

Analysis of Restaurants in New York

Made by:
Ana Parčina

Introduction

- ▶ New York - big city, high diversity of food
- ▶ Manhattan borough
- ▶ Question: **Where to open a restaurant?**



Data acquisition and cleaning

► data sources:

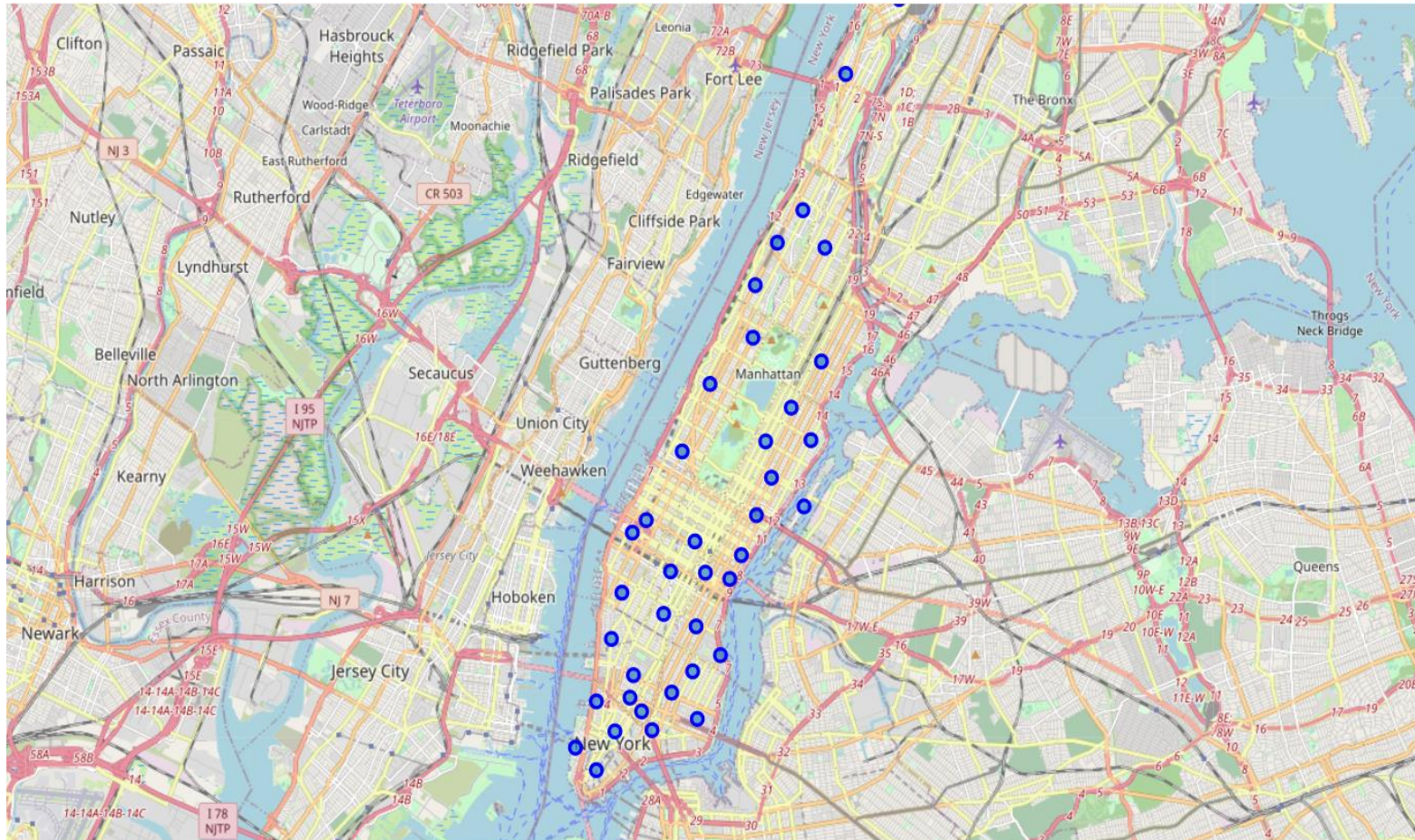
- 1) Foursquare Locator
- 2) New York neighborhood data

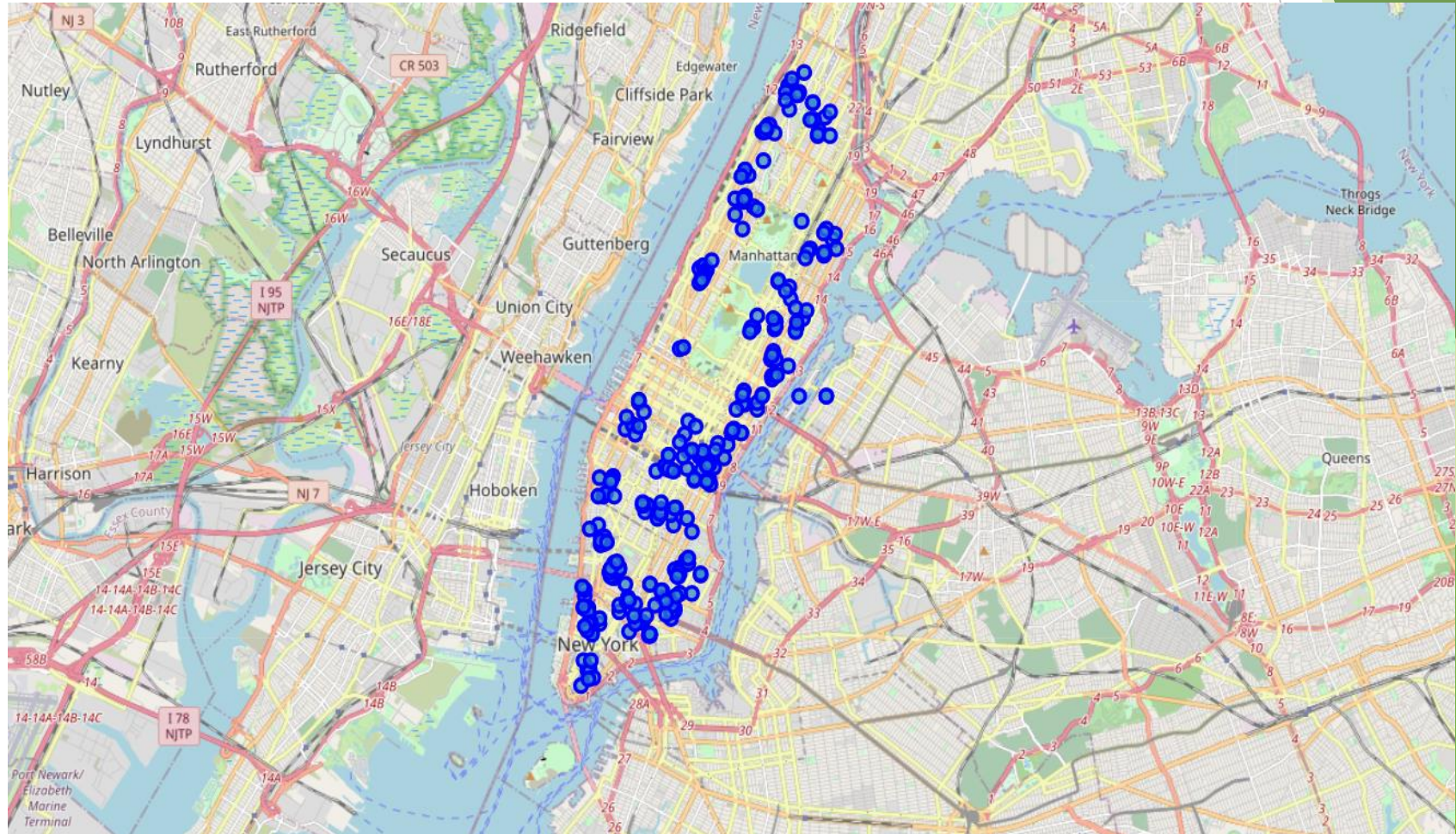
► data cleaning

Table 1. Simple feature selection during data cleaning.

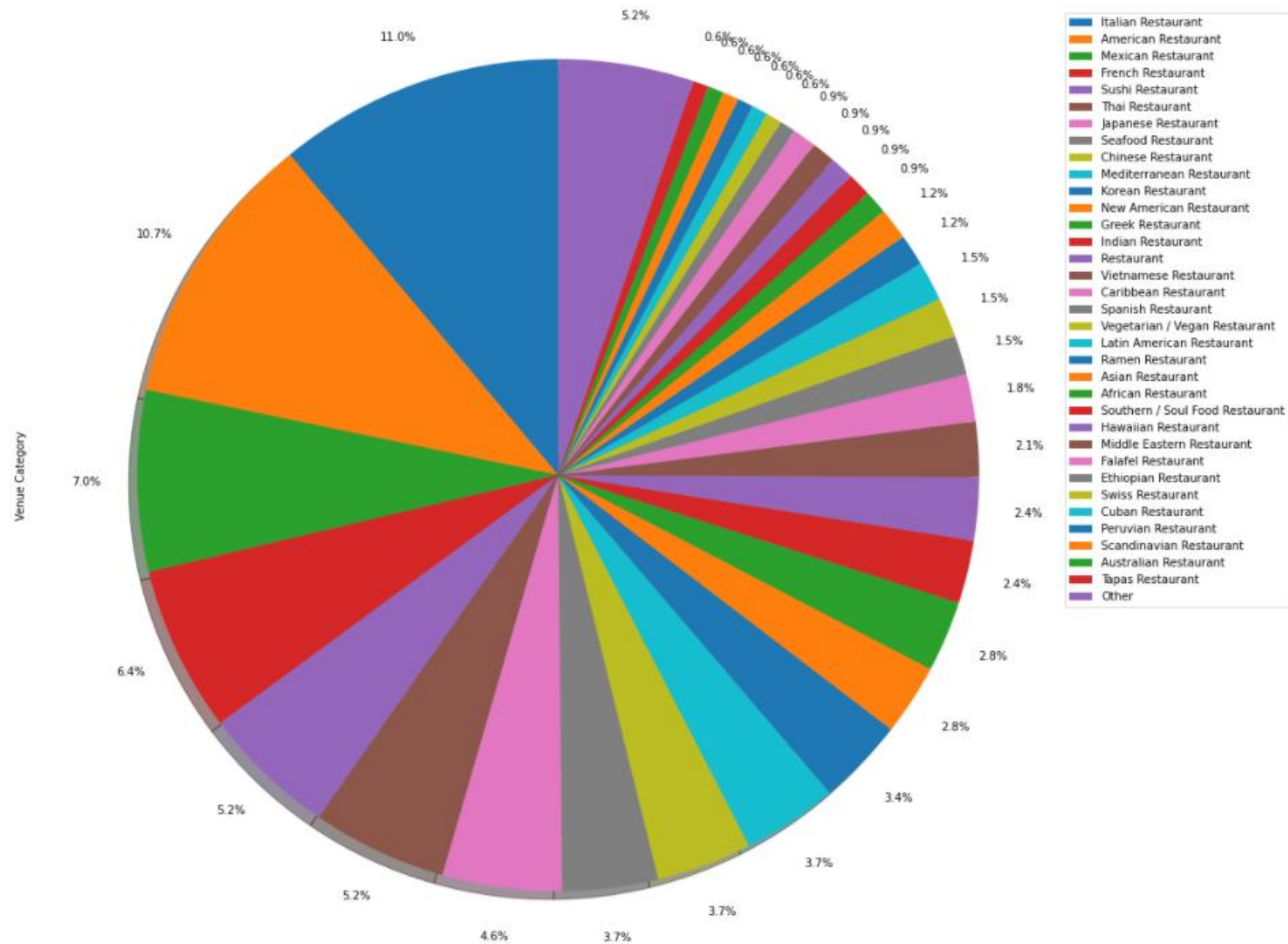
Kept features	Dropped features	Reason for dropping features
Venue Latitude, Venue Longitude	Neighborhood Latitude, Neighborhood Longitude	In this case we are interested in location of each restaurant, not the coordinates of its neighborhood.
Neighborhood	Borough	Borough is the same for every neighborhood.
Italian, American, Mexican restaurants	All other types of restaurants	Only three type of restaurants are considered in this case due to amount of data.

► Neighborhoods on Manhattan

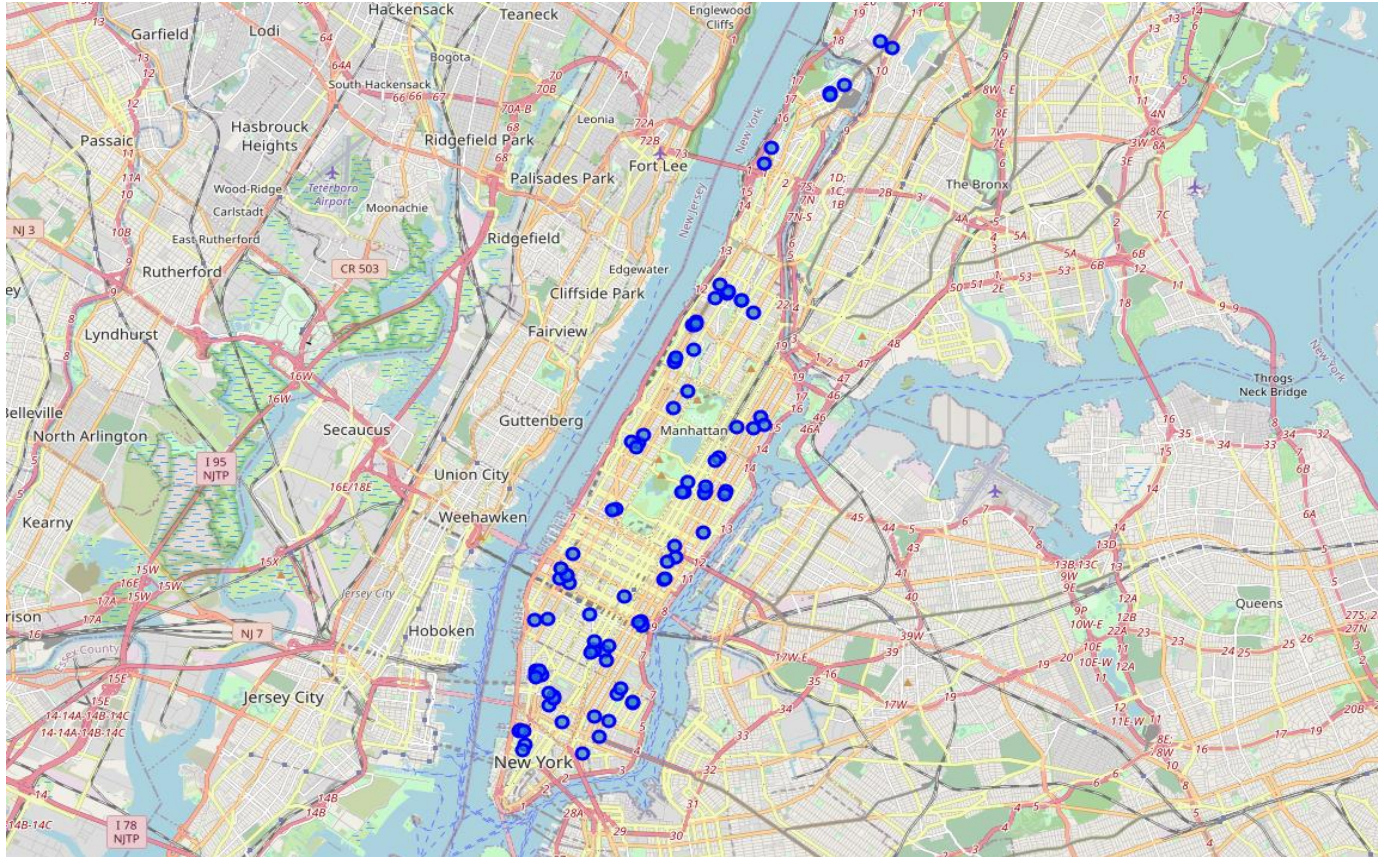




► Types of restaurants on Manhattan

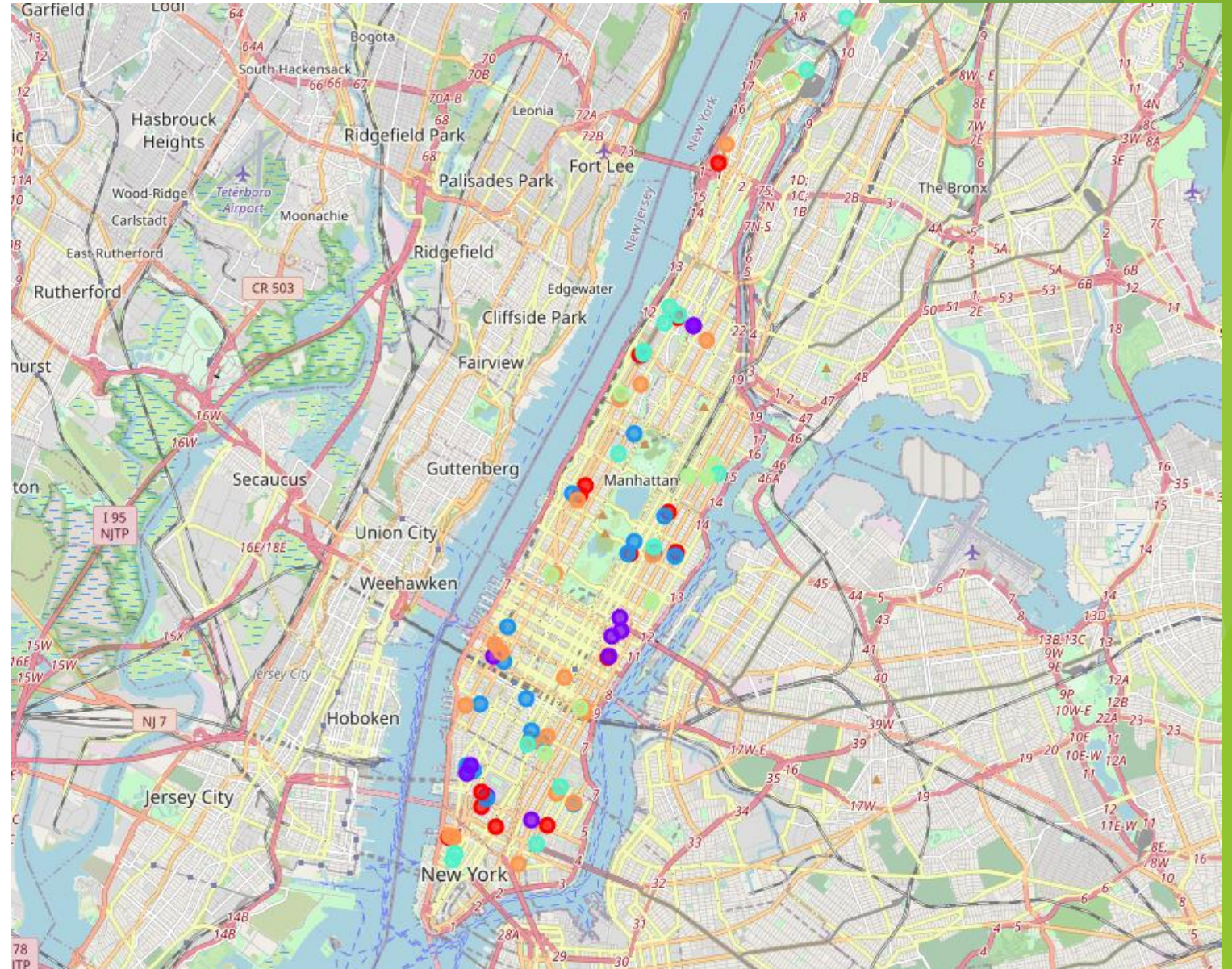


► Mexican, Italian and American Restaurants on Manhattan



KMeans Model

- Devide restaurants according to ratings and type in 6 clusters



► Example of cluster of with excellent grade

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In [40]: restaurants.loc[restaurants['Cluster Labels'] == 1]
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Out[40]:

	Cluster Labels	Neighborhood	Venue	Venue Latitude	Venue Longitude	Venue Category	rating
541	1	Greenwich Village	Carbone	40.727903	-74.000136	1	5
941	1	Noho	Lil' Frankie's	40.723445	-73.988328	1	5
1025	1	Sutton Place	Felidia	40.760267	-73.965277	1	5
1035	1	Sutton Place	Scalinatella	40.762761	-73.965566	1	5
1040	1	Sutton Place	amata	40.759236	-73.967515	1	5
140	1	Hamilton Heights	The Edge Harlem	40.819692	-73.946073	2	5
196	1	Central Harlem	The Edge Harlem	40.819692	-73.946073	2	5
734	1	West Village	Westville West	40.734055	-74.004279	2	5
739	1	West Village	The Little Owl	40.732441	-74.005424	2	5
1060	1	Turtle Bay	The Smith	40.755376	-73.968243	2	5
1173	1	Hudson Yards	Friedman's	40.755271	-73.998509	2	5

Conclusions

- ▶ When client looks at the map he/she can determine where should it be good place for opening the restaurant according to the type of food that it will serve.
- ▶ The restaurant owner will not have good competition which will be great tail wind in the beginning of his business.

Thank you for your attention!