



BEST NEIGHBORHOOD FOR GROCERY STORE IN VANCOUVER

Chithra Raji

INTRODUCTION

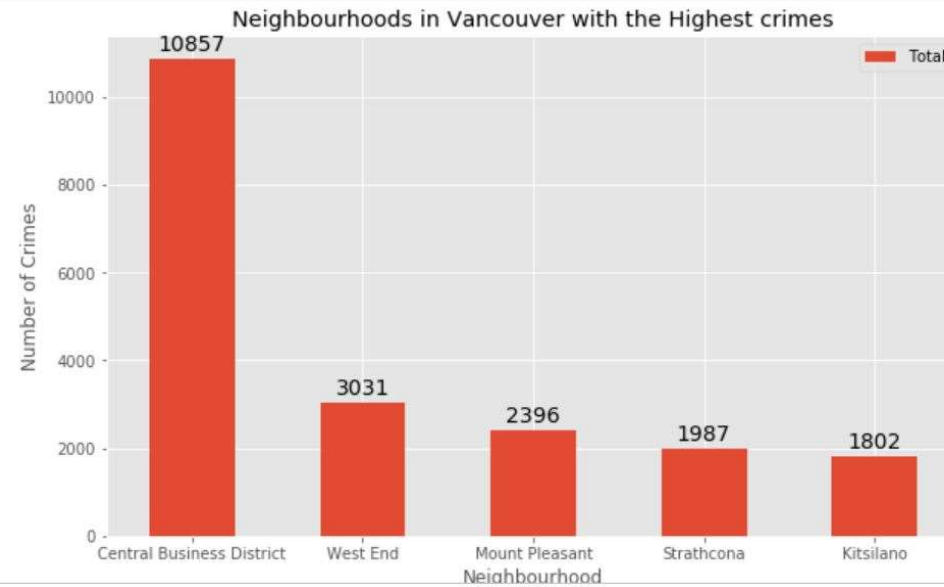
- The aim of the project was to analyze different data sets especially the crime data set to start with – analyze and find a safe and crime free zone in Vancouver for a new grocery shop businessman to start his new venture. I will be using specific data science tools to analyse data and focus on the safest borough by clustering, grouping and exploring its boroughs and then finding the 10 most common venues and choose the borough where we find grocery as the least common venue. Based on definition of our problem, factors that will influence our decision are: ☐ finding the safest borough based on crime statistics ☐ finding the most common venues ☐ choosing the right neighbourhood within the borough ☐ We will be using the geographical coordinates of Vancouver to plot neighbourhoods in a borough that is safe and in the city's vicinity, and finally cluster our neighborhoods and present our findings.

DATA SOURCES

- Data sources used are mentioned below :
- Dataset from Kaggle containing the Vancouver Crimes from 2003 to 2019
- List of officially categorized boroughs in Vancouver from Wikipedia.
- Creating new dataset of the Neighborhoods, along with their boroughs, crime data and the respective Neighbourhood's co-ordinates using geocoder
- Fetching neighbourhood coordinates using Foursquare

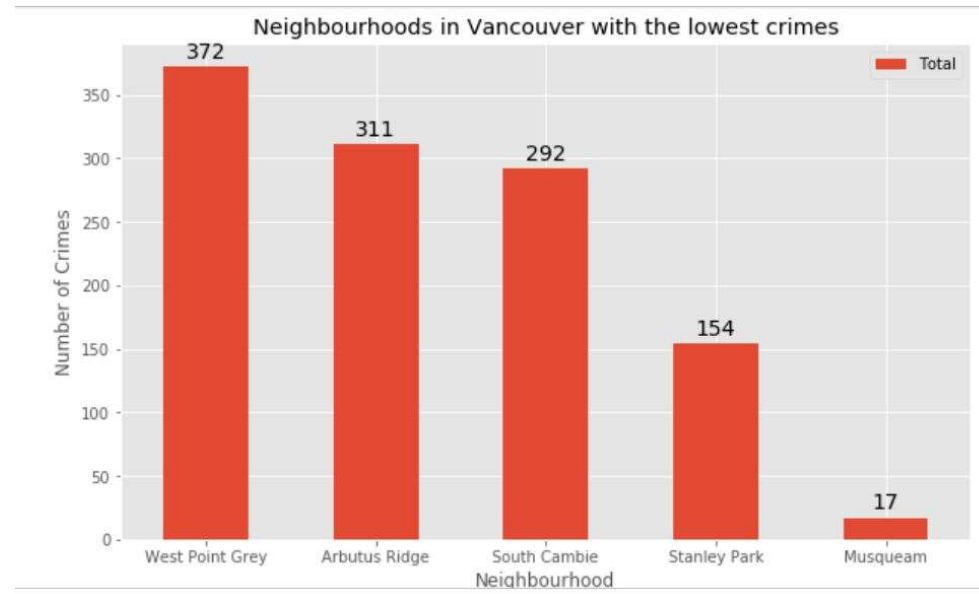
RESULT

- The objective of the business problem was to help stakeholders identify one of the safest borough in Vancouver, and an appropriate neighborhood within the borough to set up a commercial establishment especially a Grocery store. This has been achieved by first making use of Vancouver crime data to identify a safe borough with considerable number of neighborhood for any business to be viable. After selecting the borough it was imperative to choose the right neighborhood where grocery shops were not among venues in a close proximity to each other. We achieved this by grouping the neighborhoods into clusters to assist the stakeholders by providing them with relevant data about venues and safety of a given neighborhood.



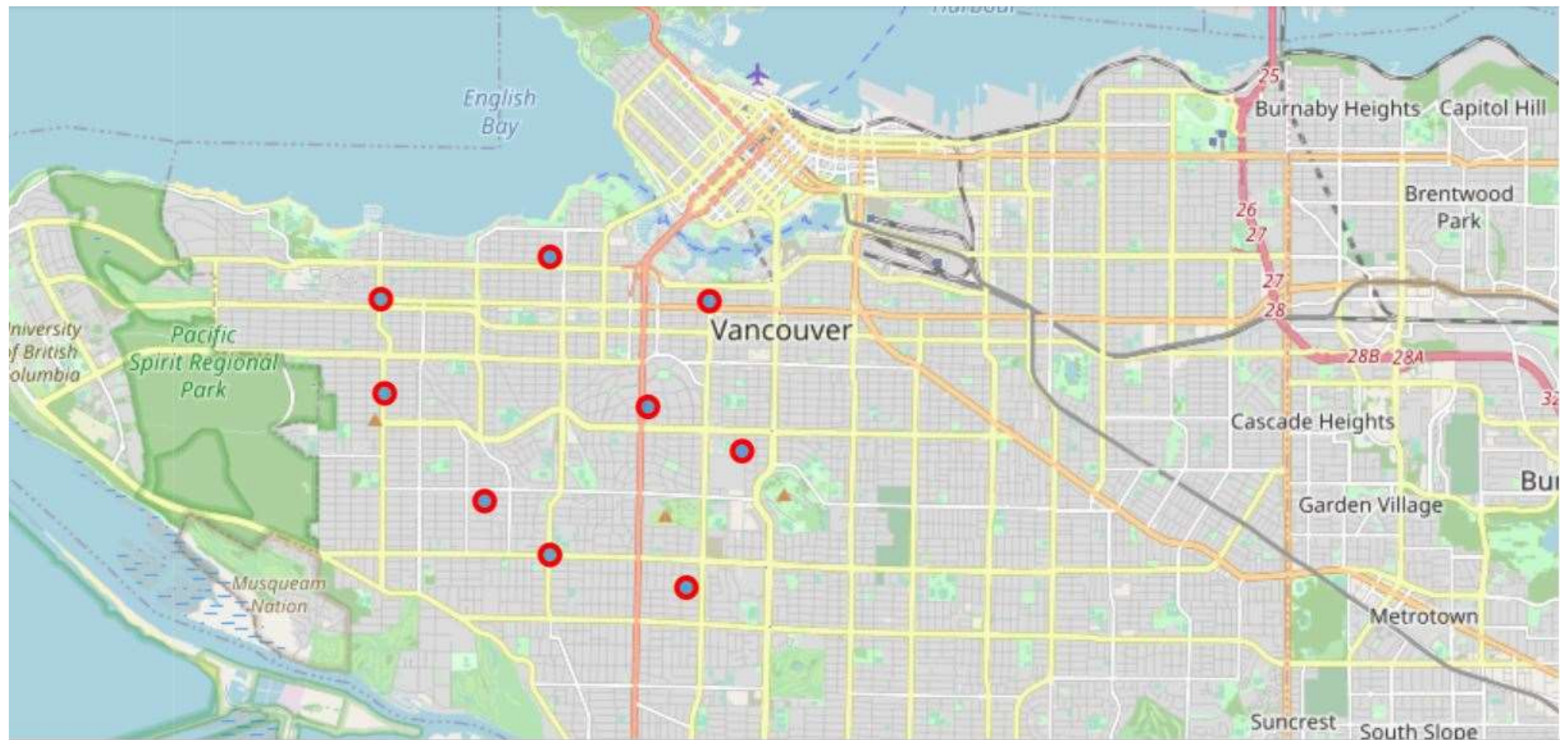
Progress 1

- After clustering and grouping, this is the result of a bar graph with the total number crimes along the neighborhoods
- Found out that Central Business District has the most crimes with 10857 crimes.



Progress 2

- After creating a bar chart for the least crimes in neighbourhood, we could figure out a neighborhood which was the safest to stay.
- From the result it turns out that Musqueam city of Vancouver is the safest city.



		Venue	Venue	Venue	Venue	Venue	Venue	Venue	Venue	Venue	Venue
0	West Side	Park	French Restaurant	Yoga Studio	Cosmetics Shop	Dessert Shop	Dim Sum Restaurant	Diner	Falafel Restaurant	Fast Food Restaurant	Food

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[56]: vancouver_merged.loc[vancouver_merged['Cluster Labels'] == 2, vancouver_merged.columns[[1] + list(range(5, vancouver_merged.columns.get_loc('Cluster Labels')))]
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	Borough	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
9	West Side	Japanese Restaurant	Ice Cream Shop	Liquor Store	Sushi Restaurant	Indian Restaurant	Italian Restaurant	Gym Pool	Gym / Fitness Center	Deli / Bodega	Dessert Shop

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[57]: vancouver_merged.loc[vancouver_merged['Cluster Labels'] == 3, vancouver_merged.columns[[1] + list(range(5, vancouver_merged.columns.get_loc('Cluster Labels')))]
```

	Borough	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
7	West Side	Nightlife Spot	Bakery	Grocery Store	Pet Store	Spa	Yoga Studio	Dessert Shop	Dim Sum Restaurant	Diner	Falafel Restaurant

RESULT DEPICTING THE CLUSTERS OF COMMON VENUES

Conclusion

- We have explored the crime data to understand different types of crimes in all neighborhoods of Vancouver and later categorized them into different boroughs, this helped us group the neighborhoods into boroughs and choose the safest borough first. Once we confirmed the borough the number of neighborhoods for consideration also comes down, we further shortlist the neighborhoods based on the common venues, to choose a neighborhood which best suits the business problem.