

```
In [1]: import os
import pandas as pd
import json
import numpy as np
import folium
from folium.features import CustomIcon
from folium.plugins import HeatMap
import geopy
from geopy.geocoders import Nominatim
import vincent
from folium import plugins
# Adds tool to the top right
from folium.plugins import MeasureControl
import warnings
import ssl
```

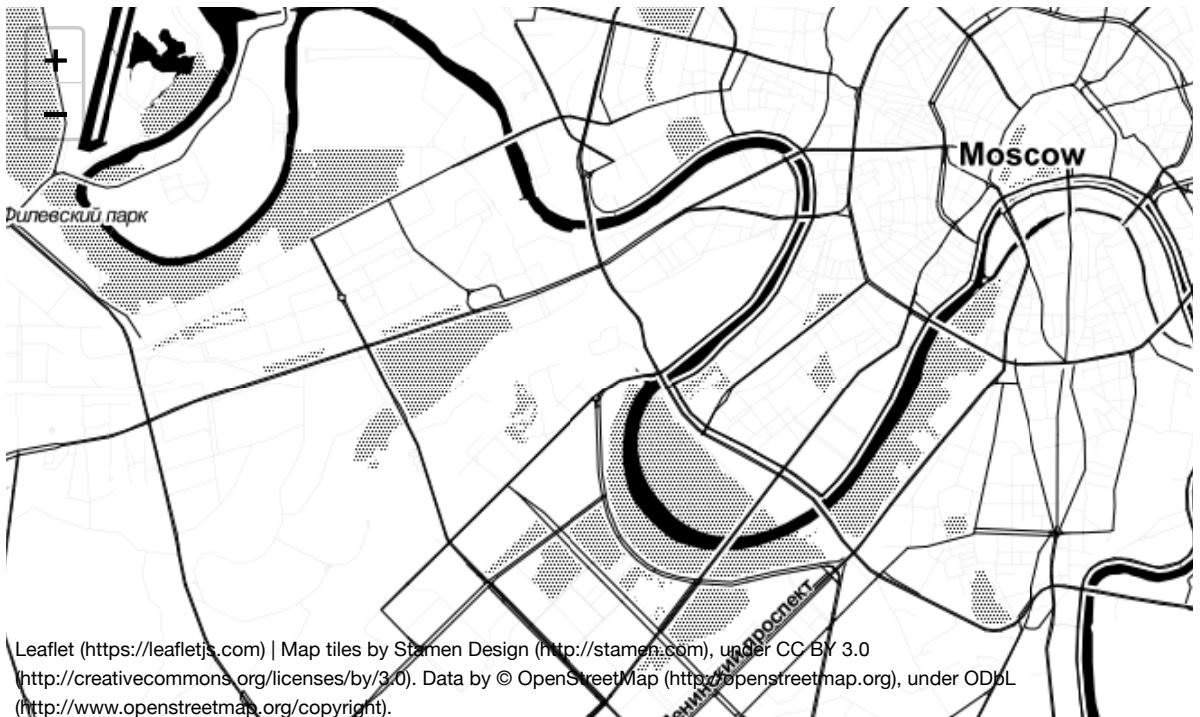
```
In [2]: warnings.filterwarnings("ignore")
```

```
In [3]: try:
    _create_unverified_https_context = ssl._create_unverified_context
except AttributeError:
    pass
else:
    ssl._create_default_https_context = _create_unverified_context
```

```
In [4]: m = folium.Map(location=[55.736026, 37.65244389999998],
    tiles='Stamen Toner', zoom_start=13)
```

```
m
```

```
Out[4]:
```



```
In [5]: m = folium.Map(location=[55.736026, 37.65244389999998],  
    tiles='Stamen Terrain', zoom_start=16)
```

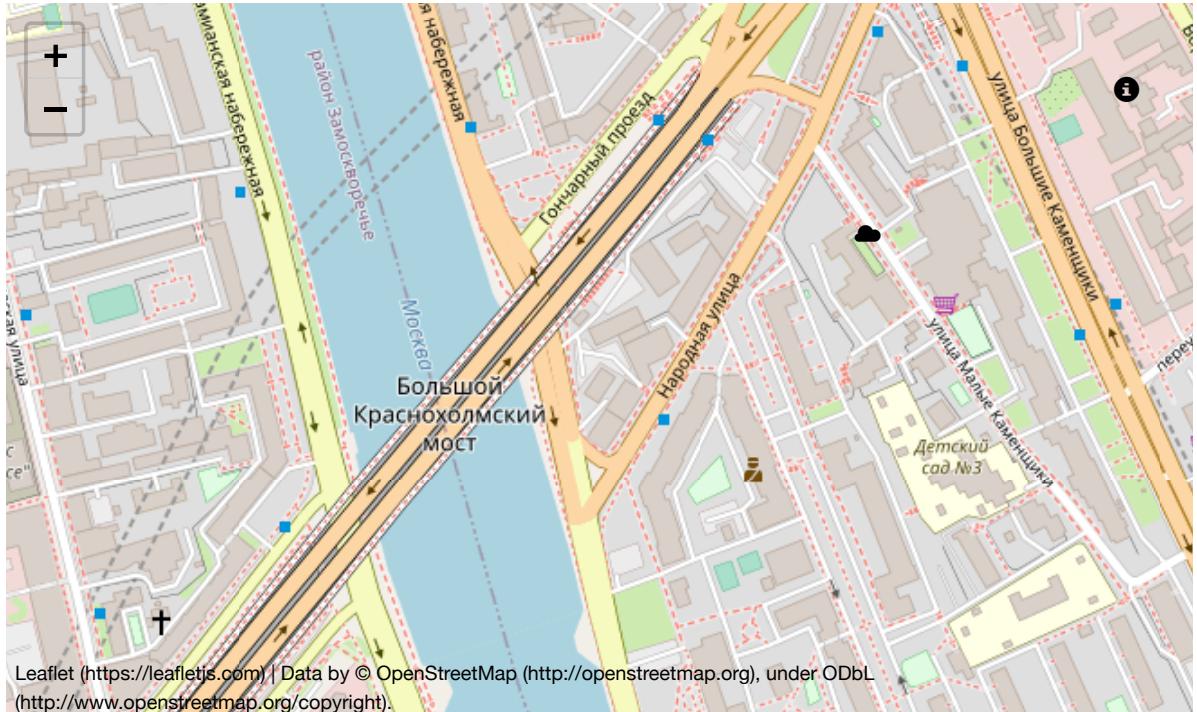
```
m
```

Out[5]:



```
In [6]: m = folium.Map(  
    location=[55.736026, 37.65244389999998],  
    zoom_start=16  
)  
  
folium.Marker(  
    location=[55.737748217579934, 37.65213131904601],  
    popup='School No: 498',  
    icon=folium.Icon(icon='cloud')  
) .add_to(m)  
  
folium.Marker(  
    location=[55.7387267076729, 37.65522122383118],  
    popup='College No:54',  
    icon=folium.Icon(color='green')  
) .add_to(m)  
  
folium.Marker(  
    location=[55.73720460137249, 37.657259702682495],  
    popup='Skylink',  
    icon=folium.Icon(color='red', icon='info-sign')  
) .add_to(m)  
  
m
```

Out[6]:



```
In [7]: m = folium.Map(
    location=[55.736026, 37.65244389999998],
    tiles='Stamen Toner',
    zoom_start=16
)

folium.Circle(
    radius=100,
    location=[55.737748217579934, 37.65213131904601],
    popup='School No: 498',
    color='crimson',
    fill=False,
).add_to(m)

folium.CircleMarker(
    location=[55.7387267076729, 37.65522122383118],
    radius=50,
    popup='College No:54',
    color='#3186cc',
    fill=True,
    fill_color='#3186cc'
).add_to(m)

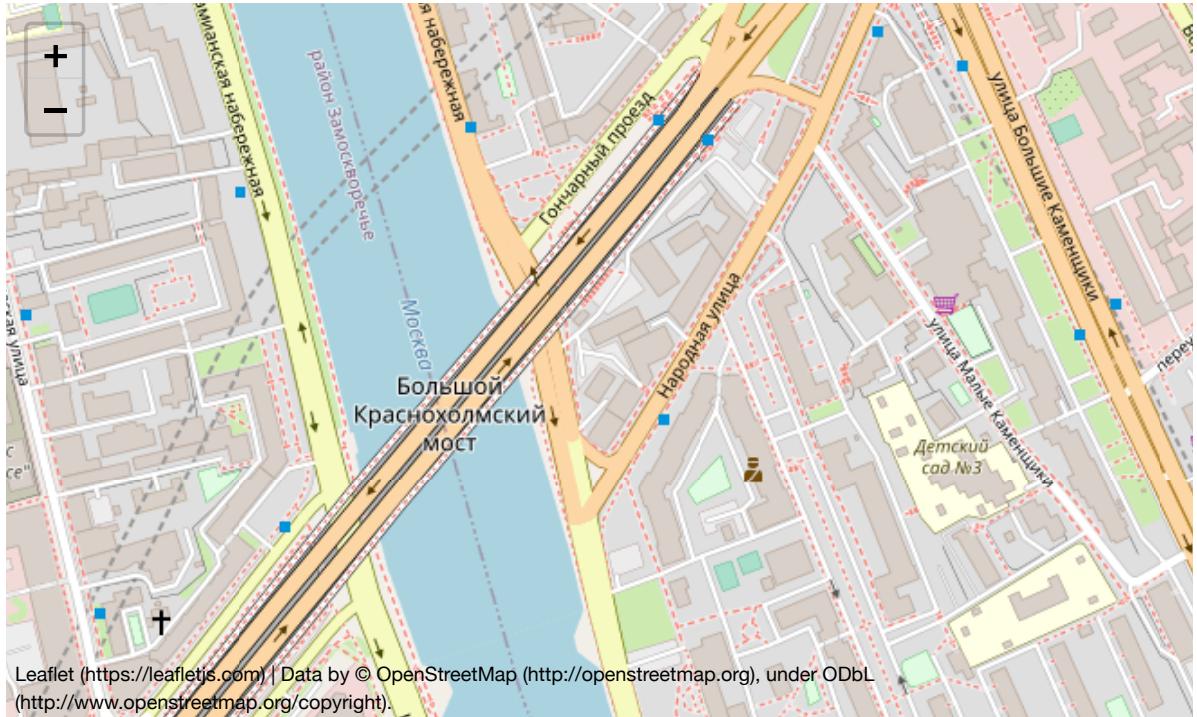
m
```

Out[7]:



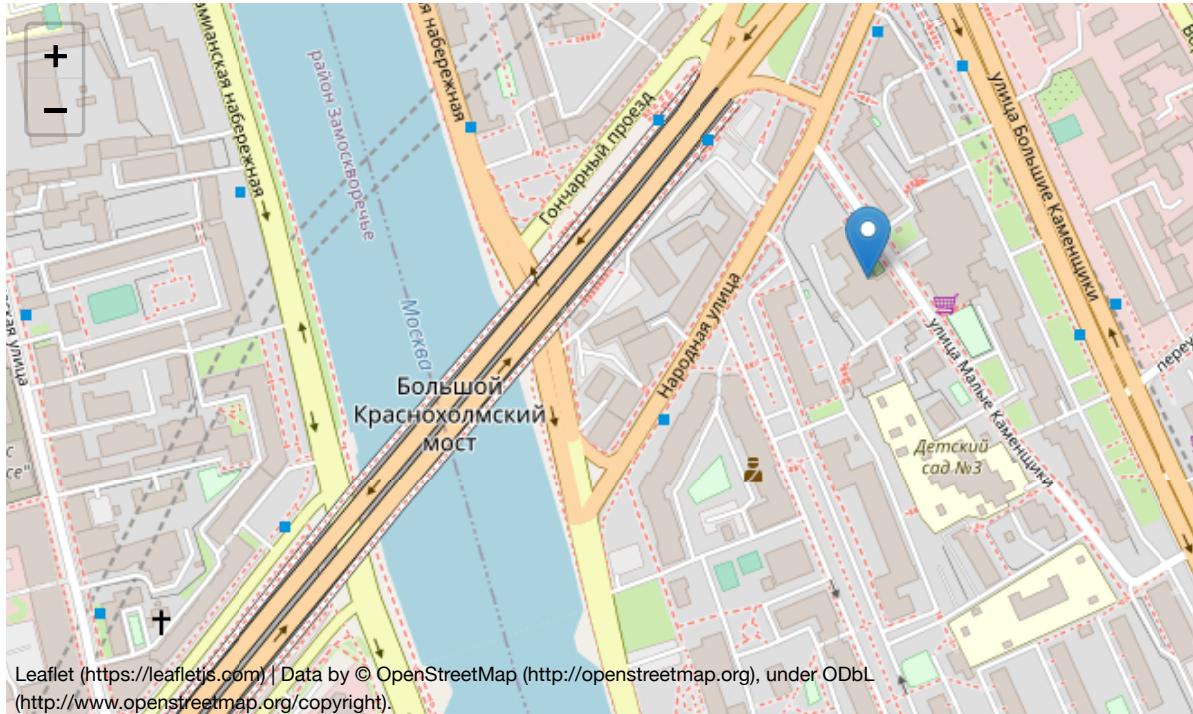
```
In [8]: m = folium.Map(  
    location=[55.736026, 37.65244389999998],  
    zoom_start=16  
)  
  
m.add_child(folium.LatLngPopup())  
  
m
```

Out[8]:



```
In [9]: m = folium.Map(  
    location=[55.736026, 37.65244389999998],  
    zoom_start=16  
)  
  
folium.Marker(  
    location=[55.737748217579934, 37.65213131904601],  
    popup='School No: 498'  
) .add_to(m)  
  
m.add_child(folium.ClickForMarker(popup='Taganskaya'))  
  
m
```

Out[9]:



```
In [10]: world_geo = "https://raw.githubusercontent.com/python-visualization/folium/master/examples/data/world-countries.json"

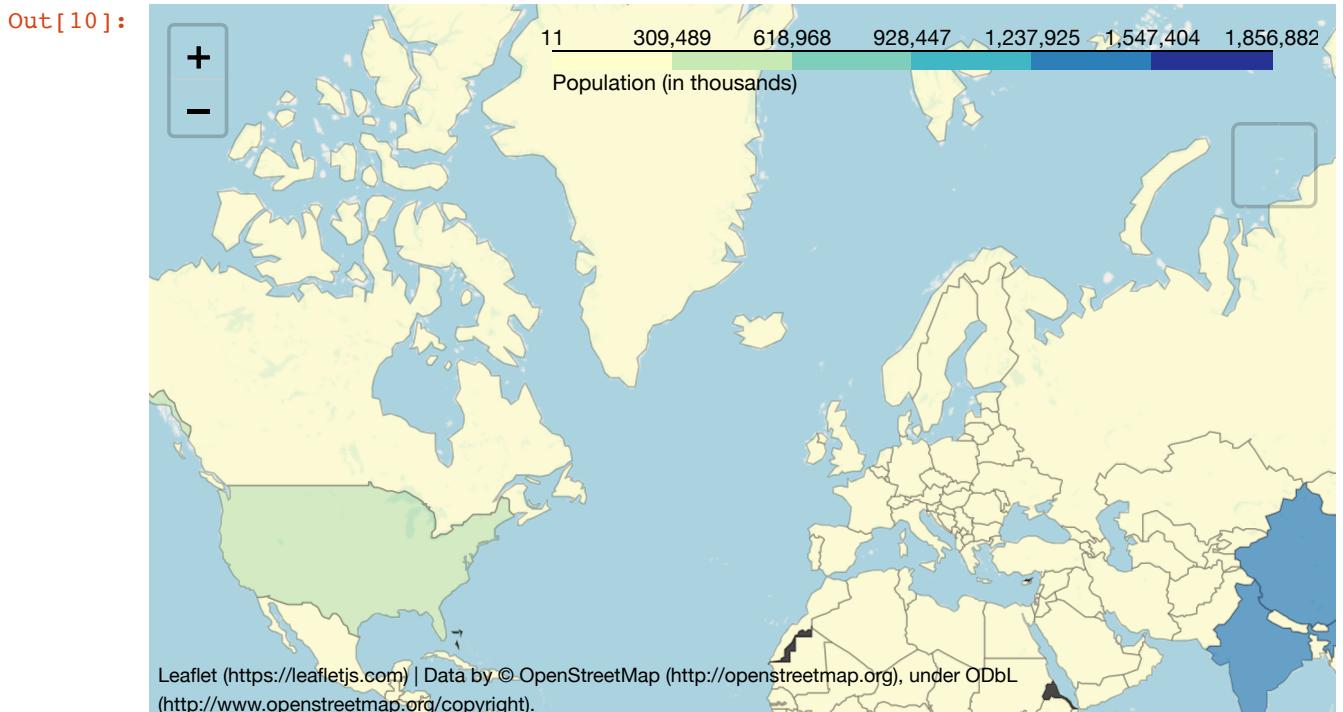
world_data = pd.read_excel("world_population.xls")

world_data['2020'] = world_data['2020'] / 1_000

m = folium.Map(location=[42, 35], zoom_start=1.5)

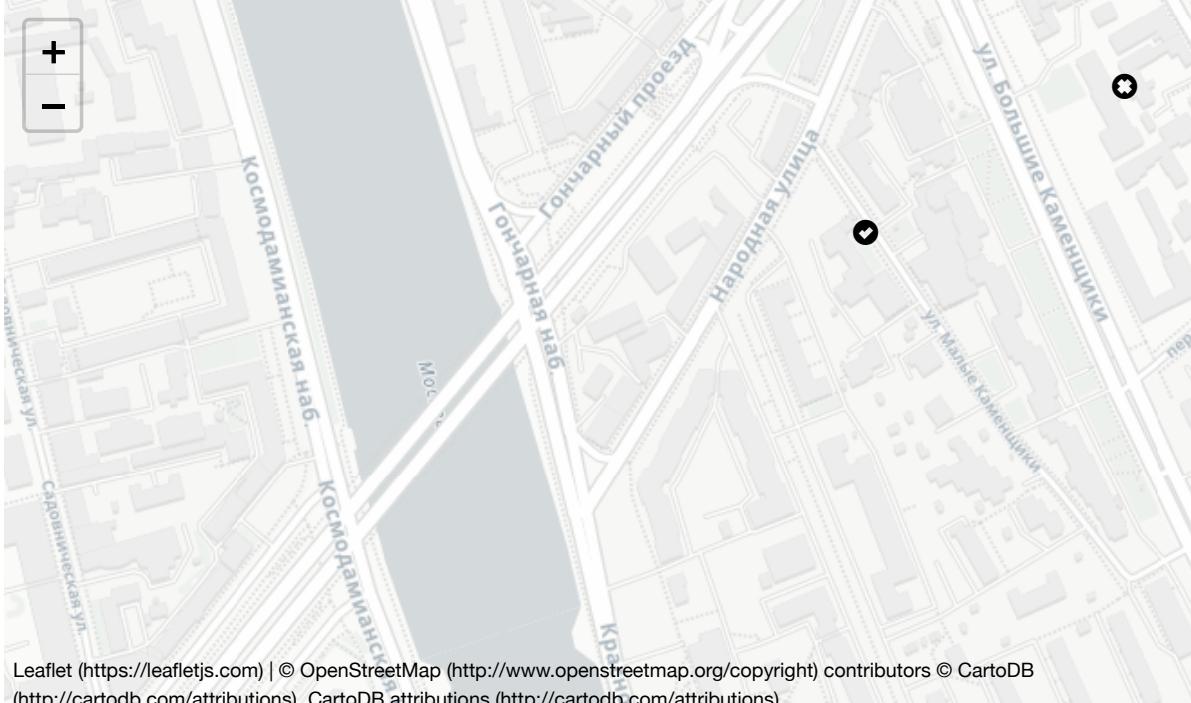
m.choropleth(
    geo_data=world_geo,
    name='choropleth',
    data=world_data,
    columns=['Country Name', '2020'],
    key_on='feature.properties.name',
    fill_color='YlGnBu',
    fill_opacity=0.7,
    line_opacity=0.2,
    legend_name='Population (in thousands)',
    smooth_factor=0,
)
folium.LayerControl().add_to(m)

m
```



```
In [11]: m = folium.Map(  
    location=[55.736026, 37.65244389999998],  
    tiles='Cartodb Positron',  
    zoom_start=16  
)  
  
folium.Marker(  
    location=[55.737748217579934, 37.65213131904601],  
    popup='School No: 498',  
    icon=folium.Icon(color='orange', icon='ok-sign')  
).add_to(m)  
  
folium.Marker(  
    location=[55.7387267076729, 37.65522122383118],  
    popup='College No:54',  
    icon=folium.Icon(color='darkgreen', icon='remove-sign')  
).add_to(m)  
  
folium.Marker(  
    location=[55.73720460137249, 37.657259702682495],  
    popup='Skylink',  
    icon=folium.Icon(color='darkpurple', icon='info-sign')  
).add_to(m)  
  
m
```

Out[11]:

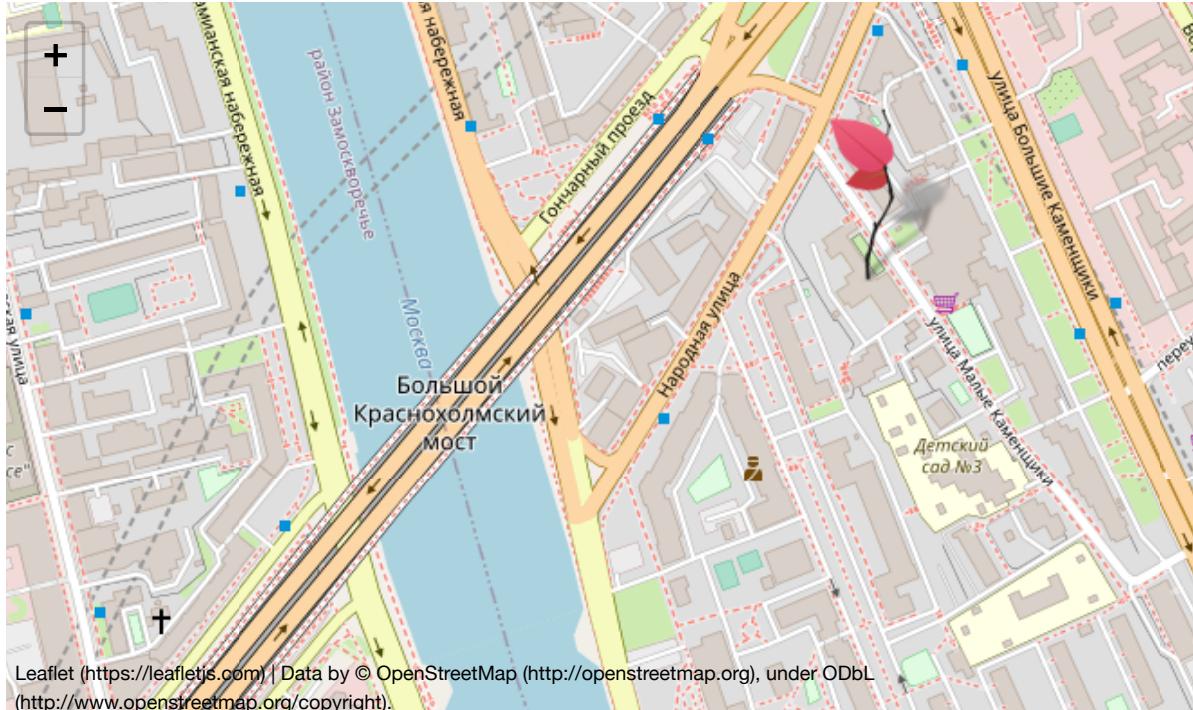


```
In [12]: m = folium.Map(
    location=[55.736026, 37.65244389999998],
    zoom_start=16
)

url = 'http://leafletjs.com/examples/custom-icons/{}'.format
icon_image = url('leaf-red.png')
shadow_image = url('leaf-shadow.png')

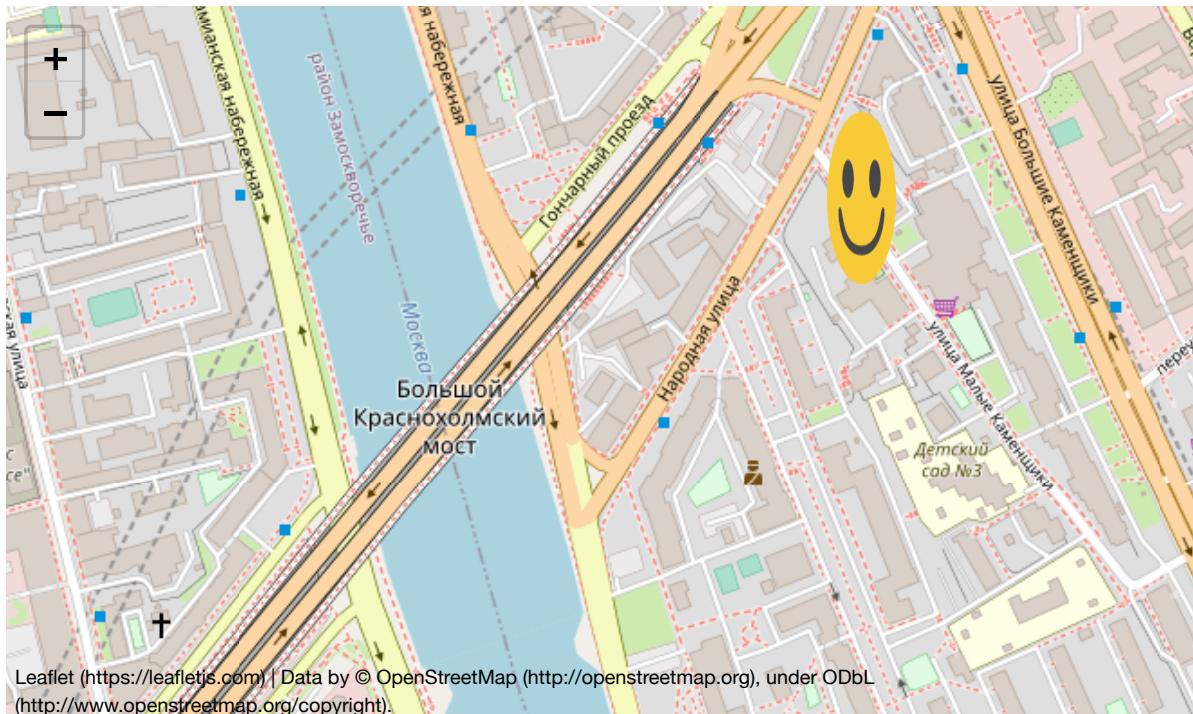
icon = CustomIcon(
    icon_image,
    icon_size=(38, 95),
    icon_anchor=(22, 94),
    shadow_image=shadow_image,
    shadow_size=(50, 64),
    shadow_anchor=(4, 62),
    popup_anchor=(-3, -76)
)
marker = folium.Marker(
    location=[55.737748217579934, 37.65213131904601],
    icon=icon,
    popup='School No: 498'
)
m.add_child(marker)
m
```

Out[12]:



```
In [13]: m = folium.Map(  
    location=[55.736026, 37.65244389999998],  
    zoom_start=16  
)  
  
pic = '/YOUR_PATH/{}'.format  
icon_image = pic('emoticon_smile.png')  
shadow_image = None  
  
icon = CustomIcon(  
    icon_image,  
    icon_size=(38, 95),  
    icon_anchor=(22, 94),  
    shadow_image=shadow_image,  
    shadow_size=(50, 64),  
    shadow_anchor=(4, 62),  
    popup_anchor=(-3, -76)  
)  
  
marker = folium.Marker(  
    location=[55.737748217579934, 37.65213131904601],  
    icon=icon,  
    popup='School No: 498'  
)  
  
m.add_child(marker)  
  
m
```

Out[13]:



```
In [14]: data = (np.random.normal(size=(100, 3)) *
               np.array([[1, 1, 1]]) +
               np.array([[48, 5, 1]])).tolist()

m = folium.Map([55.736026, 37.65244389999998], tiles='stamentoner', zoom_start=6)

HeatMap(data).add_to(m)

m
```

Out[14]:



```
In [15]: data = (np.random.normal(size=(100, 3)) *
               np.array([[1, 1, 1]]) +
               np.array([[48, 5, 1]]).tolist())

m = folium.Map([48., 5.], tiles='stamentoner', zoom_start=6)

HeatMap(data).add_to(m)

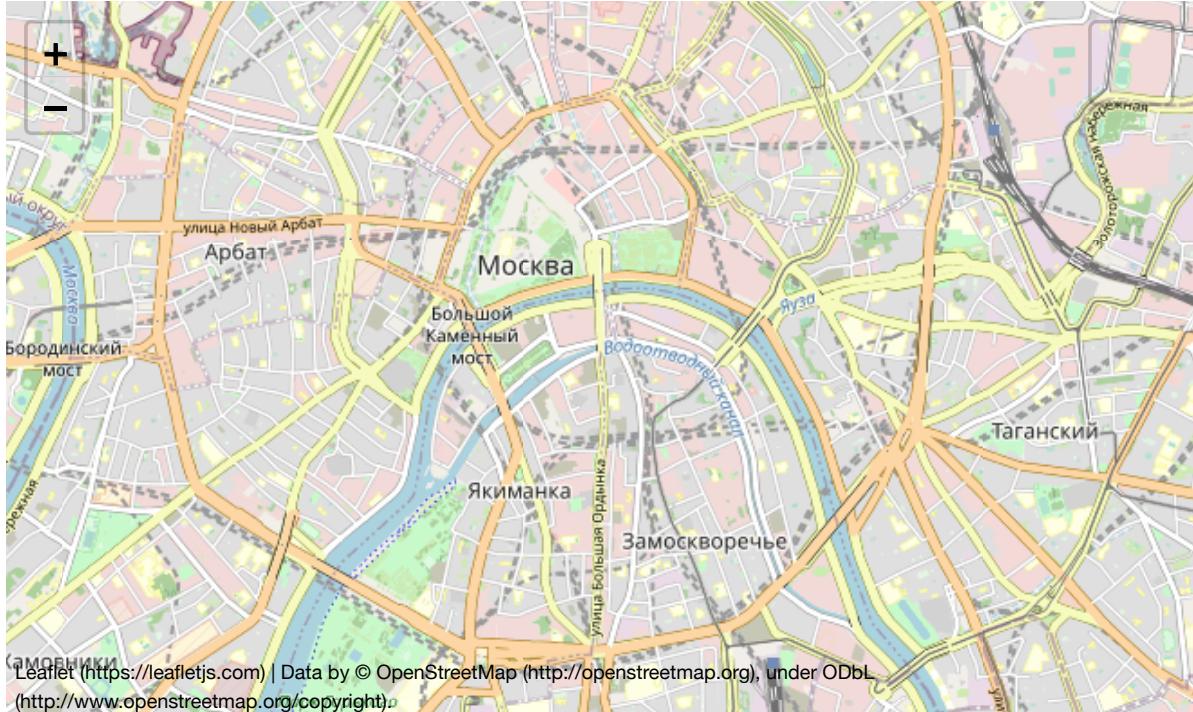
m
```

Out[15]:

The map displays a heatmap overlay on a grayscale background map of Europe, focusing on the British Isles and continental Europe. The heatmap is centered over France and Belgium, with colors indicating varying values or concentrations. Major cities are labeled, including London, Paris, Brussels, and Berlin. The English Channel and Bristol Channel are also labeled.

```
In [16]: m = folium.Map(location=[55.736026, 37.65244389999998],  
                     tiles=None, zoom_start=13)  
  
folium.TileLayer('OpenStreetMap').add_to(m)  
folium.TileLayer('Cartodb Positron').add_to(m)  
folium.TileLayer('cartodbdark_matter').add_to(m)  
folium.TileLayer('Mapbox Bright').add_to(m)  
folium.TileLayer('Mapbox Control Room').add_to(m)  
folium.TileLayer('stamentoner').add_to(m)  
folium.TileLayer('stamenterrain').add_to(m)  
folium.TileLayer('stamenwatercolor').add_to(m)  
  
m.add_child(folium.LayerControl())  
  
m
```

Out[16]:



```
In [17]: N = 100

multi_iter2 = {
    'x': np.random.uniform(size=(N,)),
    'y': np.random.uniform(size=(N,)),
}

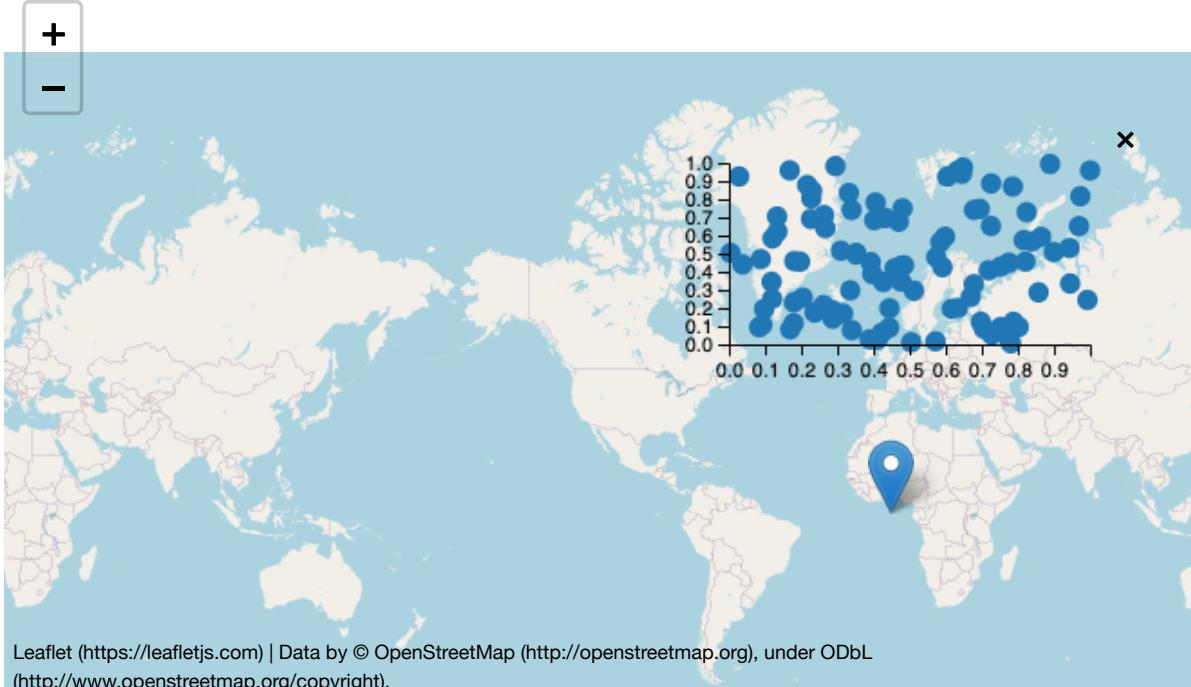
scatter = vincent.Scatter(multi_iter2, iter_idx='x', height=100, width=200)
data = json.loads(scatter.to_json())

m = folium.Map([0, 0], zoom_start=1)
mk = folium.features.Marker([0, 0])
p = folium.Popup('Hello')
v = folium.features.Vega(data, width='100%', height='100%')

mk.add_child(p)
p.add_child(v)
m.add_child(mk)

m
```

Out[17]:

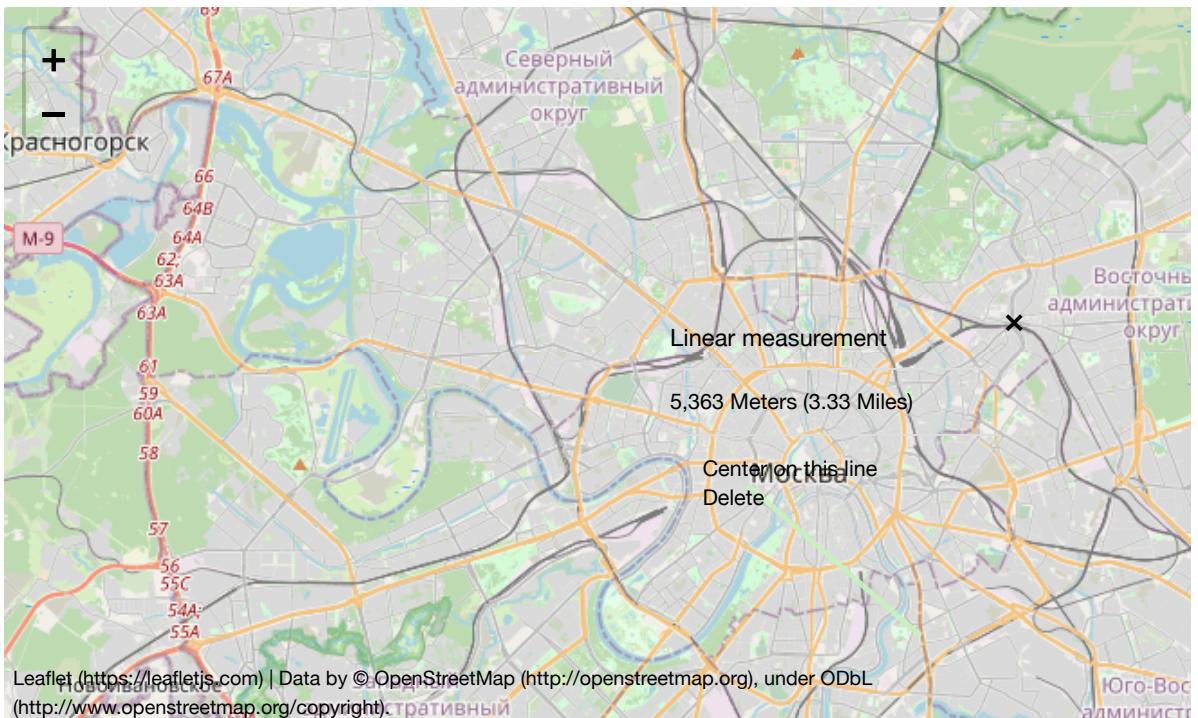


```
In [18]: m = folium.Map(location=[55.736026, 37.65244389999998], zoom_start = 11)

m.add_child(MeasureControl())

m
```

Out[18]:



```
In [19]: latRome, lonRome = 41.9028, 12.4964
```

```
m = folium.Map(location=[latRome, lonRome], tiles='Stamen Toner', width=750, height=500, zoom_start=13)
```

```
m
```

Out[19]:



```
In [20]: nom=Nominatim(scheme="http")
```

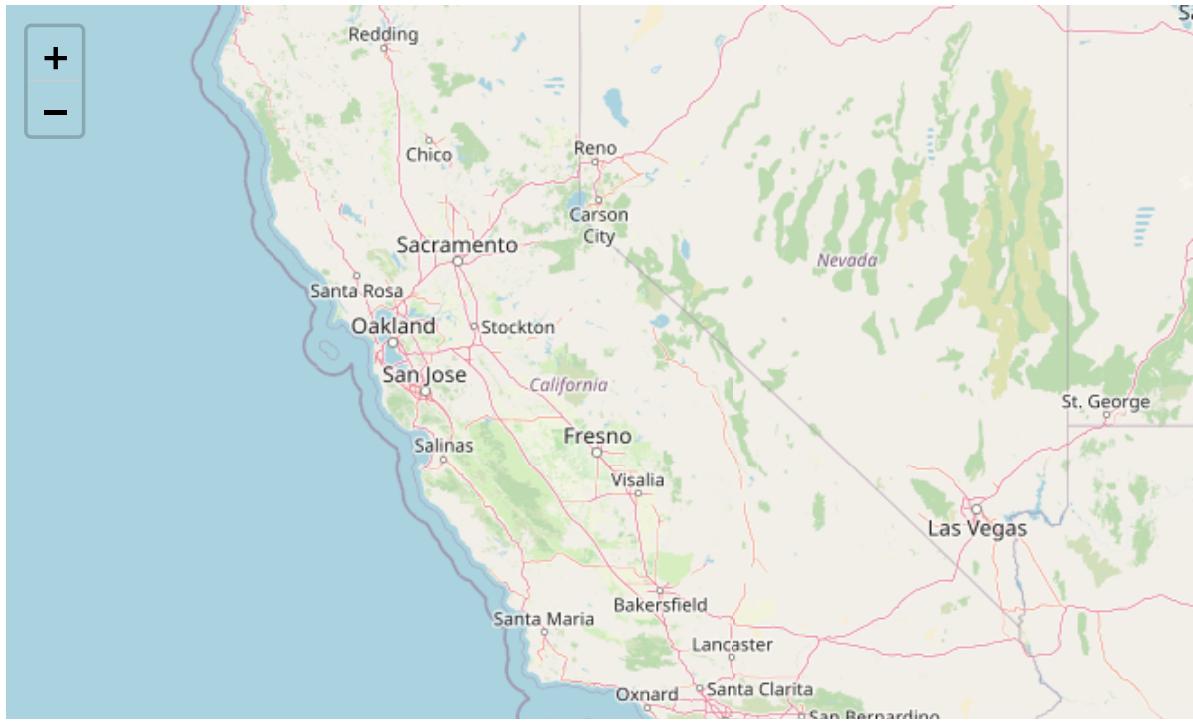
```
In [21]: california=nom.geocode("California")
print(california.longitude)
print(california.latitude)
```

```
-118.755997
36.7014631
```

```
In [22]: m = folium.Map(location=[california.latitude, california.longitude],
                     tiles='OpenStreetMap', width=750, height=500, zoom_start=6)
```

```
m
```

Out[22]:



```
In [24]: istanbul=nom.geocode("Istanbul")
```

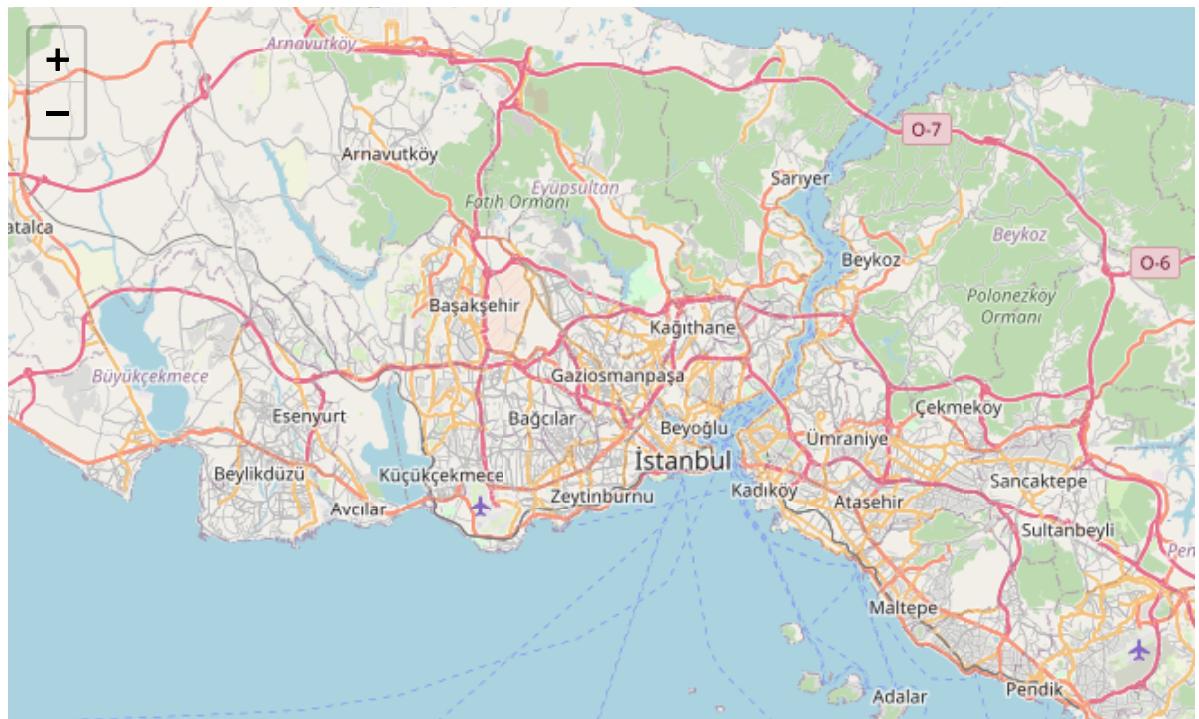
```
In [25]: print(istanbul.longitude)
print(istanbul.latitude)
```

```
28.9651646
41.0096334
```

```
In [26]: m = folium.Map(location=[istanbul.latitude, istanbul.longitude],  
                     tiles='OpenStreetMap', width=750, height=500, zoom_start=10)
```

```
m
```

Out[26]:



```
In [27]: lake_como=nom.geocode("Lake Como")

print(lake_como.longitude)
print(lake_como.latitude)

m = folium.Map(location=[lake_como.latitude, lake_como.longitude],
               tiles=None, width=750, height=500, zoom_start=10)

folium.TileLayer('OpenStreetMap').add_to(m)
folium.TileLayer('Stamen Terrain').add_to(m)
folium.TileLayer('Stamen Toner').add_to(m)
folium.TileLayer('Stamen Watercolor').add_to(m)
folium.TileLayer('CartoDB positron').add_to(m)
folium.TileLayer('CartoDB dark_matter').add_to(m)
folium.TileLayer('Mapbox Bright').add_to(m)
folium.TileLayer('Mapbox Control Room').add_to(m)

m.add_child(folium.LayerControl())

m
```

9.264881035005711
45.9917589

Out[27]:



```
In [28]: m = folium.Map(location=[latRome, lonRome], tiles='Stamen Toner', width=750, height=500, zoom_start=13)

lat1, lon1 = 41.899514, 12.476924
folium.Marker(
    location=[lat1, lon1],
    popup='Pantheon',
    icon=folium.Icon(icon='white')
).add_to(m)

lat2, lon2 = 41.890725, 12.492213
folium.Marker(
    location=[lat2, lon2],
    popup='Colosseum',
    icon=folium.Icon(icon_color='red', icon='white')
).add_to(m)

points=[(lat1, lon1), (lat2, lon2)]

folium.PolyLine(points, color="red", weight=2.5, opacity=1).add_to(m)

m
```

Out[28]:

