

# **The Battle of Neighbourhoods:** **Find the best place to stay in New York City**

Applied Data Science Capstone Project

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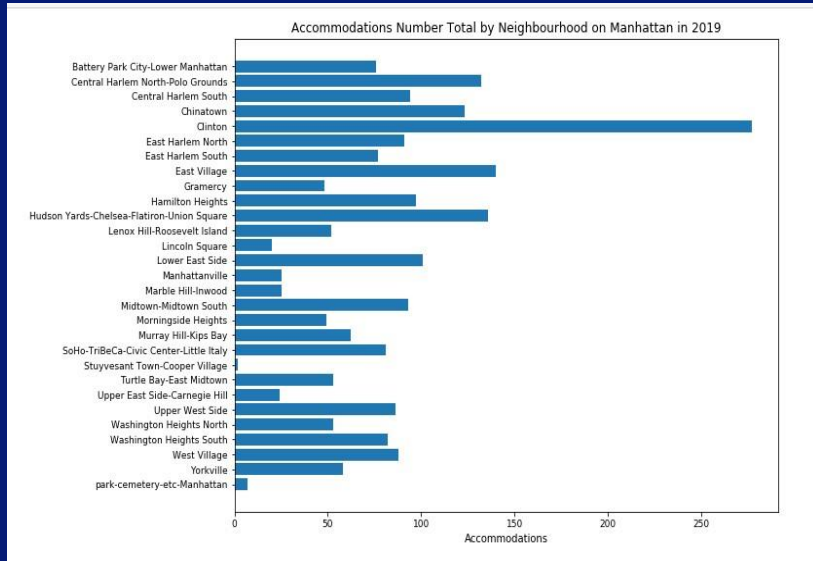




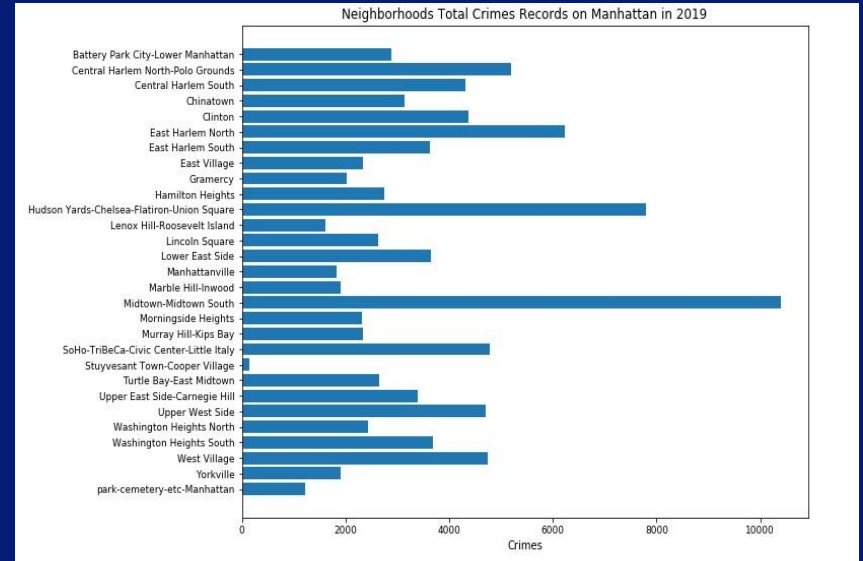


# Analysis

## Apartments Total by Neighborhood Chart

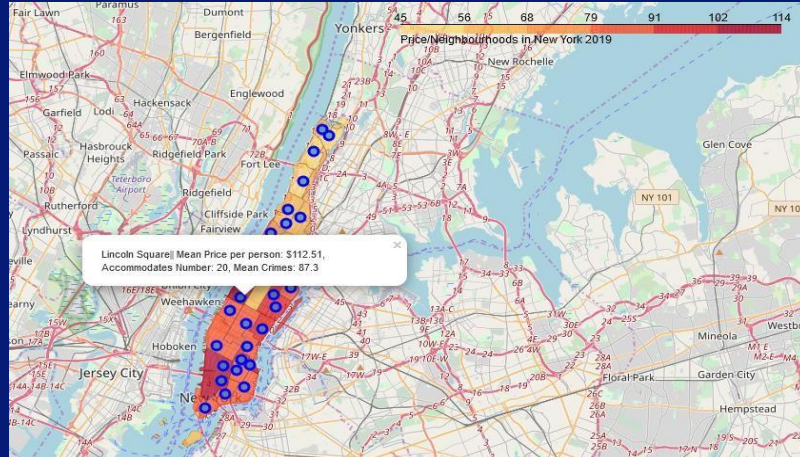


## Neighborhoods Crimes Records Chart



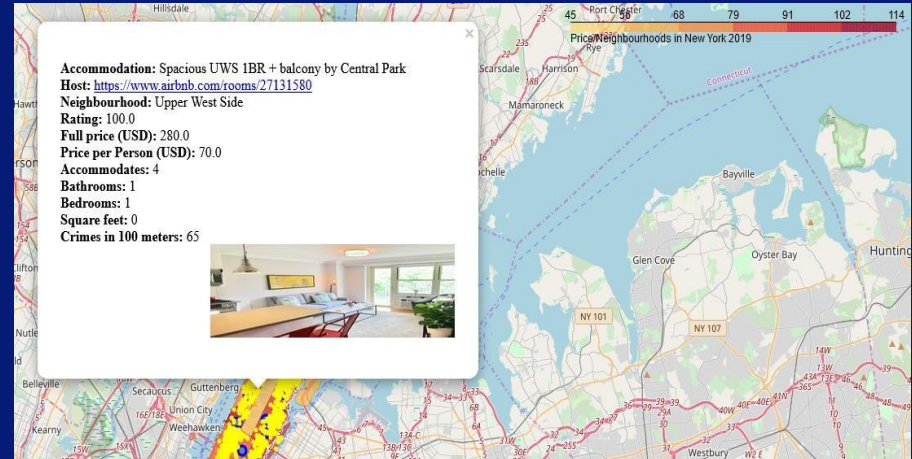
# Analysis

## NYC Tabulation Area Neighborhoods Average Prices per Person



# Analysis

## Accommodations Detailed Info Map



Top-5 Neighborhoods with **Highest average Price per Person** in 2019 year:

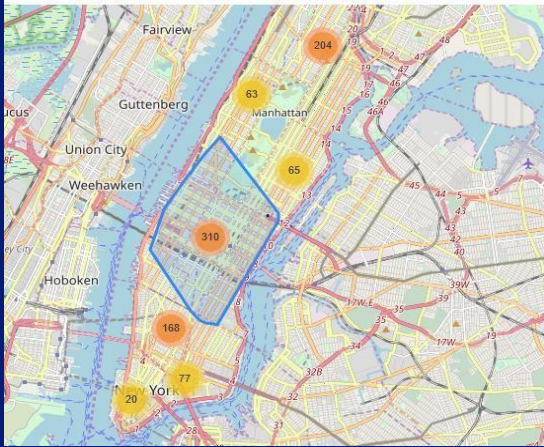
- West Village - 112.85 USD - 88 accommodations

- Lincoln Square - 112.51 USD - 20 accommodations
- Stuyvesant Town-Cooper Village - 107.5 USD - 2 accommodations

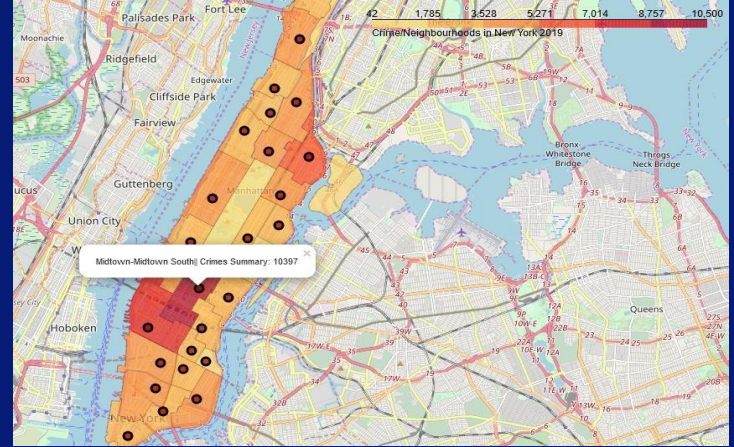


# Analysis

## Crimes Cluster Map



## Summary Crimes by Neighborhoods Map











# Analysis

## Foursquare API Neighborhoods Analysis

```
fine_art_cat = ['Art','Arts','Museum', 'Library','Exhibit','Gallery']
eat_place_cat = ['Restaurant','Steakhouse']
shopping_cat = ['Shopping Mall','Market','Boutique']
outdoor_cat = ['Sculpture Garden','Scenic Lookout','Roof Deck','Outdoor Sculpture','Monument / Landmark',
               'Memorial Site','Lighthouse','Historic Site','Harbor / Marina','Fountain','Event Space','Bridge',
               'Waterfront','Church','Building','Garden','Historic Site','Lake','Park',
               'Pier','Rest Area','River','Synagogue','Field']
entertainment_cat = ['Nightclub','Circus','Club', 'Stadium', 'Karaoke Bar', 'Pub','Theater','Opera', 'Concert', 'Zoo']

#Join all categories' values in one
tourists_categories = fine_art_cat + eat_place_cat + shopping_cat + outdoor_cat +entertainment_cat
```

Calculate the Top-3 Venues Categories for each accommodation.

Then run k-means to cluster the neighborhood into 3 clusters.

Cluster Labels	name	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	1st Most Common Venue Share	2nd Most Common Venue Share	3rd Most Common Venue Share
1	**Stylish, Quiet, Centrally Located (9th & 52nd)	Food Place	Entertainment	Fine Art	0.62	0.35	0.04
2	157-C	Food Place	Sightseeing	Fine Art	0.52	0.29	0.14
2	A neat bedroom in a cozy 3-bedroom apartment	Food Place	Sightseeing	Shopping	0.48	0.41	0.04
0	Art filled peaceful paradise EV Union Square	Food Place	Sightseeing	Shopping	0.71	0.07	0.07
0	Artsy Parisian Apt in Greenwich Village	Food Place	Entertainment	Sightseeing	0.65	0.26	0.09

Now, we can examine each cluster and determine our custom venue categories that distinguish each cluster.

# Analysis

## Foursquare API Neighborhoods Analysis

### Cluster 0 – Mix (red dots) characteristics:

- average *price\_per\_person*;
- average *crimes* rate;
- second top Common Venue Category has a Mix of all kind of Categories;
- contains 58% from all top accommodations.

### Cluster 1 – Entertainment (blue dots) characteristics:

- highest average *price\_per\_person* among all clusters;
- highest average *crimes* rate among all clusters;
- *Entertainment* is 1st and the 2nd Top Common Venue Categories;
- contains 15% from all top accommodations.

### Cluster 2 – Sightseeing (light-green dots) characteristics:

- lowest average *price\_per\_person*;
- lowest *crimes* rate among all clusters;
- *Sightseeing* is the second top Common Venue Category; • contains 27% from all top accommodations.

