

Capstone Project - The Battle of Neighborhoods

Where to open a Coffee Shop in NYC

Introduction

This final project explores the best locations for coffee shops throughout the city of New York. Although we might have a feeling that coffee shops are ubiquitous, there are many differences in the number of coffee shops depending on the neighborhood.

Over 8 million people live in the city and coffee shops became a place where you could get not only coffee, but also other types of snacks and refreshments. With many of them also providing free wi-fi, there are many people who would bring their laptops and work from the coffee shops during the day (this, of course, before the COVID-19 pandemic).

This report explores which neighborhoods and boroughs of New York City have the biggest number of coffee shops, as well as the best rated ones. Moreover, the study will attempt to answer the questions "Where should I open a coffee shop?" and "Where should I go if I want great coffee in New York?"

Data

In order to answer the questions mentioned above, data on New York City neighborhoods, boroughs to include boundaries, latitude, longitude, restaurants, and restaurant ratings and tips are required.

New York City data containing the neighborhoods and boroughs, latitudes, and longitudes will be obtained from the data source: https://cocl.us/new_york_dataset

New York City data containing neighborhood boundaries will be obtained from the data source: <https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqmj-j8zm>

All data related to locations and quality of coffee shops will be obtained via the Foursquare API utilized via the Request library in Python.

Methodology

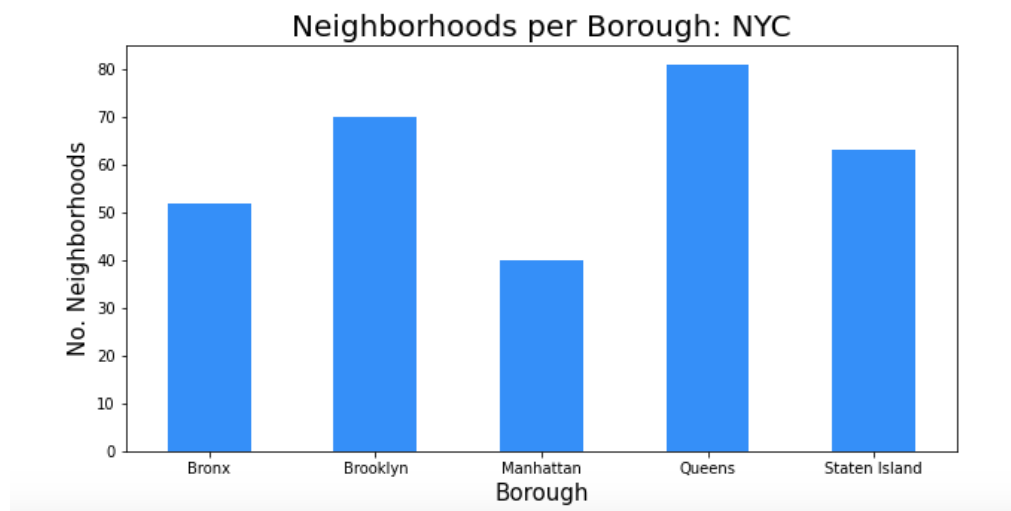
- Data will be collected from https://cocl.us/new_york_dataset and cleaned and processed into a dataframe.
- Foursquare be used to locate all venues and then filtered by coffee shops. Ratings, tips, and likes by users will be counted and added to the dataframe.
- Data will be sorted based on rankings
- Finally, the data be will be visually assessed using graphing from various Python libraries.

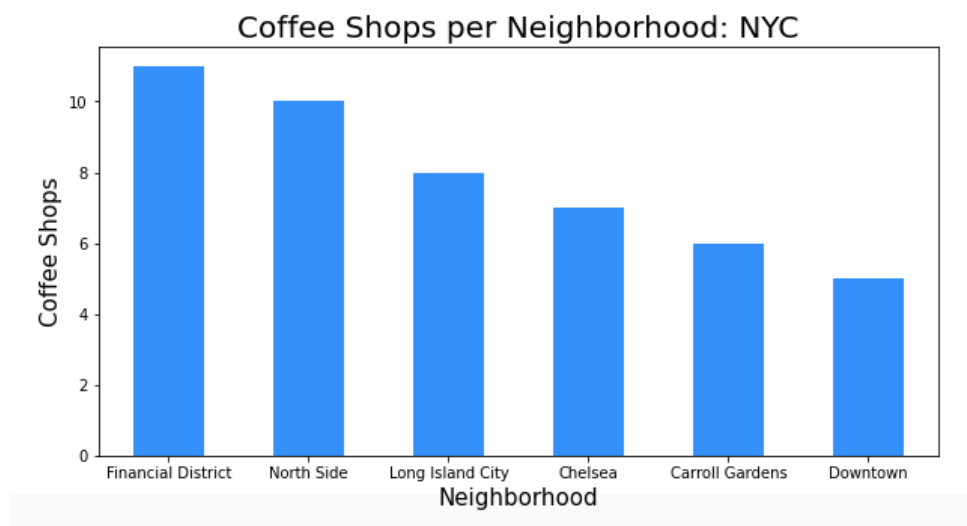
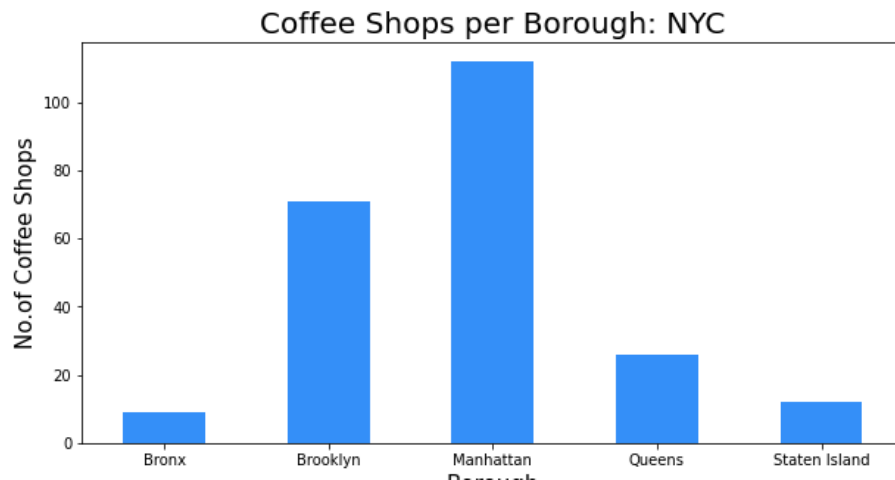
Problem Statement

1. What is / are the best location(s) for coffee shops in New York City?
2. In what Neighborhood and/or borough should I open a coffee shop to have the best chance of being successful?
3. Where would I go in New York City to have the best coffee?

I – Analyzing NYC

Firstly, it is important to understand how the city is divided and how many neighborhoods there are. New York has 5 boroughs: Manhattan, Queens, Brooklyn, Bronx, and Staten Island. Each of them, however, has a very different number of neighborhoods:



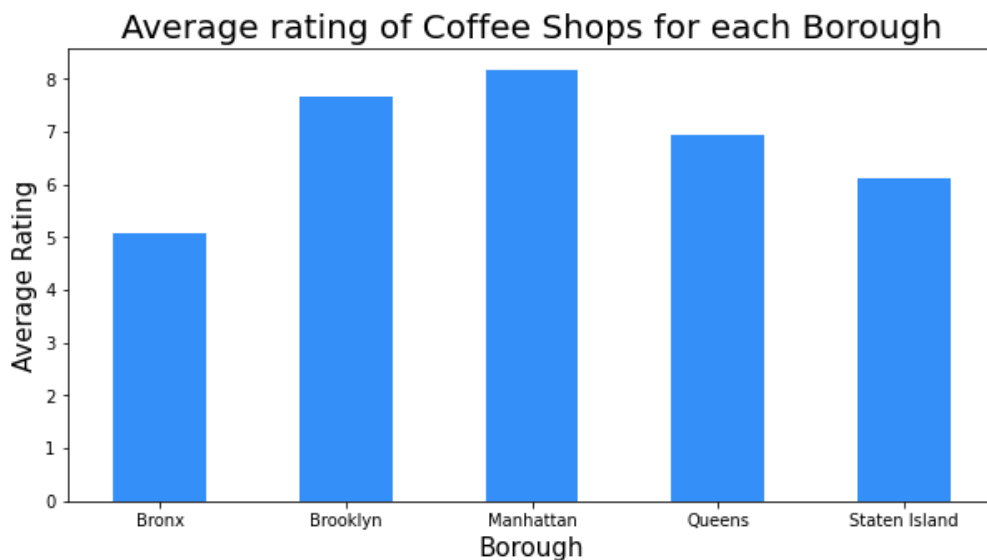


As we can see, Manhattan has the highest number of coffee shops, even though it has fewer neighborhoods than the other boroughs. Additionally, we conclude that the Financial District has the highest number of coffee shops in all of NYC.

II – Analyzing Coffee Shops data

After getting data from Foursquare, it is possible to see which borough has more well rated coffee shops:

	Borough	Average Rating
2	Manhattan	8.174107
1	Brooklyn	7.654930
3	Queens	6.926923
4	Staten Island	6.108333
0	Bronx	5.066667



Results / Conclusion

Manhattan has the best rated coffee shops restaurants on average. Bronx has the least amount of coffee shops per borough. Despite Manhattan having the least number of neighborhoods in all five boroughs, it has the most coffee shops. Based on this information, I would state that Manhattan and Brooklyn are the best locations for coffee shops in NYC. To have the best shot of success, I would open a coffee shop in Brooklyn, since it has less competition than Manhattan, as well as smaller average rating. Finally, I would go to Midtown South in Manhattan for the best coffee, based on 2438 likes. As a final note, all of the above analysis is depended on the adequacy and accuracy of Foursquare data. A more comprehensive analysis and future work would need to incorporate data from other external databases.