



# The Best Neighborhoods to live in Manhattan

The Battle of Neighborhoods

Applied Data Science Capstone Project: IBM/Coursera

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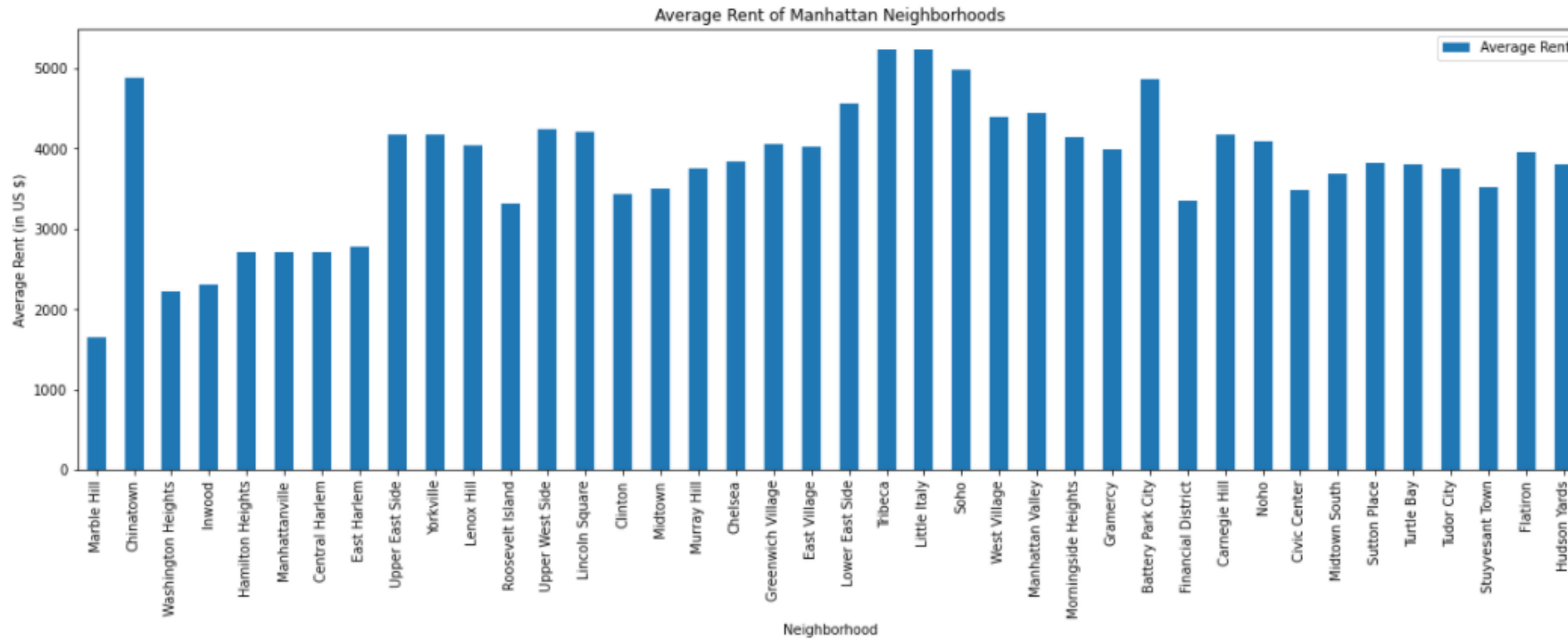
# Problem to solve

- ▶ People looking for the best neighborhoods to live in Manhattan
- ▶ Three most important factor to consider:
  - ❖ Budget
  - ❖ Location
  - ❖ Venues in Neighborhoods
    - ✓ Grocery stores
    - ✓ Parks
    - ✓ Restaurants
    - ✓ Coffee places
    - ✓ Gyms or fitness centers

# Data Sources

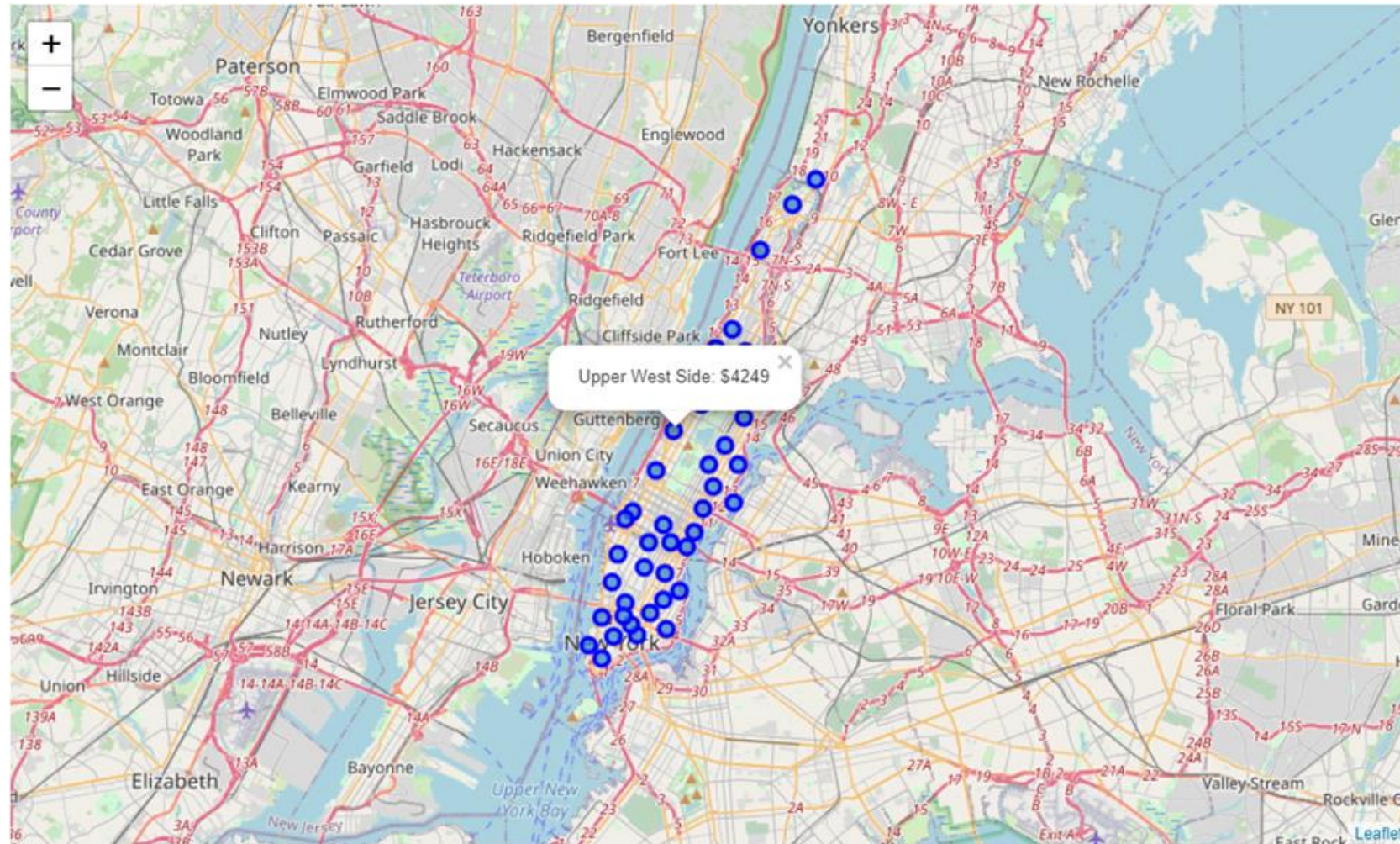
- ▶ Average monthly rent data of Manhattan neighborhoods
  - ❖ <https://www.rentcafe.com/average-rent-market-trends/us/ny/manhattan/>
- ▶ Latitudes and longitudes data for all New York neighborhoods
  - ❖ [https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork/labs/newyork\\_data.json](https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBMDeveloperSkillsNetwork-DS0701EN-SkillsNetwork/labs/newyork_data.json)
- ▶ Venues data for each neighborhoods
  - ❖ Obtained from Foursquare API

# Average monthly rent (in \$)



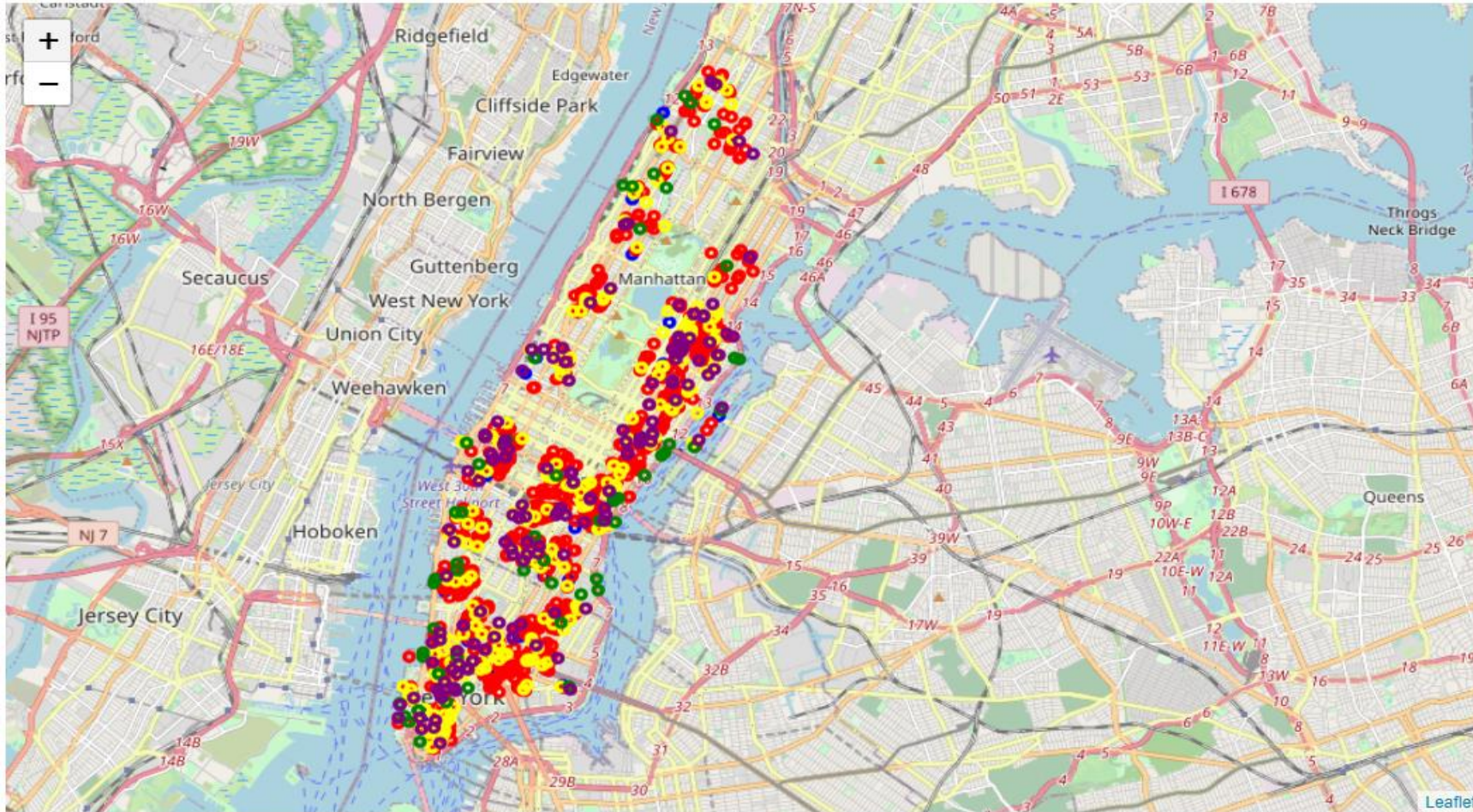


# Location of neighborhoods





Location of venues of interest: grocery stores, restaurants, coffee places, parks, gyms



# Neighborhoods with all types of venues of interest

|    | Neighborhood       | Coffee | Grocery | Gym | Park | Restaurant | Score    |
|----|--------------------|--------|---------|-----|------|------------|----------|
| 0  | Flatiron           | 5      | 1       | 8   | 2    | 34         | 0.090090 |
| 1  | Turtle Bay         | 8      | 1       | 1   | 3    | 36         | 0.088288 |
| 2  | Sutton Place       | 4      | 2       | 11  | 3    | 27         | 0.084685 |
| 3  | West Village       | 4      | 1       | 1   | 4    | 35         | 0.081081 |
| 4  | East Village       | 4      | 1       | 1   | 1    | 34         | 0.073874 |
| 5  | Washington Heights | 8      | 2       | 3   | 2    | 22         | 0.066667 |
| 6  | Chelsea            | 8      | 1       | 2   | 2    | 23         | 0.064865 |
| 7  | Hudson Yards       | 5      | 2       | 7   | 2    | 18         | 0.061261 |
| 8  | Midtown            | 5      | 1       | 4   | 1    | 22         | 0.059459 |
| 9  | Lincoln Square     | 7      | 2       | 7   | 1    | 13         | 0.054054 |
| 10 | Gramercy           | 5      | 2       | 1   | 2    | 18         | 0.050450 |
| 11 | Manhattanville     | 4      | 2       | 1   | 1    | 19         | 0.048649 |
| 12 | Inwood             | 4      | 2       | 1   | 2    | 18         | 0.048649 |
| 13 | Manhattan Valley   | 3      | 1       | 2   | 1    | 15         | 0.039640 |
| 14 | Battery Park City  | 5      | 1       | 4   | 4    | 7          | 0.037838 |
| 15 | East Harlem        | 1      | 1       | 2   | 1    | 14         | 0.034234 |
| 16 | Roosevelt Island   | 2      | 1       | 2   | 2    | 2          | 0.016216 |



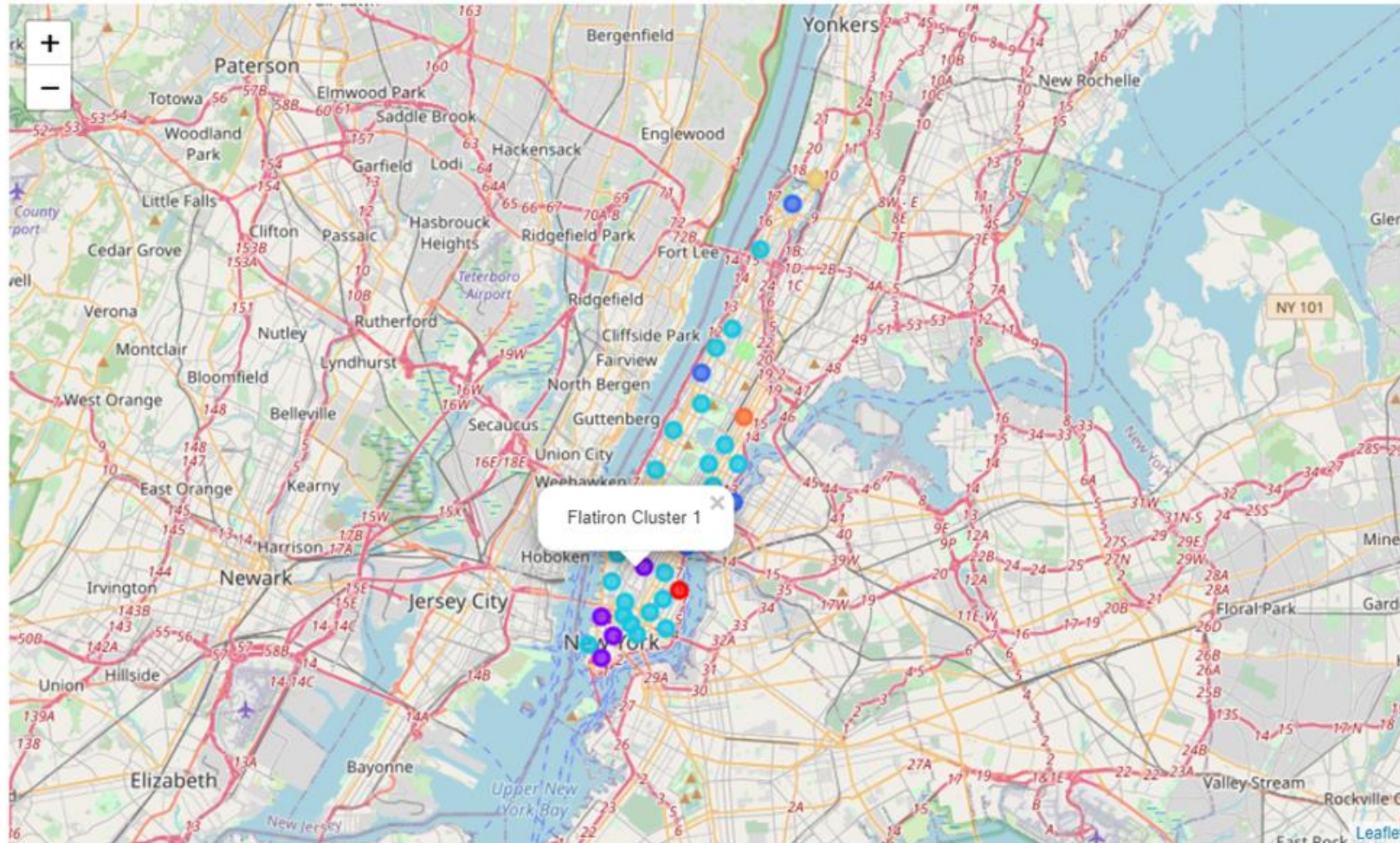
Highest  
Score!



Best Neighborhood  
Flatiron



# K-means clustering identifying the most similar neighborhoods to the best one





# Recommendations based on clustering

|   | Neighborhood       | Average Rent |
|---|--------------------|--------------|
| 0 | Civic Center       | 3493         |
| 1 | Clinton            | 3428         |
| 2 | Financial District | 3354         |
| 3 | Flatiron           | 3962         |
| 4 | Hudson Yards       | 3809         |
| 5 | Midtown            | 3509         |
| 6 | Murray Hill        | 3754         |
| 7 | Tribeca            | 5228         |

