

```
!pip install folium
import folium as fl
import pandas as pd
from folium.plugins import HeatMap
```

```
Requirement already satisfied: folium in /usr/local/lib/python3.10/dist-packages (0.14.0)
Requirement already satisfied: branca>=0.6.0 in /usr/local/lib/python3.10/dist-packages (from folium)
Requirement already satisfied: jinja2>=2.9 in /usr/local/lib/python3.10/dist-packages (from folium)
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Requirement already satisfied: urllib3<1.27,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (f
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from
Requirement already satisfied: charset-normalizer~2.0.0 in /usr/local/lib/python3.10/dist-package
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from que
```

```
file=pd.read_csv("AB_NYC_2019.csv")
file.head()
```

	<b>id</b>	<b>name</b>	<b>host_id</b>	<b>host_name</b>	<b>neighbourhood_group</b>	<b>neighbourhood</b>	<b>latitude</b>
<b>0</b>	2539	Clean & quiet apt home by the park	2787	John	Brooklyn	Kensington	40.64749
<b>1</b>	2595	Skylit Midtown Castle	2845	Jennifer	Manhattan	Midtown	40.75362
<b>2</b>	3647	THE VILLAGE OF HARLEM....NEW YORK !	4632	Elisabeth	Manhattan	Harlem	40.80902
<b>3</b>	3831	Cozy Entire Floor of Brownstone	4869	LisaRoxanne	Brooklyn	Clinton Hill	40.68514
<b>4</b>	5022	Entire Apt: Spacious Studio/Loft by central park	7192	Laura	Manhattan	East Harlem	40.79851



```
file.columns
```

```
Index(['id', 'name', 'host_id', 'host_name', 'neighbourhood_group',
       'neighbourhood', 'latitude', 'longitude', 'room_type', 'price',
       'minimum_nights', 'number_of_reviews', 'last_review',
       'reviews_per_month', 'calculated_host_listings_count',
       'availability_365'],
      dtype='object')
```

```
file.isnull().sum()
```

<b>id</b>	0
<b>name</b>	16
<b>host_id</b>	0
<b>host_name</b>	21
<b>neighbourhood_group</b>	0
<b>neighbourhood</b>	0

```

latitude          0
longitude         0
room_type         0
price             0
minimum_nights    0
number_of_reviews 0
last_review       10052
reviews_per_month 10052
calculated_host_listings_count 0
availability_365   0
dtype: int64

```

```
file.shape
```

```
(48895, 16)
```

```

for i in file.columns:
    if any(file[i].isnull()):
        if file[i].dtypes=='int' or file[i].dtypes=='float':
            file[i].fillna(file[i].mean(),inplace=True)
        elif file[i].dtypes=='object':
            file[i].fillna(file[i].mode().iloc[0],inplace=True)
file.isnull().sum()

```

```

id              0
name            0
host_id         0
host_name       0
neighbourhood_group 0
neighbourhood   0
latitude         0
longitude        0
room_type        0
price            0
minimum_nights   0
number_of_reviews 0
last_review      0
reviews_per_month 0
calculated_host_listings_count 0
availability_365   0
dtype: int64

```

```

file=file.drop_duplicates()
file.shape

```

```
(48895, 16)
```

## ▼ Creating Map:

```

locations_data =file[["latitude", "longitude", "name",'price','host_name','neighbourhood']]
locations_data

```

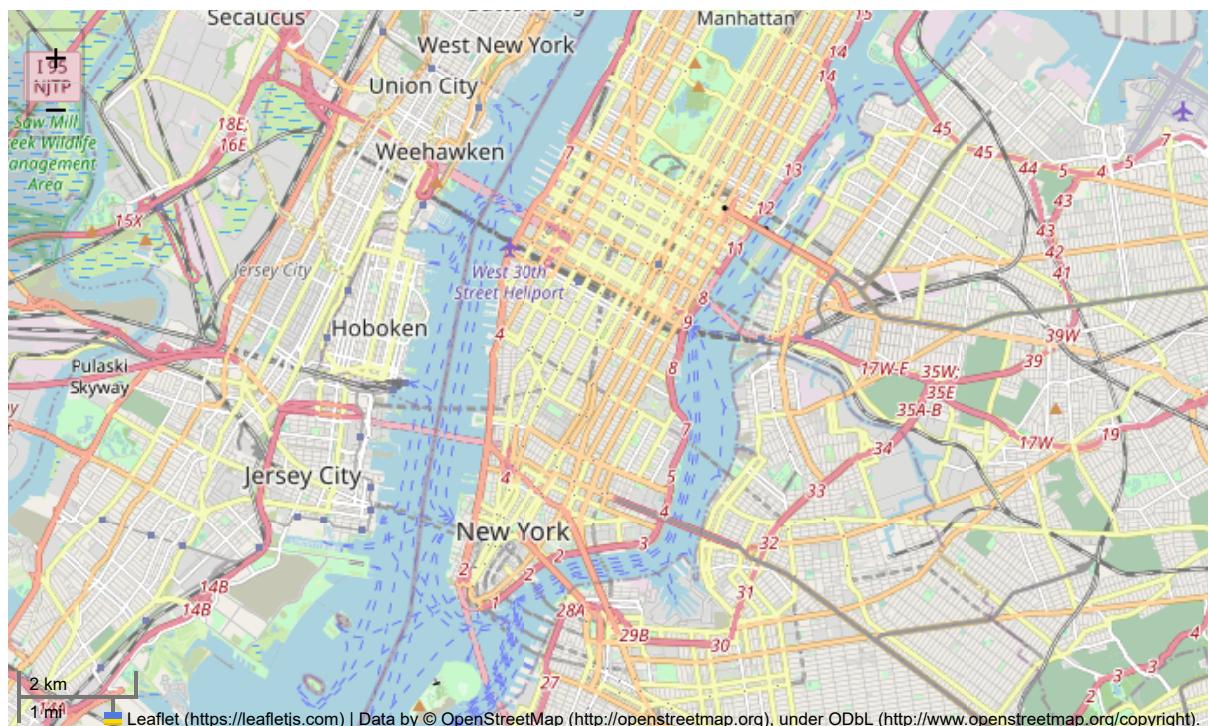
	latitude	longitude		name	price	host_name	neighbourhood
0	40.64749	-73.97237	Clean & quiet apt home by the park	149	John	Kensington	
1	40.75362	-73.98377	Skylit Midtown Castle	225	Jennifer	Midtown	
2	40.80902	-73.94190	THE VILLAGE OF HARLEM....NEW YORK !	150	Elisabeth	Harlem	
3	40.68514	-73.95976	Cozy Entire Floor of Brownstone	89	LisaRoxanne	Clinton Hill	
4	40.79851	-73.94399	Entire Apt: Spacious Studio/Loft by central park	80	Laura	East Harlem	
...	...	...	...	...	...	...	...
			Charmina one bedroom -	--	--	--	Bedford-

Just taking First 200 rows:

```
48891 40.70184 -73.93317 Available room III 40 Marisol Bushwick
```

```
location_data=locations_data.head(200)
map=f1.Map(location=[location_data.latitude.mean(),location_data.longitude.mean()],zoom_start=12,control
```

map

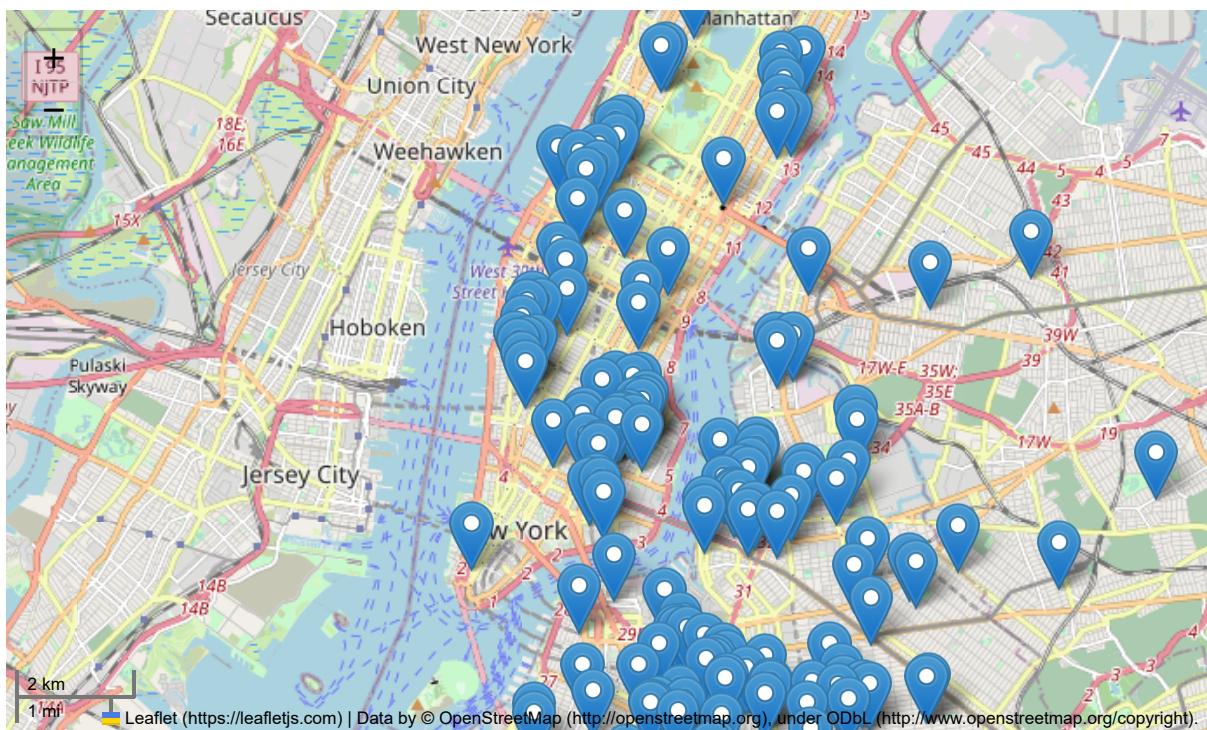


## ▼ Creating Map Markers:

```
for index, location in location_data.iterrows():
    latitude = location['latitude']
    longitude = location['longitude']
    name = location['name']
```

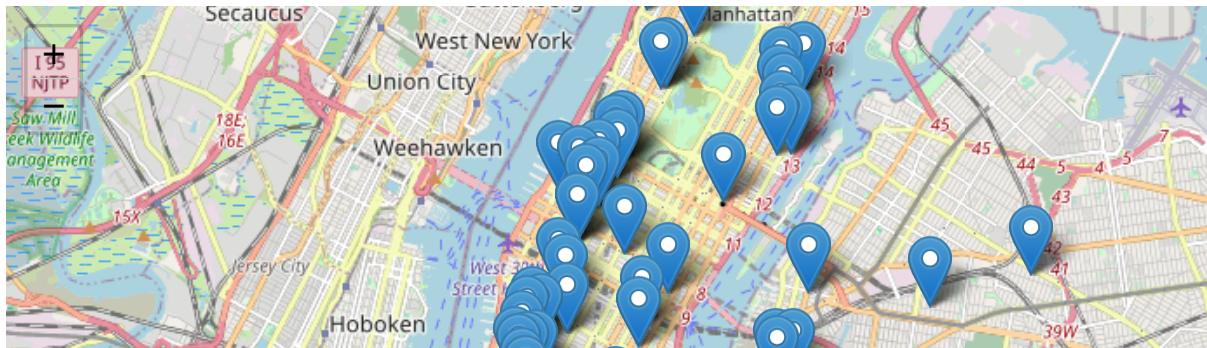
```
marker = fl.Marker([latitude, longitude], popup=name)
marker.add_to(map)
```

map



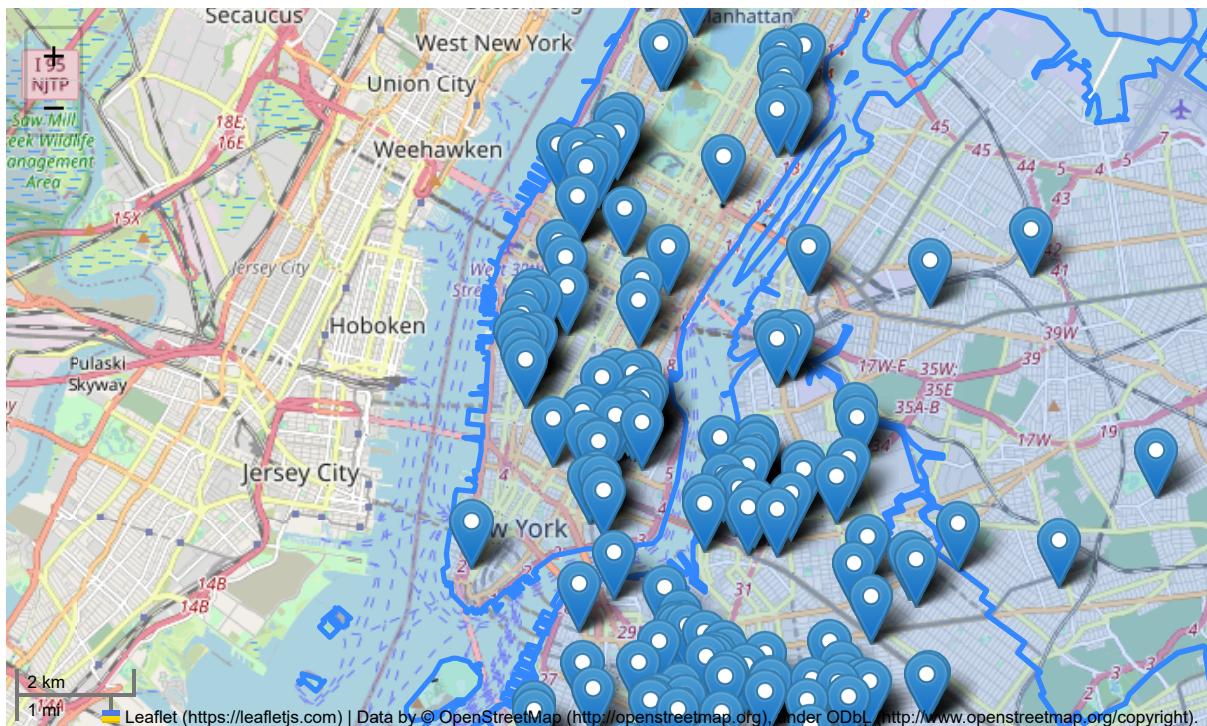
```
for index, location in location_data.iterrows():
    latitude = location['latitude']
    longitude = location['longitude']
    name = location['name']
    price=location['price']
    neighbourhood=location['neighbourhood']
    text = f"Name: {name}, Price:{price}, Neighbourhood:{neighbourhood}"
    text_color=f'<div style="color: blue; padding: 10px; background-color: aqua">{text}</div>'
    popup = fl.Popup(text_color,max_width=250)
    marker = fl.Marker([latitude, longitude], popup=popup)
    marker.add_to(map)
```

map



## ▼ Adding Neighbourhood Layer:

```
neighbourhood_layer = f1.GeoJson('/content/new-york-city-boroughs.geojson', name='Neighborhoods')
neighbourhood_layer.add_to(map)
for index, location in location_data.iterrows():
    latitude = location['latitude']
    longitude = location['longitude']
    name = location['name']
    price = location['price']
    neighbourhood = location['neighbourhood']
    text = f"Name: {name}, Price: {price}, Neighbourhood: {neighbourhood}"
    popup_html = f'<div style="color: blue; padding: 10px; background-color: aqua;">{text}</div>'
    popup = f1.Popup(popup_html, max_width=250)
    marker = f1.Marker([latitude, longitude], popup=popup)
    marker.add_to(map)
map
```

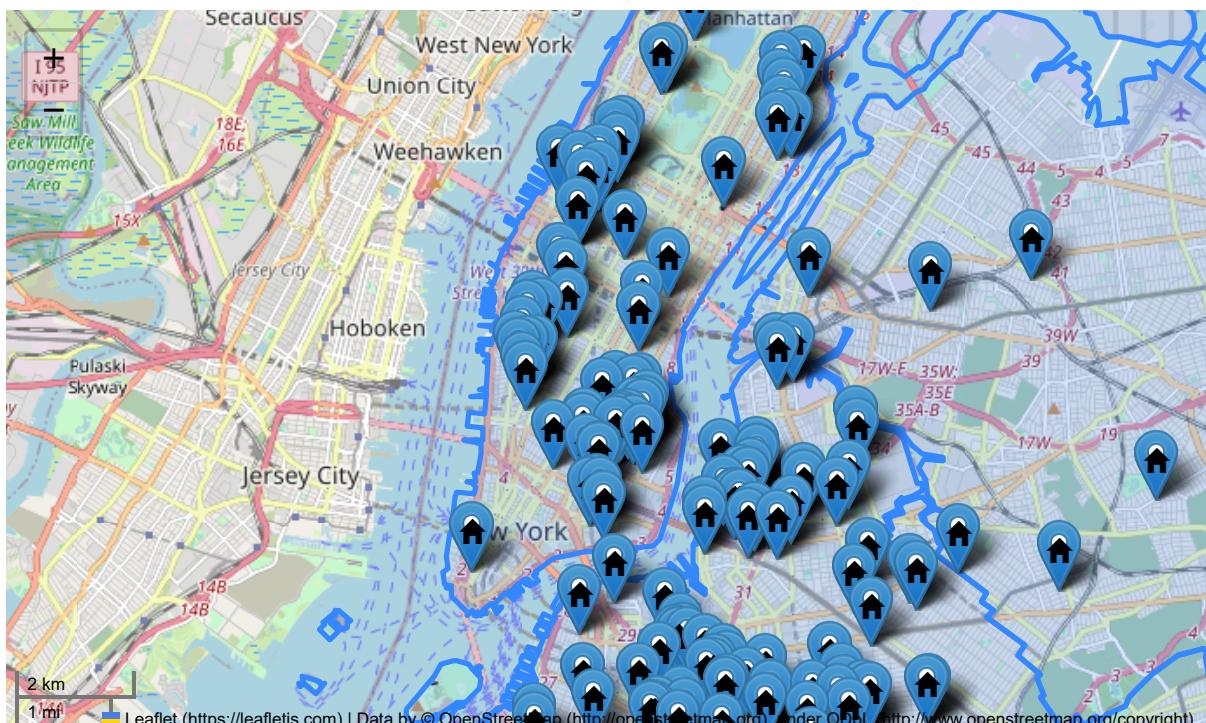


## ▼ Adding tool-tip:

```

for index, location in location_data.iterrows():
    latitude = location['latitude']
    longitude = location['longitude']
    name = location['name']
    price = location['price']
    neighbourhood = location['neighbourhood']
    text = f"Name: {name}, Price: {price}, Neighbourhood: {neighbourhood}"
    pop_up_html = f'<div style="color: blue; padding: 10px; background-color: aqua;">{text}</div>'
    marker = fl.Marker(
        location=[latitude, longitude],
        tooltip=pop_up_html,
        icon=fl.Icon(color='blue', icon='home')
    )
    marker.add_to(map)
map

```



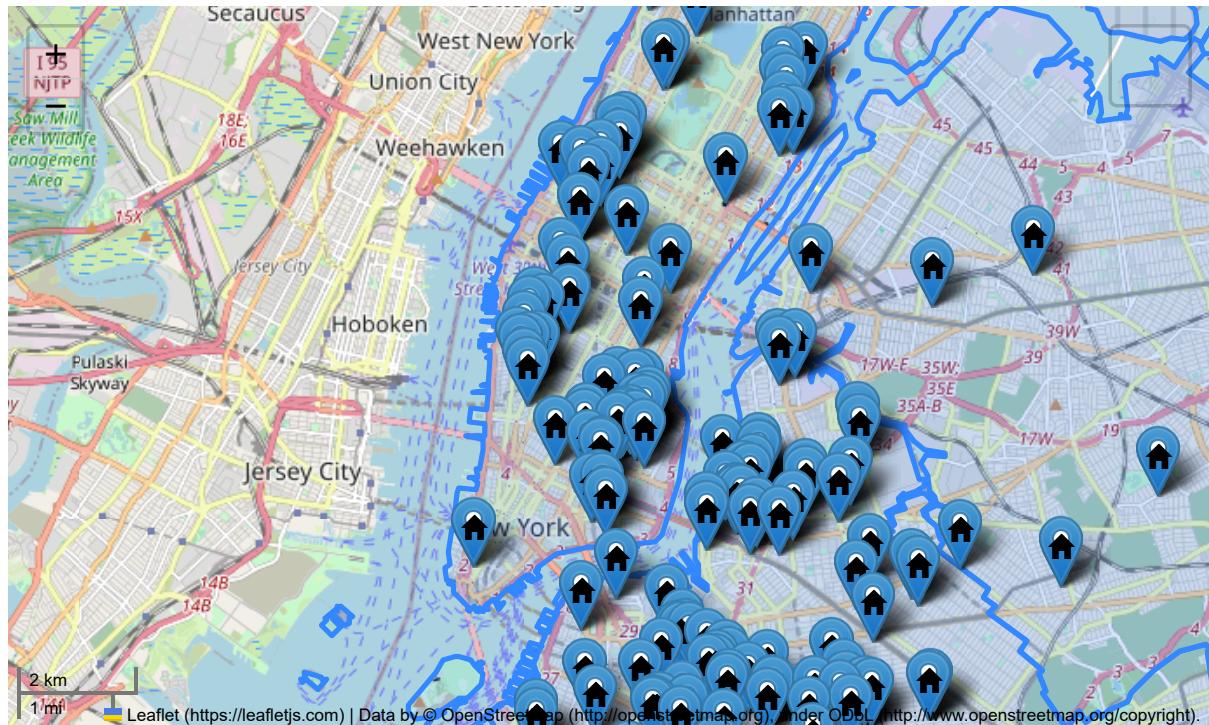
## ▼ Adding Style.Lagends:

```

for index, location in location_data.iterrows():
    latitude = location['latitude']
    longitude = location['longitude']
    name = location['name']
    price = location['price']
    neighbourhood = location['neighbourhood']
    tooltip_text = f"Name: {name}"
    marker = fl.Marker(location=[latitude, longitude], tooltip=tooltip_text, icon=fl.Icon(color='blue', icon='home'))
    text = f"Name: {name}, Price: {price}, Neighbourhood: {neighbourhood}"
    pop_up_html = f'<div style="color: blue; padding: 10px; background-color: aqua;">{text}</div>'
    fl.Popup(pop_up_html).add_to(marker)
    marker.add_to(map)
fl.TileLayer('cartodbpositron').add_to(map)
fl.LayerControl().add_to(map)

```

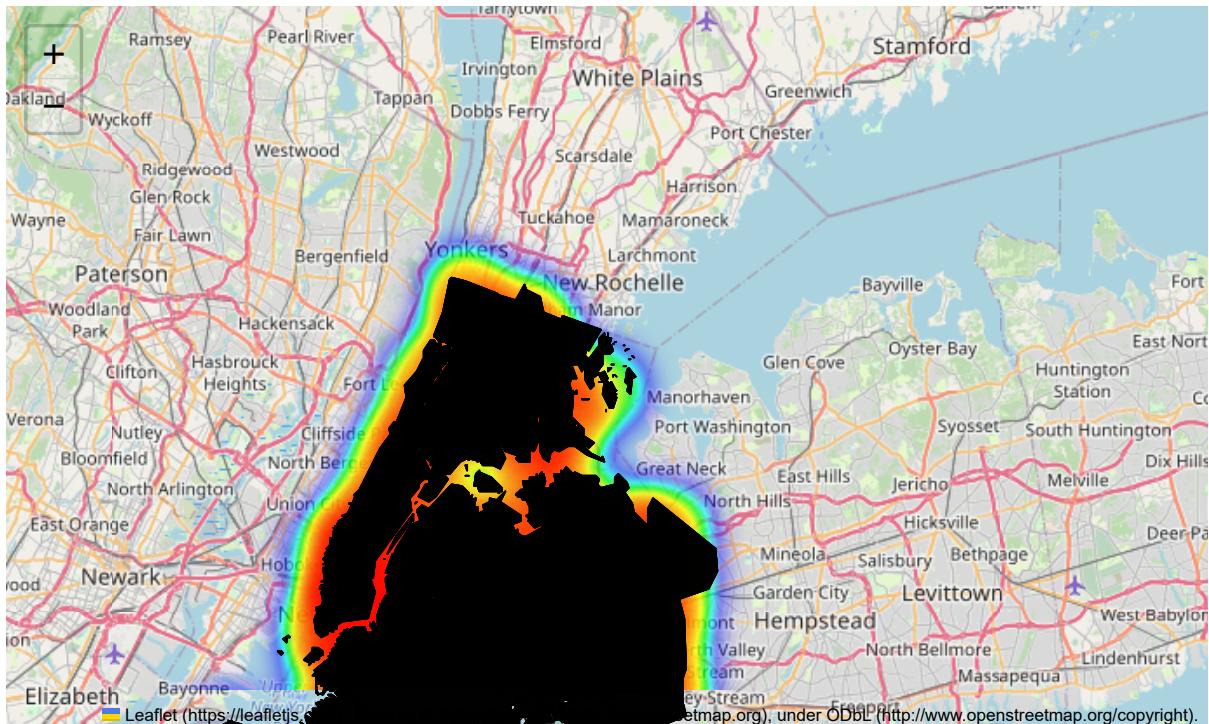
map



```
heat_map_data = []
map=f1.Map(location=[locations_data['latitude'].mean(),locations_data['longitude'].mean()],zoom_start=10
for index, location in locations_data.iterrows():
    latitude = location['latitude']
    longitude = location['longitude']
    heat_map_data.append([latitude, longitude])
HeatMap(heat_map_data).add_to(map)
map
```



```
data=f1.Choropleth(geo_data='/content/new-york-city-boroughs.geojson',data=locations_data,columns=['neig  
data.add_to(map)  
map
```



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