

# FINDING A PERFECT APARTMENT

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# WHAT'S THE SITUATION?

I am moving to New York City in a few months. I am looking for a single flat and I am hoping to use data science to help me find the most place to live in based on several factors. I want to be in Manhattan, near a tube station, walking distance to work-out studios, food, and entertainment. As much as possible, I want to be cost efficient.

The task is to find the most cost efficient rental flat in Manhattan, NYC within walking distance to groceries, shops, a work-out studio, and a subway station. Additionally, flat must have 2 bedrooms, a living room, and bathroom. The rent must be around \$6000/month.

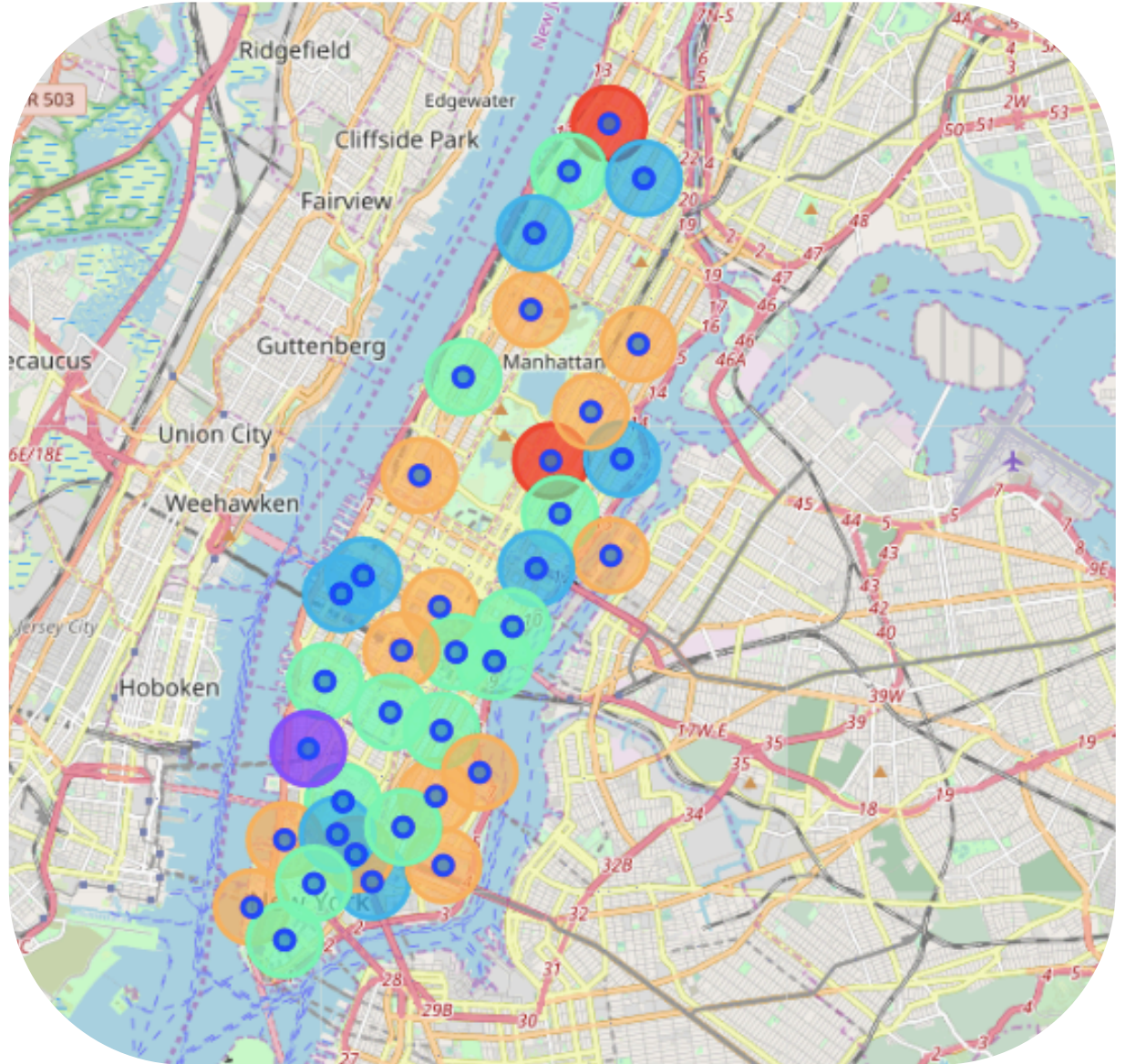
This exercise will be beneficial to and interesting for other young professionals moving to Manhattan.

# DATA SOURCING AND SCRAPING

- Wikipedia  
([https://en.wikipedia.org/wiki/List\\_of\\_New\\_York\\_City\\_Subway\\_stations\\_in\\_Manhattan](https://en.wikipedia.org/wiki/List_of_New_York_City_Subway_stations_in_Manhattan))
- NY Transit authority and Google maps  
(<https://www.google.com/maps/search/manhattan+subway+metro+stations/@40.7837297,-74.1033043,11z/data=!3m1!4b1>)
- Real estate websites  
(<http://www.rentmanhattan.com/index.cfm?page=search&state=results> [http://www.nestpick.com/search?city=new-york&page=1&order=relevance&district=manhattan&gclid=CjwKCAiAjNjgBR\\_AgEiwAGLI f2hkP3A-cPxiZYkURqQEswQK2jKQEpv\\_MvKcrIhRWRzNkc\\_r-fGiOlxoCA7cQAvD\\_BwE&type=apartment&display=list](http://www.nestpick.com/search?city=new-york&page=1&order=relevance&district=manhattan&gclid=CjwKCAiAjNjgBR_AgEiwAGLI f2hkP3A-cPxiZYkURqQEswQK2jKQEpv_MvKcrIhRWRzNkc_r-fGiOlxoCA7cQAvD_BwE&type=apartment&display=list) [https://www.realtor.com/apartments/Manhattan\\_NY](https://www.realtor.com/apartments/Manhattan_NY))

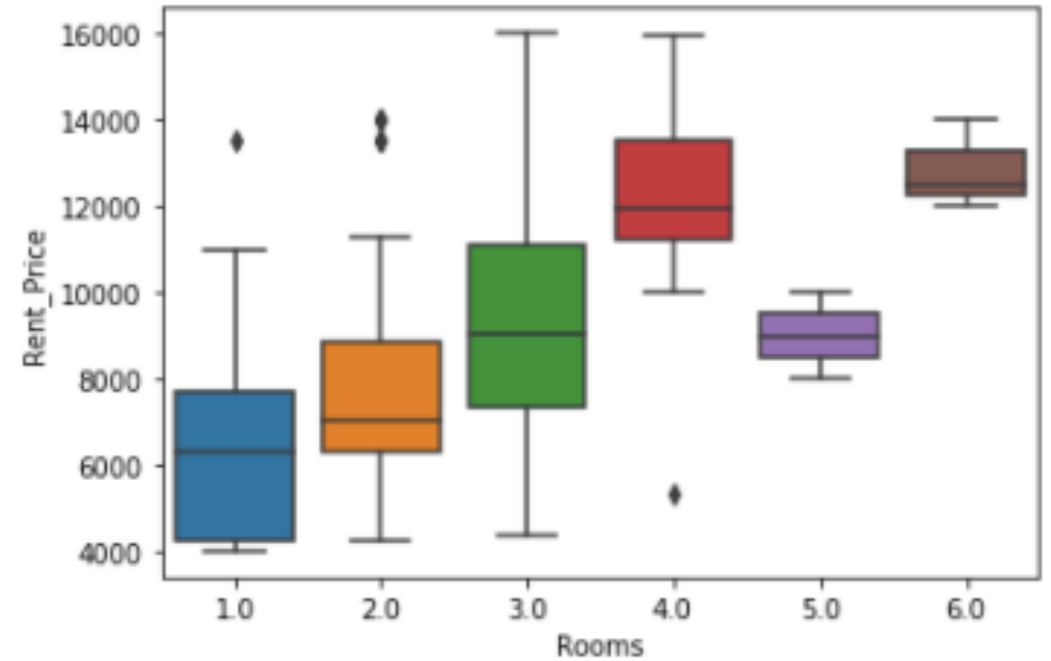
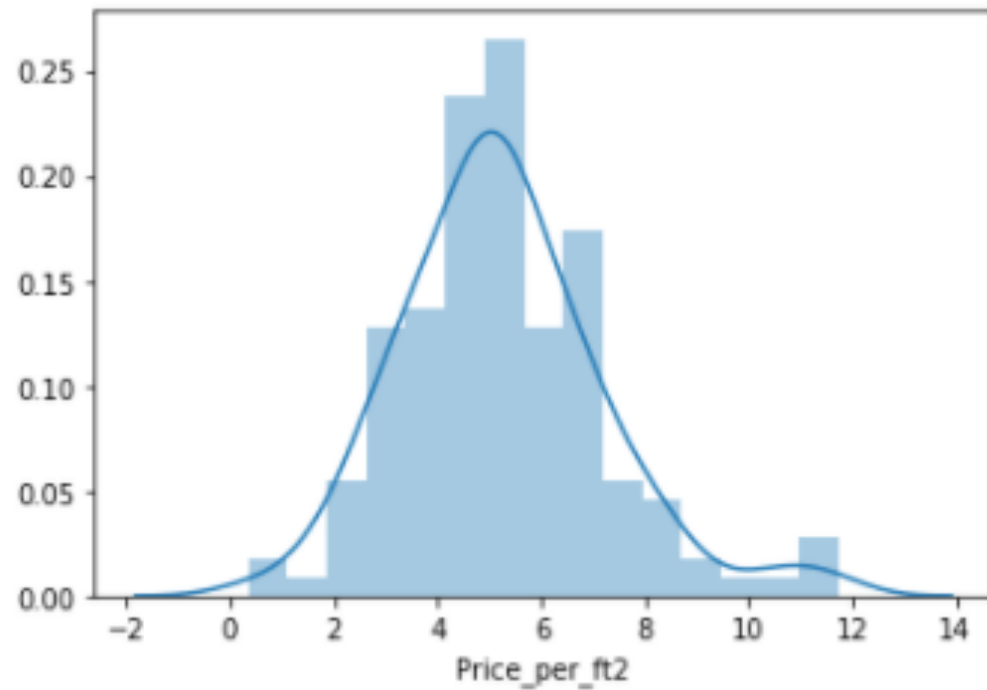
WHAT ARE THE TOP  
NEIGHBORHOOD  
CLUSTERS IN  
MANHATTAN?

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# WHAT ARE THEIR MOST COMMON AMENITIES/ VENUES?

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Marble Hill	Coffee Shop	Discount Store	Yoga Studio	Steakhouse	Supplement Shop	Tennis Stadium	Shoe Store	Gym	Bank	Seafood Restaurant
1	Chinatown	Chinese Restaurant	Cocktail Bar	Dim Sum Restaurant	American Restaurant	Vietnamese Restaurant	Salon / Barbershop	Noodle House	Bakery	Bubble Tea Shop	Ice Cream Shop
6	Central Harlem	African Restaurant	Seafood Restaurant	French Restaurant	American Restaurant	Cosmetics Shop	Chinese Restaurant	Event Space	Liquor Store	Beer Bar	Gym / Fitness Center
9	Yorkville	Coffee Shop	Gym	Bar	Italian Restaurant	Sushi Restaurant	Pizza Place	Mexican Restaurant	Deli / Bodega	Japanese Restaurant	Pub
14	Clinton	Theater	Italian Restaurant	Coffee Shop	American Restaurant	Gym / Fitness Center	Hotel	Wine Shop	Spa	Gym	Indie Theater
23	Soho	Clothing Store	Boutique	Women's Store	Shoe Store	Men's Store	Furniture / Home Store	Italian Restaurant	Mediterranean Restaurant	Art Gallery	Design Studio
26	Morningside Heights	Coffee Shop	American Restaurant	Park	Bookstore	Pizza Place	Sandwich Place	Burger Joint	Café	Deli / Bodega	Tennis Court
34	Sutton Place	Gym / Fitness Center	Italian Restaurant	Furniture / Home Store	Indian Restaurant	Dessert Shop	American Restaurant	Bakery	Juice Bar	Boutique	Sushi Restaurant
39	Hudson Yards	Coffee Shop	Italian Restaurant	Hotel	Theater	American Restaurant	Café	Gym / Fitness Center	Thai Restaurant	Restaurant	Gym



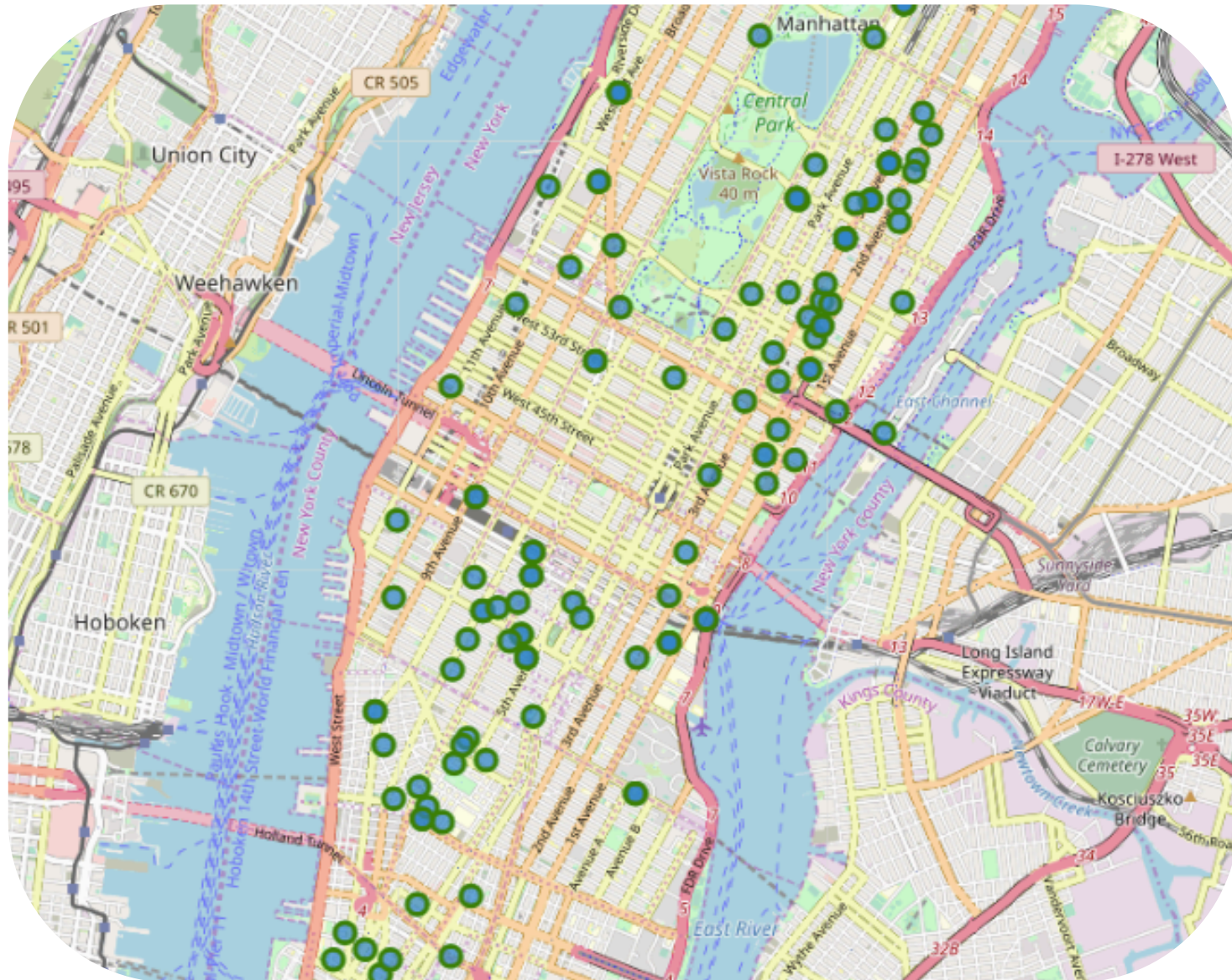
## SELECTING AN APARTMENT THAT MATCHES OUR PRICE RANGE

- Using latitude and longitude (geodata) of the rental places webscrapped, leveraging use Nominatum., Matplotlib



# MAP IT OUT USING NOMINATIM!

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NOW AFTER PICKING  
A PARTICULAR  
APARTMENT, LET'S  
CHECK OUT ITS  
NEARBY VENUES

	Neighborhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
3	Inwood	Mexican Restaurant	Lounge	Pizza Place	Café	Wine Bar	Bakery	American Restaurant	Park	Frozen Yogurt Shop	Spanish Restaurant
5	Manhattanville	Deli / Bodega	Italian Restaurant	Seafood Restaurant	Mexican Restaurant	Sushi Restaurant	Beer Garden	Coffee Shop	Falafel Restaurant	Bike Trail	Other Nightlife
10	Lenox Hill	Sushi Restaurant	Italian Restaurant	Coffee Shop	Gym / Fitness Center	Pizza Place	Burger Joint	Deli / Bodega	Gym	Sporting Goods Shop	Thai Restaurant
12	Upper West Side	Italian Restaurant	Bar	Bakery	Vegetarian / Vegan Restaurant	Indian Restaurant	Coffee Shop	Cosmetics Shop	Wine Bar	Mexican Restaurant	Sushi Restaurant
16	Murray Hill	Sandwich Place	Hotel	Japanese Restaurant	Gym / Fitness Center	Coffee Shop	Salon / Barbershop	Burger Joint	French Restaurant	Bar	Italian Restaurant
17	Chelsea	Coffee Shop	Italian Restaurant	Ice Cream Shop	Bakery	Nightclub	Theater	Art Gallery	Seafood Restaurant	American Restaurant	Hotel
18	Greenwich Village	Italian Restaurant	Sushi Restaurant	French Restaurant	Clothing Store	Chinese Restaurant	Café	Indian Restaurant	Bakery	Seafood Restaurant	Electronics Store
27	Gramercy	Italian Restaurant	Restaurant	Thrift / Vintage Store	Cocktail Bar	Bagel Shop	Coffee Shop	Pizza Place	Mexican Restaurant	Grocery Store	Wine Shop
29	Financial District	Coffee Shop	Hotel	Gym	Wine Shop	Steakhouse	Bar	Italian Restaurant	Pizza Place	Park	Gym / Fitness Center
31	Noho	Italian Restaurant	French Restaurant	Cocktail Bar	Gift Shop	Bookstore	Grocery Store	Mexican Restaurant	Hotel	Sushi Restaurant	Coffee Shop
32	Civic Center	Gym / Fitness Center	Bakery	Italian Restaurant	Cocktail Bar	French Restaurant	Sandwich Place	Coffee Shop	Gym	Yoga Studio	Park
35	Turtle Bay	Italian Restaurant	Coffee Shop	Steakhouse	Wine Bar	Sushi Restaurant	Hotel	Noodle House	Indian Restaurant	Japanese Restaurant	French Restaurant
36	Tudor City	Café	Park	Pizza Place	Mexican Restaurant	Greek Restaurant	Sushi Restaurant	Hotel	Deli / Bodega	Diner	Dog Run
38	Flatiron	Italian Restaurant	American Restaurant	Gym	Gym / Fitness Center	Yoga Studio	Vegetarian / Vegan Restaurant	Bakery	Clothing Store	Cosmetics Shop	Cycle Studio



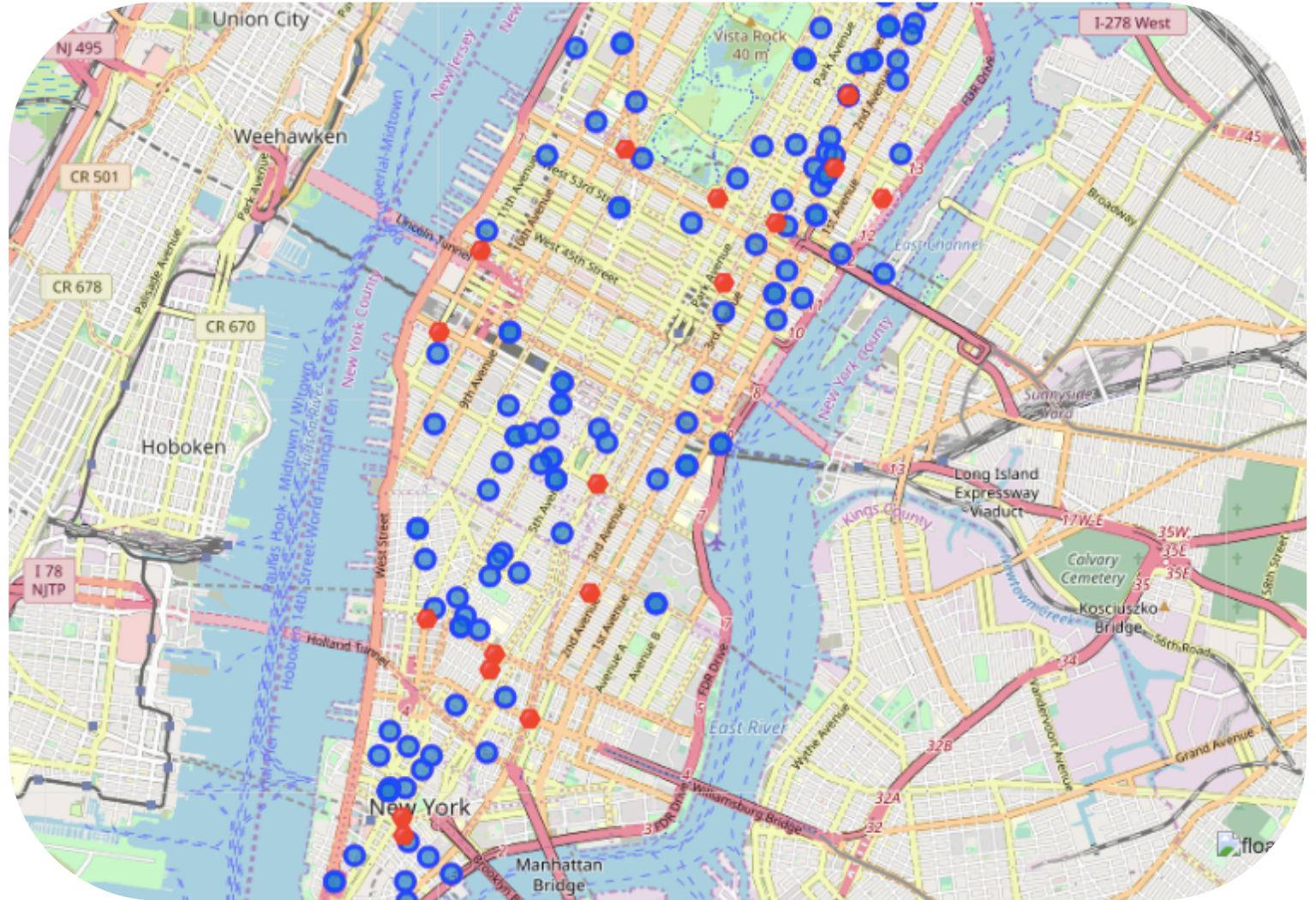
# WHERE ARE THE NEAR SUBWAY STATIONS?

	sub_station	sub_address	lat	long
0	Dyckman Street Subway Station	170 Nagle Ave, New York, NY 10034, USA	40.861857	-73.924509
1	57 Street Subway Station	New York, NY 10106, USA	40.764250	-73.954525
2	Broad St	New York, NY 10005, USA	40.730862	-73.987156
3	175 Street Station	807 W 177th St, New York, NY 10033, USA	40.847991	-73.939785
4	5 Av and 53 St	New York, NY 10022, USA	40.764250	-73.954525



# COMPARE APARTMENTS VS SUBWAY STATIONS

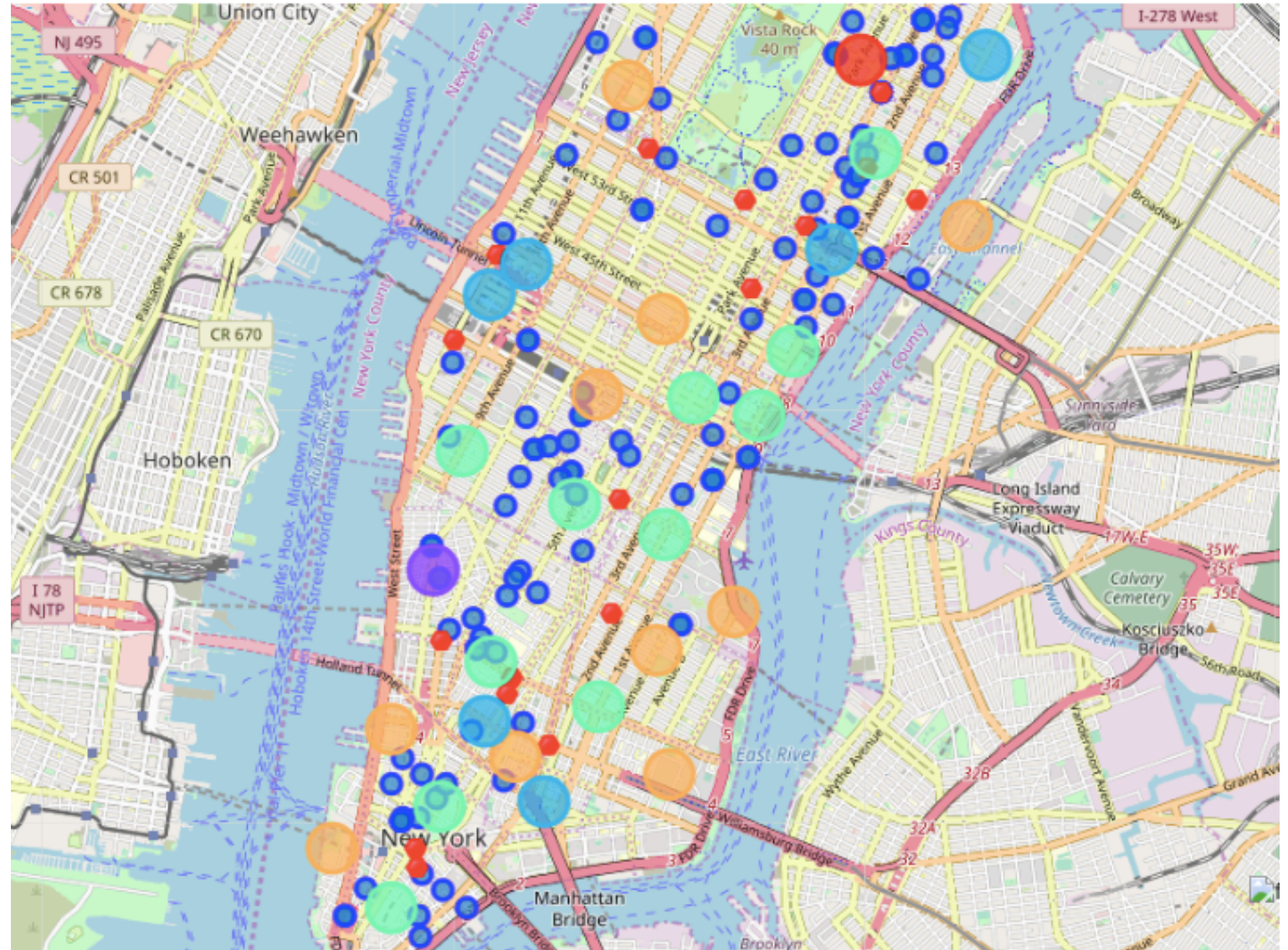
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# COMPARE APARTMENTS VS VENUES VS SUBWAY STATIONS

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19 DUTCH STREET,  
FINANCIAL DISTRICT NEIGHBORHOOD  
NEAR 'FULTON STREET SUBWAY' STATION  
CLUSTER # 3  
MONTHLY RENT : \$6935

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THIS LOOKS LIKE A GREAT APARTMENT!

# CONCLUSION

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- I was able to capture the necessary details and visualize the data to choose my perfect apartment.
  - Rental spaces available
  - Price ranges
  - Subway stations
  - Nearby restaurants, cafes, gyms
- From this information, I conclude that 19 Dutch Street in the Financial District meet all my requirements and will be the apartment I will be moving to - after it passes my in-person inspection test!