

# Capstone Project - The Battle of Neighborhoods

## (Week 2)

### 1) INTRODUCTION

In this assignment we will use **Foursquare API** to explore the nearby **Japanese** and **Mexican** restaurants of New York City and compare the ratings and tips of these restaurants. This report will be targeted to stakeholders interested in opening Mexican or Japanese restaurant in nearby New York City. We would prefer location closeby World Trade Centre. We will use our data science powers to generate a few most promising neighborhoods based on this criteria. Advantages of each area will then be clearly expressed so that best possible final location can be chosen by stakeholders.

We will use construct URL to send a request to API to explore venues, geographical location using Foursquare and visualize results. Finally, we will use the Folium library to visualize the both restaurants in New York City.

Before we get the data and start exploring it, let's download all the dependencies that we will need.

#### 1.2) Interest

Let's assume we are at the World Trade Centre in New York . So let's start by converting the WTC address to its latitude and longitude coordinates. In order to define an instance of the geocoder, we need to define a user\_agent. We will name our agent *foursquare\_agent*

### 2) Data Acquisition

The URL for Japanese food venue is found [here](#) and for Mexican food venue is found [here](#) for a radius of 2km from World Trade Centre, New York.

### 3) Exploratory Data Analysis

Below is the list of restaurants extracted which are at the vicinity of 2000mts from World Trade Centre.

**Table -1 Let's visualize the following Japanese restaurants that are nearby**

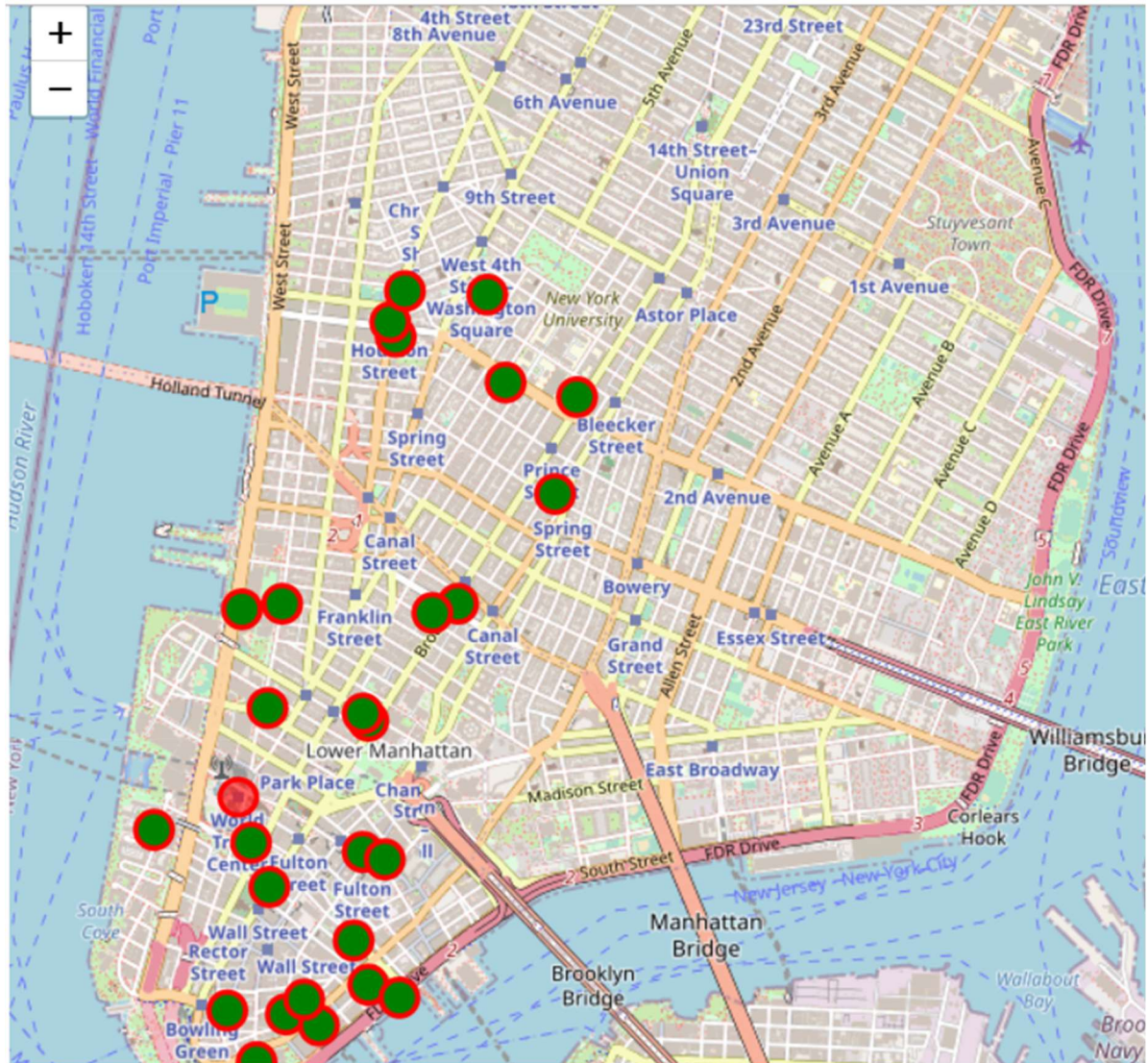
0	Zutto Japanese American Pub
1	Sumo Japanese Cuisine
2	EN Japanese Brasserie
3	Emperor Japanese Tapas Shabu
4	Pinklady Japanese Cheese Tart (Pinklady Cheese...
5	Mana Japanese
6	Nagoya Japanese Restaurant
7	SUteiShi Japanese Restaurant
8	Aoi Japanese Restaurant
9	Japanese Supermarket
10	Japanese Anime Souvenir Toys And Games
11	Nagoya Japanese Restaurant
12	Kaede Japanese Restaurant
13	Kokura Japanese Restaurant
14	Wave Japanese Restaurant
15	Ozu Japanese Cuisine & Lounge
16	Tataki Japanese Restaurant
17	AA Japanese Ramen
18	Takumi Japanese Cuisine
19	Shiseido Japanese Beauty Gallery
20	Okinawa Japanese Restaurant
21	Koo Japanese Fusion
22	Korin
23	China 59
24	Tokyo Bay
25	BINY Karaoke Bar and Lounge
26	Masuya
27	Shinju Sushi
28	Goemon
29	Miso Sushi

**Table -2 Let's visualize the following Mexican restaurants that are nearby**

0	Mad Dog & Beans Mexican Cantina
1	Chipotle Mexican Grill
2	Chipotle Mexican Grill
3	Chipotle Mexican Grill
4	Dahlia's Mexican Restaurant
5	Chipotle Mexican Grill
6	Chipotle Mexican Grill
7	Chipotle Mexican Grill
8	Chipotle Mexican Grill
9	Chipotle Mexican Grill
10	mexican boulevard
11	Caliente Mexican Grill
12	Tex-mexican Express
13	Chipotle Mexican Grill
14	Panchito's Mexican Restaurant
15	San Luis Corp. (Mexican/Ecuadorian Food)
16	Taco Truck Ecuadorian y Mexican
17	Camión Modern Mexican #FoodTruck #FiDi
18	Gloria's Mexican Food Cart
19	Chipotle Mexican Grill
20	Al Horno Lean Mexican Kitchen
21	Mexican Taco Truck
22	Mexican Food Si Si
23	Chipotle Mexican Grill
24	Fresh Tortilla Tex-Mexican Express
25	Cocina Mexicana
26	Oaxaca Express
27	Taqueria La Poblanita
28	Dos Caminos
29	Jajaja Plantas Mexicana

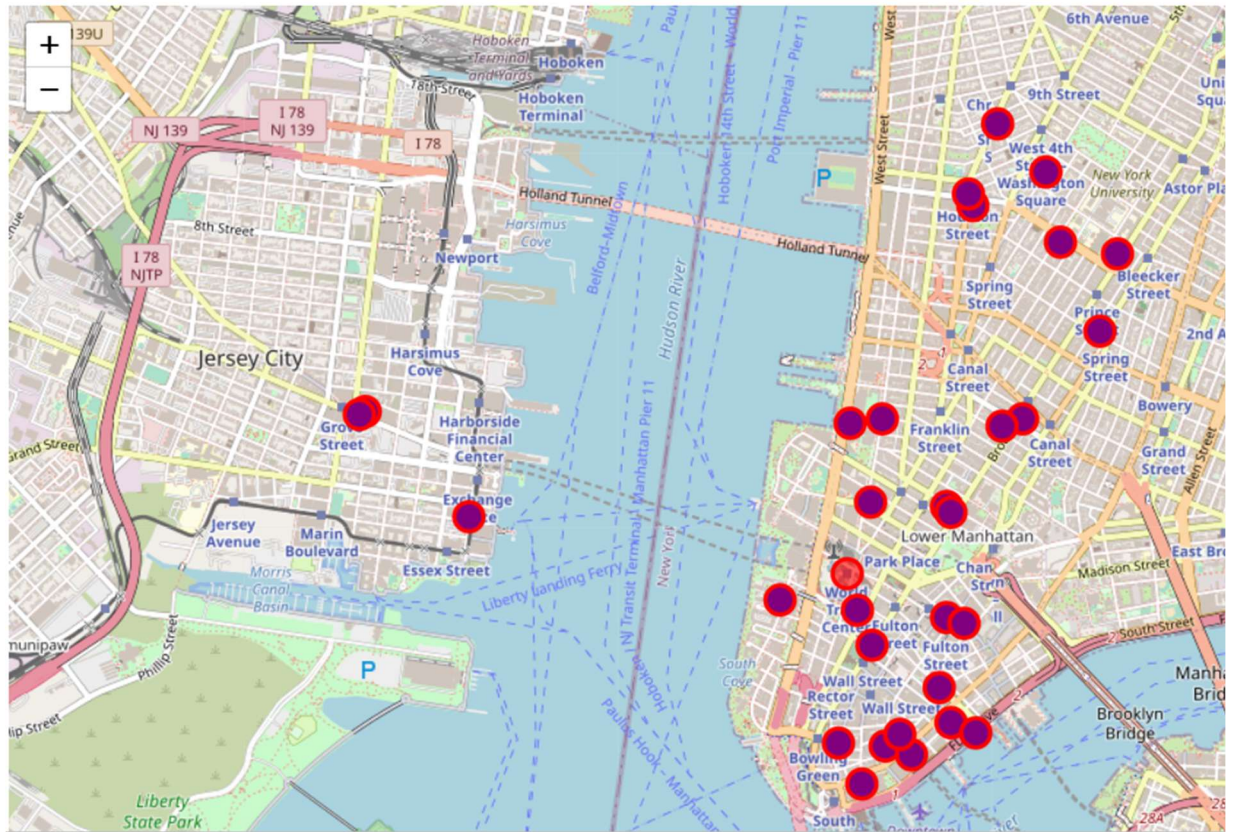
#### 4) Folium Maps

*Folium* is a powerful Python library that helps you create several types of Leaflet maps. It is solely developed for the purpose of visualizing geospatial data. For a defined center, you can also define the initial zoom level into that location when the map is rendered. *The higher the zoom level the more the map is zoomed into the center.*



*Fig 1 – Japanese restaurants around WTC*





*Fig 2 – Mexican restaurants around WTC*

Table 3 – Ratings of 5 closest Japanese restaurants to WTC

Sl.no	Japanese Restaurant	Rating
1	Nagoya Japanese Restaurant	0
2	Mana Japanese Restaurant	0
3	Kaede Japanese Restaurant	5.7
4	Tokyo Bay Japanese Restaurant	6.7
5	Shinju Sushi Japanese Restaurant	6.8

Table 4 – Ratings of 5 closest Mexican restaurants to WTC

Sl.no	Japanese Restaurant	Rating
1	Chipotle Mexican Grill Restaurant, end eve	5.8
2	Chipotle Mexican Grill Restaurant, Greenwich st	5.8
3	Chipotle Mexican Grill Restaurant, Bueritto Place	7.0
4	Tex Mexican Restaurant	0
5	Chipotle Mexican Grill Restaurant, 100 maiden lane	5.9

## 5) Results & Discussion

So now we have all the Japanese and Mexican restaurants in area within 2kms from World Trade Centre.

This concludes the data gathering phase - we're now ready to use this data for analysis to produce the report on optimal locations for a new Japanese or Mexican restaurant! Both type of restaurants are located towards north and south of WTC almost in similar numbers.

It is observed that there are no japanese restaurants near Downtown Jersey City whereas 3 mexican restaurants were found near Downtown Jersey City. The number of mexican restaurants rated were comparatively higher than japanese restuarants since more number of japanese restaurants were not rated at all which also shows the demand of japanese restaurant is lesser compared to mexican restaurant.

## 6) Conclusion

Final decission on optimal restaurant location will be made by stakeholders based on specific characteristics of neighborhoods and locations in every recommended zone, taking into consideration additional factors like attractiveness of each location

(proximity to park or water), levels of noise / proximity to major roads, real estate availability, prices, social and economic dynamics of every neighborhood etc