WeatherPy.ipynb 234 KB

WeatherPy

Note

- 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 time

# Import API key
from api_keys import api_key

# Incorporated citipy to determine city based on latitude and longitude
from citipy import citipy

# Output File (CSV)
output_data_file = "output_data/cities.csv"

# Range of latitudes and longitudes
lat_range = (-90, 90)
lng_range = (-180, 180)
```

Generate Cities List

In [2]:

```
# List for holding lat_lngs and cities
lat_lngs = []
cities = []

# Create a set of random lat and lng combinations
lats = np.random.uniform(low=-90.000, high=90.000, size=1500)
lngs = np.random.uniform(low=-180.000, high=180.000, size=1500)
lat_lngs = zip(lats, lngs)

# Identify nearest city for each lat, lng combination
for lat_lng in lat_lngs:
```

```
    city = citipy.nearest_city(lat_lng[0], lat_lng[1]).city_name

    # If the city is unique, then add it to a our cities list
    if city not in cities:
        cities.append(city)

# Print the city count to confirm sufficient count
len(cities)
```

Out [2]:

```
616
```

Perform API Calls

- Perform a weather check on each city using a series of successive API calls.
- Include a print log of each city as it'sbeing processed (with the city number and city name).

In [3]:

Out [3]:

```
Beginning Data Retrieval
-----------------------------
Processing Record 1 of Set 1 | lompoc
Processing Record 2 of Set 1 | klaksvik
Processing Record 3 of Set 1 | bisignano
Processing Record 4 of Set 1 | bengkulu
City not found. Skipping...
Processing Record 5 of Set 1 | hilo
Processing Record 6 of Set 1 | rikitea
Processing Record 7 of Set 1 | ahipara
Processing Record 8 of Set 1 | lebu
Processing Record 9 of Set 1 | hamilton
Processing Record 10 of Set 1 | castro
Processing Record 11 of Set 1 | ashland
Processing Record 12 of Set 1 | ushuaia
Processing Record 13 of Set 1 | haines junction
Processing Record 14 of Set 1 | punta arenas
Processing Record 15 of Set 1 | salalah
Processing Record 16 of Set 1 | port macquarie
Processing Record 17 of Set 1 | mataura
Processing Record 18 of Set 1 | saint-philippe
Processing Record 19 of Set 1 | kaitangata
Processing Record 20 of Set 1 | souillac
Processing Record 21 of Set 1 | srednekolymsk
Processing Record 22 of Set 1 | busselton
Processing Record 23 of Set 1 | severo-kurilsk
Processing Record 24 of Set 1 | belushya guba
City not found. Skipping...
Processing Record 25 of Set 1 | ivaipora
City not found. Skipping...
Processing Record 26 of Set 1 | cape town
Processing Record 27 of Set 1 | ambilobe
```

```
Processing Record 38 of Set 12 | la ronge
Processing Record 39 of Set 12 | natal
Processing Record 40 of Set 12 | nevsehir
Processing Record 41 of Set 12 | turayf
Processing Record 42 of Set 12 | temiscaming
Processing Record 43 of Set 12 | gardan diwal
City not found. Skipping...
Processing Record 44 of Set 12 | kupang
Processing Record 45 of Set 12 | port-cartier
Processing Record 46 of Set 12 | storm lake
Processing Record 47 of Set 12 | manokwari
Processing Record 48 of Set 12 | julich
Processing Record 49 of Set 12 | makung
City not found. Skipping...
Processing Record 0 of Set 13 | viedma
Processing Record 1 of Set 13 | dolbeau
City not found. Skipping...
Processing Record 2 of Set 13 | sarkand
Processing Record 3 of Set 13 | jhang
Processing Record 4 of Set 13 | naze
Processing Record 5 of Set 13 | zory
Processing Record 6 of Set 13 | labuan
Processing Record 7 of Set 13 | luwuk
Processing Record 8 of Set 13 | sao felix do xingu
Processing Record 9 of Set 13 | fonte boa
Processing Record 10 of Set 13 | mahibadhoo
Processing Record 11 of Set 13 | loukhi
Processing Record 12 of Set 13 | mount isa
Processing Record 13 of Set 13 | kargasok
Processing Record 14 of Set 13 | mandera
Processing Record 15 of Set 13 | praya
----------------------------
Data Retrieval Complete
----------------------------
```

Convert Raw Data to DataFrame

- Export the city data into a .csv.
- Display the DataFrame

In [4]:

Out [4]:

```
City          547
Cloudiness    547
Country       547
Date          547
Humidity      547
Lat           547
Lng           547
Max Temp      547

Wind Speed    547
```

```
Wind Speed    547
dtype: int64
```

In [5]:

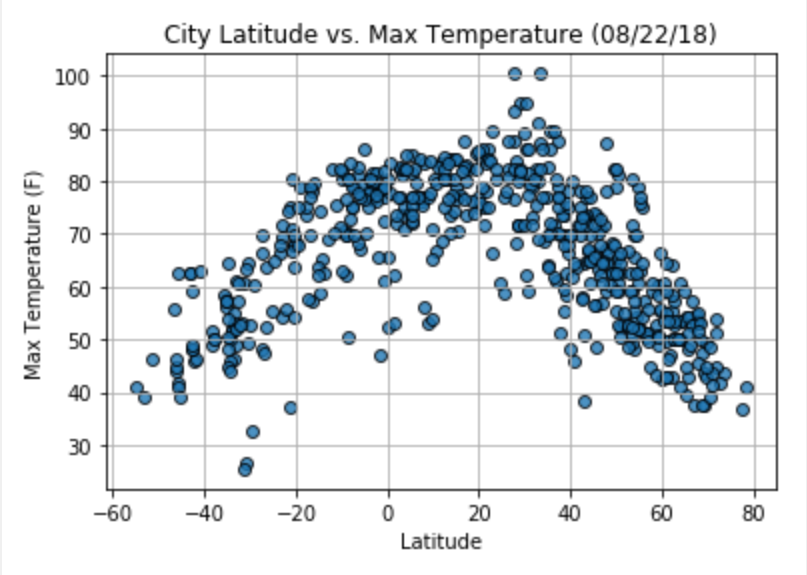
	City	Cloudiness	Country	Date	Humidity	Lat	Lng	Max Temp	Wind Speed
0	lompoc	1	US	1534984500	44	34.64	-120.46	77.00	11.41
1	klaksvik	92	FO	1534983600	100	62.23	-6.59	50.00	13.87
2	bisignano	0	IT	1534981800	88	39.50	16.27	66.20	5.82
3	hilo	90	US	1534984860	90	19.71	-155.08	77.00	8.05
4	rikitea	8	PF	1534986579	100	-23.12	-134.97	69.58	19.71

Plotting the Data

- Use proper labeling of the plots using plot titles (including date of analysis) and axes labels.
- Save the plotted figures as .pngs.

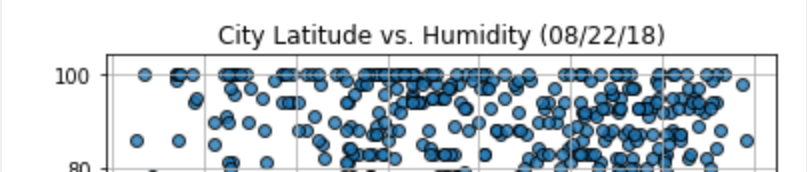
Latitude vs. Temperature Plot

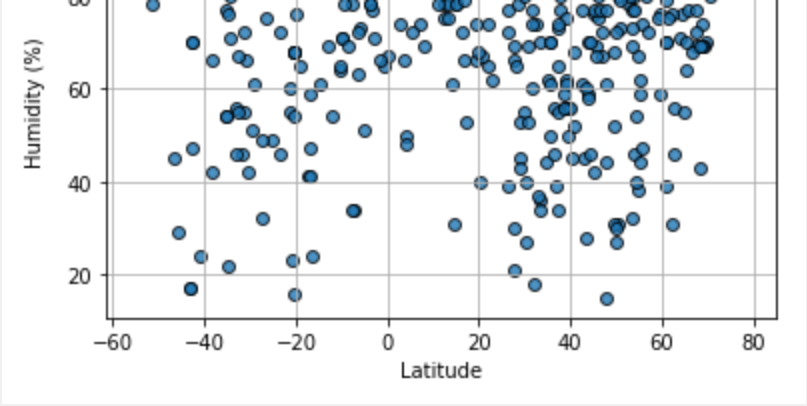
In [6]:



Latitude vs. Humidity Plot

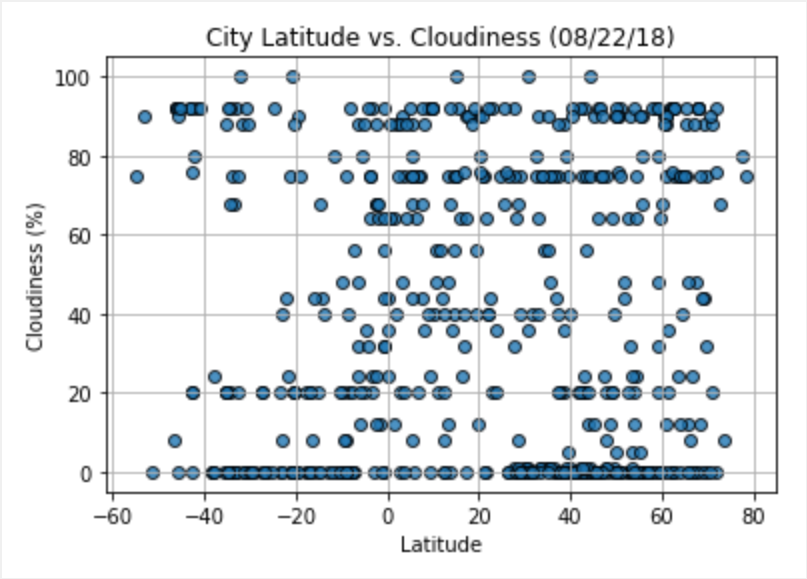
In [7]:





Latitude vs. Cloudiness Plot

In [8]:



Latitude vs. Wind Speed Plot

In [9]: