

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 json
import os

# 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 our cities list
    if city not in cities:
        cities.append(city)

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

Out[2]: 620

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's being processed (with the city number and city name).

```

In [21]: # Save config information.
url = "http://api.openweathermap.org/data/2.5/weather?"
units = "imperial"

# Build partial query URL
query_url = f"{url}appid={api_key}&units={units}&q="
print(query_url)

# set up lists to hold reponse info

city_name = []
cloudiness = []
country = []
date = []
humidity = []
lat= []
lon = []
temp_max = []
wind_speed = []

counter = 0

for num,city in enumerate(cities, start=0):

    #print("counter:." , counter)
    if (counter > 49 ):
        counter=0
    else:
        counter += 1

#    print("Processing Record "+ str(counter) +" of Set "+ str((num // 50)+1)
#    + " |",city)
    responseCode = requests.get(query_url + city)
    if(responseCode.status_code ==200):
        response = requests.get(query_url + city).json()
        temp_max.append(response['main']['temp_max'])
        lat.append(response['coord']['lat'])
        lon.append(response['coord']['lon'])
        wind_speed.append(response['wind']['speed'])
        country.append(response['sys']['country'])
        humidity.append(response['main']['humidity'])
        cloudiness.append(response['clouds']['all'])
        date.append(response['dt'])
        city_name.append(response['name'])
        print("Processing Record "+ str(counter) +" of Set "+ str((num //
50)+1)+ " |",city)
    if(responseCode.status_code ==404):
        print("City not found. Skipping..")

```

<http://api.openweathermap.org/data/2.5/weather?appid=acb3a5439ddde8c581b7059f3de63dae&units=imperial&q=>

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Processing Record 1 of Set 1 | tura
Processing Record 2 of Set 1 | isla mujeres
Processing Record 3 of Set 1 | guerrero negro
Processing Record 4 of Set 1 | havosund
Processing Record 5 of Set 1 | busselton
Processing Record 6 of Set 1 | cape town
Processing Record 7 of Set 1 | ketchikan
Processing Record 8 of Set 1 | bilma
Processing Record 9 of Set 1 | shimoda
Processing Record 10 of Set 1 | zhanaozen
Processing Record 11 of Set 1 | stepnogorsk
Processing Record 12 of Set 1 | ushuaia
Processing Record 13 of Set 1 | yellowknife
Processing Record 14 of Set 1 | saint-philippe
Processing Record 15 of Set 1 | nanortalik
Processing Record 16 of Set 1 | hermanus
Processing Record 17 of Set 1 | saldanha
Processing Record 18 of Set 1 | punta arenas
Processing Record 19 of Set 1 | bredasdorp
Processing Record 20 of Set 1 | comodoro rivadavia
Processing Record 21 of Set 1 | mataura
City not found. Skipping..
Processing Record 23 of Set 1 | liberty
Processing Record 24 of Set 1 | hilo
City not found. Skipping..
Processing Record 26 of Set 1 | macusani
Processing Record 27 of Set 1 | barrow
Processing Record 28 of Set 1 | te anau
Processing Record 29 of Set 1 | soe
Processing Record 30 of Set 1 | luwuk
Processing Record 31 of Set 1 | bluff
Processing Record 32 of Set 1 | dukat
Processing Record 33 of Set 1 | airai
City not found. Skipping..
Processing Record 35 of Set 1 | aksarayskiy
Processing Record 36 of Set 1 | poum
Processing Record 37 of Set 1 | omsukchan
Processing Record 38 of Set 1 | atuona
Processing Record 39 of Set 1 | rikitea
Processing Record 40 of Set 1 | tiksi
Processing Record 41 of Set 1 | jamestown
Processing Record 42 of Set 1 | kapaa
Processing Record 43 of Set 1 | port alfred
Processing Record 44 of Set 1 | sri aman
Processing Record 45 of Set 1 | flinders
Processing Record 46 of Set 1 | port elizabeth
Processing Record 47 of Set 1 | college
Processing Record 48 of Set 1 | albany
Processing Record 49 of Set 1 | beloha
Processing Record 50 of Set 1 | meadow lake
Processing Record 1 of Set 2 | paddhari
Processing Record 2 of Set 2 | hithadhoo
Processing Record 3 of Set 2 | tarrafal
Processing Record 4 of Set 2 | atrauli
Processing Record 5 of Set 2 | mollendo
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Processing Record 6 of Set 2 | byron bay
Processing Record 7 of Set 2 | qaanaaq
Processing Record 8 of Set 2 | batagay
Processing Record 9 of Set 2 | caceres
Processing Record 10 of Set 2 | aykhal
Processing Record 11 of Set 2 | impfondo
Processing Record 12 of Set 2 | varkkallai
Processing Record 13 of Set 2 | ajdabiya
Processing Record 14 of Set 2 | basoda
Processing Record 15 of Set 2 | tasiilaq
Processing Record 16 of Set 2 | tuatapere
City not found. Skipping..
Processing Record 18 of Set 2 | inhambane
Processing Record 19 of Set 2 | simbahan
Processing Record 20 of Set 2 | sitka
Processing Record 21 of Set 2 | coquimbo
Processing Record 22 of Set 2 | ironton
Processing Record 23 of Set 2 | mar del plata
Processing Record 24 of Set 2 | bundaberg
Processing Record 25 of Set 2 | sedalia
Processing Record 26 of Set 2 | yendi
City not found. Skipping..
Processing Record 28 of Set 2 | masunga
Processing Record 29 of Set 2 | celestun
Processing Record 30 of Set 2 | georgetown
Processing Record 31 of Set 2 | ucluelet
Processing Record 32 of Set 2 | ponta do sol
Processing Record 33 of Set 2 | roma
Processing Record 34 of Set 2 | honningsvag
City not found. Skipping..
Processing Record 36 of Set 2 | anadyr
Processing Record 37 of Set 2 | el tocuyo
Processing Record 38 of Set 2 | dikson
Processing Record 39 of Set 2 | bolobo
Processing Record 40 of Set 2 | misratah
Processing Record 41 of Set 2 | hamilton
Processing Record 42 of Set 2 | raudeberg
Processing Record 43 of Set 2 | erzin
Processing Record 44 of Set 2 | manado
Processing Record 45 of Set 2 | wanning
Processing Record 46 of Set 2 | narsaq
Processing Record 47 of Set 2 | kadoma
Processing Record 48 of Set 2 | nchelenge
Processing Record 49 of Set 2 | lazaro cardenas
Processing Record 50 of Set 3 | quatre cocos
Processing Record 1 of Set 3 | brae
Processing Record 2 of Set 3 | yulara
City not found. Skipping..
Processing Record 4 of Set 3 | ribeira grande
Processing Record 5 of Set 3 | arraial do cabo
Processing Record 6 of Set 3 | puerto ayora
Processing Record 7 of Set 3 | wasilla
Processing Record 8 of Set 3 | luderitz
Processing Record 9 of Set 3 | vestmannaeyjar
Processing Record 10 of Set 3 | codrington
Processing Record 11 of Set 3 | deputatskiy
Processing Record 12 of Set 3 | indramayu
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Processing Record 13 of Set 3 | broome
Processing Record 14 of Set 3 | luzhou
Processing Record 15 of Set 3 | hobart
Processing Record 16 of Set 3 | copiapo
Processing Record 17 of Set 3 | kilindoni
Processing Record 18 of Set 3 | rawson
Processing Record 19 of Set 3 | constitucion
Processing Record 20 of Set 3 | geraldton
Processing Record 21 of Set 3 | lashio
Processing Record 22 of Set 3 | damietta
Processing Record 23 of Set 3 | lodwar
City not found. Skipping..
Processing Record 25 of Set 3 | altamont
Processing Record 26 of Set 3 | saquarema
Processing Record 27 of Set 3 | dingle
Processing Record 28 of Set 3 | talnakh
Processing Record 29 of Set 3 | koumac
City not found. Skipping..
Processing Record 31 of Set 3 | fortuna
Processing Record 32 of Set 3 | castro
Processing Record 33 of Set 3 | verkhnevilyuysk
Processing Record 34 of Set 3 | gat
Processing Record 35 of Set 3 | umm kaddadah
Processing Record 36 of Set 3 | zabid
City not found. Skipping..
Processing Record 38 of Set 3 | sapulpa
City not found. Skipping..
Processing Record 40 of Set 3 | divo
Processing Record 41 of Set 3 | sao joao do paraíso
Processing Record 42 of Set 3 | nyurba
Processing Record 43 of Set 3 | chuy
Processing Record 44 of Set 3 | kirakira
Processing Record 45 of Set 3 | cabo san lucas
City not found. Skipping..
City not found. Skipping..
Processing Record 48 of Set 3 | ishigaki
Processing Record 49 of Set 4 | vaini
Processing Record 50 of Set 4 | sibolga
Processing Record 1 of Set 4 | sungairaya
Processing Record 2 of Set 4 | marystown
Processing Record 3 of Set 4 | takoradi
Processing Record 4 of Set 4 | canutama
Processing Record 5 of Set 4 | magdagachi
Processing Record 6 of Set 4 | kaitangata
Processing Record 7 of Set 4 | banda aceh
Processing Record 8 of Set 4 | chapais
Processing Record 9 of Set 4 | pacific grove
Processing Record 10 of Set 4 | khatanga
Processing Record 11 of Set 4 | thinadhoo
Processing Record 12 of Set 4 | carnarvon
Processing Record 13 of Set 4 | atar
Processing Record 14 of Set 4 | kieta
City not found. Skipping..
Processing Record 16 of Set 4 | bonga
Processing Record 17 of Set 4 | zabol
Processing Record 18 of Set 4 | antipovka
Processing Record 19 of Set 4 | sorland

Processing Record 20 of Set 4 | thompson
Processing Record 21 of Set 4 | arinos
Processing Record 22 of Set 4 | qaqortoq
Processing Record 23 of Set 4 | lebu
Processing Record 24 of Set 4 | smidovich
Processing Record 25 of Set 4 | assiniboia
Processing Record 26 of Set 4 | rio grande
City not found. Skipping..
Processing Record 28 of Set 4 | tuktoyaktuk
City not found. Skipping..
City not found. Skipping..
Processing Record 31 of Set 4 | berlevag
Processing Record 32 of Set 4 | okhotsk
Processing Record 33 of Set 4 | burnie
Processing Record 34 of Set 4 | skibbereen
Processing Record 35 of Set 4 | baherden
Processing Record 36 of Set 4 | amapa
Processing Record 37 of Set 4 | portland
City not found. Skipping..
Processing Record 39 of Set 4 | itapuranga
Processing Record 40 of Set 4 | new norfolk
City not found. Skipping..
Processing Record 42 of Set 4 | luangwa
Processing Record 43 of Set 4 | samarai
Processing Record 44 of Set 4 | cherskiy
Processing Record 45 of Set 4 | lorengau
City not found. Skipping..
Processing Record 47 of Set 4 | faanui
City not found. Skipping..
Processing Record 49 of Set 5 | victoria
Processing Record 50 of Set 5 | christchurch
Processing Record 1 of Set 5 | titusville
Processing Record 2 of Set 5 | klaksvik
City not found. Skipping..
Processing Record 4 of Set 5 | vila velha
Processing Record 5 of Set 5 | norman wells
City not found. Skipping..
Processing Record 7 of Set 5 | longyearbyen
Processing Record 8 of Set 5 | katsuura
Processing Record 9 of Set 5 | mahebourg
Processing Record 10 of Set 5 | walvis bay
Processing Record 11 of Set 5 | san lorenzo
Processing Record 12 of Set 5 | cidreira
Processing Record 13 of Set 5 | udachnyy
Processing Record 14 of Set 5 | saint george
Processing Record 15 of Set 5 | ilulissat
City not found. Skipping..
Processing Record 17 of Set 5 | vila franca do campo
Processing Record 18 of Set 5 | ostrovnoy
Processing Record 19 of Set 5 | panama city
Processing Record 20 of Set 5 | japura
Processing Record 21 of Set 5 | islamkot
Processing Record 22 of Set 5 | saint anthony
Processing Record 23 of Set 5 | mitu
Processing Record 24 of Set 5 | atambua
Processing Record 25 of Set 5 | hasaki
Processing Record 26 of Set 5 | ngunguru

Processing Record 27 of Set 5 | przasnysz
Processing Record 28 of Set 5 | bagenalstown
Processing Record 29 of Set 5 | orumiyeh
Processing Record 30 of Set 5 | egvekinot
Processing Record 31 of Set 5 | kungurtug
Processing Record 32 of Set 5 | akdepe
Processing Record 33 of Set 5 | port-cartier
Processing Record 34 of Set 5 | tateyama
Processing Record 35 of Set 5 | ahipara
City not found. Skipping..
City not found. Skipping..
Processing Record 38 of Set 5 | kidal
Processing Record 39 of Set 5 | duku
Processing Record 40 of Set 5 | dodge city
Processing Record 41 of Set 5 | leningradskiy
Processing Record 42 of Set 5 | mogzon
Processing Record 43 of Set 5 | viedma
Processing Record 44 of Set 5 | faya
City not found. Skipping..
City not found. Skipping..
Processing Record 47 of Set 6 | montevideo
Processing Record 48 of Set 6 | souillac
Processing Record 49 of Set 6 | praya
Processing Record 50 of Set 6 | menongue
Processing Record 1 of Set 6 | jackson
Processing Record 2 of Set 6 | merauke
City not found. Skipping..
Processing Record 4 of Set 6 | tambacounda
Processing Record 5 of Set 6 | chokurdakh
Processing Record 6 of Set 6 | saint-georges
Processing Record 7 of Set 6 | farafangana
Processing Record 8 of Set 6 | la ronge
Processing Record 9 of Set 6 | chepareria
Processing Record 10 of Set 6 | bremerton
City not found. Skipping..
Processing Record 12 of Set 6 | hillsborough
Processing Record 13 of Set 6 | noumea
Processing Record 14 of Set 6 | sisimiut
City not found. Skipping..
Processing Record 16 of Set 6 | kolobrzeg
Processing Record 17 of Set 6 | harper
Processing Record 18 of Set 6 | kamyshin
Processing Record 19 of Set 6 | knyaze-volkonskoye
Processing Record 20 of Set 6 | port lincoln
Processing Record 21 of Set 6 | havre
Processing Record 22 of Set 6 | bethel
Processing Record 23 of Set 6 | cayenne
Processing Record 24 of Set 6 | saskylakh
Processing Record 25 of Set 6 | bereda
Processing Record 26 of Set 6 | butaritari
Processing Record 27 of Set 6 | pevek
Processing Record 28 of Set 6 | vanimo
Processing Record 29 of Set 6 | sierre
Processing Record 30 of Set 6 | cortez
Processing Record 31 of Set 6 | avarua
Processing Record 32 of Set 6 | mount gambier
Processing Record 33 of Set 6 | matara

Processing Record 34 of Set 6 | kommunisticheskiy
Processing Record 35 of Set 6 | bataipora
Processing Record 36 of Set 6 | masuda
Processing Record 37 of Set 6 | kavieng
Processing Record 38 of Set 6 | lakes entrance
Processing Record 39 of Set 6 | tarko-sale
Processing Record 40 of Set 6 | alice springs
City not found. Skipping..
Processing Record 42 of Set 6 | umm lajj
Processing Record 43 of Set 6 | makokou
Processing Record 44 of Set 6 | salta
Processing Record 45 of Set 6 | berga
Processing Record 46 of Set 7 | hun
Processing Record 47 of Set 7 | esperance
Processing Record 48 of Set 7 | port blair
Processing Record 49 of Set 7 | oranjemund
Processing Record 50 of Set 7 | tankhoy
Processing Record 1 of Set 7 | caluquembe
Processing Record 2 of Set 7 | darhan
Processing Record 3 of Set 7 | sur
Processing Record 4 of Set 7 | port hedland
Processing Record 5 of Set 7 | marsa matruh
Processing Record 6 of Set 7 | jablanica
Processing Record 7 of Set 7 | flin flon
Processing Record 8 of Set 7 | cosamaloapan
Processing Record 9 of Set 7 | los llanos de aridane
Processing Record 10 of Set 7 | port hawkesbury
City not found. Skipping..
Processing Record 12 of Set 7 | havre-saint-pierre
City not found. Skipping..
Processing Record 14 of Set 7 | severo-kurilsk
Processing Record 15 of Set 7 | kahului
Processing Record 16 of Set 7 | concepcion del oro
Processing Record 17 of Set 7 | roebourne
Processing Record 18 of Set 7 | myitkyina
Processing Record 19 of Set 7 | pisco
Processing Record 20 of Set 7 | adre
Processing Record 21 of Set 7 | antalaha
Processing Record 22 of Set 7 | vicente guerrero
Processing Record 23 of Set 7 | sorong
Processing Record 24 of Set 7 | isangel
Processing Record 25 of Set 7 | bajil
Processing Record 26 of Set 7 | leshan
Processing Record 27 of Set 7 | palu
Processing Record 28 of Set 7 | alberdi
Processing Record 29 of Set 7 | grindavik
Processing Record 30 of Set 7 | poya
Processing Record 31 of Set 7 | languyan
Processing Record 32 of Set 7 | natal
Processing Record 33 of Set 7 | nioro
Processing Record 34 of Set 7 | mae sot
Processing Record 35 of Set 7 | surgana
City not found. Skipping..
Processing Record 37 of Set 7 | yeppoon
Processing Record 38 of Set 7 | lakhimpur
Processing Record 39 of Set 7 | galdar
Processing Record 40 of Set 7 | ust-kulom

Processing Record 41 of Set 7 | kudahuvadhoo
Processing Record 42 of Set 7 | westport
Processing Record 43 of Set 7 | salinopolis
Processing Record 44 of Set 7 | mogadishu
Processing Record 45 of Set 8 | upernavik
Processing Record 46 of Set 8 | kipushi
Processing Record 47 of Set 8 | cururupu
City not found. Skipping..
Processing Record 49 of Set 8 | moindou
Processing Record 50 of Set 8 | champerico
Processing Record 1 of Set 8 | jiancheng
City not found. Skipping..
Processing Record 3 of Set 8 | san jose
Processing Record 4 of Set 8 | vardo
Processing Record 5 of Set 8 | acapulco
Processing Record 6 of Set 8 | glenwood springs
Processing Record 7 of Set 8 | emba
Processing Record 8 of Set 8 | bandarbeyla
Processing Record 9 of Set 8 | sohagpur
Processing Record 10 of Set 8 | kenai
Processing Record 11 of Set 8 | touros
Processing Record 12 of Set 8 | biak
Processing Record 13 of Set 8 | lasa
Processing Record 14 of Set 8 | agirish
Processing Record 15 of Set 8 | ayan
Processing Record 16 of Set 8 | canavieiras
Processing Record 17 of Set 8 | urusha
Processing Record 18 of Set 8 | haines junction
Processing Record 19 of Set 8 | broken hill
Processing Record 20 of Set 8 | nabire
Processing Record 21 of Set 8 | golden
Processing Record 22 of Set 8 | saint-pierre
Processing Record 23 of Set 8 | nhulunbuy
Processing Record 24 of Set 8 | provideniya
Processing Record 25 of Set 8 | nova olimpia
Processing Record 26 of Set 8 | inuvik
Processing Record 27 of Set 8 | santa cruz de tenerife
Processing Record 28 of Set 8 | pointe michel
City not found. Skipping..
Processing Record 30 of Set 8 | sao filipe
Processing Record 31 of Set 8 | inzhavino
Processing Record 32 of Set 8 | goderich
Processing Record 33 of Set 8 | russell
Processing Record 34 of Set 8 | kruisfontein
Processing Record 35 of Set 8 | nouakchott
Processing Record 36 of Set 8 | loei
Processing Record 37 of Set 8 | iberia
Processing Record 38 of Set 8 | tessalit
Processing Record 39 of Set 8 | palestine
City not found. Skipping..
Processing Record 41 of Set 8 | uvat
Processing Record 42 of Set 8 | jalu
Processing Record 43 of Set 8 | pangoa
Processing Record 44 of Set 9 | yar-sale
Processing Record 45 of Set 9 | twin falls
Processing Record 46 of Set 9 | aklavik
City not found. Skipping..

Processing Record 48 of Set 9 | yilan
Processing Record 49 of Set 9 | bellevue
Processing Record 50 of Set 9 | hovd
Processing Record 1 of Set 9 | coahuayana
Processing Record 2 of Set 9 | mandera
Processing Record 3 of Set 9 | oranjestad
Processing Record 4 of Set 9 | lompoc
Processing Record 5 of Set 9 | erenhot
Processing Record 6 of Set 9 | chenzhou
Processing Record 7 of Set 9 | maceio
Processing Record 8 of Set 9 | omboue
City not found. Skipping..
Processing Record 10 of Set 9 | taoudenni
Processing Record 11 of Set 9 | san patricio
Processing Record 12 of Set 9 | karabuk
Processing Record 13 of Set 9 | abu samrah
City not found. Skipping..
Processing Record 15 of Set 9 | matagami
Processing Record 16 of Set 9 | carinhanha
Processing Record 17 of Set 9 | alexandria
Processing Record 18 of Set 9 | aksu
Processing Record 19 of Set 9 | bajos de haina
Processing Record 20 of Set 9 | meulaboh
Processing Record 21 of Set 9 | bushehr
Processing Record 22 of Set 9 | almeirim
Processing Record 23 of Set 9 | tual
Processing Record 24 of Set 9 | margate
Processing Record 25 of Set 9 | santiago de cao
Processing Record 26 of Set 9 | yelizovo
Processing Record 27 of Set 9 | manyana
City not found. Skipping..
Processing Record 29 of Set 9 | buin
Processing Record 30 of Set 9 | najran
Processing Record 31 of Set 9 | nanakuli
Processing Record 32 of Set 9 | shelburne
Processing Record 33 of Set 9 | khor
Processing Record 34 of Set 9 | kirkuk
City not found. Skipping..
City not found. Skipping..
Processing Record 37 of Set 9 | hami
Processing Record 38 of Set 9 | golkoy
Processing Record 39 of Set 9 | nileshwar
Processing Record 40 of Set 9 | goundi
Processing Record 41 of Set 9 | prado
Processing Record 42 of Set 9 | san gabriel
City not found. Skipping..
Processing Record 44 of Set 10 | kodiak
Processing Record 45 of Set 10 | petropavlovsk-kamchatskiy
Processing Record 46 of Set 10 | naze
Processing Record 47 of Set 10 | zaraza
Processing Record 48 of Set 10 | ancud
Processing Record 49 of Set 10 | zhucheng
Processing Record 50 of Set 10 | pedernales
Processing Record 1 of Set 10 | falam
Processing Record 2 of Set 10 | kysyl-syr
Processing Record 3 of Set 10 | newport
Processing Record 4 of Set 10 | bintulu

City not found. Skipping..
Processing Record 6 of Set 10 | oussouye
Processing Record 7 of Set 10 | peterhead
Processing Record 8 of Set 10 | tromso
Processing Record 9 of Set 10 | teya
Processing Record 10 of Set 10 | dongning
Processing Record 11 of Set 10 | northam
Processing Record 12 of Set 10 | parati
Processing Record 13 of Set 10 | balyaga
Processing Record 14 of Set 10 | salalah
Processing Record 15 of Set 10 | zhaotong
Processing Record 16 of Set 10 | yatou
Processing Record 17 of Set 10 | singaraja
Processing Record 18 of Set 10 | muisne
Processing Record 19 of Set 10 | abatskoye
Processing Record 20 of Set 10 | macamic
City not found. Skipping..
Processing Record 22 of Set 10 | whitehorse
Processing Record 23 of Set 10 | carballo
Processing Record 24 of Set 10 | phalodi
Processing Record 25 of Set 10 | nome
Processing Record 26 of Set 10 | zhigansk
City not found. Skipping..
Processing Record 28 of Set 10 | khandbari
Processing Record 29 of Set 10 | palmer
Processing Record 30 of Set 10 | gravdal
Processing Record 31 of Set 10 | laela
City not found. Skipping..
City not found. Skipping..
City not found. Skipping..
Processing Record 35 of Set 10 | chumikan
Processing Record 36 of Set 10 | yima
Processing Record 37 of Set 10 | corowa
Processing Record 38 of Set 10 | shipunovo
Processing Record 39 of Set 10 | dong hoi
City not found. Skipping..
Processing Record 41 of Set 10 | turukhansk
City not found. Skipping..
Processing Record 43 of Set 11 | sumbe
Processing Record 44 of Set 11 | kenitra
Processing Record 45 of Set 11 | high prairie
Processing Record 46 of Set 11 | elko
Processing Record 47 of Set 11 | nouadhibou
Processing Record 48 of Set 11 | huancabamba
City not found. Skipping..
Processing Record 50 of Set 11 | makuyuni
Processing Record 1 of Set 11 | fort nelson
Processing Record 2 of Set 11 | frederikshavn
Processing Record 3 of Set 11 | torbay
Processing Record 4 of Set 11 | beibei
Processing Record 5 of Set 11 | sao joao da barra
Processing Record 6 of Set 11 | sainte-rose
Processing Record 7 of Set 11 | sheridan
Processing Record 8 of Set 11 | hirara
Processing Record 9 of Set 11 | safford
Processing Record 10 of Set 11 | husavik
Processing Record 11 of Set 11 | komsomolskiy

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Processing Record 12 of Set 11 | bull savanna
Processing Record 13 of Set 11 | batetskiy
Processing Record 14 of Set 11 | bagdarin
Processing Record 15 of Set 11 | de aar
Processing Record 16 of Set 11 | sola
Processing Record 17 of Set 11 | cabras
Processing Record 18 of Set 11 | colesberg
Processing Record 19 of Set 11 | maragogi
Processing Record 20 of Set 11 | russellville
Processing Record 21 of Set 11 | tobol
Processing Record 22 of Set 11 | lang suan
City not found. Skipping..
Processing Record 24 of Set 11 | maniwaki
City not found. Skipping..
Processing Record 26 of Set 11 | kiama
Processing Record 27 of Set 11 | pirai do sul
Processing Record 28 of Set 11 | pendleton
Processing Record 29 of Set 11 | mikkeli
Processing Record 30 of Set 11 | tiarei
Processing Record 31 of Set 11 | kerman
Processing Record 32 of Set 11 | batsfjord
Processing Record 33 of Set 11 | rasht
Processing Record 34 of Set 11 | nikolskoye
Processing Record 35 of Set 11 | adrar
Processing Record 36 of Set 11 | alofi
Processing Record 37 of Set 11 | itaituba
Processing Record 38 of Set 11 | bathsheba
Processing Record 39 of Set 11 | torres
Processing Record 40 of Set 11 | matay
Processing Record 41 of Set 12 | outjo
City not found. Skipping..
Processing Record 43 of Set 12 | ambon
Processing Record 44 of Set 12 | yaan
Processing Record 45 of Set 12 | mehamn
Processing Record 46 of Set 12 | dicabisagan
Processing Record 47 of Set 12 | manuk mangkaw
Processing Record 48 of Set 12 | chabahar
Processing Record 49 of Set 12 | taltal
Processing Record 50 of Set 12 | chor
Processing Record 1 of Set 12 | emerald
Processing Record 2 of Set 12 | daman
City not found. Skipping..
Processing Record 4 of Set 12 | vorukh
Processing Record 5 of Set 12 | san felipe
Processing Record 6 of Set 12 | nhamunda
Processing Record 7 of Set 12 | carutapera
Processing Record 8 of Set 12 | bjerkvik
Processing Record 9 of Set 12 | mirnyy
Processing Record 10 of Set 12 | hervey bay
Processing Record 11 of Set 12 | kapuskasing
Processing Record 12 of Set 12 | valdez
City not found. Skipping..
Processing Record 14 of Set 12 | ryazanovskiy
Processing Record 15 of Set 12 | abha
Processing Record 16 of Set 12 | labuhan
Processing Record 17 of Set 12 | romanovka
Processing Record 18 of Set 12 | naryan-mar

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Processing Record 19 of Set 12 | deshnok
Processing Record 20 of Set 12 | cassia
Processing Record 21 of Set 12 | axim
Processing Record 22 of Set 12 | gweta
Processing Record 23 of Set 12 | svetlaya
Processing Record 24 of Set 12 | rafai
Processing Record 25 of Set 12 | bonavista
City not found. Skipping..
Processing Record 27 of Set 12 | sao geraldo do araguaia
City not found. Skipping..
Processing Record 29 of Set 12 | the pas
City not found. Skipping..
Processing Record 31 of Set 12 | la asuncion
Processing Record 32 of Set 12 | baykalsk
Processing Record 33 of Set 12 | yokadouma
Processing Record 34 of Set 12 | north myrtle beach
Processing Record 35 of Set 12 | black river
City not found. Skipping..
City not found. Skipping..
Processing Record 38 of Set 12 | itarema
Processing Record 39 of Set 12 | seydi
Processing Record 40 of Set 13 | redlands
Processing Record 41 of Set 13 | coihaique
Processing Record 42 of Set 13 | bom sucesso
City not found. Skipping..
Processing Record 44 of Set 13 | moctezuma
Processing Record 45 of Set 13 | salinas
Processing Record 46 of Set 13 | puerto quijarro
Processing Record 47 of Set 13 | shache
Processing Record 48 of Set 13 | muros
Processing Record 49 of Set 13 | kwinana
Processing Record 50 of Set 13 | caucaia
Processing Record 1 of Set 13 | drovyanaya
Processing Record 2 of Set 13 | dandong
Processing Record 3 of Set 13 | semenivka
Processing Record 4 of Set 13 | kara
Processing Record 5 of Set 13 | kloulklubed
City not found. Skipping..
Processing Record 7 of Set 13 | florianopolis
Processing Record 8 of Set 13 | virpur
```

Convert Raw Data to DataFrame

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

```
In [22]: print(len(cloudiness))
print(len(country))
print(len(date))
print(len(humidity))
print(len(lat))
print(len(lon))
print(len(temp_max))
print(len(wind_speed))
print(len(city_name))
```

```
541
541
541
541
541
541
541
541
541
```

```
In [23]: # create a data frame from
weather_dict_city = {
    "City": city_name,
    "Cloudiness": cloudiness,
    "Country": country,
    "Date": date,
    "Humidity": humidity,
    "Lat": lat,
    "Lon": lon,
    "Max Temp": temp_max,
    "Wind Speed": wind_speed,
}
weather_data_city = pd.DataFrame(weather_dict_city)
weather_data_city.head()
```

Out[23]:

| | City | Cloudiness | Country | Date | Humidity | Lat | Lon | Max Temp | Wind Speed |
|---|----------------|------------|---------|------------|----------|--------|---------|----------|------------|
| 0 | Tura | 96 | RU | 1569632411 | 89 | 64.27 | 100.22 | 28.1 | 4.61 |
| 1 | Isla Mujeres | 40 | MX | 1569632412 | 74 | 21.23 | -86.73 | 84.2 | 5.82 |
| 2 | Guerrero Negro | 0 | MX | 1569632419 | 84 | 27.97 | -114.04 | 68.8 | 19.80 |
| 3 | Havoy Sund | 90 | NO | 1569632425 | 100 | 71.00 | 24.66 | 41.0 | 13.87 |
| 4 | Busselton | 5 | AU | 1569632427 | 89 | -33.64 | 115.35 | 61.0 | 10.13 |

```
In [24]: # Export file as a CSV, without the Pandas index, but with the header
weather_data_city.to_csv("../WeatherPy/Weatherdata.csv", index=False, header=True)
```

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.

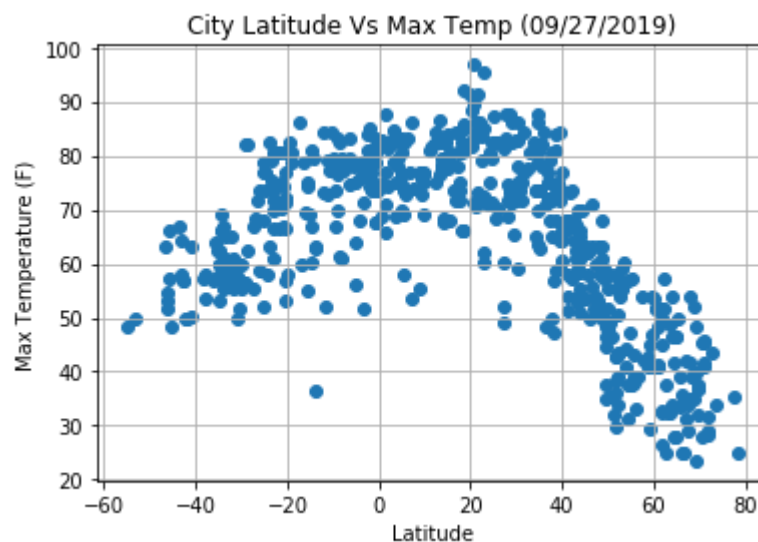
Latitude vs. Temperature Plot

```
In [25]: # Build a scatter plot for each data type
plt.scatter(weather_data_city["Lat"], weather_data_city["Max Temp"], marker=
"o")

# Incorporate the other graph properties
plt.title("City Latitude Vs Max Temp (09/27/2019)")
plt.ylabel("Max Temperature (F)")
plt.xlabel("Latitude")
plt.grid(True)

# Save the figure
plt.savefig("MaxTemperatureInWorldCitiesbasedonLatitude.png")

# Show plot
plt.show()
```



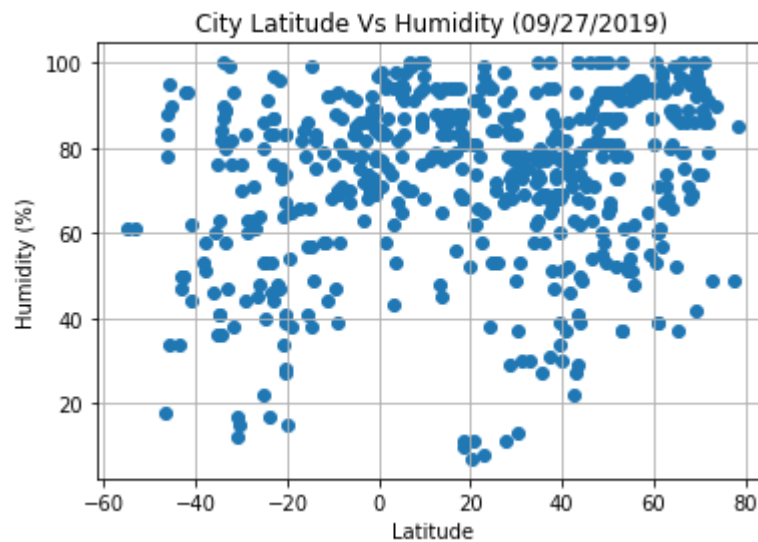
Latitude vs. Humidity Plot


```
In [26]: # Build a scatter plot for each data type
plt.scatter(weather_data_city["Lat"], weather_data_city["Humidity"], marker=
"o")

# Incorporate the other graph properties
plt.title("City Latitude Vs Humidity (09/27/2019)")
plt.ylabel("Humidity (%)")
plt.xlabel("Latitude")
plt.grid(True)

# Save the figure
plt.savefig("HumidityInWorldCitiesbasedonLatitude.png")

# Show plot
plt.show()
```

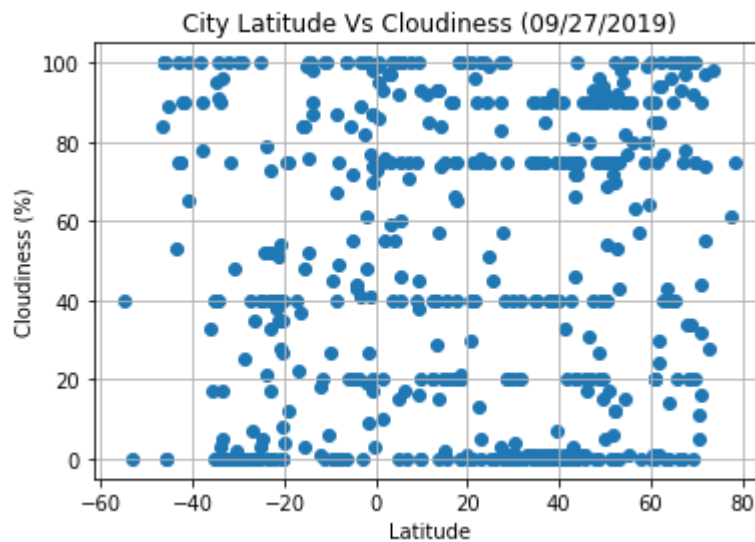


Latitude vs. Cloudiness Plot

```
In [27]: # Build a scatter plot for each data type
plt.scatter(weather_data_city["Lat"], weather_data_city["Cloudiness"], marker=
"o")

# Incorporate the other graph properties
plt.title("City Latitude Vs Cloudiness (09/27/2019)")
plt.ylabel("Cloudiness (%)")
plt.xlabel("Latitude")
plt.grid(True)
# Save the figure
plt.savefig("CloudinessInWorldCitiesbasedonLatitude.png")

# Show plot
plt.show()
```



Latitude vs. Wind Speed Plot

```
In [28]: # Build a scatter plot for each data type
plt.scatter(weather_data_city["Lat"], weather_data_city["Wind Speed"], marker=
"o")

# Incorporate the other graph properties
plt.title("City Latitude Vs Wind Speed (09/27/2019) ")
plt.ylabel("Wind Speed (mph)")
plt.xlabel("Latitude")
plt.grid(True)
# Save the figure
plt.savefig("WindspeedInWorldCitiesbasedonLatitude.png")

# Show plot
plt.show()
```

