# Coursera Capstone

## IBM Applied Data Science Capstone

## Japanese Restaurant in New York

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# Business Problem

The objective of this Capstone project is to analyze and select the best locations in the city of New York to open a new restaurant. Using Data Science methodology and instruments such as Data Analysis and Visualization, this project aims to provide solutions to answer the business question: Where in the city of New York, should the investor open a Restaurant? Target Audience of this project and some demographic facts this project is particularly useful to developers and investors looking to open or invest in a restaurant in the city of New York. Overall, New York is a great place to open a restaurant with an ethnical Japanese cuisine. As New York is the most diverse city in the world (800 languages are spoken in New York). With its diverse culture, comes diversity in the food items. There are many restaurants in New York City, each belonging to different categories like Chinese, Indian, French, etc.

## Data

## To solve the problem, we will need the following data:

• New York City data containing the neighborhoods and boroughs.

 • Latitude and longitude coordinates of those neighborhoods. This is required to plot the map and get the venue data.

 • Venue data, particularly data related to restaurants. We are going to use this data to perform further analysis of the neighborhoods.

This project will require using of many data science skills, from web scrapping (open source dataset), working with API (Foursquare), data cleaning, data wrangling, to map visualization (Folium). In the next Methodology section, we will discuss and describe any exploratory data analysis that we did, any inferential statistical testing that we performed, and what at machine learning techniques were used.

## Methodology

• Data will be collected from https://cocl.us/new_york_dataset and cleaned and processed into a data frame.

• Foursquare be used to locate all venues and then filtered by Japanese restaurants. Ratings, tips, and likes by users will be counted and added to the data frame.

• Data will be sorted based on rankings.

• Finally, the data be will be visually assessed using graphing from Python libraries.

# Results

The results of our analysis showed below:

1. We see the highest number of Neighborhoods and what Borough they belong to.



Neighborhoods per Borough: NYC
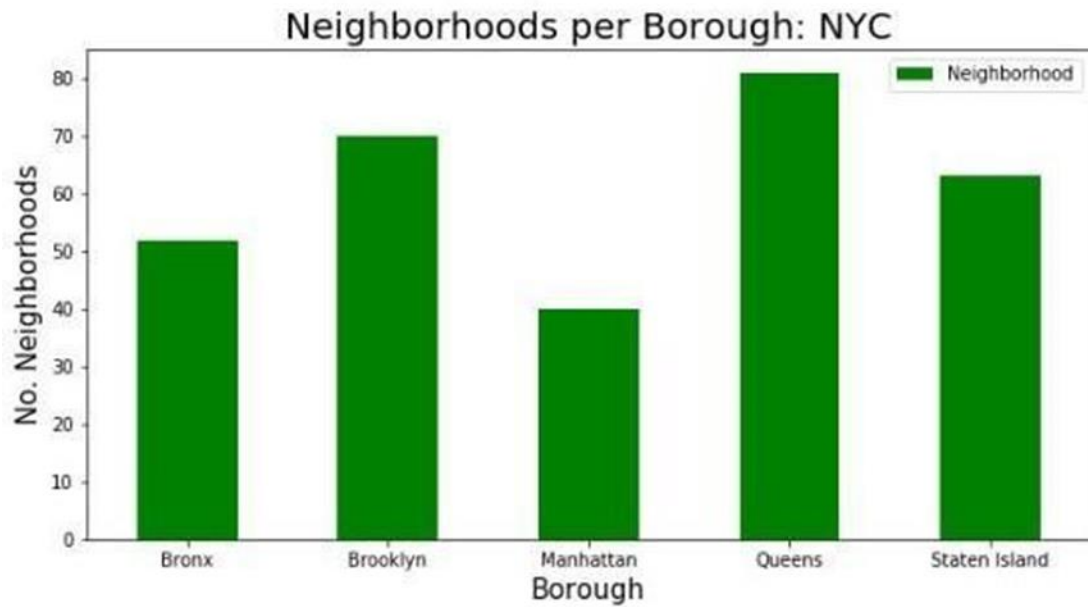
First we fetched the New York City's neighborhood data along with respective latitudes and longitudes from https://cocl.us/new_york_dataset

| | 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 |
| 5 | Bronx | Kingsbridge | 40.881687 | -73.902818 |
| 6 | Manhattan | Marble Hill | 40.876551 | -73.910660 |
| 7 | Bronx | Woodlawn | 40.898273 | -73.867315 |
| 8 | Bronx | Norwood | 40.877224 | -73.879391 |
| 9 | Bronx | Williamsbridge | 40.881039 | -73.857446 |

**Discussion Section**

Based on the results of our analysis, I would state that Manhattan and Brooklyn are the best locations for cuisine in NYC. To have the best shot of success, I would open a restaurant in Brooklyn particularly. Neighborhoods Cobble Hill or North Side are the best places to open a new Japanese restaurant.

**Conclusion**

In the project we have gone through the process of identifying the business problem, specifying the data required, extracting and preparing the data, performing data analysis, and lastly providing recommendations to the investors/developers. During the project, we applied different data science methods and instruments to get the answer to our main question: Where in the City of New York, should the investor open a Japanese Restaurant?" The findings of this project will help the relevant investor better understand the advantages and disadvantages of different New York neighborhoods/boroughs in terms of opening a Japanese restaurant.

Thank You!!!