

VacationPy

Note

- Keep an eye on your API usage. Use <https://developers.google.com/maps/reporting/gmp-reporting> as reference for how to monitor your usage and billing.
- Instructions have been included for each segment. You do not have to follow them exactly, but they are included to help you think through the steps.

In [1]:

```
# Dependencies and Setup
import matplotlib.pyplot as plt
import pandas as pd
import numpy as np
import requests
import gmaps
import os
from pprint import pprint

# Import API key
from api_keys import g_key
gmaps.configure(api_key=g_key)
```

Store Part I results into DataFrame

- Load the csv exported in Part I to a DataFrame

In [22]:

```
city_data=pd.read_csv("City_Data_Output.csv")
city_data=city_data[["City","Id","country","lat","lng","Cloudiness","humidity","temperature","wind_speed"]]

len(city_data["City"])
```

Out[22]: 554

In [4]:

```
fig=gmaps.figure()
fig
```

Humidity Heatmap

- Configure gmaps.
- Use the Lat and Lng as locations and Humidity as the weight.
- Add Heatmap layer to map.

In [21]:

```
city_data.head()
```

Out[21]:

	City	Id	country	lat	lng	Cloudiness	humidity	temperature	wind_speed
21	Rosignol	3376223	GY	6.2833	-57.5333	0	85	78.10	6.06
201	Jalu	86049	LY	29.0331	21.5482	0	55	74.59	7.56
252	Ikalamavony	1064258	MG	-21.1500	46.5833	0	43	75.74	4.85
298	Caravelas	3466980	BR	-17.7125	-39.2481	0	85	70.43	5.97
358	Saint-Pierre	935214	RE	-21.3393	55.4781	0	69	76.91	5.75

In [23]:

```
city_data["humidity"].max()
```

Out[23]: 100

In [6]:

```
location=city_data[["lat","lng"]].astype(float)
weight_humidity=city_data["humidity"].astype(float)
```

In [25]:

```
location=city_data[["lat","lng"]].astype(float)
city_humidity=city_data["humidity"].astype(float)

heat_layer=gmaps.heatmap_layer(location,weights=weight_humidity,dissipating=False,
                                max_intensity=100,point_radius=2)
fig.add_layer(heat_layer)
fig
```

Create new DataFrame fitting weather criteria

- Narrow down the cities to fit weather conditions.
- Drop any rows will null values.

In [14]:

```
filt=((city_data["temperature"]>70)&
      (city_data["temperature"]<80)&
      (city_data["wind_speed"]<10)&
      (city_data["Cloudiness"]==0))

city_data=city_data.loc[filt,: ]
city_data.dropna()

city_data
```

Out[14]:

	City	Id	country	lat	lng	Cloudiness	humidity	temperature	wind_speed
21	Rosignol	3376223	GY	6.2833	-57.5333	0	85	78.10	6.06
201	Jalu	86049	LY	29.0331	21.5482	0	55	74.59	7.56
252	Ikalamavony	1064258	MG	-21.1500	46.5833	0	43	75.74	4.85
298	Caravelas	3466980	BR	-17.7125	-39.2481	0	85	70.43	5.97
358	Saint-Pierre	935214	RE	-21.3393	55.4781	0	69	76.91	5.75
379	Chifeng	2038067	CN	42.2683	118.9636	0	33	72.77	1.03
418	Tùkrah	88834	LY	32.5341	20.5791	0	66	77.29	7.83
428	Sirte	2210554	LY	31.2089	16.5887	0	65	75.00	8.12
440	Ziarat	1162094	PK	30.3823	67.7282	0	11	75.70	5.01
461	Talgar	1518518	KZ	43.3027	77.2395	0	13	78.96	4.47
480	Iquitos	3696183	PE	-3.7481	-73.2472	0	94	75.24	3.44
518	Siwah	347863	EG	29.2041	25.5195	0	64	75.52	6.96
537	Ampanihy	1078553	MG	-24.7000	44.7500	0	37	78.49	6.71

Hotel Map

- Store into variable named `hotel_df`.
- Add a "Hotel Name" column to the DataFrame.
- Set parameters to search for hotels with 5000 meters.
- Hit the Google Places API for each city's coordinates.
- Store the first Hotel result into the DataFrame.
- Plot markers on top of the heatmap.

In [15]:

```
hotel_df=city_data[["City","country","lat","lng"]]
hotel_df=hotel_df.reset_index(drop=True)
hotel_df["hotel name"]=" "

hotel_df
```

Out[15]:

	City	country	lat	lng	hotel name
0	Rosignol	GY	6.2833	-57.5333	
1	Jalu	LY	29.0331	21.5482	
2	Ikalamavony	MG	-21.1500	46.5833	
3	Caravelas	BR	-17.7125	-39.2481	
4	Saint-Pierre	RE	-21.3393	55.4781	
5	Chifeng	CN	42.2683	118.9636	
6	Tùkrah	LY	32.5341	20.5791	
7	Sirte	LY	31.2089	16.5887	
8	Ziarat	PK	30.3823	67.7282	
9	Talgar	KZ	43.3027	77.2395	
10	Iquitos	PE	-3.7481	-73.2472	
11	Siwah	EG	29.2041	25.5195	
12	Ampanihy	MG	-24.7000	44.7500	

In [16]:

```
for index,row in hotel_df.iterrows():
    try:
        lat=row["lat"]
        lng=row["lng"]
        location=f"{lat},{lng}"
        base_url="https://maps.googleapis.com/maps/api/place/nearbysearch/json"
        parameters={"location":location,"radius":5000,"keyword":"Hotel","key":g_key}
        repo=requests.get(base_url,params=parameters).json()

        hotel_df.loc[index,"hotel name"]=repo['results'][0]['name']

    except IndexError:

        print("data not found")
```

data not found

In [17]:

```
hotel_df
```

Out[17]:

	City	country	lat	lng	hotel name
0	Rosignol	GY	6.2833	-57.5333	Leisure Inn, Hotel Restaurant
1	Jalu	LY	29.0331	21.5482	Jalu Hotel
2	Ikalamavony	MG	-21.1500	46.5833	
3	Caravelas	BR	-17.7125	-39.2481	Pousada Liberdade
4	Saint-Pierre	RE	-21.3393	55.4781	Le Battant Des Lames
5	Chifeng	CN	42.2683	118.9636	Wanda Realm Chifeng
6	Tùkrah	LY	32.5341	20.5791	مضيف مرحبا للما ناك
7	Sirte	LY	31.2089	16.5887	Al- Waffaa Hotel
8	Ziarat	PK	30.3823	67.7282	Grand Hotel
9	Talgar	KZ	43.3027	77.2395	Alma Port
10	Iquitos	PE	-3.7481	-73.2472	Nativo Hotel
11	Siwah	EG	29.2041	25.5195	Dream Lodge Hotel
12	Ampanihy	MG	-24.7000	44.7500	Hotel Restaurant ANGORA

In [18]:

```
hotel_df["hotel name"].replace("",np.nan,inplace=True)

hotel_df.dropna(inplace=True)
hotel_df.rename(columns={"country":"Country",
                          "hotel name":"Hotel Name"},inplace=True)

hotel_df
```

Out[18]:

	City	Country	lat	lng	Hotel Name
0	Rosignol	GY	6.2833	-57.5333	Leisure Inn, Hotel Restaurant
1	Jalu	LY	29.0331	21.5482	Jalu Hotel
3	Caravelas	BR	-17.7125	-39.2481	Pousada Liberdade
4	Saint-Pierre	RE	-21.3393	55.4781	Le Battant Des Lames
5	Chifeng	CN	42.2683	118.9636	Wanda Realm Chifeng
6	Tùkrah	LY	32.5341	20.5791	مضيف مرحبا للما ناك
7	Sirte	LY	31.2089	16.5887	Al- Waffaa Hotel
8	Ziarat	PK	30.3823	67.7282	Grand Hotel
9	Talgar	KZ	43.3027	77.2395	Alma Port
10	Iquitos	PE	-3.7481	-73.2472	Nativo Hotel
11	Siwah	EG	29.2041	25.5195	Dream Lodge Hotel
12	Ampanihy	MG	-24.7000	44.7500	Hotel Restaurant ANGORA

In [19]:

```
# NOTE: Do not change any of the code in this cell

# Using the template add the hotel marks to the heatmap
info_box_template = """
<dl>
<dt>Name</dt><dd>{Hotel Name}</dd>
<dt>City</dt><dd>{City}</dd>
<dt>Country</dt><dd>{Country}</dd>
</dl>
"""

# Store the DataFrame Row
# NOTE: be sure to update with your DataFrame name
hotel_info = [info_box_template.format(**row) for index, row in hotel_df.iterrows()]
locations = hotel_df[["lat", "lng"]]
```

In [26]:

```
# Add marker layer ontop of heat map
markers=gmaps.marker_layer(locations,info_box_content=hotel_info)

fig.add_layer(markers)
fig.add_layer(heat_layer)

# Display figure
fig
```

In []: