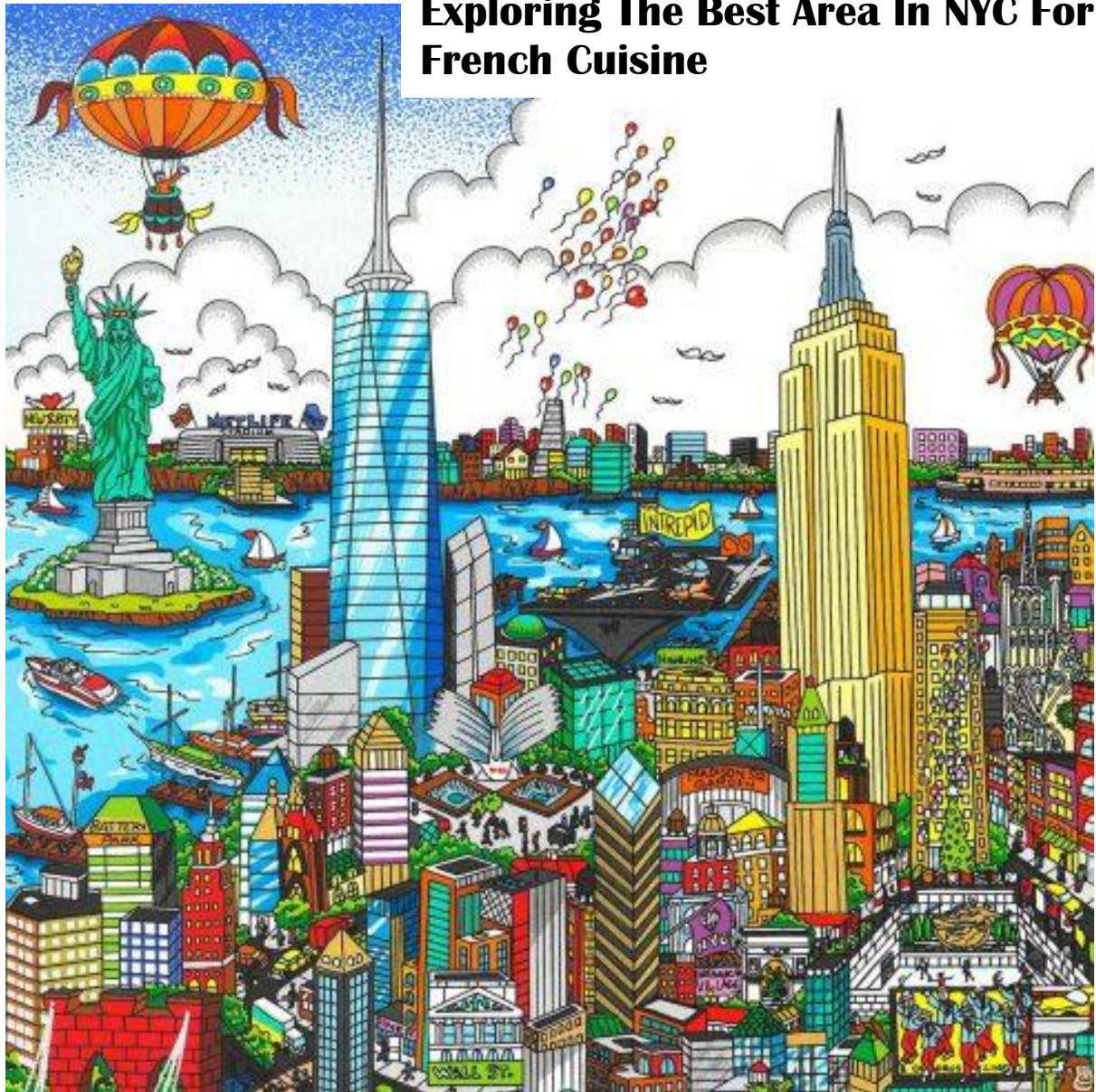


The Battle of Neighborhoods Report

**Exploring The Best Area In NYC For
French Cuisine**



IBM - Applied Data Science
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1. Introduction

The purpose of this project is to help anyone interested in exploring and prospecting the best area in NYC to setup a restaurant specifically related to exclusive French cuisine.

By applying Data Science in our research, the findings may help people understand and make smart decisions when ready to go live and setup a similar business.

Finally, this methodology could be replicated and applied to other cities around the globe as long as the Data Scientist has access to a data base of the city to be analyzed.

2. Business Problem

The restaurant industry is certainly a difficult business to set up and operate not only because it's capital-intensive with low margins and due to health issues, they're also under heavy regulations. In top, most restaurants have to deal with a large number of skill-full and hard-working competitors and a variety of flavors worldwide.

Depending whether restaurants want to crack a particular segment and remain prosperous, they have to run a proper analysis of this particular industry with reliable and predictive data tools. Indeed, Data science provides invaluable insights regarding trends and emerging consumer lifestyles so that they can better address and meet public needs.

For this project, I will use the Foursquare API to explore neighborhoods in New York City in order to figure out the best location for me to open a French restaurant and position it in a niche sector. In addition, the explore function will let us get the most common venue categories in each neighborhood, and then we'll use this feature to group them into neighborhoods. Then we'll figure out which location is the most common visit venue and venue with least/most French restaurants to help me to decide the optimum location for opening a French restaurant. As a side note, the data source and methodology will be described in the 2nd part of the project.

By applying Data Science, we need to address a few questions:

- What's currently the best are in NYC to taste exclusive French cuisine?
- What is the best area in NYC for French restaurants?
- Which areas New Yorkers relate to French cuisine?

3. Environment & Target

As we know, New York city is probably one of the most important financial center in the world and also described as a great influencer in terms of new culture, fashion, commerce, entertainment, sport, financial research, tourism, contemporary art, sports and cuisine. Because of the great melting pot and large foreign communities, it's quite beneficial for New

Yorkers as they can get a large variety of choice in terms of fine cuisine such as: Chinese, Indian, Italian, Thai, Peruvian, Japanese to mention a few.

Having said this, we also have to keep in mind French cuisine is probably one of the most expensive cuisine out there and, in this respect, prospect areas should be selected on this particular criteria.

Finally, to survive in this competitive market, as a whole, ensuring a correct location for a business in the restaurant industry is key.

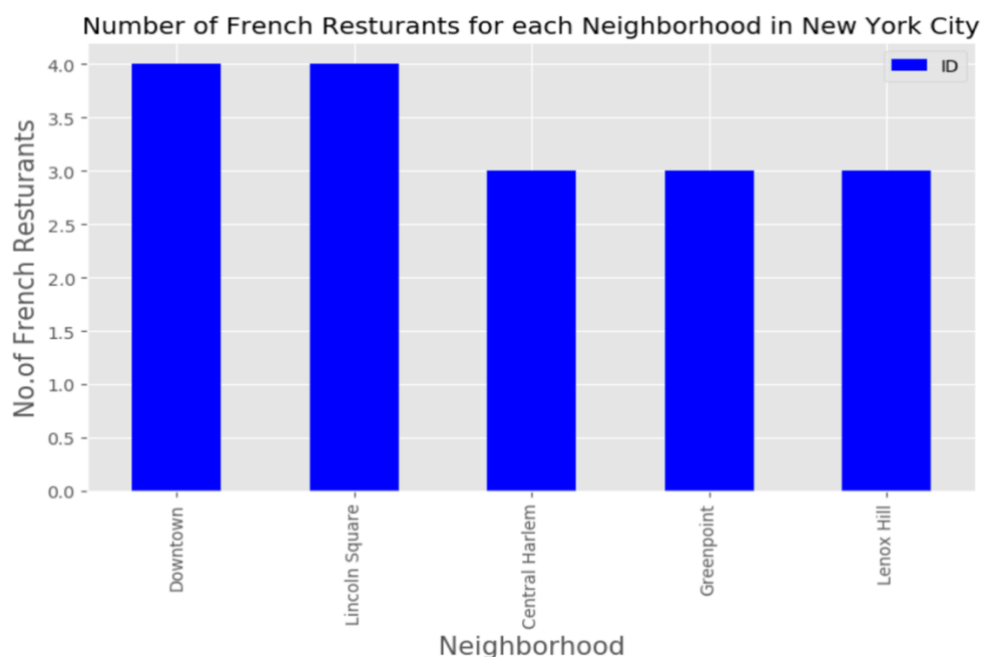
4. Data Source

We will use the existing free New York Geo data: https://cocl.us/new_york_dataset to determine the number of borough and neighborhoods.

In order to segment the neighborhoods and explore them, we will essentially need a dataset that contains the boroughs and neighborhoods that exist in each borough as well as the latitude and longitude coordinates of each neighborhood.

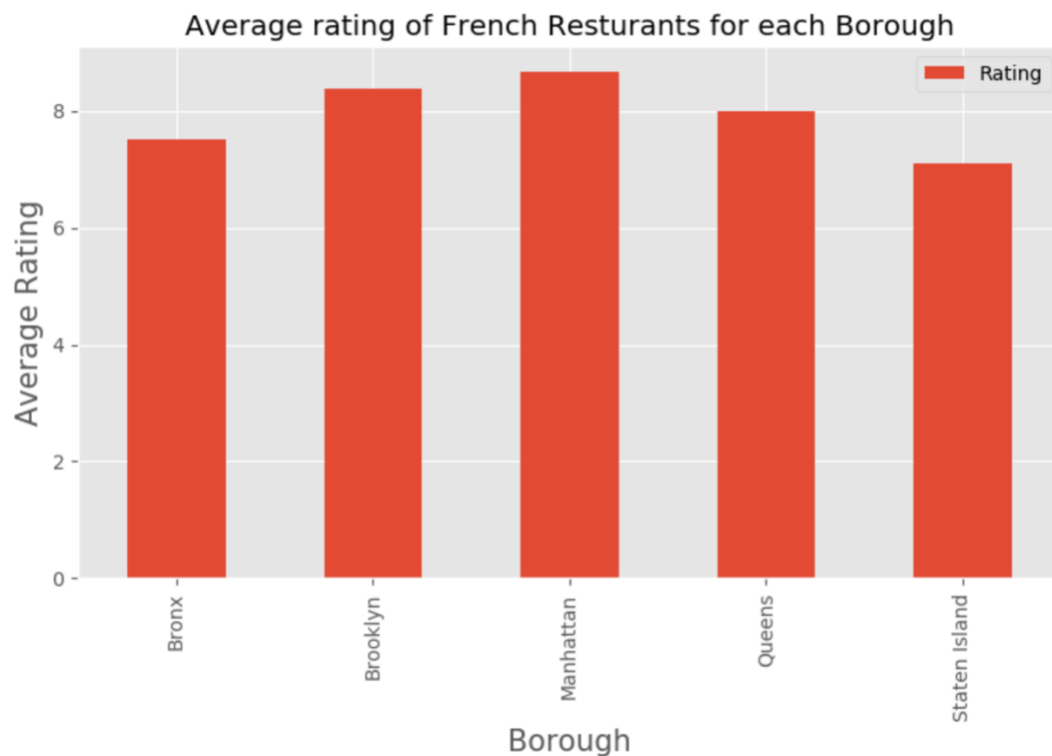
	Borough	Neighborhood	Latitude	Longitude
0	Bronx	Wakefield	40.894705	-73.847201
1	Bronx	Co-op City	40.874294	-73.829939
2	Bronx	Eastchester	40.887556	-73.827806
3	Bronx	Fieldston	40.895437	-73.905643
4	Bronx	Riverdale	40.890834	-73.912585

We will be using FourSquare API to find all venues for each neighborhood and then we'll filter out all venues that are French Restaurants



Next, we'll find and count the ratings, tips and likes for each French Restaurant using FourSquare API and sort the data

Finally, we'll visualize the ranking of neighborhoods using folium library(python)



	Neighborhood	Average Rating
8	Chelsea	9.0
17	East Harlem	9.1
28	Little Italy	9.3
40	Soho	9.0
41	South Side	9.1
49	West Village	9.2

5. Methodology

The FourSquare API is used as its prime data gathering source as it has a database of millions of places, especially their places API which provides the ability to explore specific location, location sharing and details about a business. Client_ID and Client_Secret serial numbers provided when registering in their website allow us to access to their API and geodata with a limited number of calls.

Also, matplotlib and pandas libraries are deployed to help us manipulate data structures and create static plots with python

6. Results

- Manhattan has the most French restaurants among all boroughs in New York
- Unsurprisingly, the average rating of French restaurants in Manhattan is the highest in New York
- The neighbors of Downton and Lincoln Square have the highest number of French restaurants

7. Conclusion

Following our statistical analysis described in the python notebook, we can say that the best place to open a French restaurant is Manhattan if the selection criteria is based on the fact people assimilate this neighbor as a relational place to French cuisine.

A counter intuitive choice would be to open a French restaurant in a place where there's no French cuisine competition or/and little number of restaurants other than French cuisine and/or far/close to Downtown NYC. But this is out of the scope of this project.