The Report of The Battle of Neighborhoods

1. Introduction

I am a Chinese student studying in Vancouver, Canada. I like the scenery and the humanities here. I enjoy my life here. However, I am not really used to eating local food. I want to do a project. Go to find some Chinese restaurants and go to meet up with my Chinese friends.

2. Methodology

The integrated approach includes find out relevant data, data cleaning and preparation, analysis and result. We firstly need to import the necessary libraries we need include requests and os for Computer command control, numpy for data calculation, pandas for data cleansing, matplotlib and seaborn for data visualization, geopy for geographic information acquisition and folium for map visualization.

3. Dataset

First, we should load a csv file named "information_week4.csv" that contains the postal code, borough, neighborhood, Latitude, and Longitude, as shown in Figure 1.

Fig. 1 Related information csv file

Then, we need foursquare API location data to get information about restaurants and their ratings. And we need load the url and import foursquare data. And, export the data to local csv file for further data cleaning on postal codes then import back. After that, I merge my postal csv and final dataframe to get the borough information.

4. Data preparation and cleaning

In the stage of Data preparation and cleaning, we need load the csv into python dataframe. Then, we use Foursquare API to get all the data, append into rows then create a dataframe. Of course, we should remove unnecessary columns or rows as shown in Figure 2.

Fig. 2 the borough information we get

Lastly, merge the two dataset together, and ,we can get the comprehensive information, as shown in Figure 3.

	PostalCode	Borough	Neighborhood	Latitude	Longitude	ID	Name	postal	Category
0	V2S	Abbotsford	Southeast	49.0172	-122.2843	4b774f67f964a520f8902ee3	Dragon Fort Restaurant	V2S	Chinese Restaurant
1	V2Y	Langley Township	Northwest	49.1336	-122.6312	4be70fd82457a593077ead15	Luxe Chinese Seafood Restaurant	V2Y	Chinese Restaurant
2	V3B	Port Coquitlam	Central	49.2816	-122.7536	4ee5487b4fc66c40b96a10db	Grand Palace Seafood Restaurant	V3B	Chinese Restaurant
3	V3B	Port Coquitlam	Central	49.2816	-122.7536	4d3f3aeecb84b60cb7477bab	Rainbow Butterfly Chinese Restaurant	V3B	Chinese Restaurant
4	V3J	Coquitlam	North	49.2581	-122.8627	51e6e46c498e231314f181bc	Sun Star Restaurant 新星美食	V3J	Chinese Restaurant
...	...	...	...	...	...	...	...	...	...
61	V6X	Richmond	North	49.1768	-123.1161	5006e38be4b0831ec3cac976	Double Double Restaurant 老油条	V6X	Chinese Restaurant
62	V6X	Richmond	North	49.1768	-123.1161	4beeff5cf2712d7ff324fbd8	Leung Kee Congee & Noodles	V6X	Chinese Restaurant
63	V6Y	Richmond	Central	49.1572	-123.1153	4b6f7527f964a5205ef12ce3	Master Hung BBQ Restaurant	V6Y	Chinese Restaurant
64	V7A	Richmond	South	49.1314	-123.1162	57d305d3498e018d181b11d9	Bubble Waffle Cafe	V7A	Chinese Restaurant
65	V7M	North Vancouver	Southwest Central	49.3216	-123.0812	4b5a66aff964a520b4c228e3	Red Chilli Szechuan Restaurant	V7M	Chinese Restaurant

Fig. 3 Comprehensive information after merging

5. Analysis

In this section, we use the visualization library 'matplotlib' to present data information. We choose to display the information on the number of Chinese restaurants in each area we have received on the way, as demonstrated in figure 4, in which the blue histogram represent the number of Chinese restaurants per borough in each region .
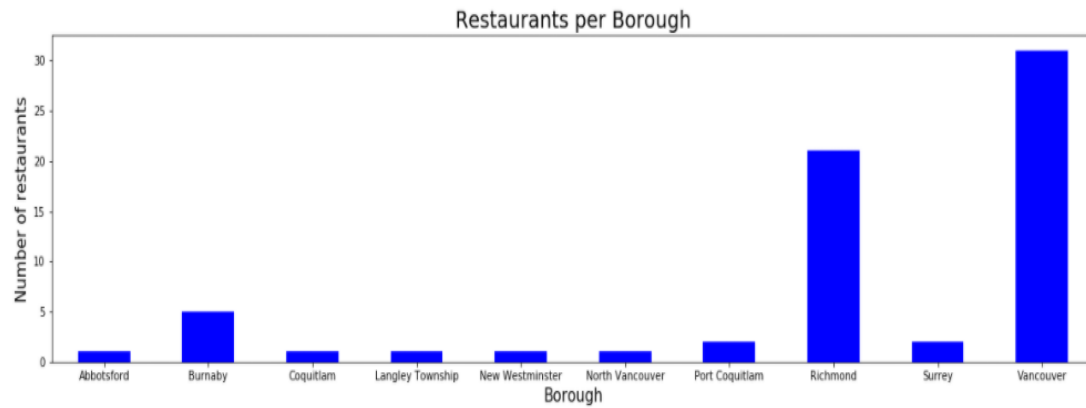
Fig. 4 Restaurants per borough

6. Result

From the Figure 4, we can conclude that Vancouver has the highest number of restaurants in Greater Vancouver Area, then Richmond and Burnaby. From the bar graph, we can also see most of the Chinese restaurants are located in one of these three boroughs. In conclusion, when I meet my friends and want to find a Chinese restaurant, we should stay in either Burnaby, Richmond, or Vancouver.