



Traditional Japanese Restaurant in USA



Introduction

My best friend "Aya", the young Japanese lady just graduated from university have plan to marry with her partner and will be moved to New York City after married because her partner working there as a business man. Aya has her dream to open up her own Japanese restaurant and this is a chance to open her own restaurant in the amazing place New York City!



Business Problem

Aya doesn't have any idea because she doesn't know anything about New York. The important thing she has to do is exploring about New York before doing her Business Plan.



Describe the data that will be using to execute the idea

Based on definition of my idea, factors that will influence my decision are:

- the type of common area in the neighborhood (any type)
- find out there are any Japanese restaurants in the neighborhood (if any)
- distance of neighborhood from city center I decided to use regularly spaced grid of locations, centered around city center, to define our neighborhoods.

A collage of Japanese food. In the top left, there are three pieces of sushi on a wooden cutting board, topped with red fish and green onions. Next to them is a small white bowl of dark soy sauce. In the top right, a hand is using chopsticks to pick up a piece of food from a bowl. The background is a soft, out-of-focus image of a red bowl with gold floral patterns.

Describe the data that will be using to execute the idea

Following data sources will be needed to extract/generate the required information:

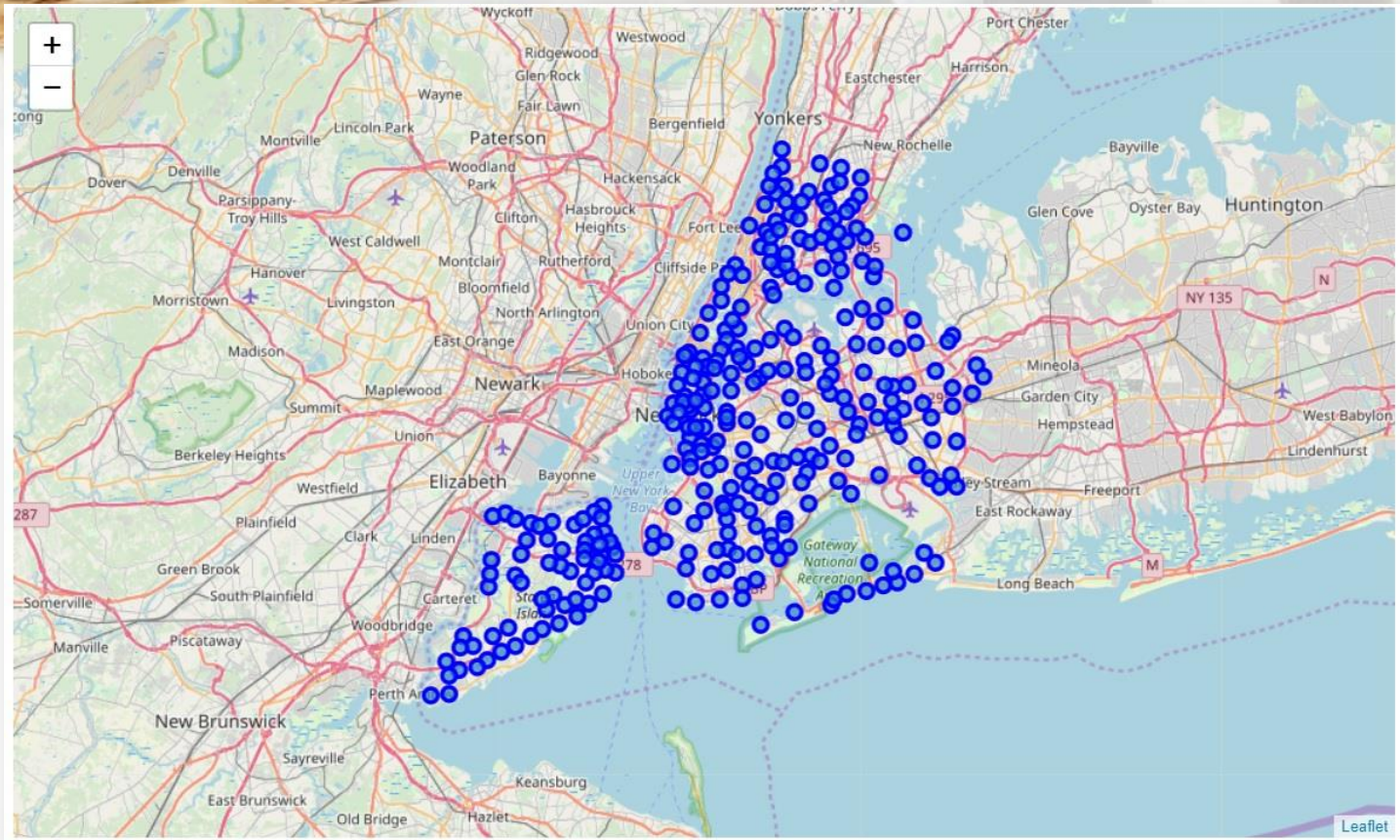
- Centers of candidate areas will be generated algorithmically and approximate addresses of centers of those areas will be obtained using New York Data that already used by previous lab.
- Number of restaurants and their type and location in every neighborhood will be obtained using Foursquare API



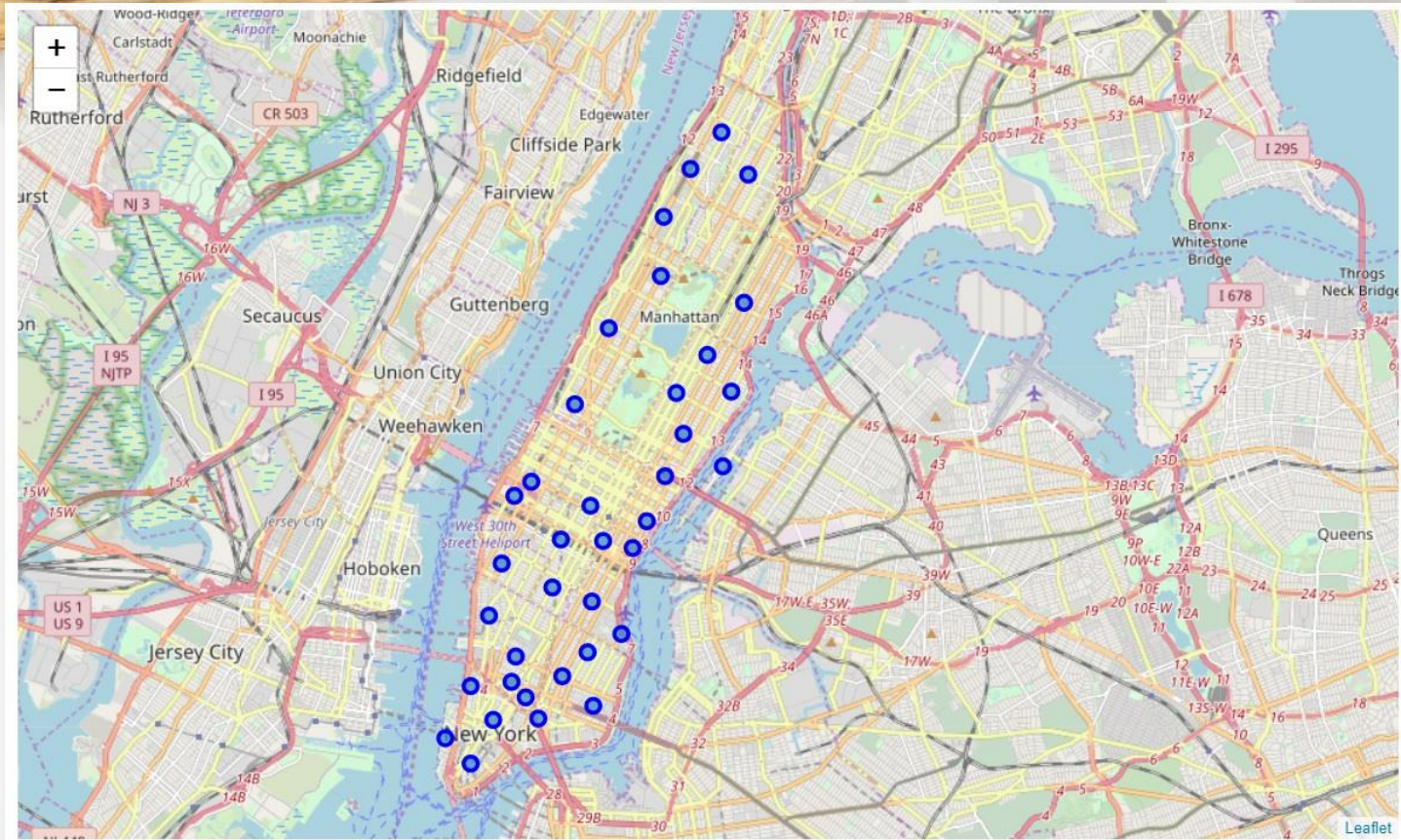
Neighborhood Candidates

Create latitude & longitude coordinates for centroids of candidate neighborhoods.

- first, I will explore the New York City
- then explore Manhattan, the area that Aya's partner house is located in.



A map of New York with neighborhoods



A map of New York with neighborhoods



	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Marble Hill	40.876551	-73.91066	Arturo's	40.874412	-73.910271	Pizza Place
1	Marble Hill	40.876551	-73.91066	Bikram Yoga	40.876844	-73.906204	Yoga Studio
2	Marble Hill	40.876551	-73.91066	Tibbett Diner	40.880404	-73.908937	Diner
3	Marble Hill	40.876551	-73.91066	Starbucks	40.877531	-73.905582	Coffee Shop
4	Marble Hill	40.876551	-73.91066	Dunkin'	40.877136	-73.906666	Donut Shop

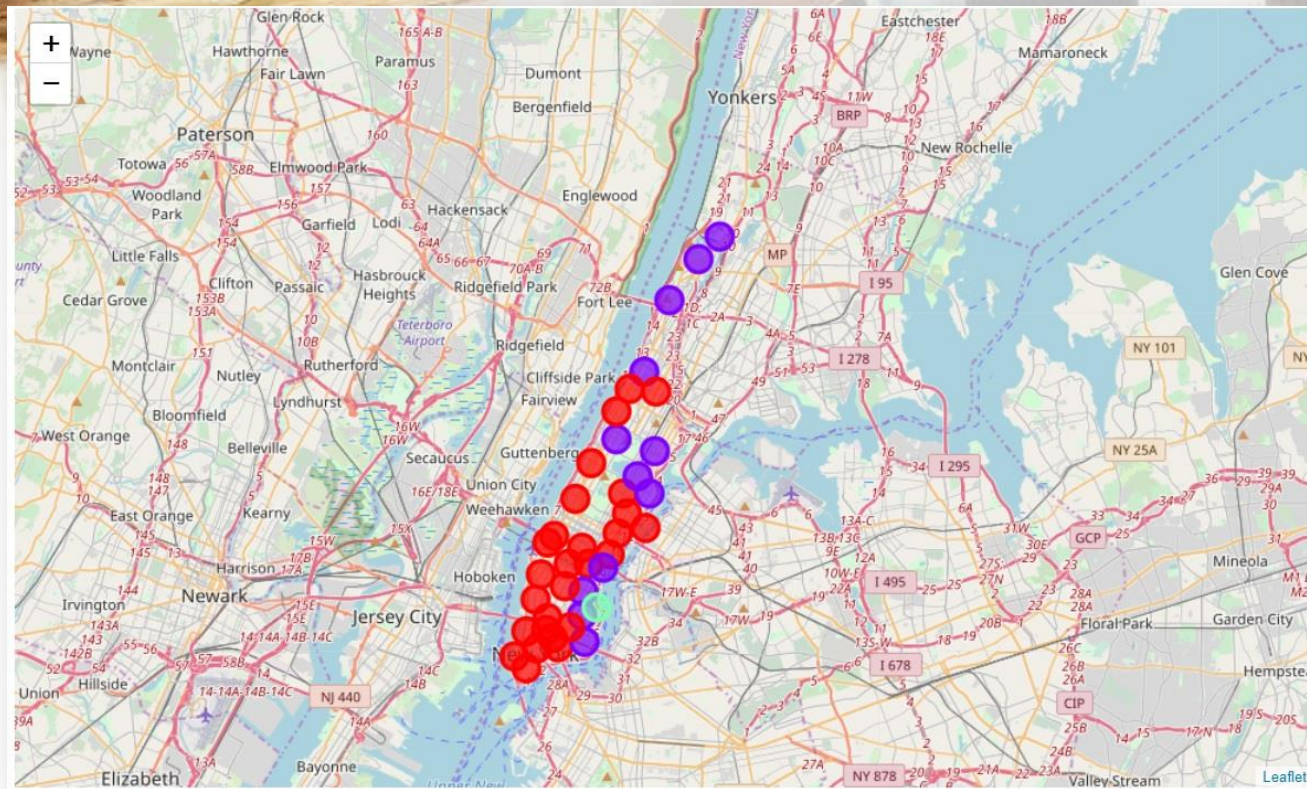
Next, utilizing the Foursquare API to explore the neighborhoods and segment them. Then put on the data frame.



	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Battery Park City	Park	Coffee Shop	Hotel	Memorial Site	Gym
1	Carnegie Hill	Coffee Shop	Pizza Place	Café	Yoga Studio	Japanese Restaurant
2	Central Harlem	Chinese Restaurant	African Restaurant	American Restaurant	Bar	Cosmetics Shop
3	Chelsea	Coffee Shop	Ice Cream Shop	Bakery	Italian Restaurant	Nightclub
4	Chinatown	Chinese Restaurant	Cocktail Bar	American Restaurant	Salon / Barbershop	Bakery

Drop the duplicate categories, there are 334 unique categories in Manhattan.

Then, create the new data frame and display the top 5 venues for each neighborhood



Cluster the neighborhood into 3 clusters and plot to Manhattan map.

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
1	Chinatown	Chinese Restaurant	Cocktail Bar	American Restaurant	Salon / Barbershop	Bakery
5	Manhattanville	Coffee Shop	Italian Restaurant	Seafood Restaurant	Mexican Restaurant	Park
6	Central Harlem	Chinese Restaurant	African Restaurant	American Restaurant	Bar	Cosmetics Shop
8	Upper East Side	Italian Restaurant	Exhibit	Bakery	Art Gallery	Coffee Shop
10	Lenox Hill	Italian Restaurant	Coffee Shop	Pizza Place	Sushi Restaurant	Burger Joint
11	Roosevelt Island	Park	Sandwich Place	Coffee Shop	Outdoors & Recreation	School
12	Upper West Side	Italian Restaurant	Bar	Wine Bar	Coffee Shop	Cosmetics Shop
13	Lincoln Square	Theater	Café	Gym / Fitness Center	Concert Hall	Italian Restaurant
14	Clinton	Theater	Gym / Fitness Center	American Restaurant	Italian Restaurant	Wine Shop
15	Midtown	Hotel	Sporting Goods Shop	Theater	Clothing Store	Coffee Shop
16	Murray Hill	Coffee Shop	Sandwich Place	Japanese Restaurant	Hotel	Italian Restaurant
17	Chelsea	Coffee Shop	Ice Cream Shop	Bakery	Italian Restaurant	Nightclub
18	Greenwich Village	Italian Restaurant	Sushi Restaurant	Clothing Store	Indian Restaurant	French Restaurant
21	Tribeca	Park	Italian Restaurant	Café	Spa	American Restaurant
22	Little Italy	Italian Restaurant	Bakery	Café	Salon / Barbershop	Sandwich Place
23	Soho	Clothing Store	Boutique	Art Gallery	Shoe Store	Furniture / Home Store
24	West Village	Italian Restaurant	New American Restaurant	Cosmetics Shop	Park	American Restaurant
26	Morningside Heights	Bookstore	American Restaurant	Coffee Shop	Park	Burger Joint
28	Battery Park City	Park	Coffee Shop	Hotel	Memorial Site	Gym
29	Financial District	Coffee Shop	Wine Shop	Hotel	American Restaurant	Pizza Place
31	Noho	Italian Restaurant	Cocktail Bar	Art Gallery	French Restaurant	Mexican Restaurant
32	Civic Center	Gym / Fitness Center	French Restaurant	Hotel	Coffee Shop	Italian Restaurant
33	Midtown South	Korean Restaurant	Hotel	Hotel Bar	Japanese Restaurant	Cosmetics Shop
34	Sutton Place	Gym / Fitness Center	Indian Restaurant	Italian Restaurant	Furniture / Home Store	American Restaurant
35	Turtle Bay	Italian Restaurant	Wine Bar	Steakhouse	Sushi Restaurant	Ramen Restaurant
38	Flatiron	Gym / Fitness Center	Yoga Studio	Gym	American Restaurant	Japanese Restaurant
39	Hudson Yards	American Restaurant	Italian Restaurant	Café	Gym / Fitness Center	Hotel

Cluster 1



	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Marble Hill	Sandwich Place	Coffee Shop	Yoga Studio	Deli / Bodega	Supplement Shop
2	Washington Heights	Mobile Phone Shop	Bakery	Café	Grocery Store	Bank
3	Inwood	Mexican Restaurant	Café	Pizza Place	Lounge	Pharmacy
4	Hamilton Heights	Pizza Place	Café	Mexican Restaurant	Deli / Bodega	Coffee Shop
7	East Harlem	Mexican Restaurant	Deli / Bodega	Bakery	Latin American Restaurant	Thai Restaurant
9	Yorkville	Italian Restaurant	Gym	Coffee Shop	Pizza Place	Bar
19	East Village	Bar	Wine Bar	Ice Cream Shop	Chinese Restaurant	Cocktail Bar
20	Lower East Side	Pizza Place	Café	Cocktail Bar	Chinese Restaurant	Japanese Restaurant
25	Manhattan Valley	Coffee Shop	Bar	Indian Restaurant	Pizza Place	Deli / Bodega
27	Gramercy	Bar	Italian Restaurant	American Restaurant	Bagel Shop	Pizza Place
30	Carnegie Hill	Coffee Shop	Pizza Place	Café	Yoga Studio	Japanese Restaurant
36	Tudor City	Café	Park	Mexican Restaurant	Greek Restaurant	Deli / Bodega

Cluster 2



	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
37	Stuyvesant Town	Boat or Ferry	Park	Bar	Heliport	Tennis Court

Cluster 3



Results and Discussion

- This analysis shows about 3 groups of area around Manhattan, New York, USA. Each cluster groups show the top 5 common venue of each area to bring the idea which area Aya should open her Japanese restaurant.
- Result of all this is 40 area containing largest number of potential new restaurant locations based on number of ranking of each area. Cluster 1 is the popular location and contain the large rating of restaurant-categories. Cluster 2 is also contain rating of restaurant-categories, but mostly are light meal or beverages. Cluster 3 is no contain any restaurant type.
- If I would recommend Aya, I will suggest the area in Cluster 1 to open her restaurant.



Conclusion

- Purpose of this project is to recommend Aya to open her Japanese restaurant in the right place! As you can see on the result of each cluster, the area in cluster 3 "Stuyvesant Town" is very near from her partner's house. If she thinks only where is the most convenience for her to take care the restaurant, she may choose the nearest one! And she might loss the potential to run the business and she will get loss for sure.
- Finally, I would like to suggest her to survey the area of "Cluster 1" that will open the restaurant by herself.