

PREDICTING THE POTENTIAL LOCATIONS FOR SPORTS SHOPS

INTRODUCTION

- Sports is something that will always be in demand. So opening a sports store seems like the right thing to do.
- **Problem** : A company wants to start a sports shop which supplies sports equipment in Manhattan, New York, so this project helps in generating potential locations
- **Condition**: These locations were generated based on potential customer bases in and around the locality

POTENTIAL CUSTOMERS

- Colleges and Universities
- Elementary schools
- Middle schools
- High Schools
- Private Schools
- Rec centers
- Stadiums

DATA ACQUISITION

- Data of **Manhattan, New York** was taken from newyork_data json file.
- Data of **potential customer bases** including coordinates were obtained using Foursquare API.
- **Addresses of the potential locations** were obtained using LocationIQ API reverse geocoding

DATA CLEANING

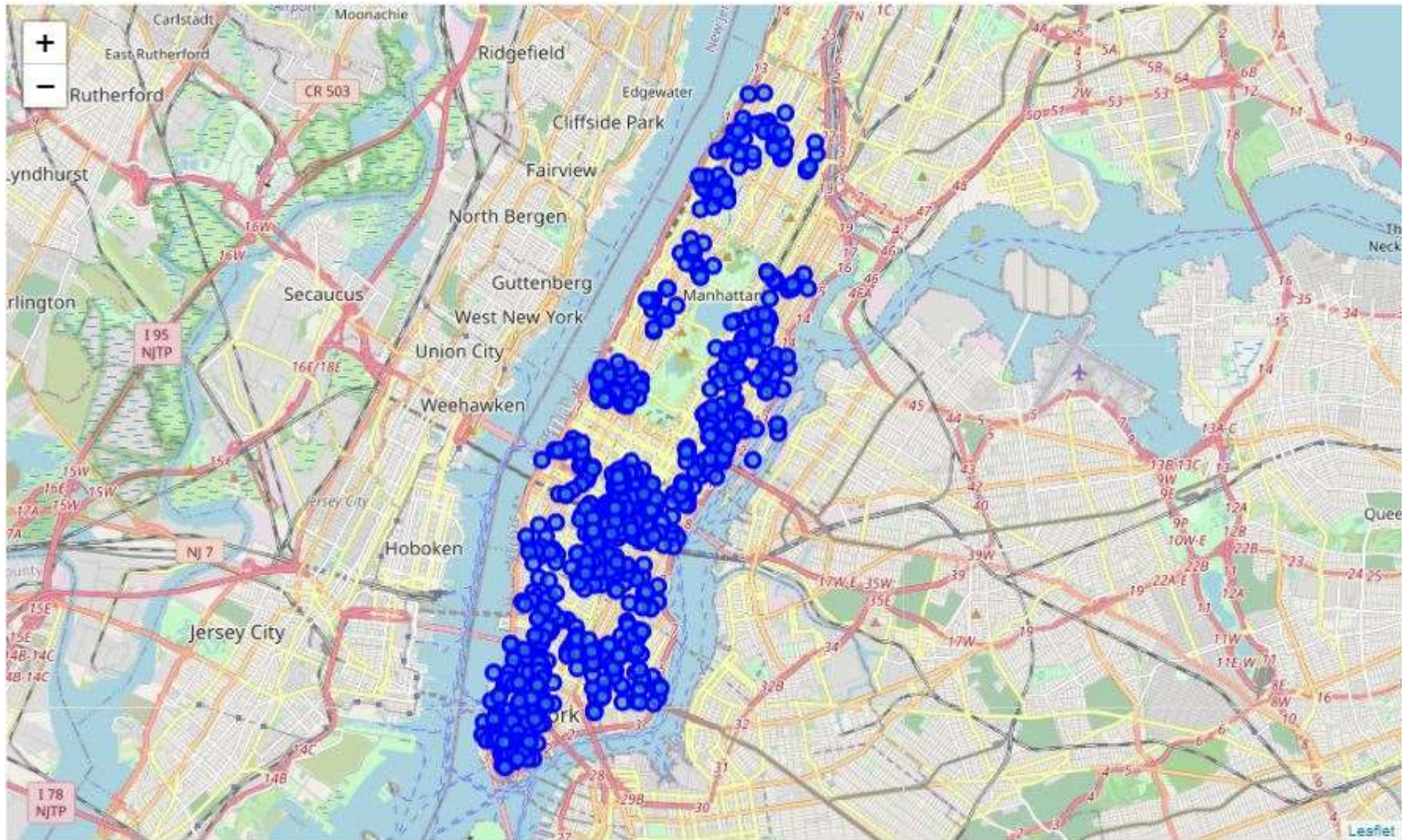
- From each category of potential customers, the data had to be individually inspected and cleaned to see what was available and what should be taken.
- An example is shown here of how many categories were there in ‘colleges’ itself.
- After this all the data was combined into a data frame and total venues obtained was **1316**.

```
manhattancollege['Venue Category'].value_counts()
```

College Academic Building	191
General College & University	163
College Administrative Building	126
Student Center	107
College Classroom	80
University	79
Trade School	79
College Library	71
College Lab	49
College Arts Building	47
Medical School	41
College Residence Hall	40
College Gym	31
College Auditorium	29
College Cafeteria	22
Law School	21
College Theater	21
College Science Building	18
College Quad	17
Office	15
School	12
College & University	12
College Technology Building	12
College Bookstore	10
Community College	10
College Engineering Building	9
College Rec Center	8
College Communications Building	7
Doctor's Office	5
Fraternity House	5
Hotel	3
Elementary School	3
Miscellaneous Shop	3
High School	3
Library	3
Art Gallery	3

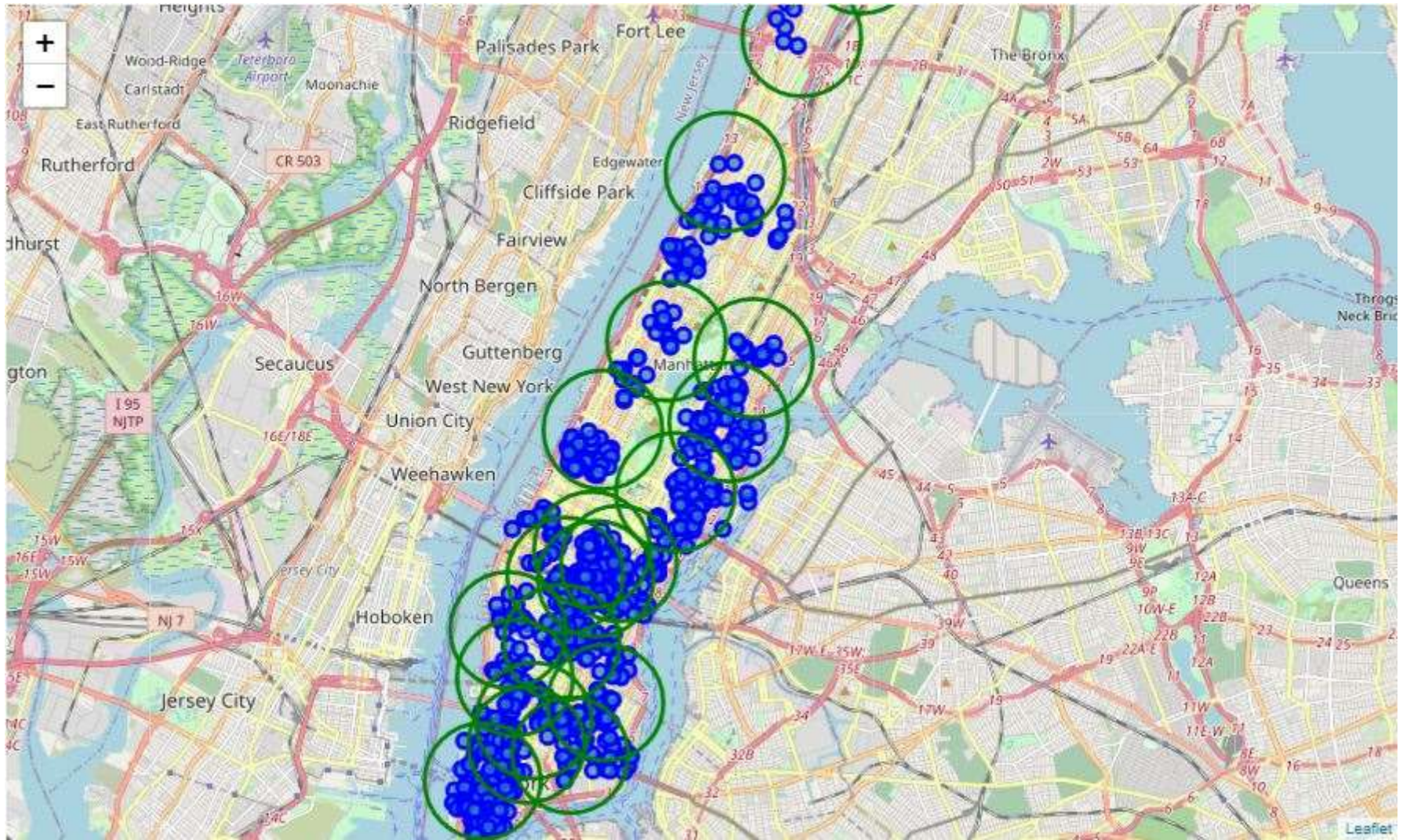
ANALYSIS

- The co-ordinates were obtained and plotted on a map.



ANALYSIS

- These points were then clustered using k-means clustering.



ANALYSIS

- The centers of these clusters are taken and the reverse geocoded to obtain the addresses of these locations.

```
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Addresses of locations recommended for further analysis
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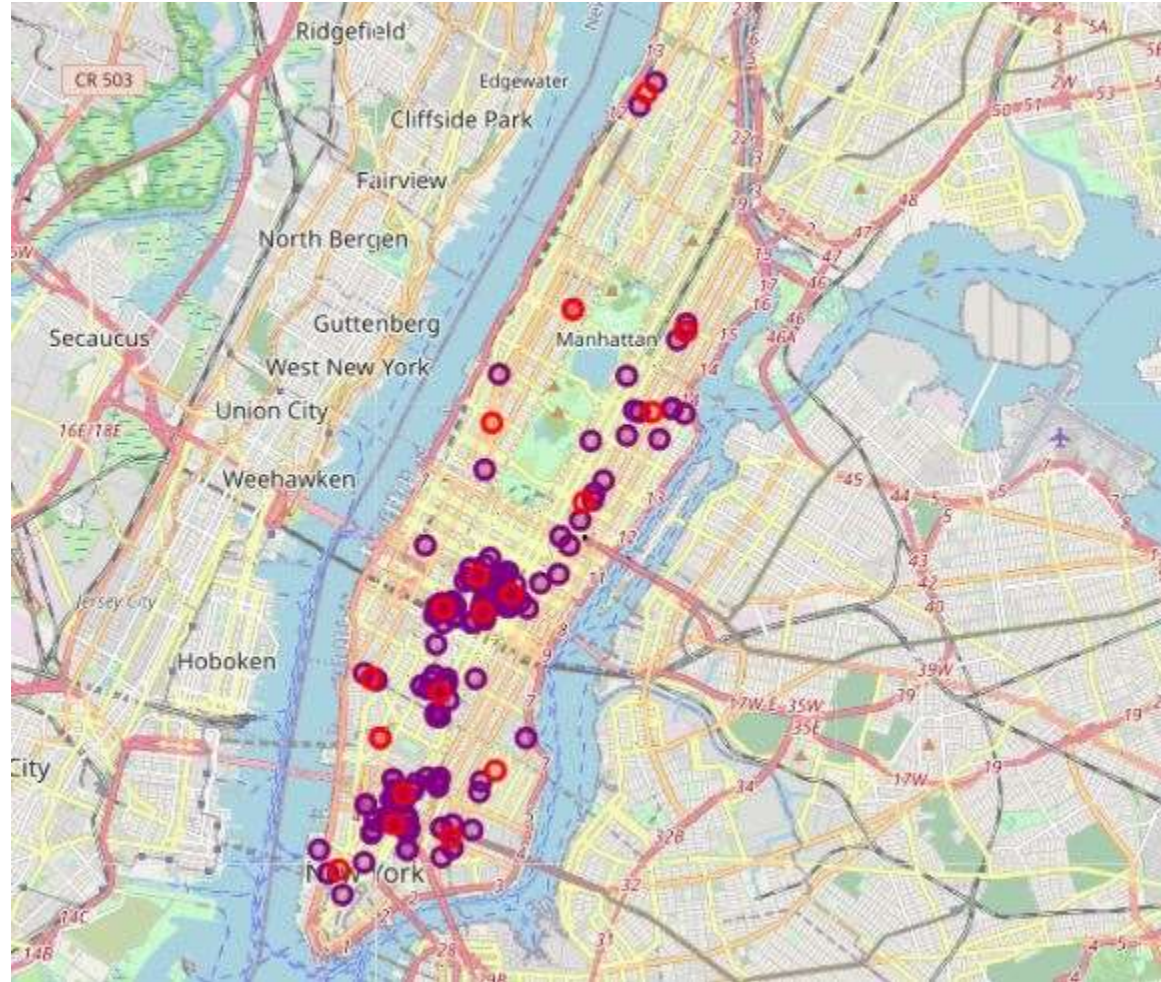
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386, 5th Avenue, Midtown West, New York, New York County, New York, 10018
60, Greene Street, SoHo, New York, New York County, New York, 10012
1896, 3rd Avenue, East Harlem, New York, New York County, New York, 10029
517, W 207 St, Inwood, New York, New York County, New York, 10034
600, West 182nd Street, Washington Heights, New York, New York County, New York, 10033
150, East 59th Street, Midtown East, New York, New York County, New York, 10022
606, West 143rd Street, Hamilton Heights, New York, New York County, New York, 10031
410, East 89th Street, Upper East Side, New York, New York County, New York, 10128
30, Horatio St, West Village, New York, New York County, New York, 10014
Duane Reade, Upper West Side, New York, New York County, New York, 10025
Silverstein Family Park, Tribeca, New York, New York County, New York, 10007
252, Broome St, Lower East Side, New York, New York County, New York, 10002
159, E 71 St, Upper East Side, New York, New York County, New York, 10021
One Vanderbilt, Midtown East, New York, New York County, New York, 10017
311, E 10 St, East Village, New York, New York County, New York, 10009
357, W 14 St, Chelsea, New York, New York County, New York, 10014
Duane Reade, Upper West Side, New York, New York County, New York, 10025
Citi Bike - E 43 St & Vanderbilt Ave, Midtown East, New York, New York County, New York, 10017
2, West 37th Street, Midtown West, New York, New York County, New York, 10018
```


CONCLUSIONS AND FUTURE DIRECTIONS

- Potential locations were generated based on customer bases for the stakeholders.
- More locations can be used for analysis depending on objective.
- More conditions can be used to filter the locations used for clustering depending what type of shops is going to be set up.

CONCLUSIONS AND FUTURE DIRECTIONS

- In this project, the factor of close by competitors was not considered as on closer inspection of close by shops (figure) like SKECHERS showroom may boost businesses, but can be added when done for other problems.



● Potential locations

● Close-by shops

THANK YOU