



# Most Dog-Friendly Neighborhoods in Manhattan

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# Introduction

- The city can be a tricky place to raise a dog.
- Dogs need open spaces, accepting communities, pet supply and grooming locations, and plenty of dog-friendly establishments and eateries.
- That's why dog owners are always looking for the perfect neighborhood to raise their pup, and it can be challenging to find.
- Manhattan is one of the more dog-welcoming cities, but what is the perfect area in Manhattan for a dog owner?
- This analysis will find a solution to the problem by identifying the top dog-friendly neighborhoods to live in Manhattan.



# Data

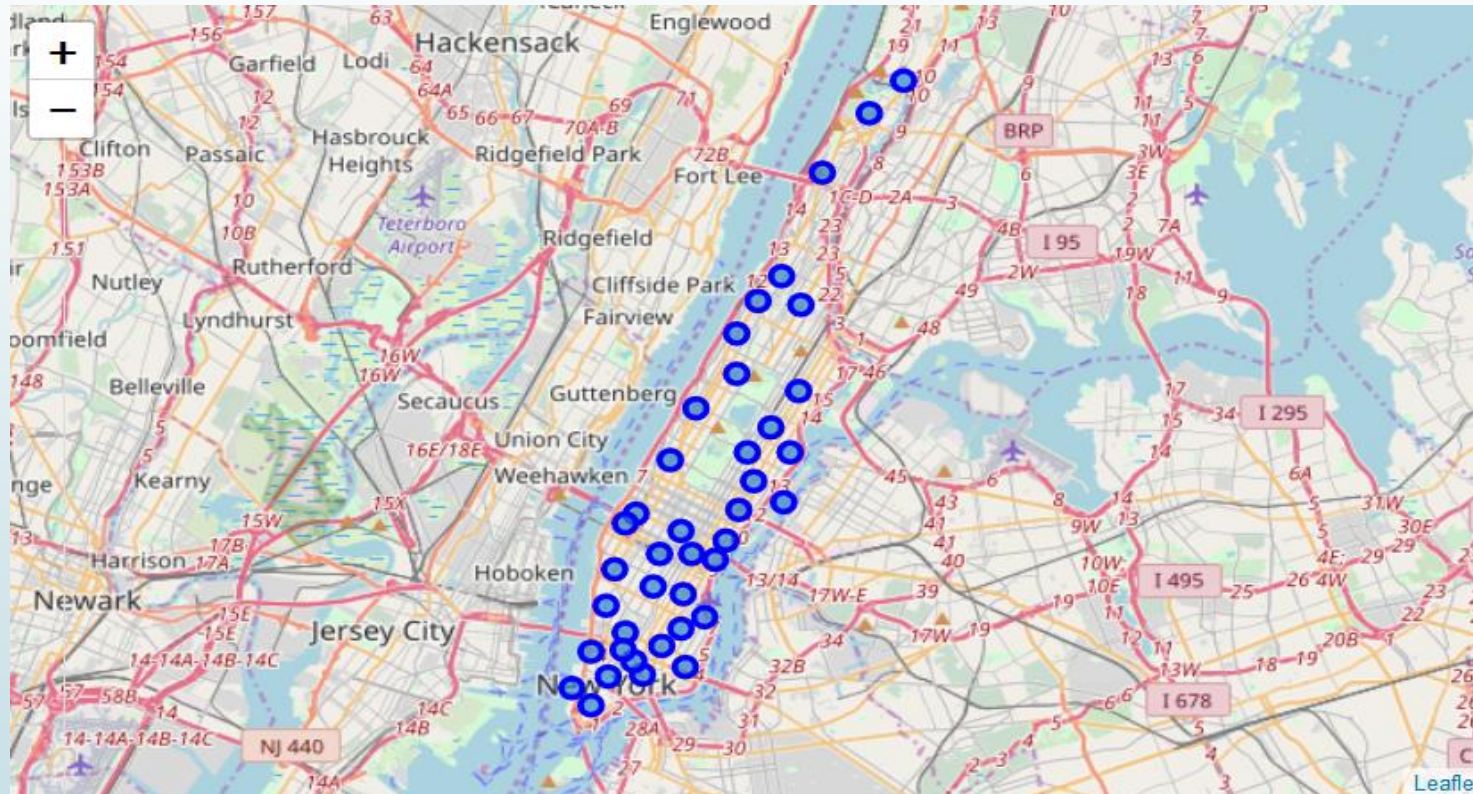
- A dataset of New York City neighborhoods, as well as their latitude and longitude, will be used to create a database of neighborhoods in Manhattan to analyze ([https://geo.nyu.edu/catalog/nyu\\_2451\\_34572](https://geo.nyu.edu/catalog/nyu_2451_34572)).
- Foursquare location data will be used to find the neighborhoods that provide the most extensive list of top dog related establishments (<https://developer.foursquare.com>).
- Venues identified as dog-friendly include Dog Run, Outdoors & Recreation, Park, Pet Café, Pet Service, Pet Store, Trail, and Veterinarian.
- Finally, neighborhoods will be rated using a 'Dog Friendly Factor' based on the frequency of the dog-friendly venues identified above within the neighborhood.



# Methodology

- First the data was downloaded and cleaned. After downloading the New York City dataset, information regarding Borough, Neighborhood, Latitude, and Longitude were pulled and transformed into a pandas dataframe.
- Next, in order to focus on Manhattan neighborhoods, the New York City dataframe was sliced to create a new dataframe of Manhattan data only.
- Foursquare API was used to evaluate and segment the neighborhoods.
- The final step in creating the aggregate database was grouping each row by neighborhood and taking the mean of the frequency of occurrence of each venue.
- Lastly, dog-friendly venue frequencies were identified and combined in a new database. Adjusting the final database by sorting on the 'Dog Friendly Factor' in descending order identified the top dog-friendly neighborhoods.

# Analysis



► Map of Manhattan neighborhoods

# Analysis

	Neighborhood	Accessories Store	Adult Boutique	African Restaurant	American Restaurant	Antique Shop	Arcade	Arepa Restaurant	Argentinian Restaurant	Art Gallery	Art Museum	Arts & Crafts Store
0	Marble Hill	0	0	0	0	0	0	0	0	0	0	0
1	Marble Hill	0	0	0	0	0	0	0	0	0	0	0
2	Marble Hill	0	0	0	0	0	0	0	0	0	0	0
3	Marble Hill	0	0	0	0	0	0	0	0	0	0	0
4	Marble Hill	0	0	0	0	0	0	0	0	0	0	0
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- List of venue categories by neighborhood

# Analysis

	Neighborhood	Accessories Store	Adult Boutique	Afghan Restaurant	African Restaurant	American Restaurant	Antique Shop	Arcade	Arepa Restaurant	Argentinian Restaurant	Art Gallery	Art Museum	Arts & Crafts Store
0	Battery Park City	0.000000	0.00	0.00	0.000000	0.010000	0.00	0.00	0.000000	0.000000	0.000000	0.00	0.000000
1	Carnegie Hill	0.000000	0.00	0.00	0.000000	0.010000	0.00	0.00	0.000000	0.010000	0.000000	0.01	0.000000
2	Central Harlem	0.000000	0.00	0.00	0.069767	0.046512	0.00	0.00	0.000000	0.000000	0.023256	0.00	0.000000
3	Chelsea	0.000000	0.00	0.00	0.000000	0.040000	0.01	0.00	0.000000	0.000000	0.020000	0.00	0.000000
4	Chinatown	0.000000	0.00	0.00	0.000000	0.040000	0.00	0.00	0.000000	0.000000	0.000000	0.00	0.000000

- Frequency of each type of venue per neighborhood identified

# Analysis

	Neighborhood	Dog Run	Outdoors & Recreation	Park	Pet Café	Pet Service	Pet Store	Trail	Veterinarian	Dog Friendly Factor
0	Battery Park City	0.0	0.0	0.080000	0.0	0.0	0.01	0.0	0.0	0.090000
1	Carnegie Hill	0.0	0.0	0.000000	0.0	0.0	0.01	0.0	0.0	0.010000
2	Central Harlem	0.0	0.0	0.023256	0.0	0.0	0.00	0.0	0.0	0.023256
3	Chelsea	0.0	0.0	0.010000	0.0	0.0	0.01	0.0	0.0	0.020000
4	Chinatown	0.0	0.0	0.000000	0.0	0.0	0.00	0.0	0.0	0.000000

- Pet-friendly venues frequencies for each neighborhood isolated and summed to create 'Dog Friendly Factor' for relative ranking



# Results

Neighborhood	Dog Run	Outdoors & Recreation	Park	Pet Café	Pet Service	Pet Store	Trail	Veterinarian	Dog Friendly Factor
Stuyvesant Town	0.000000	0.000000	0.105263	0.0	0.052632	0.000000	0.000000	0.000000	0.157895
Tudor City	0.036585	0.000000	0.060976	0.0	0.000000	0.012195	0.012195	0.000000	0.121951
Roosevelt Island	0.038462	0.038462	0.038462	0.0	0.000000	0.000000	0.000000	0.000000	0.115385
Inwood	0.017544	0.000000	0.035088	0.0	0.000000	0.017544	0.017544	0.017544	0.105263
Battery Park City	0.000000	0.000000	0.080000	0.0	0.000000	0.010000	0.000000	0.000000	0.090000
Morningside Heights	0.000000	0.000000	0.071429	0.0	0.000000	0.000000	0.000000	0.000000	0.071429
Tribeca	0.010000	0.000000	0.050000	0.0	0.000000	0.000000	0.000000	0.000000	0.060000
Hudson Yards	0.027397	0.000000	0.027397	0.0	0.000000	0.000000	0.000000	0.000000	0.054795
Turtle Bay	0.010000	0.000000	0.030000	0.0	0.000000	0.010000	0.000000	0.000000	0.050000
Lincoln Square	0.010000	0.000000	0.030000	0.0	0.000000	0.010000	0.000000	0.000000	0.050000

- Top10 dog-friendly neighborhoods in Manhattan



# Discussion

- The analysis enabled a breakdown of which neighborhoods are best suited for a dog owner.
- Venues such as parks, pet cafés, veterinarians, and other dog-related locations were analyzed to create a metric for dog-friendliness.
- There are several items that should be taken into account while digesting these results:
  - 1) Assumptions were made, for example assuming that all 'Parks' identified here are dog-friendly.
  - 2) This was not an exhaustive list of dog-friendly venues available to dog owners, and only those identified in the dataset available were used.
  - 3) The 'Dog Friendly Factor' was a simple metric and a more complex metric could be used to achieve the next level of accuracy.



# Conclusion

- This analysis involved an initial review of dog-friendly neighborhoods in Manhattan and provided several great options, including Stuyvesant Town, Tudor City, Roosevelt Island, and Inwood among the top picks.
- Future analysis could build upon this base by including an even more detailed list of dog-friendly venues and constructing a more complex statistical metric for ranking.
- Furthermore, the analysis could be adapted to evaluate additional cities around the world.