Introduction

Jack is a talented chef, his mom is french, his dad is italian, he grew up in Asia and lives in Manhatten. Jack can cook any cuisine you can think of to perfection. Here is the problem: Jack wants to open a restaurant/foodvenue on Manhattan, and he wants to use data to help him make the hard decision of the kind of restaurant he should open and where he should open it. Ideally he would like a recommendation for each neighbourhood on Manhattan, based on the existing food places in the neighbourhood.

Dataset
To complete the task I will need to isolate the Manhattan data from the New York dataset and the dataset must fulfils these requirements:

1) The data set must be food venues only.
2) The data set must include food category.
3) The data set must include latitude and logitude coordinates of each neighbourhood.

Methodology
1) First I'll download the data.
2) Draw a map of the Manhattan Neighbourhoods.
3) Find out the top10 food venue types for all of Manhattan.
4) Isolate top10 food-venue type and make a data frame for these and the Manhattan neighbourhoods.
5) Based on the average amount of food-venue type, rate each food-venue type for each neighbourhood.

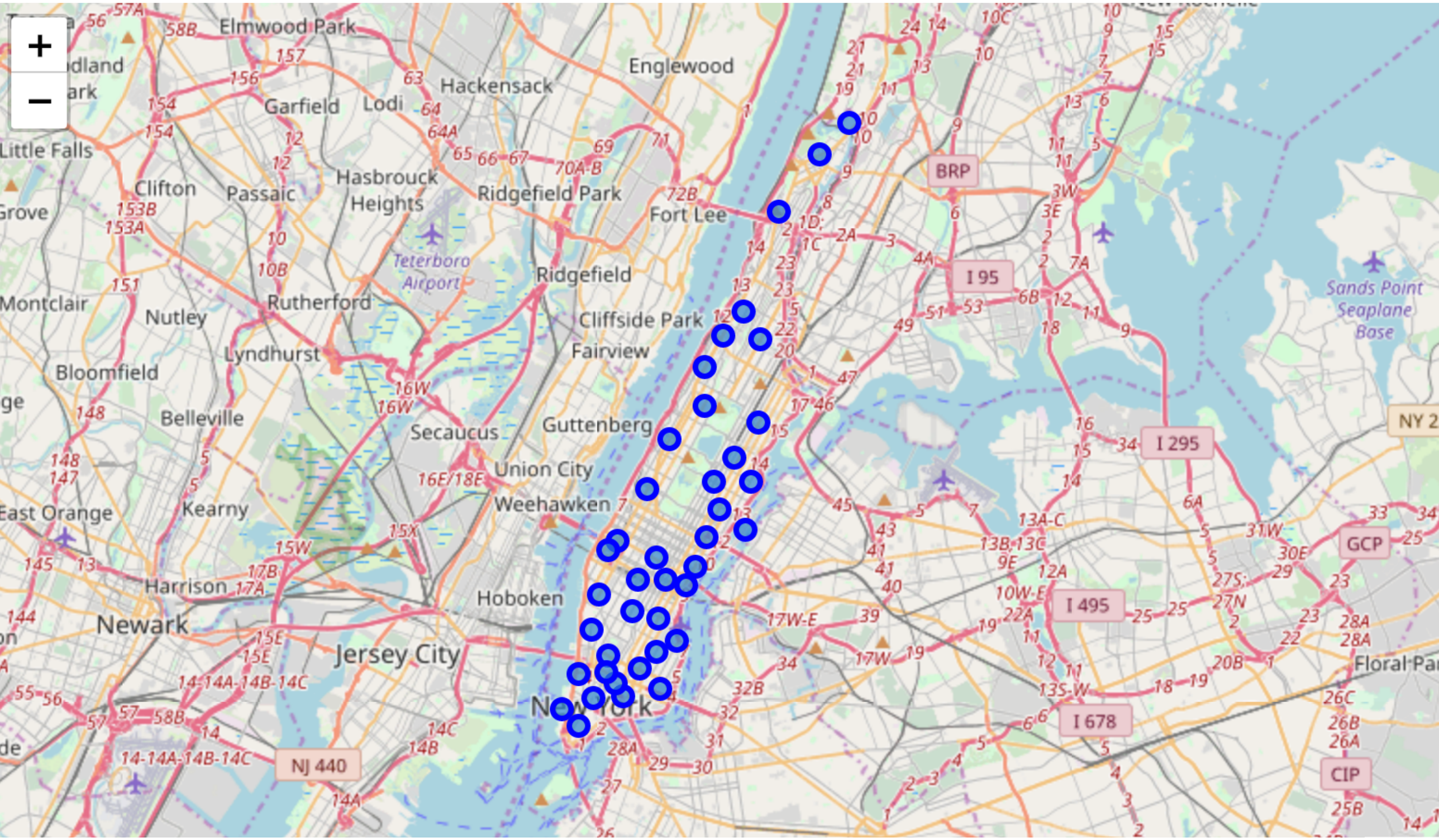
1) Download and prep the data

Data source: https://cocl.us/new_york_dataset
foursquare API

- **Needed data: Neighbourhood, borough, latitude, longitude.**
- **Formatted into data-frame**
- **Isolated Mahattan data**

	Borough	Neighborhood	Latitude	Longitude
0	Manhattan	Marble Hill	40.876551	-73.910660
1	Manhattan	Chinatown	40.715618	-73.994279
2	Manhattan	Washington Heights	40.851903	-73.936900
3	Manhattan	Inwood	40.867684	-73.921210
4	Manhattan	Hamilton Heights	40.823604	-73.949688

2) Draw a map of the Manhattan Neiborhoods



3) Find out the top10 food venue types for all of Manhattan.¶

```
# I want to know the 10 most popular food venues
df = manhattan_venues['Venue Category'].value_counts()
df.head(10)
```

```
Italian Restaurant     247
Pizza Place            169
Café                   143
American Restaurant    141
Deli / Bodega          131
Sandwich Place         119
Chinese Restaurant     110
Mexican Restaurant     110
Bakery                 106
French Restaurant       90
Name: Venue Category, dtype: int64
```

4) Isolate top10 food-venue type and make a dataframe for these and the Manhattan neighbourhoods.

Neighborhood	Italian Restaurant	Pizza Place	Café	American Restaurant	Deli / Bodega	Sandwich Place	Mexican Restaurant	Chinese Restaurant	Bakery	French Restaurant
Sutton Place	7.000	9.000	1.000	4.000	1.000	1.000	3.00	3.00	1.00	4.00
Tribeca	7.000	1.000	5.000	7.000	4.000	3.000	1.00	2.00	3.00	2.00
Tudor City	2.000	5.000	7.000	3.000	9.000	3.000	5.00	2.00	0.00	1.00
Turtle Bay	10.000	3.000	6.000	3.000	9.000	3.000	1.00	0.00	0.00	3.00
Upper East Side	15.000	5.000	2.000	6.000	4.000	1.000	2.00	2.00	3.00	4.00
Upper West Side	7.000	3.000	2.000	2.000	0.000	0.000	2.00	1.00	3.00	2.00
Washington Heights	2.000	9.000	3.000	1.000	7.000	3.000	4.00	6.00	4.00	0.00
West Village	17.000	4.000	2.000	9.000	0.000	2.000	4.00	2.00	1.00	4.00
Yorkville	10.000	10.000	2.000	2.000	9.000	4.000	3.00	3.00	3.00	1.00
AVG	6.175	4.225	3.575	3.525	3.275	2.975	2.75	2.75	2.65	2.25

5) Based on the average amount of food-venue type, rate each food-venue type for each neighbourhood.

Neighborhood	Italian Restaurant	Pizza Place	Café	American Restaurant	Deli / Bodega	Sandwich Place	Mexican Restaurant	Chinese Restaurant	Bakery	French Restaurant
Battery Park City	2.175	0.225	3.575	1.525	3.275	0.975	1.75	-0.25	1.65	2.25
Carnegie Hill	2.175	-3.775	-1.425	1.525	2.275	2.975	0.75	1.75	-3.35	-0.75
Central Harlem	6.175	1.225	2.575	1.525	0.275	0.975	2.75	-1.25	1.65	0.25
Chelsea	1.175	0.225	-1.425	-0.475	1.275	-0.025	-1.25	0.75	-5.35	-3.75
Chinatown	5.175	2.225	0.575	0.525	3.275	-0.025	-1.25	-16.25	-4.35	2.25
Civic Center	-5.825	1.225	-1.425	-2.475	0.275	-5.025	-2.25	1.75	-1.35	-3.75
Clinton	-3.825	1.225	-0.425	-4.475	-4.725	-2.025	-0.25	-2.25	1.65	0.25
East Harlem	6.175	-1.775	1.575	3.525	-2.725	0.975	-4.25	1.75	-2.35	1.25
East Village	1.175	-4.775	0.575	1.525	0.275	2.975	-2.25	-3.25	1.65	-1.75
Financial District	0.175	-1.775	-2.425	-3.475	-0.725	-5.025	-2.25	1.75	0.65	1.25
Flatiron	-8.825	2.225	-1.425	-2.475	3.275	-3.025	-1.25	1.75	-0.35	-0.75
Gramercy	1.175	0.225	1.575	-0.475	0.275	-0.025	-1.25	1.75	1.65	2.25
Greenwich Village	-12.825	0.225	-2.425	-1.475	3.275	-0.025	1.75	-1.25	0.65	-1.75
Hamilton Heights	5.175	-0.775	-0.425	3.525	-6.725	-0.025	-4.25	-1.25	0.65	2.25
Hudson Yards	2.175	4.225	-2.425	-1.475	1.275	0.975	2.75	1.75	2.65	2.25
Inwood	6.175	-1.775	-0.425	1.525	-1.725	1.975	-4.25	0.75	-0.35	2.25