



# Coursera Capstone Project — The Battle of Neighborhoods Relocation Conundrum

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# Introduction & Challenges with the Business Model



## Introduction

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- Globalization led migration within the border and across the border is increasing every year
- The United States admitted a total of 1.18 million legal immigrants (618k new arrivals, 565k status adjustments) in 2016<sup>1</sup>
- Increase in search for better place in new city



## Past Challenges faced by the Firm with Similar clients

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- Fees structure is 50% before relocation and remaining 50% after 3 months of relocation
- Firm gets 60% of the remaining fees as per past data and if they successfully suggest a location which client likes then chances of getting remaining fees increased to as high as 95%

1: Source: Yearbook of Immigration Statistics

## Client Requirements & Problem Statement



### Client Requirements & Inputs

- Prefer a Borough with low crime rates
- Do not want to go to Staten Island
- He likes his current Neighborhood The Beaches West in Toronto besides like India Bazaar Neighborhood of Toronto



### Problem Statement

- Client of ABC relocation consultant firm looking for suitable Neighborhoods in New York as he is relocating from Toronto
- We will be going to recommend him the neighborhood of New York which has similar characteristics as his current location



### Client Requirements & Inputs

For this project we need the following data:

**New York City data that contains the list of Boroughs, Neighborhoods along with their latitude and longitude.**

Data source: [https://cocl.us/new\\_york\\_dataset](https://cocl.us/new_york_dataset)

**New York City crime data that contains list of all the reported crimes in year 2018 as per Boroughs**

Data source: Downloaded the csv file from following location: <https://data.cityofnewyork.us/Public-Safety/NYPD-Complaint-Data-Historic/qgea-i56i>

**2020 Projected population of different boroughs**

Data source: Downloaded the csv file from following location:

<https://data.cityofnewyork.us/City-Government/2020-population/t8c6-3i7b>

**Toronto City data that contains the list Boroughs, Neighborhoods**

Data source: [https://en.wikipedia.org/wiki/List\\_of\\_postal\\_codes\\_of\\_Canada:\\_M](https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M)

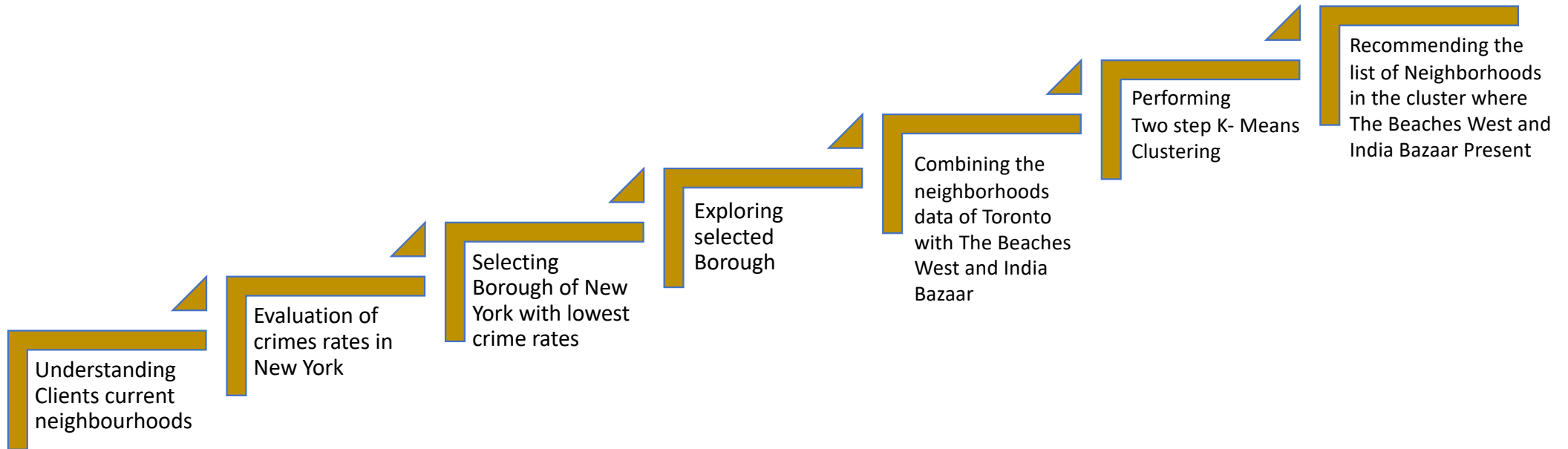
**Geospatial data for Toronto to get latitude and longitude of all Boroughs and Neighborhoods**

Data source: [https://cocl.us/Geospatial\\_data](https://cocl.us/Geospatial_data)

**Data source: Foursquare API**

Description: By using Foursquare api we will can explore all the venues in each neighborhood.

## Methodology



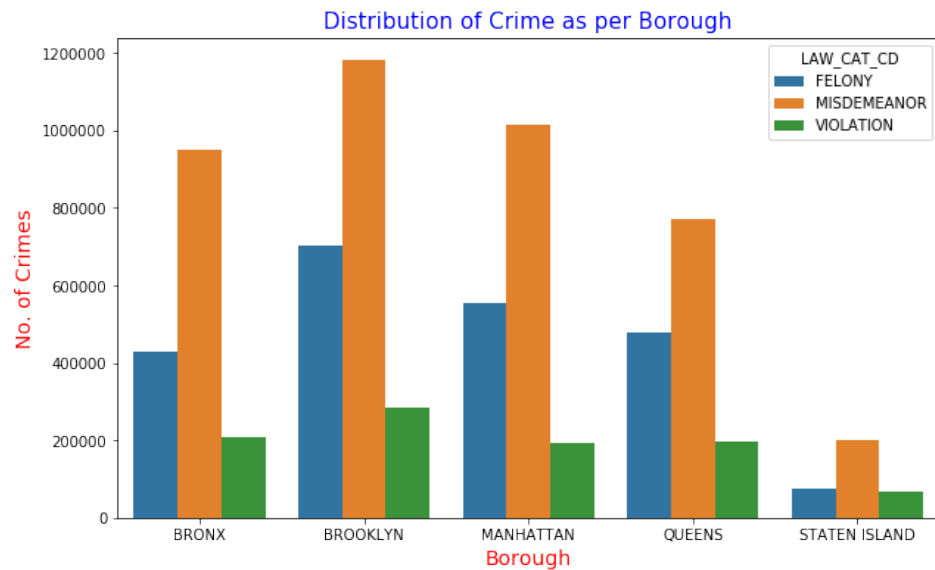
## Understanding Clients current neighbourhoods

- Current Location of Client : The Beaches West, India Bazaar
- Using Four Square API Explored venues around the current location
- Total 19 venues



## Evaluation of Crime Rates in New York's Borough

- Client Requested the Borough with low Crime rates
- Do not want to go Staten Island
- Second best option available is Queens

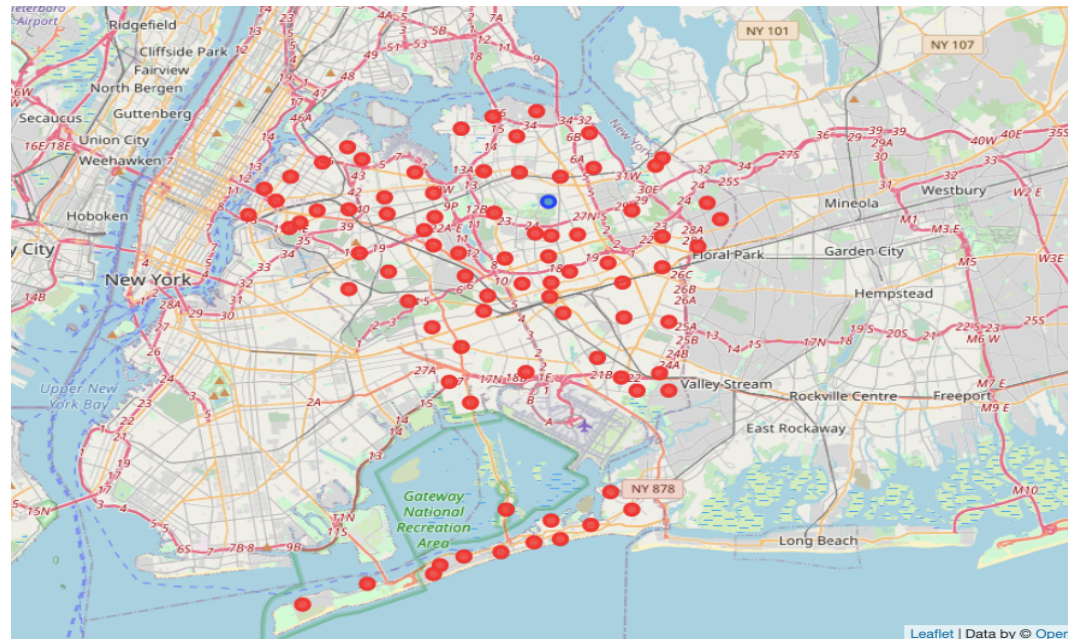


	Borough	Felony_Crime	Population	Felony_Crime/Population
0	BRONX	427916	1446788	0.295770
1	BROOKLYN	703224	2648452	0.265523
2	MANHATTAN	555234	1638281	0.338913
3	QUEENS	476811	2330295	0.204614
4	STATEN ISLAND	74859	487155	0.153666

## Exploring Queen's

- Used FourSquare API to explore the neighborhoods in Queens
- Total 82 Neighborhoods with 1534 distinct venues

Neighborhoods Map:





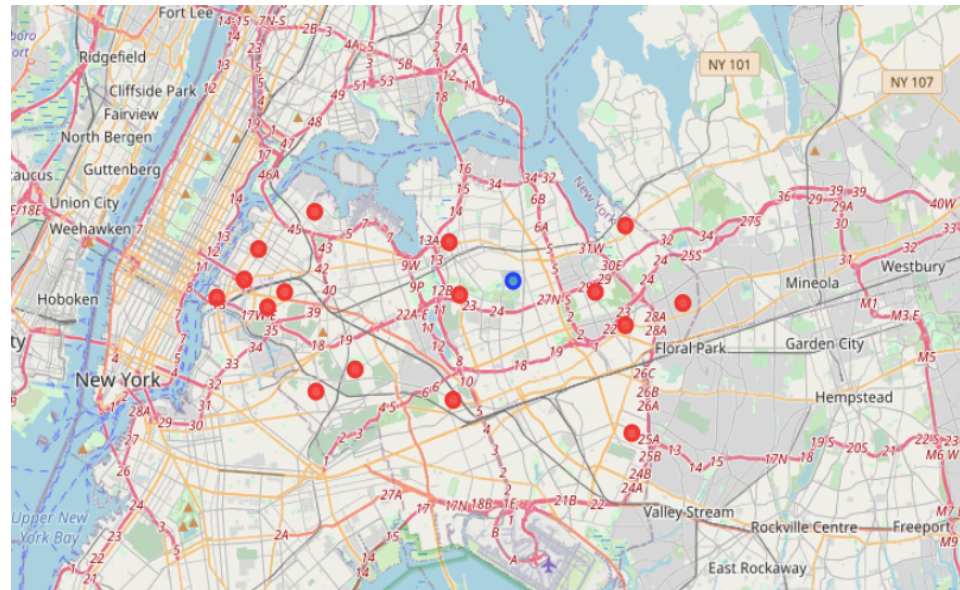
## Two Step K-means Clustering

- Merged The Beaches West and India Bazaar Neighborhoods data with Queens Neighborhood data
- Two step K-means clustering was performed
- First step was to remove extreme outliers
- Second, to get clusters of homogeneous groups of neighborhoods
- Got a list of 16 Neighborhoods which are part of same clusters as does The Beaches West and India Bazaar

## Results & Recommendations

We recommend the list of final 16 neighborhoods in Queens to our client

#	Name of Neighbourhood
1	Queensboro Hill
2	Oakland Gardens
3	Bellaire
4	Floral Park
5	Little Neck
6	Flushing
7	Kew Gardens
8	Middle Village
9	Ridgewood
10	Hunters Point
11	Sunnyside
12	Long Island City
13	Sunnyside Gardens
14	Ravenswood
15	Steinway
16	Cambria Heights





**THANK YOU**