



Capstone Project - Battle of Neighborhoods

Analyzing the competition in New York to open a new Night Club

Introduction

The City of New York, is well know as one of the cities with the most agitated night life in the world. The Entertaining Market is one of the most profitables, but also highly competitive, with several options for people to choose from. Market is highly competitive.



Business Problem

The client wants to open his Night Club business in New York, so he asks for a visual feedback of his potential competitors. I decided to extract the data of the city registered at Foursquare and show it on an interactive map, with markers identified by their names.



Data Scraping

Data scraping was done using Foursquare API to collect the information about Night Clubs in a 10 km radius area, from the coordinates of New York.

```
Out[5]: 'https://api.foursquare.com/v2/venues/search?client_id=[REDACTED]&secret=[REDACTED]&v=20201104&query=Night Club&radius=10000&limit=500'
```

```
In [6]: 1 results = requests.get(url).json()
        2 results
```

```
Out[6]: {'meta': {'code': 200, 'requestId': '5fe7e18754a4277f8ff8d47a'},
         'notifications': [{'type': 'notificationTray', 'item': {'unreadCount': 0}}],
         'response': {'venues': [{'id': '4c177cb57bf1d13a4235e881',
                                'name': 'KTU Professional Radio DJ Night Club and Lounge',
                                'location': {'address': '32 Avenue of the Americas',
                                             'lat': 40.720443,
                                             'lng': -74.005319,
                                             'labeledLatLngs': [{'label': 'display',
                                                                'lat': 40.720443,
                                                                'lng': -74.005319}],
                                             'distance': 860,
                                             'postalCode': '10013',
                                             'cc': 'US',
                                             'city': 'New York',
                                             'state': 'NY',
                                             'country': 'United States',
                                             'formattedAddress': ['32 Avenue of the Americas', 'New York, NY 10013']},
                                'categories': [{'id': '4bf58dd8d48988d11f941735',
                                                'name': 'Nightclub',
                                                'pluralName': 'Nightclubs',
                                                'shortName': 'Nightclub',
                                                'icon': 'https://ss7.imgix.net/foursquare.com/img/venues/categories/nightclub.png?w=24&h=24&v=20201104',
                                                'color': '#333333',
                                                'pluralColor': '#333333',
                                                'shortColor': '#333333'}]
                                }
                                ]
         }
         
```

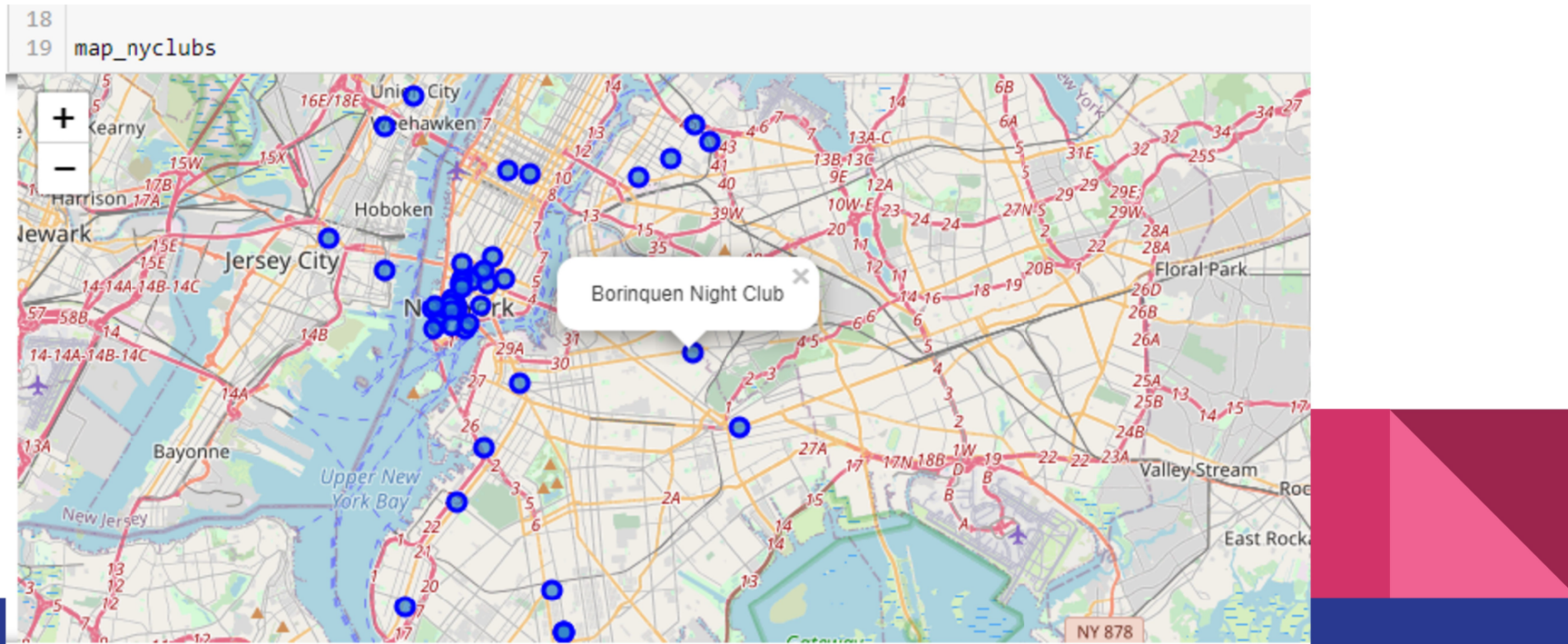
Data Selecting

From the acquired JSON, now in a dataframe, I filtered the relevant data: 'name', 'location.formattedAddress', 'location.lat', 'location.lng', 'id', and converted to dataframe to explore and organize

3 df					
	name	location.formattedAddress	location.lat	location.lng	id
0	KTU Professional Radio DJ Night Club and Lounge	[32 Avenue of the Americas, New York, NY 10013]	40.720443	-74.005319	4c177cb57bf1d13a4235e881
1	Ave night club	[116 10th Ave, New York, NY 10012]	40.723527	-73.997321	4e3e3828aeb73139a1846b2e
2	Peligro Night Club	[184 Ludlow St (E Houston St), New York, NY 10003]	40.721886	-73.987160	4bdcf6b6edf50f471addc834
3	Butter Night Club	[New York, NY 10003]	40.728718	-73.992570	4e0027482271bc79ee0659bf
4	Russian Night Club Taous	[1814 Coney Island ave (between Avenue N & Ave O), Brooklyn, NY 11232]	40.613148	-73.963331	4e910d629a52db7dba84fcb8
5	3001N Night Club	[475 Washington Blvd, Jersey City, NJ 07310]	40.724152	-74.036331	4eec1d980aaf1d45b060197c
6	Arena Night Club	[Brooklyn, NY]	40.689660	-73.981290	5204ed15498ea5d6a8c28662
7	phebe night club & restaurant	[Jersey City, NJ]	40.733997	-74.058690	5440a372498e713d54e68980
8	Passion Night Club	[1814 Coney Island Ave (Ave N and Ave O), Brooklyn, NY 11232]	40.613149	-73.963337	4bef5f335e4aa593b9fa58bb
9	Medusa Night Club	[25-18 50th St (25th avenue), Woodside, NY 11377]	40.763749	-73.904286	53118e23498e874d47549229
10	One77 Night Club	[Brooklyn, NY]	40.669591	-73.995528	56e5195b498e7c13ecd6a89e
11	Arena Night Club	[135 W 41st St (btwn 6th Ave. & Broadway), New York, NY 10018]	40.754944	-73.985935	4a73d7b0f964a52088dd1fe3
12	Ammos Night Club	[New York]	40.754124	-73.977017	4e6c58e7d4c09a17a590df4f
13	Ascomundo Night Club	[2770 Atlantic Ave, Brooklyn, NY 11207]	40.676028	-73.891971	4f32c1ae19836c91c7f7209c
14	Caballeros de Colon Night Club	[Union City, NJ]	40.768833	-74.036484	52cf550c11d254e253e35234
15	Tropics Night Club	[363-399 39th St (4th ave), Brooklyn, NY 11232]	40.652927	-74.006529	4e2913c0d4c0e361d9e518b3
16	Fantasy Night Club	[42 Street, Union City, NJ 07093]	40.777873	-74.024214	51bfe66a498ef8fd90b463e0
17	Borinquen Night Club	[300 Wyckoff Ave, Brooklyn, NY 11237]	40.699021	-73.910893	4f32bfb819836c91c7f6489d
18	Chango Night Club	[3024 21st St (btwn 20th & 20th Ave), Long Is...	40.757011	-73.027027	4e0219176400747f4940705e

Data Presentation

With that information, I created the interactive map using Folium.



Methodology

I used Foursquare API to explore New York Night Clubs in a 10 km radius, where I found 50 Clubs in that area, from the New York coordinates provided by Geocode.

I transformed the JSON file into a dataframe, I filtered the relevant features: 'name', 'location.formattedAddress', 'location.lat', 'location.lng', 'id'.

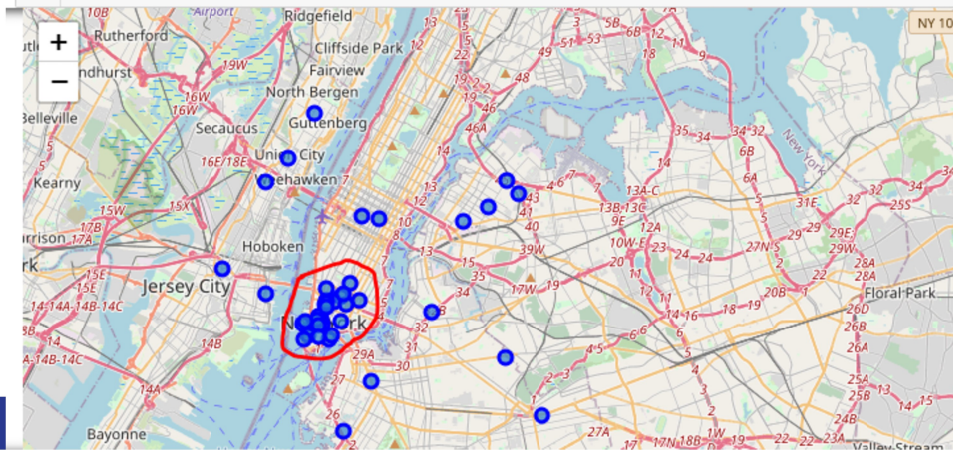
With the data filtered and organized, the Folium library was used to give the visual feedback requested by the client, with markers to each Night Club and labels to identify.



Results

The area south of Manhattan island would be a difficult area, because there is a dense concentration of Night Clubs there. From the competition perspective, it is not advised to open a new business of that kind there.

At the center and north of Manhattan, sparse Night Clubs or no clubs at all, so it could be a good option at first to open a business of that kind there. Outside Manhattan, the same pattern repeats, with sparse, not many Night Clubs, so they can be another area of interest.



Discussion

Foursquare API seems to be limited and outdated, so this definitely influences the research.

- There is high competition in the South of Manhattan, so it would be risky to open a new Night Club business due to intense competition.
- At the Center, North and outside Manhattan, there are few Night Clubs, which could be an interesting area to study the viability. As for competition in those areas, that would not be a problem



Conclusion

There is definitely room for improvement in this project.

Finding a new source of information would be advised as well, as Foursquare seems limited and outdated, even when I changed the version to 2020.

