Capstone Project - The Battle of Neighbourhoods

Description of the Data

In order to recommend the best neighbourhood to establish the restaurant, the following data will need to be collected:

- A list of Auckland neighbourhoods.
- The post codes of each neighbourhood to which latitude and longitude co-ordinates can be associated.

This data (Fig.1) can be found at the following website: https://www.geonames.org/postalcode-search.html?q=auckland&country=NZ , and will be scrapped using Python script to provide just the relevant data needed to solve this business problem.

New Zealand - postal codes

auckland | New Zealand | search

Either enter a postal code (eg. "9011", "AB1", "9980-999") or a city (eg. "London")

	Place	Code	Country	Admin1	Admin2	Admin3
1	Blockhouse Bay -36.918/174.7	0600	New Zealand	Auckland		
2	Kelston -36.898/174.66	0602	New Zealand	Auckland		
3	Huia -36.998/174.567	0604	New Zealand	Auckland		
4	McLaren Park -36.888/174.61	0612	New Zealand	Auckland		

Figure 1. An example of the webpage data to be scrapped from www.geonames.org

The Folium library will be used as a visual aid while examining the data, rendering maps of Auckland's neighbourhoods (Fig. 2) as well as showing the different venue clusters that will be looked for using machine learning methods (Fig. 3).

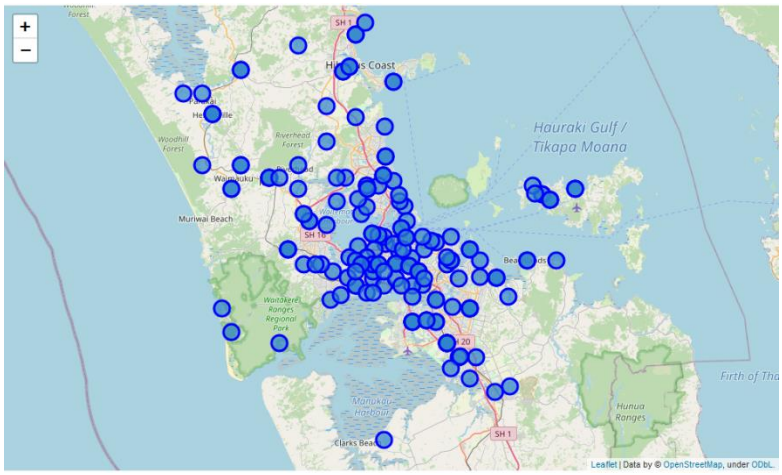

Figure 2. An example of Folium, showing the neighbourhoods of Auckland City, New Zealand.

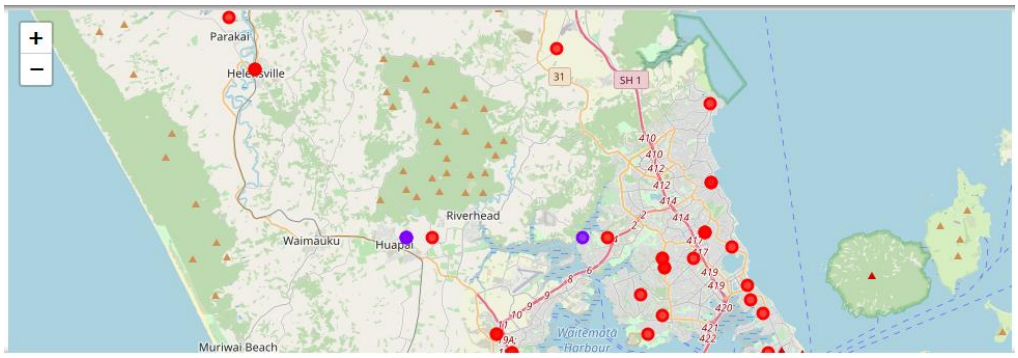

Figure 3. An example of Folium, showing neighbourhoods clustered by similar top venues for Auckland City, New Zealand.

When the neighbourhood data has been arranged into a workable data frame, I will use the Foursquare API software to identify:

- The different types of venues (e.g. restaurants, parks) in each neighbourhood.
- The popularity of each venue in each of these neighbourhoods.

The data will be refined to show the top rating venues and street addresses converted to latitude & longitude using (Fig. 4): https://geocoder.readthedocs.io/index.html

	Neighbourhoods	Neighbourhoods Latitude	Neighbourhoods Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Blockhouse Bay	-36.918	174.70	Raithlin Park	-36.918041	174.702805	Park
1	Blockhouse Bay	-36.918	174.70	Blockhouse Bay	-36.921978	174.702565	Neighborhood
2	Kelston	-36.898	174.66	Booze Hags R Us	-36.899786	174.662193	Liquor Store
3	Kelston	-36.898	174.66	Brains Park	-36.895385	174.663546	Park
4	Kelston	-36.898	174.66	Long Black	-36.893547	174.659748	Café

Figure 4. An example of venues found using FourSquare API for Auckland neighbourhoods.

From this I hope to recommend the best neighbourhood for the client to open her restaurant.