the Population Census completed 5 years and collects data on age and sex, families and households, language, immigration and internal migration, ethnocultural diversity, aboriginal peoples, housing, education, income, and work. Neighborhood Profiles of the city of Toronto use these census data to provide a portrait of demographic characteristics and economic aspects of people and households in every Toronto city neighborhood. The profiles feature selected highlights of the data, but these attachment files provide the complete data set gathered for each neighborhood. Population census carried out 5 years

1.2 Business Problem

- The challenge is to demonstrate whether or not the academic level of each educational center may be influenced by aspects of the neighborhood such as age, sex, language, immigration or internal migration, and mainly, the most conflictive neighborhoods, with the highest crime rates.

2. Data Section

2.1 Description of the Data:

- The following data is required to answer the issues of the problem:
- List of Boroughs and neighborhoods of Toronto with their geodata (latitude and longitude). List of postal codes of Canada wiki page content by using BeautifulSoup https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M

- We find in Foursquare site Metropolitan City of Toronto to get venue detail with their geodata (latitude and longitude) I used Foursquare API to get the neighborhoods of Toronto
- List of the most conflictive neighborhoods, with the highest criminality, these data on the well-being of Toronto — Security. We find this information in “Wellbeing Toronto”, we use filters to show this information: <http://map.toronto.ca/wellbeing/>
- List of data to identify the academic levels of each. Toronto Neighborhoods Education Center <https://open.toronto.ca/dataset/wellbeing-toronto-education/>
- List Neighborhood Profiles of the city of Toronto use these census data to provide a portrait of demographic characteristics and economic aspects of people. <https://open.toronto.ca/dataset/neighbourhood-profiles/>
- List List of data to identify the Police Stations: <https://open.toronto.ca/dataset/police-facility-locations/>

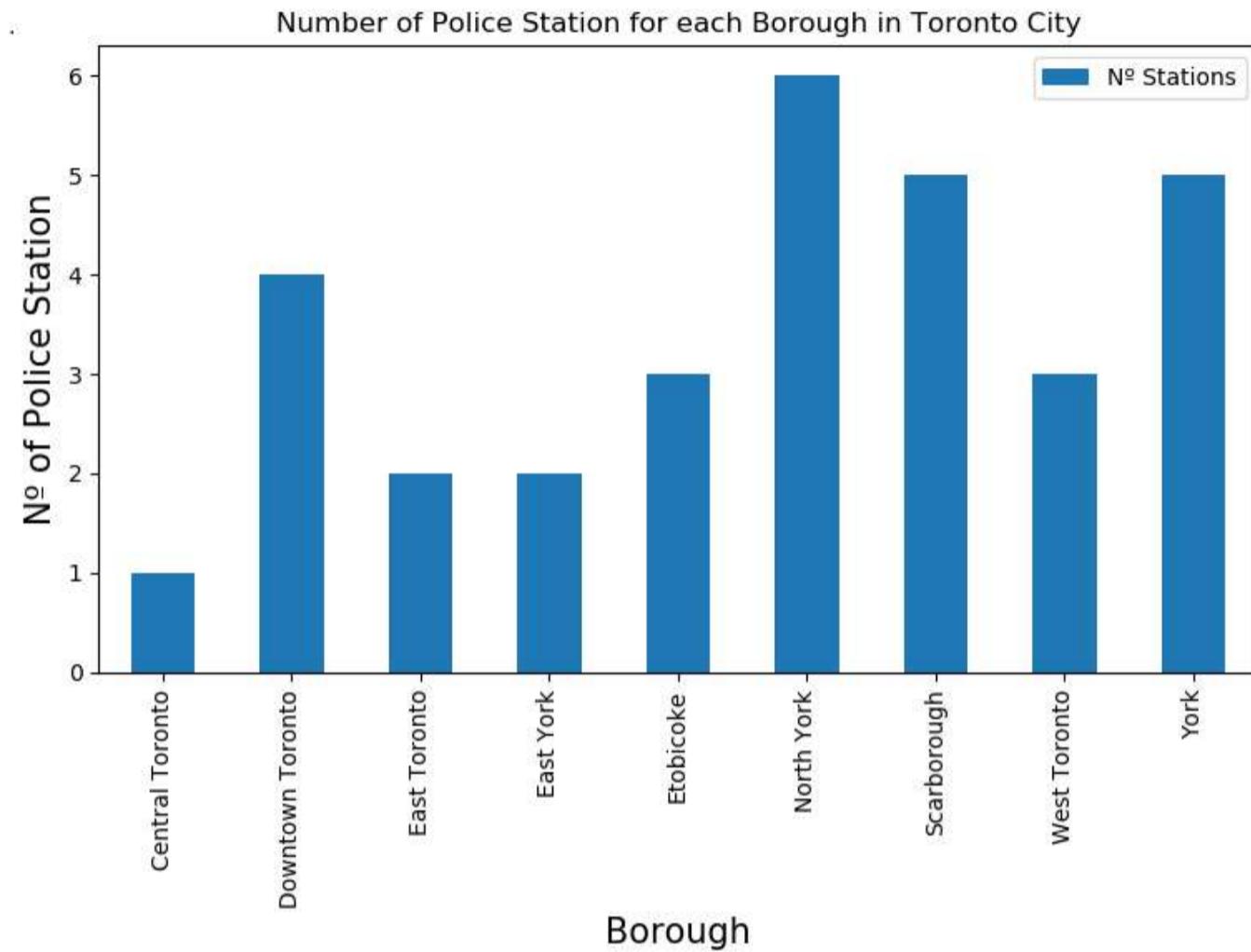
2.2 The data will be used to solve the problem:

- The data will be used as follows:
- Use Foursquare and geopy data to map the best and worst neighborhoods of the Toronto Neighborhood Education Center.
- Use Homer and geopy data to map the location of Toronto city neighborhood profiles use this census data
- Use Foursquare and geopy data to map the location of the most conflictive neighborhoods, with the highest criminality.
- The addresses of the locations of the Education Center will be converted to geodata (lat, long) using Geopy-distance and Nominatim.
- Data will be searched from open data sources, if available, from real estate sites, libraries or other government agencies such as the City of Toronto Open Data.
- The processing of these DATA will allow answering the key questions to make a decision:
- What is the Education Center with the best level in areas with high levels of crime?
- What is the Education Center with a major racial variety?
- Which are the best Educational Centers in less favored areas? What are the worst educational centers in areas with low crime and worse educational levels?
- Any other interesting finding of statistical data from Educational Centers.

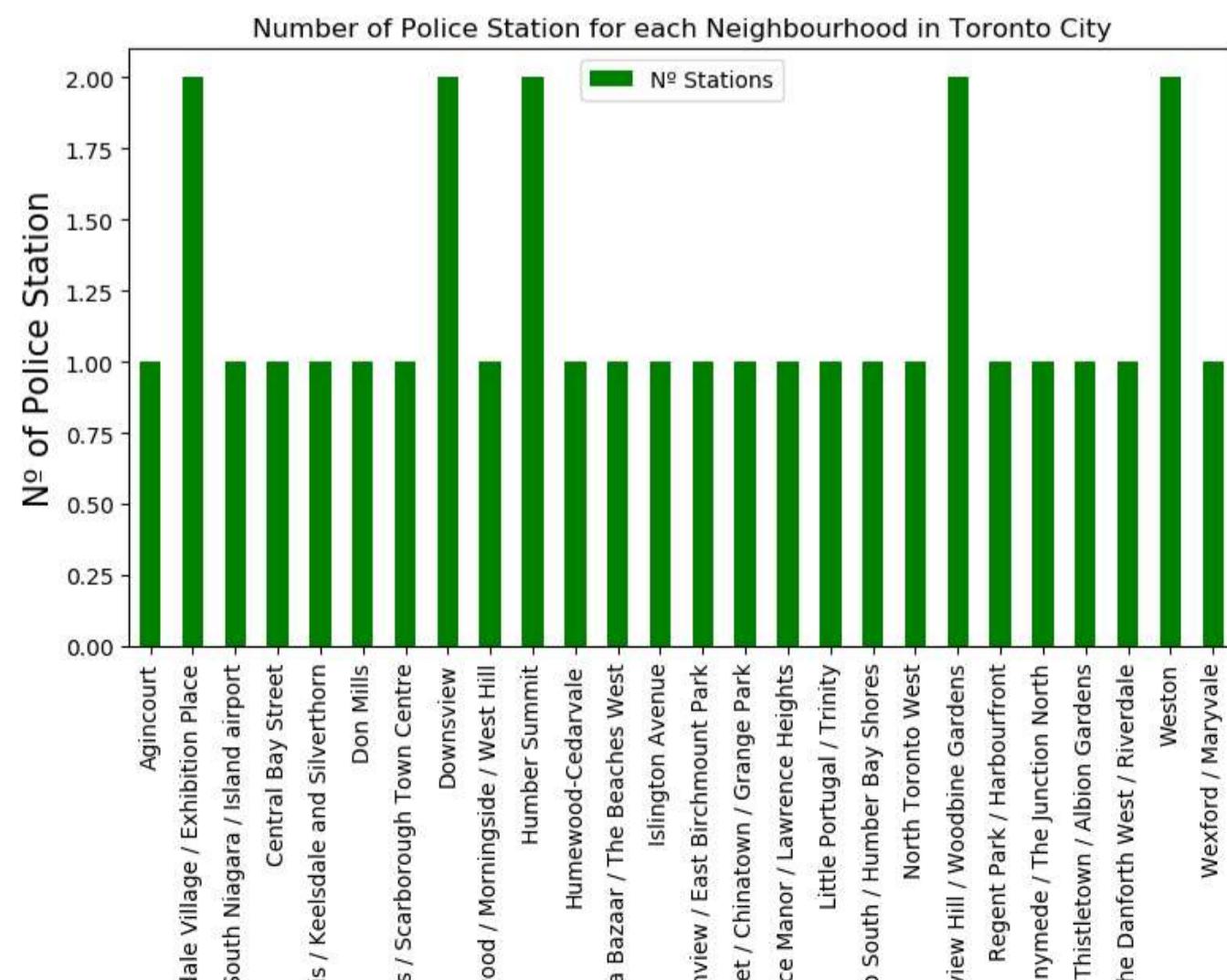
3. Results

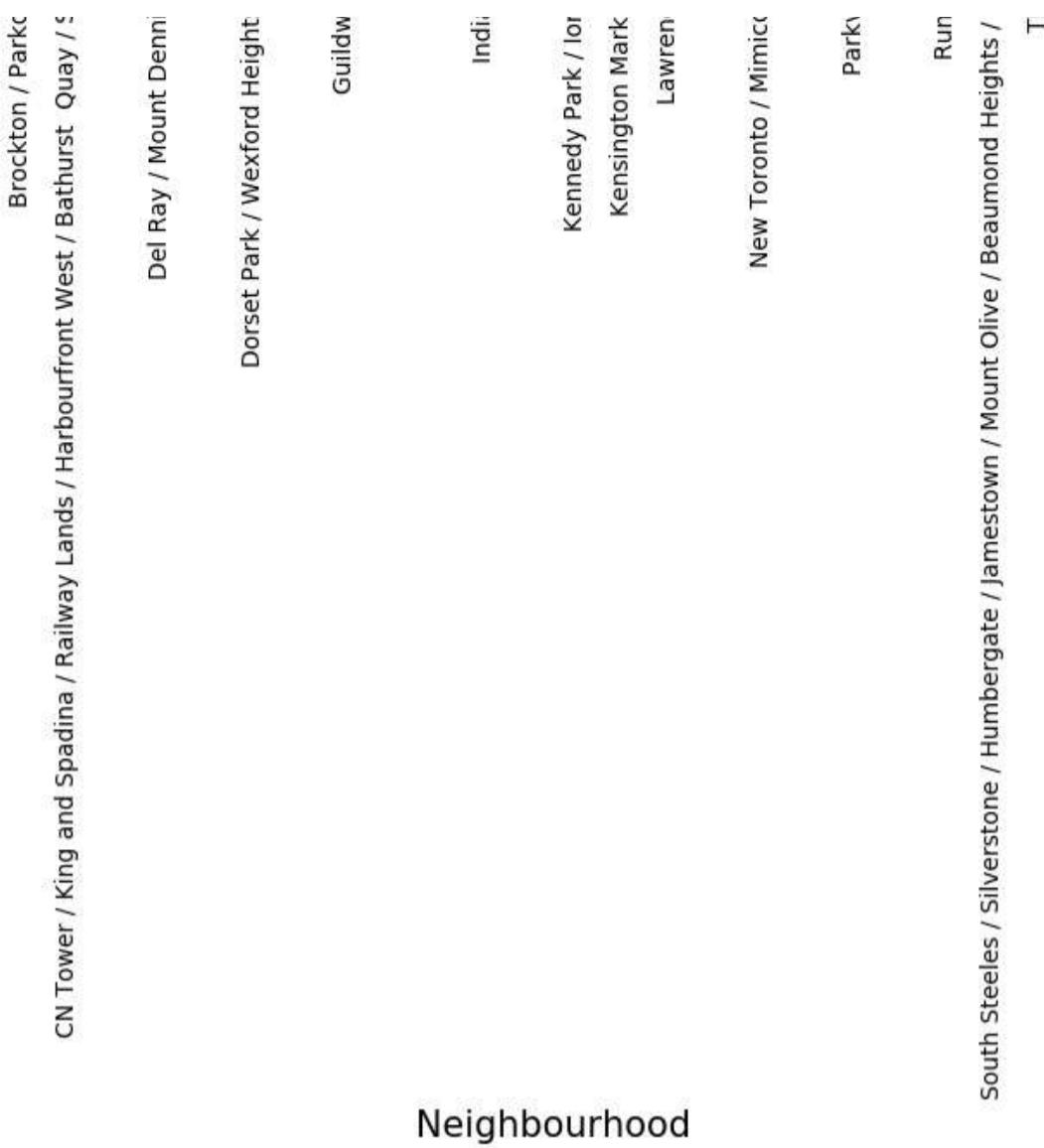
So I did the analysis and got exciting results. To see a full code click [source code](#).

1. - We see that North York has the highest number of Police Station Services.



2. -We can see 5 neighborhood groups are the first with most police stations services and they haven't a lot of neighborhoods.

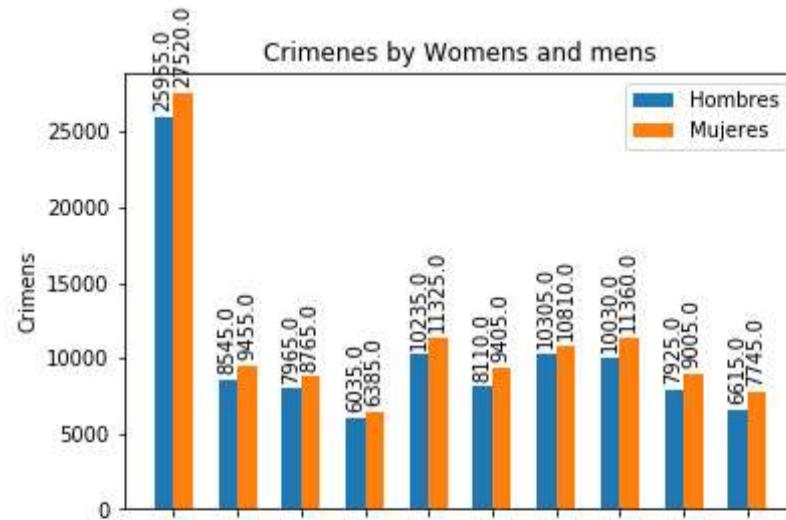




3.-Humewood-Cedarvale is the Neighborhoods more safely.

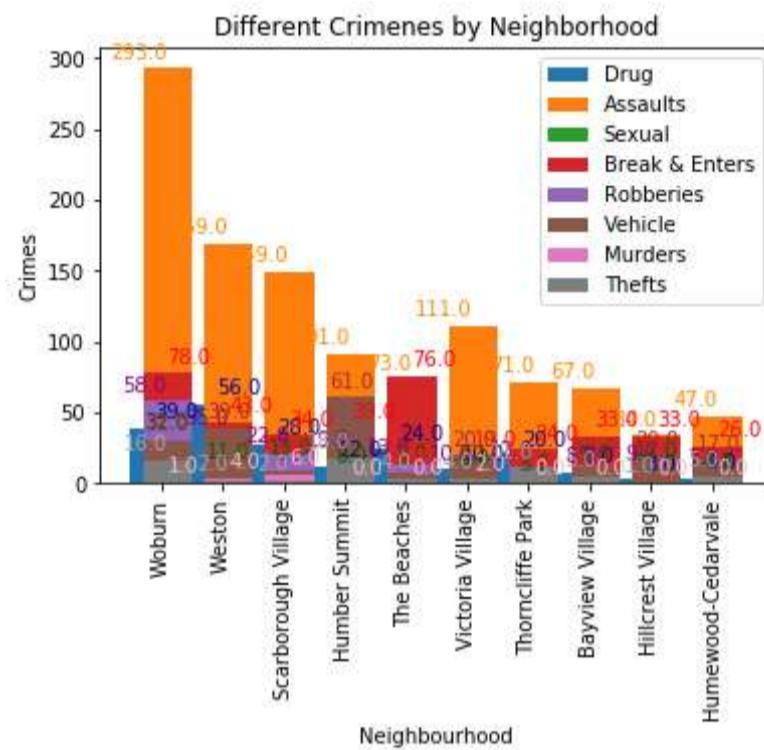
	Neighbourhood	Neighbourhood Id	Drug Arrests	Assaults	Sexual Assaults	Break & Enters	Robberies	Vehicle Thefts	Murders	Thefts
8	Woburn	137.0	39.0	293.0	32.0	78.0	58.0	31.0	1.0	16.0
7	Weston	113.0	56.0	169.0	11.0	43.0	35.0	39.0	4.0	2.0
9	Scarborough Village	139.0	28.0	149.0	13.0	34.0	22.0	9.0	6.0	2.0
0	Humber Summit	21.0	12.0	91.0	8.0	39.0	19.0	61.0	0.0	18.0
5	The Beaches	63.0	24.0	73.0	9.0	76.0	13.0	8.0	0.0	4.0
1	Victoria Village	43.0	10.0	111.0	6.0	19.0	10.0	20.0	2.0	4.0
4	Thorncliffe Park	55.0	20.0	71.0	3.0	24.0	12.0	4.0	0.0	11.0
3	Bayview Village	52.0	8.0	67.0	9.0	33.0	8.0	13.0	0.0	5.0
2	Hillcrest Village	48.0	3.0	34.0	12.0	33.0	9.0	20.0	0.0	1.0
6	Humewood-Cedarvale	106.0	4.0	47.0	4.0	26.0	7.0	17.0	0.0	5.0

4.-We see that the neighborhood with the most crimes in “WOBUM”, There is a greater number of crimes carried out by Women. Humewood-Cedarvale is the Neighborhoods more safely.

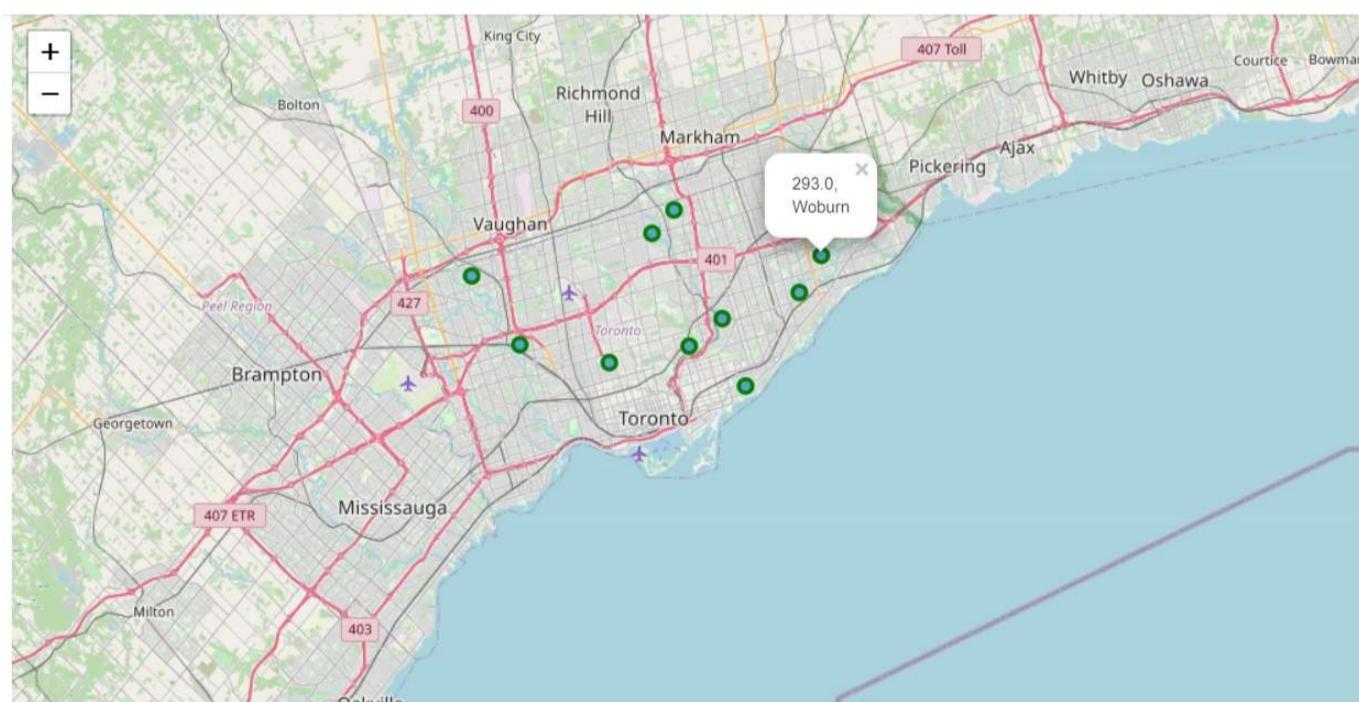




5.- We see that the neighborhood with the most crimes is “WOBUM”. The crimes most produced are assaults, Break and Enters. It is curious to see that the type of crime of Break and Enters predominates in /”The Beach/” neighborhood and Humewood-Cedarvale is the Neighborhoods more safely



6.-We see in this map that Woburn has the biggest numbers of Assault.



3. Conclusion

In my opinion, before looking at all the evidence on less secure areas and the location of police stations, we can decide the best places to conduct studies in a safer format.

* We have been able to discover that the area with the least crime is located in the ***Humewood-Cedarvale*** neighborhood.

* Also that checking the number of crimes committed by gender, ***there is not a very big difference*** between *masculine* and *feminine*.

* We have seen that the neighborhood with the highest crime is ***WOBUM***.

* We have also verified that the ***central area of Toronto contains a greater number of police stations***.

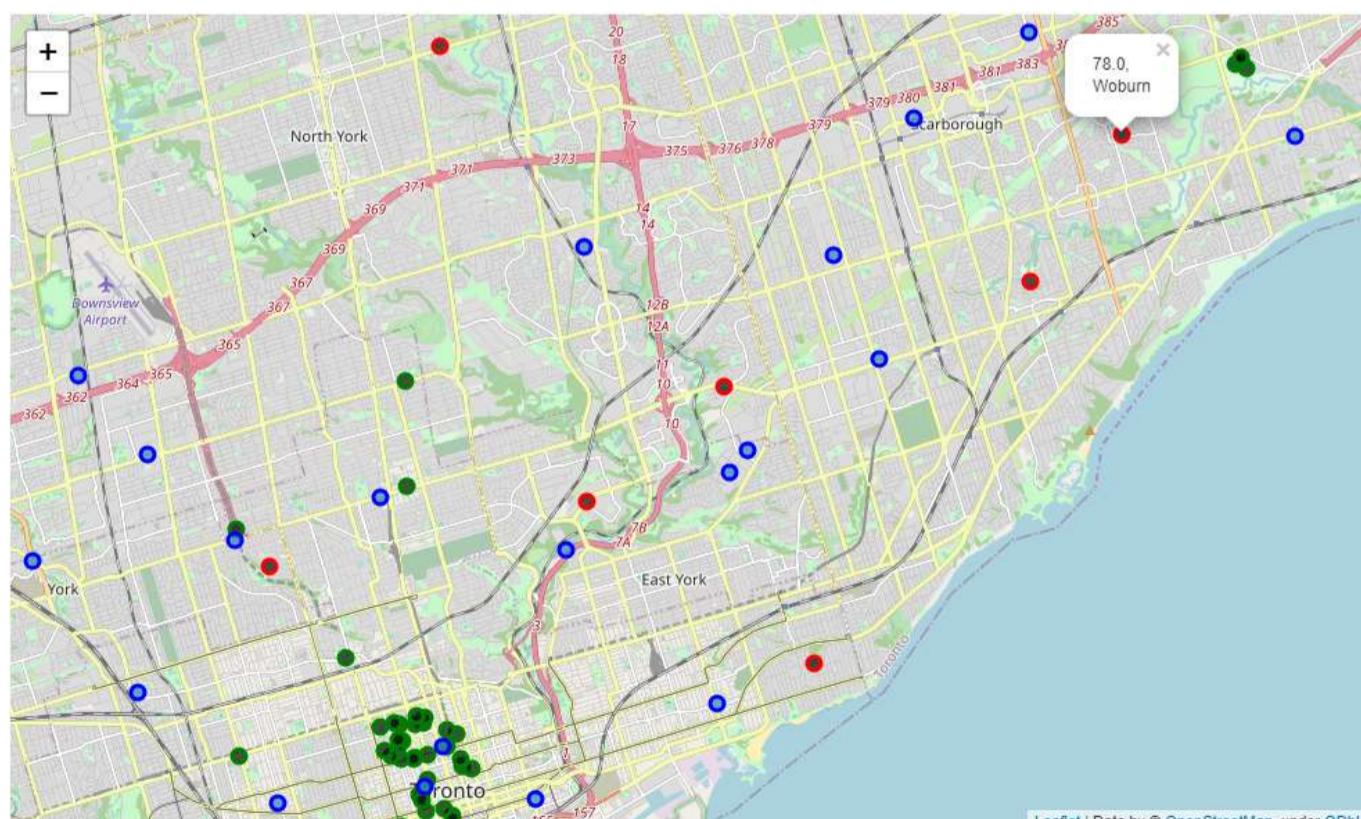
* We see that ***North York*** has the highest number of Police Station Services.

* We can see that 5 neighborhood groups are the first with the most police stations and do not cover many neighborhoods

We look for areas like:

a)- In this graph, we can see which ***areas have more crimes*** and coincide with the areas where there are fewer educational centers.

We can highlight the ***Woburn neighborhoods*** with *78 assault crimes* and ***Scarborough Village*** with *34 assault crimes*, In these neighborhoods, we only have a University of Toronto Scarborough educational center. We can see that this area is surrounded by several police stations (41.42 and 43 Division).



b)-On the other hand, in the neighborhoods of the central area of the city of Toronto, there is a higher density of Educational Centers, mainly University Faculties. It is in this area where we also find the police

stations (Headquarters, Central Bay Street, 51, 52 Division). And on the other hand, it is in these neighborhoods where there are no crimes

