Where's the PHO?

Introduction

New York City is the CITY. It is one of the most renowned city in the world. It is the mecca of fashion, and at the same time, one may argue it is the melting pot, literally the melting pot of different foods. As the city is populated with people from various backgrounds, the residents are also open to different types of food, including Vietnamese pho.

This final project explores various locations within NYC and find the best location to open up a Vietnamese PHO noodle house. As Vietnamese pho noodle is gaining popularity among all types of people from all various ethnicities and backgrounds, there are stakeholders willing to open new pho noodle houses within the city of NY. Pho is a Vietnamese soup consisting of broth, rice noodles, herbs, and meat, sometimes chicken. Pho is a popular food in Vietnam where it is served in households, street stalls and restaurants countrywide. During the 2000s, pho restaurants in the United States generated US$500 million in annual revenue, according to an unofficial estimate. Pho can now be found in cafeterias at many college and corporate campuses, especially on the West Coast. However, there is a lack of pho restaurants in the NYC and thus is a demand for this type of restaurant. Thus, this project is to provide an answer to the stakeholders of the "best location within NYC to open a new pho noodle house." As opening a new pho house would require a big investment and time from the stakeholder's perspective, it would be wise decision to determine where other Vietnamese noodle houses are located in the NYC and avoid opening an area next to another restaurant offering similar menu items (i.e. pho noodle soup). Furthermore, the ideal location of the pho house would be a location where the residents demand pho noodle soup (or Asian food), so that when the restaurant opens, there would be minimal marketing effort in advertising the new restaurant.

Data

In order to answer the above questions, various information about the NYC is needed, including NYC neighborhoods, boroughs, locations (latitude, longitude), other restaurants, and its respective

restaurant ratings and tips are required and helpful. NYC information of above can be retrieved from the data source: https://cocl.us/new_york_dataset

1) From this data, information about Borough, Neighborhood, Latitude, and Longitude would be provided in a table. 2) Next, number of Vietnamese restaurants in each of the Borough would further be determined (e.g. Brooklyn with 1, Manhattan with 2, etc.). 3) Each of the restaurants will also be rated based on "likes", ratings, and tips. 4) Coding will also be entered to identify and visualize neighborhood with the maximum average rating of restaurants 5) Based on the data analysis above, a determination of the location for the best place to open a Vietnamese noodle house will be determined.

Methodology

Data will be collected from https://cocl.us/new_york_dataset and cleaned and processed into a dataframe. Next, FourSquare be used to locate all venues and then filtered by Vietnamese/Pho restaurants. Ratings, tips, and likes by users will be counted and added to the dataframe. Data will be sorted based on rankings. Finally, the result is visually assessed using graphing from Python libraries.

Results

Based on the results, Queens followed by Brooklyn and Staten Island has top number of neighborhoods in NYC as shown in Fig.1. There are 29 Vietnamese restaurants in NYC. Manhattan has the most number of Vietnamese restaurants, thus may be very competitive with other similar Vietnamese restaurants. However, Staten Island and Queens have much less (below 5). See Fig.2 and Fig.3. Among all the different neighborhoods, Chinatown, East Village, Greenwich Village, and Homecrest each have at least two Vietnamese restaurants. The Vietnamese restaurant with the maximum likes of 1374 is Saigon Shack in Manhattan, maximum ratings is Xe May Sandwich Shop, also in Manahattan. Saigon Shack also gained the most number of tips of 390. Neighborhoods with high average ratings are East Village, Forst Green, Greenpoint, Greenwich Village and Manhattan Valley. At the same time, among the boroughs, Manhattan has the highest average rating, while Queens has the lowest. Please refer to Fig.4 where the map shows most of the restaurants with high average ratings are in Manhattan.
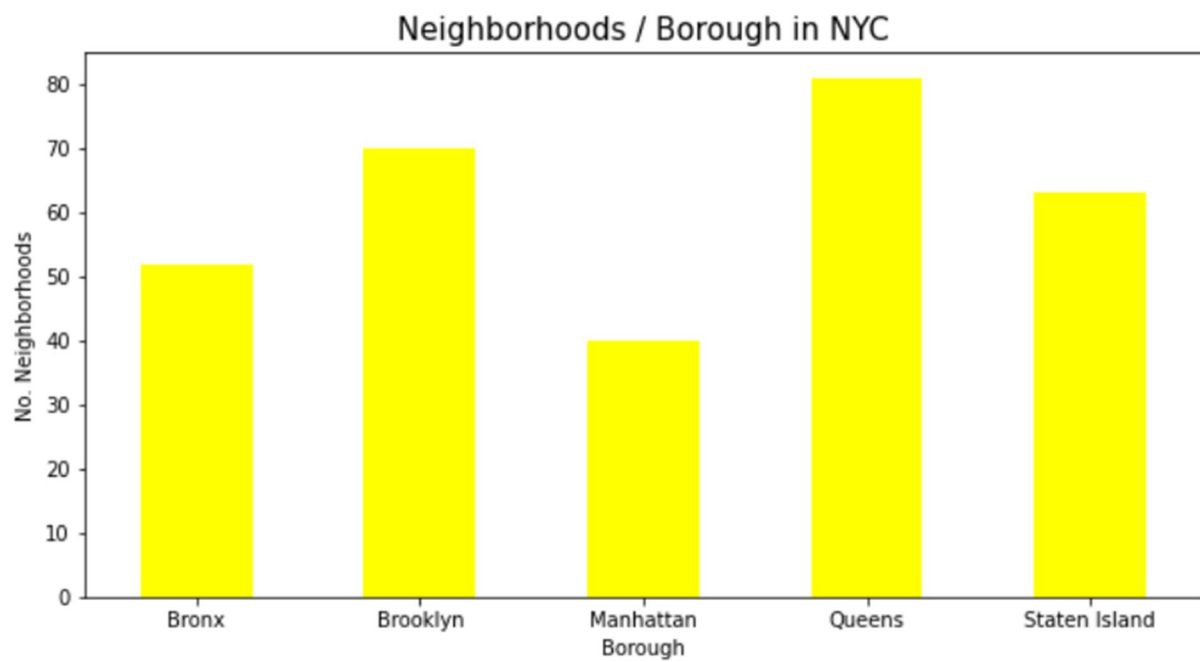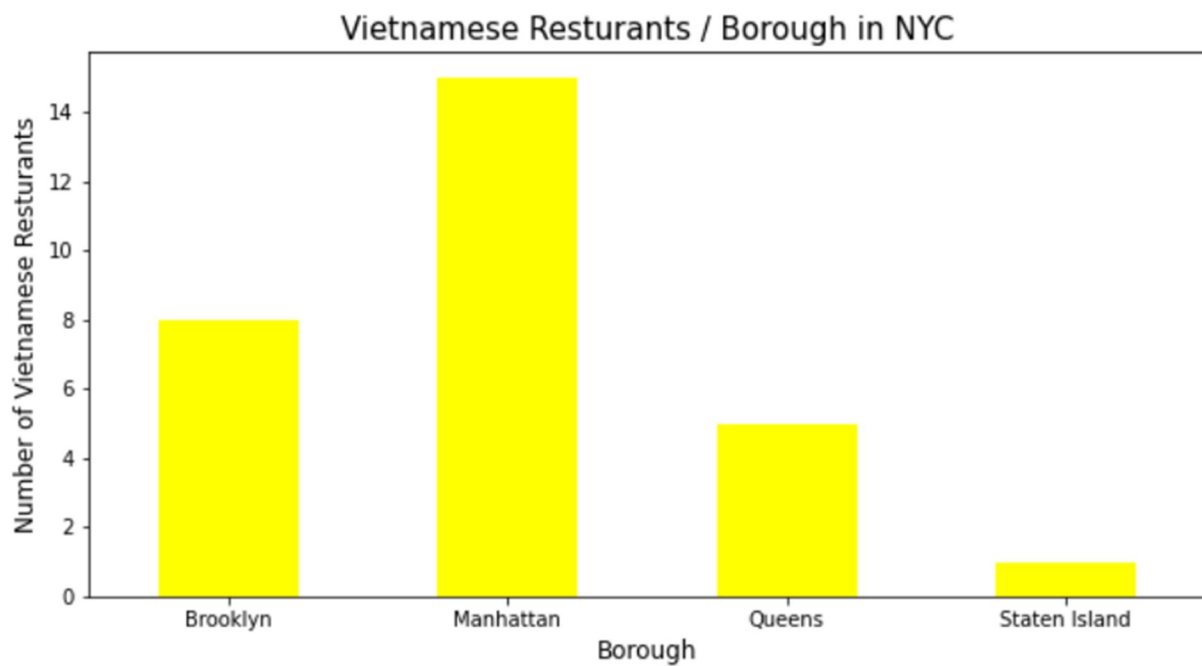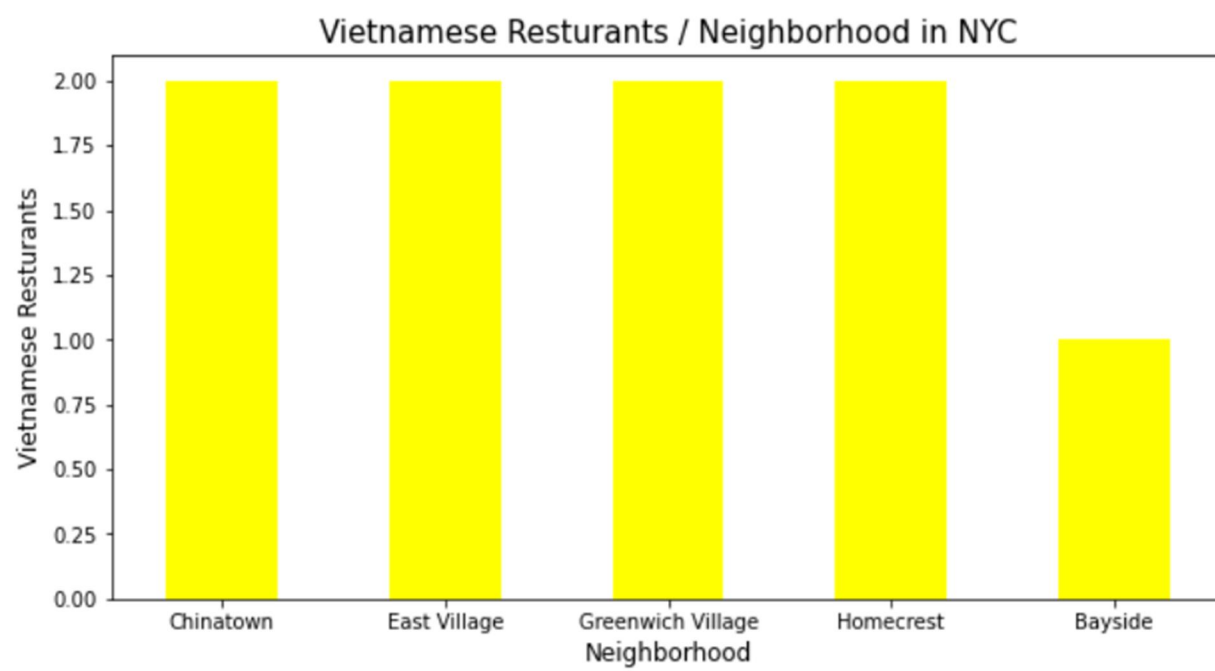
FIG. 1

FIG.2

FIG. 3

FIG.4

Conclusion

In sum, Manhattan is an area the stakeholder should avoid in opening a new Vietnamese restaurant because there will likely be fierce competition. There are restaurants identified above (e.g. Saigon Shack) with high ratings. Thus, it may be a good idea to open in an area with low average rating. This information reveals that there is a demand for a Vietnamese restaurant, however the customers are dissatisfied with the food served in the restaurants. Therefore, based on the data analysis, a strong suggestion is to open one in Queens!