

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 [31]:

```
number_list = [1, 2, 3]
str_list = ['one', 'two', 'three']

# No iterables are passed
result = zip()

# Converting iterator to list
result_list = list(result)
print(result_list)

# Two iterables are passed
result = zip(number_list, str_list)

# Converting iterator to set
result_set = pd.DataFrame(result)
print(result_set)
result_set.iloc[0,1]
```

```
[ ]
   0    1
0  1    one
1  2    two
2  3   three
```

Out[31]:

'one'

In [32]:

```
import os
os.getcwd()
```

Out[32]:

'/Users/huiyingzheng/Desktop/GT Databootcamp/python-api-challenge/WeatherPy'

In [36]:

```
# Dependencies and Setup
import matplotlib.pyplot as plt
import pandas as pd
import numpy as np
import requests
import time
from scipy.stats import linregress
import json

# Import API key
from api_keys import weather_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 [37]:

```
# 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[37]:

599

In [96]:

```
# Define url
url = "http://api.openweathermap.org/data/2.5/weather?"
city_name = "Atlanta"
print(f"{url}q={city_name}&appid={weather_api_key}")
#weather_city = requests.get(f"{url}q={city_name}&appid={weather_api_key}").json
()
#print(json.dumps(weather_city, indent=4, sort_keys=True))
#city_name = cities[0]
```

http://api.openweathermap.org/data/2.5/weather?q=Atlanta&appid=b6f59
957efaaca8110501f3b4efbcf87

In [64]:

```
cities
```

Out[64]:

```
['byron bay',  
 'albany',  
 'snasa',  
 'thompson',  
 'bandarbeyla',  
 'lorengau',  
 'mataura',  
 'hobart',  
 'port elizabeth',  
 'bull savanna',  
 'praya',  
 'vaini',  
 'roald',  
 'punta arenas',  
 'ilulissat',  
 'rikitea',  
 'boksitogorsk',  
 'longyearbyen',  
 'vardo',  
 'norman wells',  
 'cherskiy',  
 'kapaa',  
 'chifeng',  
 'kahului',  
 'paris',  
 'pacific grove',  
 'auki',  
 'belushya guba',  
 'bilma',  
 'avarua',  
 'tabas',  
 'ushuaia',  
 'bredasdorp',  
 'kassala',  
 'tiksi',  
 'thinadhoo',  
 'verkhnevilyuysk',  
 'marshall',  
 'qeshm',  
 'nizhneyansk',  
 'aklavik',  
 'kyra',  
 'upernavik',  
 'hilo',  
 'bambous virieux',  
 'taolanaro',  
 'ruatoria',  
 'kodiak',  
 'lakes entrance',  
 'jamestown',  
 'torbay',  
 'cayenne',  
 'lompoc',  
 'jalu',  
 'atuona',  
 'barrow',  
 'cabo san lucas',  
 'khlevnoye',  
 'dikson',
```

'luderitz',
'hibbing',
'cape town',
'bethel',
'nikolskoye',
'butaritari',
'moree',
'putla',
'hervey bay',
'busselton',
'qaanaaq',
'dipkarpaz',
'carnarvon',
'mar del plata',
'porto murtinho',
'saint-philippe',
'georgetown',
'castro',
'havre-saint-pierre',
'lalmohan',
'aranos',
'xinyu',
'port keats',
'seara',
'kruisfontein',
'berea',
'ribeira grande',
'puerto ayora',
'attawapiskat',
'kudahuvadhoo',
'ambon',
'porbandar',
'bluff',
'severo-kurilsk',
'port alfred',
'tura',
'hermanus',
'grand-santi',
'palabuhanratu',
'homer',
'yeppoon',
'winslow',
'padang',
'okha',
'emba',
'kaliganj',
'hofn',
'talaya',
'tabiauea',
'college',
'metro',
'westport',
'pirganj',
'galesong',
'sorvag',
'la tuque',
'amderma',
'airai',
'kavaratti',
'juneau',
'new norfolk',

'zhigansk',
'ancud',
'cockburn town',
'chokurdakh',
'pangody',
'barentsburg',
'alice springs',
'asau',
'college place',
'muhos',
'safford',
'rio branco',
'pisco',
'tikrit',
'gimli',
'esperance',
'port augusta',
'sabha',
'tezu',
'ahipara',
'yellowknife',
'najran',
'curuca',
'sentyabrskiy',
'lasa',
'barawe',
'pravokumskoye',
'kijang',
'ferrol',
'campoverde',
'carballo',
'nanortalik',
'nome',
'grand river south east',
'ahuimanu',
'bengkulu',
'naze',
'coxim',
'hithadhoo',
'clyde river',
'flinders',
'broken hill',
'willowmore',
'kilindoni',
'tuktoyaktuk',
'lakatoro',
'faanui',
'ceres',
'belfast',
'pitkyaranta',
'kommunisticheskiy',
'harbour breton',
'umzimvubu',
'butembo',
'kaeo',
'ginir',
'maralal',
'myskhako',
'tessalit',
'zachagansk',
'quatre cocos',

'kiama',
'salisbury',
'tokyo',
'bentiu',
'impfondo',
'bogo',
'urumqi',
'qui nhon',
'mao',
'tasiilaq',
'fairbanks',
'kaberamaido',
'portland',
'samarai',
'lebu',
'storforshei',
'east london',
'oranjemund',
'soyo',
'maragogi',
'tuatapere',
'illoqqortoormiut',
'chinhoyi',
'sisimiut',
'sechura',
'bubaque',
'baiyin',
'klaksvik',
'basar',
'mwense',
'mahebourg',
'isla vista',
'praia da vitoria',
'bria',
'provideniya',
'teahupoo',
'basoko',
'port blair',
'lagoa',
'mae ramat',
'mount isa',
'bjornevatn',
'victoria',
'kaitangata',
'ellisras',
'sovetskiy',
'dunedin',
'sistranda',
'leningradskiy',
'charlestown',
'yulara',
'puerto escondido',
'sainte-suzanne',
'tsihombe',
'yashkul',
'namikupa',
'cobija',
'aykhal',
'ouanaminthe',
'necochea',
'san jose de ocoa',

'srednekolym'sk',
'rawson',
'ngukurr',
'collie',
'fort nelson',
'tautira',
'nouadhibou',
'vaitupu',
'saint-francois',
'meulaboh',
'rundu',
'ponta delgada',
'lata',
'ketchikan',
'haines junction',
'calabozo',
'labutta',
'udachnyy',
'yumen',
'mezen',
'codrington',
'guerrero negro',
'rorvik',
'oistins',
'marrakesh',
'wulanhaote',
'alugan',
'saskylakh',
'kamenskoye',
'osypenko',
'xining',
'touros',
'shar',
'ola',
'igaluit',
'pitimbu',
'khilok',
'geraldton',
'sainte-marie',
'otradnoye',
'bathsheba',
'tromso',
'sao miguel',
'ondjiva',
'edinburg',
'panguipulli',
'saint george',
'ponta do sol',
'novyy urengoy',
'atar',
'deniliquin',
'mopti',
'springdale',
'asahikawa',
'coos bay',
'mbigou',
'burgeo',
'rabat',
'kindu',
'korla',
'kaspiyskiy',

'alofi',
'sanbu',
'port macquarie',
'vao',
'takoradi',
'saryagash',
'khatanga',
'labuhan',
'chateauroux',
'sarangani',
'avera',
'namatanai',
'daru',
'springbok',
'jiazi',
'coahuayana',
'rio grande',
'willmar',
'san patricio',
'pavelets',
'suez',
'buchanan',
'viedma',
'souillac',
'azimur',
'medea',
'batemans bay',
'massaguet',
'port-gentil',
'faya',
'chuy',
'greeley',
'karratha',
'sinjai',
'mareeba',
'eatonton',
'barbar',
'tianpeng',
'toliary',
'oussouye',
'salalah',
'pevek',
'sawtell',
'bella vista',
'merauke',
'odienne',
'colquiri',
'arraial do cabo',
'sindor',
'kavieng',
'isangel',
'port hardy',
'praia',
'bay roberts',
'teya',
'burnie',
'ofaqim',
'cidreira',
'cassia',
'khani',
'buraydah',

'bekhtery',
'segezha',
'chagda',
'sudbury',
'lazarev',
'azrow',
'mitu',
'nyrob',
'carutapera',
'egvekinot',
'prado',
'jujuy',
'shimanovsk',
'inongo',
'moron',
'along',
'aripuana',
'mehamn',
'kalmunai',
'zmeinogorsk',
'staroshcherbinovskaya',
'paraopeba',
'san quintin',
'ismailia',
'key largo',
'saiha',
'les escoumins',
'nguiu',
'huarmey',
'serra branca',
'fortuna',
'jumla',
'ipu',
'moose factory',
'dingle',
'chabahar',
'mbengwi',
'kamien pomorski',
'borba',
'guanica',
'krasnoselkup',
'rantepao',
'fenoarivo',
'omsukchan',
'seoni',
'loughrea',
'novopavlovka',
'berlevag',
'marcona',
'cam ranh',
'burkhala',
'merced',
'port lincoln',
'angoche',
'high rock',
'talnakh',
'mys shmidta',
'husavik',
'kontagora',
'phan thiet',
'saint anthony',

'taksimo',
'koungou',
'manggar',
'hami',
'tosno',
'porto novo',
'havelock',
'mananjary',
'fort smith',
'puerto ayacucho',
'ransang',
'thiruvananthapuram',
'comodoro rivadavia',
'malazgirt',
'hrinova',
'keti bandar',
'waipawa',
'rio gallegos',
'omidiyeh',
'saint-pierre',
'nanchang',
'petropavlovsk-kamchatskiy',
'vanavara',
'constitucion',
'imbituba',
'mapiri',
'khonuu',
'usinsk',
'natal',
'pontiac',
'roebourne',
'sao filipe',
'shalyhyne',
'acapulco',
'mandera',
'xingqing',
'sao francisco',
'tumanny',
'henties bay',
'qandahar',
'wilmington',
'cuiluan',
'mount gambier',
'san jeronimo',
'grand centre',
'perth',
'preobrazheniye',
'hasaki',
'sur',
'samusu',
'riohacha',
'port hedland',
'north platte',
'palmer',
'coquimbo',
'eucaliptus',
'whitehorse',
'kawana waters',
'poum',
'graaff-reinet',
'farafenni',

'oktyabrskiy',
'doha',
'ust-ordynskiy',
'ambilobe',
'fomboni',
'parkes',
'yinchuan',
'samana',
'lavrentiya',
'baldeogarh',
'saldanha',
'nizhniy odes',
'sitka',
'samdrup jongkhar',
'acarau',
'palestine',
'tabou',
'mecca',
'riyadh',
'alice town',
'lolua',
'malpe',
'katsuura',
'nantucket',
'cascais',
'yambio',
'altay',
'boshnyakovo',
'chumikan',
'talara',
'mponela',
'san ramon',
'trofors',
'zunyi',
'lubao',
'skeldon',
'san lorenzo',
'kragero',
'yakshur-bodya',
'yabelo',
'bonavista',
'rostock',
'conceicao do araguaia',
'belmonte',
'severo-yeniseyskiy',
'takahashi',
'devonport',
'oktyabrskoye',
'akyab',
'moindou',
'vanimo',
'santo domingo',
'thoen',
'mtwara',
'taoudenni',
'ruteng',
'axim',
'sao joao do piaui',
'pimentel',
'dandong',
'nemuro',

```
'vestmannaeyjar',  
'amazar',  
'botwood',  
'porkhov',  
'skjervoy',  
'kon tum',  
'banda aceh',  
'ciudad bolivar',  
'ende',  
'bam',  
'dillon',  
'ossora',  
'narsaq',  
'jiddah',  
'grafton',  
'iquique',  
'anadyr',  
'virginia beach',  
'tawnat',  
'tete',  
'albury',  
'luanda',  
'sulangan',  
'alta floresta',  
'khor',  
'dalvik',  
'leshukonskoye',  
'la ronge',  
'chirala',  
'humen',  
'mata grande',  
'duvan',  
'azad shahr',  
'donghai',  
'margate',  
'booue',  
'umea',  
'ayios ioannis',  
'kokoda',  
'ijaki',  
'coolum beach',  
'chokwe',  
'komsomolskiy',  
'bulgan',  
'paragominas',  
'camacupa',  
'te anau',  
'celestun',  
'rancho veloz',  
'yarkovo',  
'nuuk',  
'sao joao da barra']
```

In [83]:

```
# Because everytime the number of cities are different, first get the number of
cities
n = len(cities)

# Define url
url = "http://api.openweathermap.org/data/2.5/weather?"

#print(f"{url}q={city_name}&appid={weather_api_key}")
#weather_city = requests.get(f"{url}q={city_name}&appid={weather_api_key}").json
()
#print(json.dumps(weather_city, indent=4, sort_keys=True))
#city_name = cities[0]

# Initilize lists for data to be stored
City = []
Cloudiness = []
Country = []
Date = []
Humidity = []
Lat = []
Lng = []
Max_Temp = []
Wind_Speed = []

print("Beginning Data Retrieval")
print("-----")

# Initilize the city number
i = 1

for city in cities:

    # Create search query, make request and store in json
    query = f"{url}q={city}&appid={weather_api_key}"
    response = requests.get(query)
    response_json = response.json()

    # For each city, extract all the information needed
    try:
        name = response_json["name"]
        City.append(response_json["name"])
        Cloudiness.append(response_json["clouds"]["all"])
        Country.append(response_json["sys"]["country"])
        Date.append(response_json["dt"])
        Humidity.append(response_json["main"]["humidity"])
        Lat.append(response_json["coord"]["lat"])
        Lng.append(response_json["coord"]["lon"])
        Max_Temp.append(response_json["main"]["temp_max"])
        Wind_Speed.append(response_json["wind"]["speed"])

        print(f"Processing Record {i} out of {n} cities | {name}")

        i = i + 1

    # If weather information is missing, then do the following
    except:
        # Append null values
        print(f"City number={i} name={name} not found. Skipping...")
```

```
        i = i + 1
    pass

print("-----")
print("Data Retrieval Complete")
print("-----")
```


Beginning Data Retrieval

```

-----
Processing Record 1 out of 599 cities | Byron Bay
Processing Record 2 out of 599 cities | Albany
Processing Record 3 out of 599 cities | Snåase
Processing Record 4 out of 599 cities | Thompson
Processing Record 5 out of 599 cities | Bandarbeyla
Processing Record 6 out of 599 cities | Lorengau
Processing Record 7 out of 599 cities | Mataura
Processing Record 8 out of 599 cities | Hobart
Processing Record 9 out of 599 cities | Port Elizabeth
Processing Record 10 out of 599 cities | Bull Savanna
Processing Record 11 out of 599 cities | Praia
Processing Record 12 out of 599 cities | Vaini
Processing Record 13 out of 599 cities | Roald
Processing Record 14 out of 599 cities | Punta Arenas
Processing Record 15 out of 599 cities | Ilulissat
Processing Record 16 out of 599 cities | Rikitea
Processing Record 17 out of 599 cities | Boksitogorsk
Processing Record 18 out of 599 cities | Longyearbyen
Processing Record 19 out of 599 cities | Vardø
Processing Record 20 out of 599 cities | Norman Wells
Processing Record 21 out of 599 cities | Cherskiy
Processing Record 22 out of 599 cities | Kapaa
Processing Record 23 out of 599 cities | Chifeng
Processing Record 24 out of 599 cities | Kahului
Processing Record 25 out of 599 cities | Paris
Processing Record 26 out of 599 cities | Pacific Grove
Processing Record 27 out of 599 cities | Auki
City number=28 name=Auki not found. Skipping...
Processing Record 29 out of 599 cities | Bilma
Processing Record 30 out of 599 cities | Avarua
Processing Record 31 out of 599 cities | Tabas
Processing Record 32 out of 599 cities | Ushuaia
Processing Record 33 out of 599 cities | Bredasdorp
Processing Record 34 out of 599 cities | Kassala
Processing Record 35 out of 599 cities | Tiksi
Processing Record 36 out of 599 cities | Thinadhoo
Processing Record 37 out of 599 cities | Verkhnevilyuysk
Processing Record 38 out of 599 cities | Marshall
Processing Record 39 out of 599 cities | Qeshm
City number=40 name=Qeshm not found. Skipping...
Processing Record 41 out of 599 cities | Aklavik
Processing Record 42 out of 599 cities | Kyra
Processing Record 43 out of 599 cities | Upernavik
Processing Record 44 out of 599 cities | Hilo
Processing Record 45 out of 599 cities | Bambous Virieux
City number=46 name=Bambous Virieux not found. Skipping...
City number=47 name=Bambous Virieux not found. Skipping...
Processing Record 48 out of 599 cities | Saint Paul Harbor
Processing Record 49 out of 599 cities | Lakes Entrance
Processing Record 50 out of 599 cities | Jamestown
Processing Record 51 out of 599 cities | Torbay
Processing Record 52 out of 599 cities | Cayenne
Processing Record 53 out of 599 cities | Lompoc
Processing Record 54 out of 599 cities | Jalu
Processing Record 55 out of 599 cities | Atuona
Processing Record 56 out of 599 cities | Barrow
Processing Record 57 out of 599 cities | Cabo San Lucas
Processing Record 58 out of 599 cities | Khlevnoye
Processing Record 59 out of 599 cities | Dikson

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```
Processing Record 60 out of 599 cities | Lüderitz
Processing Record 61 out of 599 cities | Hibbing
Processing Record 62 out of 599 cities | Cape Town
Processing Record 63 out of 599 cities | Bethel
Processing Record 64 out of 599 cities | Nikolskoye
Processing Record 65 out of 599 cities | Butaritari
Processing Record 66 out of 599 cities | Moree
City number=67 name=Moree not found. Skipping...
Processing Record 68 out of 599 cities | Hervey Bay
Processing Record 69 out of 599 cities | Busselton
Processing Record 70 out of 599 cities | Qaanaaq
City number=71 name=Qaanaaq not found. Skipping...
Processing Record 72 out of 599 cities | Carnarvon
Processing Record 73 out of 599 cities | Mar del Plata
Processing Record 74 out of 599 cities | Porto Murtinho
Processing Record 75 out of 599 cities | Saint-Philippe
Processing Record 76 out of 599 cities | George Town
Processing Record 77 out of 599 cities | Castro
Processing Record 78 out of 599 cities | Havre-St-Pierre
Processing Record 79 out of 599 cities | Lālmohan
Processing Record 80 out of 599 cities | Aranos
Processing Record 81 out of 599 cities | Xinyu
Processing Record 82 out of 599 cities | Port Keats
Processing Record 83 out of 599 cities | Seara
Processing Record 84 out of 599 cities | Kruisfontein
Processing Record 85 out of 599 cities | Berea
Processing Record 86 out of 599 cities | Ribeira Grande
Processing Record 87 out of 599 cities | Puerto Ayora
City number=88 name=Puerto Ayora not found. Skipping...
Processing Record 89 out of 599 cities | Kudahuvadhoo
Processing Record 90 out of 599 cities | Ambon City
Processing Record 91 out of 599 cities | Porbandar
Processing Record 92 out of 599 cities | Bluff
Processing Record 93 out of 599 cities | Severo-Kuril'sk
Processing Record 94 out of 599 cities | Port Alfred
Processing Record 95 out of 599 cities | Tura
Processing Record 96 out of 599 cities | Hermanus
Processing Record 97 out of 599 cities | Grand-Santi
City number=98 name=Grand-Santi not found. Skipping...
Processing Record 99 out of 599 cities | Homer
Processing Record 100 out of 599 cities | Yeppoon
Processing Record 101 out of 599 cities | Winslow
Processing Record 102 out of 599 cities | Padang
Processing Record 103 out of 599 cities | Okha
Processing Record 104 out of 599 cities | Emba
Processing Record 105 out of 599 cities | Kālīganj
Processing Record 106 out of 599 cities | Hofn
Processing Record 107 out of 599 cities | Talaya
City number=108 name=Talaya not found. Skipping...
Processing Record 109 out of 599 cities | College
Processing Record 110 out of 599 cities | Metro
Processing Record 111 out of 599 cities | Westport
Processing Record 112 out of 599 cities | Pirganj
Processing Record 113 out of 599 cities | Galesong
City number=114 name=Galesong not found. Skipping...
Processing Record 115 out of 599 cities | La Tuque
City number=116 name=La Tuque not found. Skipping...
Processing Record 117 out of 599 cities | Airai
Processing Record 118 out of 599 cities | Kavaratti
Processing Record 119 out of 599 cities | Juneau
Processing Record 120 out of 599 cities | New Norfolk
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Processing Record 121 out of 599 cities | Zhigansk
Processing Record 122 out of 599 cities | Ancud
Processing Record 123 out of 599 cities | Cockburn Town
Processing Record 124 out of 599 cities | Chokurdakh
Processing Record 125 out of 599 cities | Pangody
City number=126 name=Pangody not found. Skipping...
Processing Record 127 out of 599 cities | Alice Springs
Processing Record 128 out of 599 cities | Asãu
Processing Record 129 out of 599 cities | College Place
Processing Record 130 out of 599 cities | Muhos
Processing Record 131 out of 599 cities | Safford
Processing Record 132 out of 599 cities | Rio Branco
Processing Record 133 out of 599 cities | Pisco
Processing Record 134 out of 599 cities | Tikrit
Processing Record 135 out of 599 cities | Gimli
Processing Record 136 out of 599 cities | Esperance
Processing Record 137 out of 599 cities | Port Augusta
Processing Record 138 out of 599 cities | Sabha
Processing Record 139 out of 599 cities | Tezu
Processing Record 140 out of 599 cities | Ahipara
Processing Record 141 out of 599 cities | Yellowknife
Processing Record 142 out of 599 cities | Najrān
Processing Record 143 out of 599 cities | Curuçá
City number=144 name=Curuçá not found. Skipping...
Processing Record 145 out of 599 cities | Laas
City number=146 name=Laas not found. Skipping...
Processing Record 147 out of 599 cities | Pravokumskoye
Processing Record 148 out of 599 cities | Gijang
Processing Record 149 out of 599 cities | Ferrol
Processing Record 150 out of 599 cities | Campoverde
Processing Record 151 out of 599 cities | Carballo
Processing Record 152 out of 599 cities | Nanortalik
Processing Record 153 out of 599 cities | Nome
City number=154 name=Nome not found. Skipping...
Processing Record 155 out of 599 cities | 'Āhuimanu
Processing Record 156 out of 599 cities | Bengkulu
Processing Record 157 out of 599 cities | Naze
Processing Record 158 out of 599 cities | Coxim
Processing Record 159 out of 599 cities | Hithadhoo
Processing Record 160 out of 599 cities | Clyde River
Processing Record 161 out of 599 cities | Flinders
Processing Record 162 out of 599 cities | Broken Hill
Processing Record 163 out of 599 cities | Willowmore
Processing Record 164 out of 599 cities | Kilindoni
Processing Record 165 out of 599 cities | Tuktoyaktuk
Processing Record 166 out of 599 cities | Lakatoro
Processing Record 167 out of 599 cities | Faanui
Processing Record 168 out of 599 cities | Ceres
Processing Record 169 out of 599 cities | Belfast
Processing Record 170 out of 599 cities | Pitkyaranta
Processing Record 171 out of 599 cities | Kommunisticheskiy
Processing Record 172 out of 599 cities | Harbour Breton
City number=173 name=Harbour Breton not found. Skipping...
Processing Record 174 out of 599 cities | Butembo
Processing Record 175 out of 599 cities | Kaeo
Processing Record 176 out of 599 cities | Ginir
Processing Record 177 out of 599 cities | Maralal
Processing Record 178 out of 599 cities | Myskhako
Processing Record 179 out of 599 cities | Tessalit
City number=180 name=Tessalit not found. Skipping...
Processing Record 181 out of 599 cities | Quatre Cocos
```

Processing Record 182 out of 599 cities	Kiama
Processing Record 183 out of 599 cities	Salisbury
Processing Record 184 out of 599 cities	Tokyo
Processing Record 185 out of 599 cities	Bentiu
Processing Record 186 out of 599 cities	Impfondo
Processing Record 187 out of 599 cities	Bogo
Processing Record 188 out of 599 cities	Ürümqi
Processing Record 189 out of 599 cities	Qui Nhon
Processing Record 190 out of 599 cities	Mahon
Processing Record 191 out of 599 cities	Tasiilaq
Processing Record 192 out of 599 cities	Fairbanks
Processing Record 193 out of 599 cities	Kaberaimaido
Processing Record 194 out of 599 cities	Portland
Processing Record 195 out of 599 cities	Samarai
Processing Record 196 out of 599 cities	Lebu
Processing Record 197 out of 599 cities	Storforshei
Processing Record 198 out of 599 cities	East London
Processing Record 199 out of 599 cities	Oranjemund
Processing Record 200 out of 599 cities	Soyo
Processing Record 201 out of 599 cities	Maragogi
Processing Record 202 out of 599 cities	Tuatapere
City number=203 name=Tuatapere not found.	Skipping...
Processing Record 204 out of 599 cities	Chinhoyi
Processing Record 205 out of 599 cities	Sisimiut
Processing Record 206 out of 599 cities	Sechura
Processing Record 207 out of 599 cities	Bubaque
Processing Record 208 out of 599 cities	Baiyin
Processing Record 209 out of 599 cities	Klaksvík
Processing Record 210 out of 599 cities	Bāsār
Processing Record 211 out of 599 cities	Mwense
Processing Record 212 out of 599 cities	Mahébourg
Processing Record 213 out of 599 cities	Isla Vista
Processing Record 214 out of 599 cities	Praia da Vitória
Processing Record 215 out of 599 cities	Bria
Processing Record 216 out of 599 cities	Provideniya
Processing Record 217 out of 599 cities	Teahupoo
Processing Record 218 out of 599 cities	Basoko
Processing Record 219 out of 599 cities	Port Blair
Processing Record 220 out of 599 cities	Lagoa
Processing Record 221 out of 599 cities	Mae Ramat
Processing Record 222 out of 599 cities	Mount Isa
Processing Record 223 out of 599 cities	Bjørnevatn
Processing Record 224 out of 599 cities	Hong Kong
Processing Record 225 out of 599 cities	Kaitangata
Processing Record 226 out of 599 cities	Ellisras
Processing Record 227 out of 599 cities	Sovetskiy
Processing Record 228 out of 599 cities	Dunedin
Processing Record 229 out of 599 cities	Sistranda
Processing Record 230 out of 599 cities	Leningradskiy
Processing Record 231 out of 599 cities	Charlestown
Processing Record 232 out of 599 cities	Yulara
Processing Record 233 out of 599 cities	Puerto Escondido
Processing Record 234 out of 599 cities	Sainte-Suzanne
City number=235 name=Sainte-Suzanne not found.	Skipping...
Processing Record 236 out of 599 cities	Yashkul'
Processing Record 237 out of 599 cities	Namikupa
Processing Record 238 out of 599 cities	Cobija
Processing Record 239 out of 599 cities	Aykhal
Processing Record 240 out of 599 cities	Ouanaminthe
Processing Record 241 out of 599 cities	Necochea
Processing Record 242 out of 599 cities	San José de Ocoa

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Processing Record 243 out of 599 cities | Srednekolymsk
Processing Record 244 out of 599 cities | Rawson
City number=245 name=Rawson not found. Skipping...
Processing Record 246 out of 599 cities | Collie
Processing Record 247 out of 599 cities | Fort Nelson
Processing Record 248 out of 599 cities | Tautira
Processing Record 249 out of 599 cities | Nouadhibou
City number=250 name=Nouadhibou not found. Skipping...
Processing Record 251 out of 599 cities | Saint-François
Processing Record 252 out of 599 cities | Meulaboh
Processing Record 253 out of 599 cities | Rundu
Processing Record 254 out of 599 cities | Ponta Delgada
Processing Record 255 out of 599 cities | Lata
Processing Record 256 out of 599 cities | Ketchikan
Processing Record 257 out of 599 cities | Haines Junction
Processing Record 258 out of 599 cities | Calabozo
City number=259 name=Calabozo not found. Skipping...
Processing Record 260 out of 599 cities | Udachny
Processing Record 261 out of 599 cities | Yumen
Processing Record 262 out of 599 cities | Mezen'
Processing Record 263 out of 599 cities | Codrington
Processing Record 264 out of 599 cities | Guerrero Negro
Processing Record 265 out of 599 cities | Rørvik
Processing Record 266 out of 599 cities | Oistins
Processing Record 267 out of 599 cities | Marrakesh
City number=268 name=Marrakesh not found. Skipping...
Processing Record 269 out of 599 cities | Alugan
Processing Record 270 out of 599 cities | Saskylakh
City number=271 name=Saskylakh not found. Skipping...
Processing Record 272 out of 599 cities | Osypenko
Processing Record 273 out of 599 cities | Xining
Processing Record 274 out of 599 cities | Touros
Processing Record 275 out of 599 cities | Shar
Processing Record 276 out of 599 cities | Ola
Processing Record 277 out of 599 cities | Iqaluit
Processing Record 278 out of 599 cities | Pitimbu
Processing Record 279 out of 599 cities | Khilok
Processing Record 280 out of 599 cities | Geraldton
Processing Record 281 out of 599 cities | Sainte-Marie
Processing Record 282 out of 599 cities | Otradnoye
Processing Record 283 out of 599 cities | Bathsheba
Processing Record 284 out of 599 cities | Tromsø
Processing Record 285 out of 599 cities | São Miguel
Processing Record 286 out of 599 cities | Ondjiva
Processing Record 287 out of 599 cities | Edinburgh
Processing Record 288 out of 599 cities | Panguipulli
Processing Record 289 out of 599 cities | Saint George
Processing Record 290 out of 599 cities | Ponta do Sol
Processing Record 291 out of 599 cities | Novy Urengoy
Processing Record 292 out of 599 cities | Atar
Processing Record 293 out of 599 cities | Deniliquin
Processing Record 294 out of 599 cities | Mopti
Processing Record 295 out of 599 cities | Springdale
Processing Record 296 out of 599 cities | Asahikawa
Processing Record 297 out of 599 cities | Coos Bay
Processing Record 298 out of 599 cities | Mbigou
Processing Record 299 out of 599 cities | Burgeo
Processing Record 300 out of 599 cities | Rabat
Processing Record 301 out of 599 cities | Kindu
Processing Record 302 out of 599 cities | Korla
Processing Record 303 out of 599 cities | Lagan
```

Processing Record 304 out of 599 cities	Alofi
Processing Record 305 out of 599 cities	Sanbu
Processing Record 306 out of 599 cities	Port Macquarie
Processing Record 307 out of 599 cities	Vao
Processing Record 308 out of 599 cities	Takoradze
Processing Record 309 out of 599 cities	Saryagash
Processing Record 310 out of 599 cities	Khatanga
Processing Record 311 out of 599 cities	Labuhan
Processing Record 312 out of 599 cities	Châteauroux
Processing Record 313 out of 599 cities	Sarangani
Processing Record 314 out of 599 cities	Avera
Processing Record 315 out of 599 cities	Namatanai
Processing Record 316 out of 599 cities	Daru
Processing Record 317 out of 599 cities	Springbok
Processing Record 318 out of 599 cities	Jiazi
Processing Record 319 out of 599 cities	Coahuayana Viejo
Processing Record 320 out of 599 cities	Rio Grande
Processing Record 321 out of 599 cities	Willmar
Processing Record 322 out of 599 cities	San Patricio
Processing Record 323 out of 599 cities	Pavelets
Processing Record 324 out of 599 cities	Suez
Processing Record 325 out of 599 cities	Buchanan
Processing Record 326 out of 599 cities	Viedma
Processing Record 327 out of 599 cities	Souillac
City number=328 name=Souillac not found.	Skipping...
Processing Record 329 out of 599 cities	Médéa
Processing Record 330 out of 599 cities	Batemans Bay
Processing Record 331 out of 599 cities	Massaguet
Processing Record 332 out of 599 cities	Port-Gentil
Processing Record 333 out of 599 cities	Faya
Processing Record 334 out of 599 cities	Chui
Processing Record 335 out of 599 cities	Greeley
Processing Record 336 out of 599 cities	Karratha
Processing Record 337 out of 599 cities	Sinjai
Processing Record 338 out of 599 cities	Mareeba
Processing Record 339 out of 599 cities	Eatonton
City number=340 name=Eatonton not found.	Skipping...
Processing Record 341 out of 599 cities	Tianpeng
City number=342 name=Tianpeng not found.	Skipping...
Processing Record 343 out of 599 cities	Oussouye
Processing Record 344 out of 599 cities	Salalah
Processing Record 345 out of 599 cities	Pevek
Processing Record 346 out of 599 cities	Sawtell
Processing Record 347 out of 599 cities	Bella Vista
Processing Record 348 out of 599 cities	Merauke
Processing Record 349 out of 599 cities	Odienné
Processing Record 350 out of 599 cities	Colquiri
Processing Record 351 out of 599 cities	Arraial do Cabo
Processing Record 352 out of 599 cities	Sindor
Processing Record 353 out of 599 cities	Kavieng
Processing Record 354 out of 599 cities	Isangel
Processing Record 355 out of 599 cities	Port Hardy
Processing Record 356 out of 599 cities	Praia
Processing Record 357 out of 599 cities	Bay Roberts
Processing Record 358 out of 599 cities	Teya
Processing Record 359 out of 599 cities	Burnie
Processing Record 360 out of 599 cities	Ofakim
Processing Record 361 out of 599 cities	Cidreira
Processing Record 362 out of 599 cities	Cássia
Processing Record 363 out of 599 cities	Khani
Processing Record 364 out of 599 cities	Buraidah

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Processing Record 365 out of 599 cities | Bekhtery
Processing Record 366 out of 599 cities | Segezha
City number=367 name=Segezha not found. Skipping...
Processing Record 368 out of 599 cities | Greater Sudbury
Processing Record 369 out of 599 cities | Lazarev
City number=370 name=Lazarev not found. Skipping...
Processing Record 371 out of 599 cities | Mitú
Processing Record 372 out of 599 cities | Nyrob
Processing Record 373 out of 599 cities | Carutapera
Processing Record 374 out of 599 cities | Egvekinot
Processing Record 375 out of 599 cities | Prado
City number=376 name=Prado not found. Skipping...
Processing Record 377 out of 599 cities | Shimanovsk
Processing Record 378 out of 599 cities | Inongo
Processing Record 379 out of 599 cities | Morón
Processing Record 380 out of 599 cities | Along
Processing Record 381 out of 599 cities | Aripuanã
Processing Record 382 out of 599 cities | Mehamn
Processing Record 383 out of 599 cities | Kalmunai
Processing Record 384 out of 599 cities | Zmeinogorsk
Processing Record 385 out of 599 cities | Staroshcherbinovskaya
Processing Record 386 out of 599 cities | Paraopeba
Processing Record 387 out of 599 cities | San Quintín
Processing Record 388 out of 599 cities | Ismailia
Processing Record 389 out of 599 cities | Key Largo
Processing Record 390 out of 599 cities | Saiha
Processing Record 391 out of 599 cities | Les Escoumins
City number=392 name=Les Escoumins not found. Skipping...
Processing Record 393 out of 599 cities | Huarmey
Processing Record 394 out of 599 cities | Serra Branca
Processing Record 395 out of 599 cities | Fortuna
Processing Record 396 out of 599 cities | Jumla
Processing Record 397 out of 599 cities | Ipu
Processing Record 398 out of 599 cities | Moose Factory
Processing Record 399 out of 599 cities | Dingle
Processing Record 400 out of 599 cities | Chabahar
Processing Record 401 out of 599 cities | Mbengwi
Processing Record 402 out of 599 cities | Kamień Pomorski
Processing Record 403 out of 599 cities | Borba
Processing Record 404 out of 599 cities | Guánica
Processing Record 405 out of 599 cities | Krasnosel'kup
Processing Record 406 out of 599 cities | Rantepao
Processing Record 407 out of 599 cities | Fenoarivo
Processing Record 408 out of 599 cities | Omsukchan
Processing Record 409 out of 599 cities | Seoni
Processing Record 410 out of 599 cities | Loughrea
Processing Record 411 out of 599 cities | Novopavlovka
Processing Record 412 out of 599 cities | Berlevåg
City number=413 name=Berlevåg not found. Skipping...
Processing Record 414 out of 599 cities | Cam Ranh
City number=415 name=Cam Ranh not found. Skipping...
Processing Record 416 out of 599 cities | Merced
Processing Record 417 out of 599 cities | Port Lincoln
Processing Record 418 out of 599 cities | Angoche
Processing Record 419 out of 599 cities | High Rock
Processing Record 420 out of 599 cities | Talnakh
City number=421 name=Talnakh not found. Skipping...
Processing Record 422 out of 599 cities | Husavik
Processing Record 423 out of 599 cities | Kontagora
Processing Record 424 out of 599 cities | Phan Thiet
Processing Record 425 out of 599 cities | Saint Anthony
```

Processing Record 426 out of 599 cities	Taksimo
Processing Record 427 out of 599 cities	Koungou
Processing Record 428 out of 599 cities	Manggar
Processing Record 429 out of 599 cities	Kumul
Processing Record 430 out of 599 cities	Tosno
Processing Record 431 out of 599 cities	Porto-Novo
Processing Record 432 out of 599 cities	Havelock
Processing Record 433 out of 599 cities	Mananjary
Processing Record 434 out of 599 cities	Fort Smith
Processing Record 435 out of 599 cities	Puerto Ayacucho
Processing Record 436 out of 599 cities	Ransang
Processing Record 437 out of 599 cities	Trivandrum
Processing Record 438 out of 599 cities	Comodoro Rivadavia
Processing Record 439 out of 599 cities	Malazgirt
Processing Record 440 out of 599 cities	Hriňová
Processing Record 441 out of 599 cities	Keti Bandar
Processing Record 442 out of 599 cities	Waipawa
Processing Record 443 out of 599 cities	Río Gallegos
Processing Record 444 out of 599 cities	Omīdīyeh
Processing Record 445 out of 599 cities	Saint-Pierre
Processing Record 446 out of 599 cities	Nanchang
Processing Record 447 out of 599 cities	Petropavlovsk-Kamchatskiy
Processing Record 448 out of 599 cities	Vanavara
Processing Record 449 out of 599 cities	Constitución
Processing Record 450 out of 599 cities	Imbituba
Processing Record 451 out of 599 cities	Mapiri
City number=452 name=Mapiri not found. Skipping...	
Processing Record 453 out of 599 cities	Usinsk
Processing Record 454 out of 599 cities	Natal
Processing Record 455 out of 599 cities	Pontiac
Processing Record 456 out of 599 cities	Roebourne
Processing Record 457 out of 599 cities	São Filipe
Processing Record 458 out of 599 cities	Shalyhyne
Processing Record 459 out of 599 cities	Acapulco de Juárez
Processing Record 460 out of 599 cities	Mandera
Processing Record 461 out of 599 cities	Xinqing
Processing Record 462 out of 599 cities	São Francisco
City number=463 name=São Francisco not found. Skipping...	
Processing Record 464 out of 599 cities	Henties Bay
City number=465 name=Henties Bay not found. Skipping...	
Processing Record 466 out of 599 cities	Wilmington
Processing Record 467 out of 599 cities	Cuiluan
Processing Record 468 out of 599 cities	Mount Gambier
Processing Record 469 out of 599 cities	San Jerónimo
City number=470 name=San Jerónimo not found. Skipping...	
Processing Record 471 out of 599 cities	Perth
Processing Record 472 out of 599 cities	Preobrazheniye
Processing Record 473 out of 599 cities	Hasaki
Processing Record 474 out of 599 cities	Sur
City number=475 name=Sur not found. Skipping...	
Processing Record 476 out of 599 cities	Riohacha
Processing Record 477 out of 599 cities	Port Hedland
Processing Record 478 out of 599 cities	North Platte
Processing Record 479 out of 599 cities	Palmer
Processing Record 480 out of 599 cities	Coquimbo
Processing Record 481 out of 599 cities	Eucaliptus
Processing Record 482 out of 599 cities	Whitehorse
City number=483 name=Whitehorse not found. Skipping...	
Processing Record 484 out of 599 cities	Poum
Processing Record 485 out of 599 cities	Graaff-Reinet
Processing Record 486 out of 599 cities	Farafenni

Processing Record 487 out of 599 cities		Oktyabr'skiy
Processing Record 488 out of 599 cities		Doha
Processing Record 489 out of 599 cities		Ust'-Ordynskiy
Processing Record 490 out of 599 cities		Ambilobe
Processing Record 491 out of 599 cities		Fomboni
Processing Record 492 out of 599 cities		Parkes
Processing Record 493 out of 599 cities		Yinchuan
Processing Record 494 out of 599 cities		Samaná
Processing Record 495 out of 599 cities		Lavrentiya
Processing Record 496 out of 599 cities		Baldeogarh
Processing Record 497 out of 599 cities		Saldanha
Processing Record 498 out of 599 cities		Nizhniy Odes
Processing Record 499 out of 599 cities		Sitka
Processing Record 500 out of 599 cities		Samdrup Jongkhar District
Processing Record 501 out of 599 cities		Acaraú
Processing Record 502 out of 599 cities		Palestine
Processing Record 503 out of 599 cities		Tabou
Processing Record 504 out of 599 cities		Makkah al Mukarramah
Processing Record 505 out of 599 cities		Riyadh
Processing Record 506 out of 599 cities		Alice Town
City number=507 name=Alice Town not found. Skipping...		
Processing Record 508 out of 599 cities		Malpe
Processing Record 509 out of 599 cities		Katsuura
Processing Record 510 out of 599 cities		Nantucket
Processing Record 511 out of 599 cities		Cascais
Processing Record 512 out of 599 cities		Yambio
Processing Record 513 out of 599 cities		Altay
Processing Record 514 out of 599 cities		Boshnyakovo
Processing Record 515 out of 599 cities		Chumikan
Processing Record 516 out of 599 cities		Talara
Processing Record 517 out of 599 cities		Mponela
Processing Record 518 out of 599 cities		San Ramon
Processing Record 519 out of 599 cities		Trofors
Processing Record 520 out of 599 cities		Zunyi
Processing Record 521 out of 599 cities		Lubao
Processing Record 522 out of 599 cities		Skeldon
Processing Record 523 out of 599 cities		San Lorenzo
Processing Record 524 out of 599 cities		Kragerø
City number=525 name=Kragerø not found. Skipping...		
Processing Record 526 out of 599 cities		Yabêlo
Processing Record 527 out of 599 cities		Bonavista
Processing Record 528 out of 599 cities		Rostock
Processing Record 529 out of 599 cities		Conceição do Araguaia
Processing Record 530 out of 599 cities		Belmonte
Processing Record 531 out of 599 cities		Severo-Yeniseyskiy
Processing Record 532 out of 599 cities		Takahashi
Processing Record 533 out of 599 cities		Devonport
Processing Record 534 out of 599 cities		Oktyabr'skoye
Processing Record 535 out of 599 cities		Sittwe
Processing Record 536 out of 599 cities		Moindou
Processing Record 537 out of 599 cities		Vanimó
Processing Record 538 out of 599 cities		Santo Domingo
Processing Record 539 out of 599 cities		Thoen
Processing Record 540 out of 599 cities		Mtwara
Processing Record 541 out of 599 cities		Taoudenni
Processing Record 542 out of 599 cities		Ruteng
Processing Record 543 out of 599 cities		Esim
Processing Record 544 out of 599 cities		São João do Piauí
Processing Record 545 out of 599 cities		Pimentel
Processing Record 546 out of 599 cities		Dandong
Processing Record 547 out of 599 cities		Nemuro

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Processing Record 548 out of 599 cities | Vestmannaeyjar
Processing Record 549 out of 599 cities | Amazar
Processing Record 550 out of 599 cities | Botwood
Processing Record 551 out of 599 cities | Porkhov
Processing Record 552 out of 599 cities | Skjervøy
Processing Record 553 out of 599 cities | Kon Tum
Processing Record 554 out of 599 cities | Banda Aceh
Processing Record 555 out of 599 cities | Ciudad Bolivar
Processing Record 556 out of 599 cities | Ende
Processing Record 557 out of 599 cities | Bam
Processing Record 558 out of 599 cities | Dillon
Processing Record 559 out of 599 cities | Ossora
Processing Record 560 out of 599 cities | Narsaq
City number=561 name=Narsaq not found. Skipping...
Processing Record 562 out of 599 cities | Grafton
Processing Record 563 out of 599 cities | Iquique
Processing Record 564 out of 599 cities | Anadyr
Processing Record 565 out of 599 cities | Virginia Beach
City number=566 name=Virginia Beach not found. Skipping...
Processing Record 567 out of 599 cities | Tete
Processing Record 568 out of 599 cities | Albury
Processing Record 569 out of 599 cities | Luanda
Processing Record 570 out of 599 cities | Sulangan
Processing Record 571 out of 599 cities | Alta Floresta
Processing Record 572 out of 599 cities | Khor
Processing Record 573 out of 599 cities | Dalvik
Processing Record 574 out of 599 cities | Leshukonskoye
Processing Record 575 out of 599 cities | La Ronge
Processing Record 576 out of 599 cities | Chirāla
Processing Record 577 out of 599 cities | Humen
Processing Record 578 out of 599 cities | Mata Grande
Processing Record 579 out of 599 cities | Duvan
Processing Record 580 out of 599 cities | Āzādshahr
Processing Record 581 out of 599 cities | Donghai
Processing Record 582 out of 599 cities | Margate
Processing Record 583 out of 599 cities | Booué
Processing Record 584 out of 599 cities | Umeå
Processing Record 585 out of 599 cities | Ayios Ioannis
Processing Record 586 out of 599 cities | Kokoda
City number=587 name=Kokoda not found. Skipping...
Processing Record 588 out of 599 cities | Coolum Beach
Processing Record 589 out of 599 cities | Chokwé
Processing Record 590 out of 599 cities | Yangi Marg`ilon
Processing Record 591 out of 599 cities | Bulgan
Processing Record 592 out of 599 cities | Paragominas
Processing Record 593 out of 599 cities | Camacupa
Processing Record 594 out of 599 cities | Te Anau
Processing Record 595 out of 599 cities | Celestún
Processing Record 596 out of 599 cities | Rancho Veloz
Processing Record 597 out of 599 cities | Yarkovo
Processing Record 598 out of 599 cities | Nuuk
Processing Record 599 out of 599 cities | São João da Barra
```

Data Retrieval Complete

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 [3]:

Beginning Data Retrieval

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-----
Processing Record 1 of Set 1 | severo-kurilsk
Processing Record 2 of Set 1 | darhan
Processing Record 3 of Set 1 | tarakan
Processing Record 4 of Set 1 | komsomolskiy
Processing Record 5 of Set 1 | souillac
Processing Record 6 of Set 1 | jiuquan
Processing Record 7 of Set 1 | sesheke
Processing Record 8 of Set 1 | punta arenas
Processing Record 9 of Set 1 | clarence town
Processing Record 10 of Set 1 | mataura
Processing Record 11 of Set 1 | magadan
Processing Record 12 of Set 1 | salym
Processing Record 13 of Set 1 | carnarvon
Processing Record 14 of Set 1 | puerto ayora
Processing Record 15 of Set 1 | arys
Processing Record 16 of Set 1 | prince rupert
Processing Record 17 of Set 1 | albany
Processing Record 18 of Set 1 | dikson
Processing Record 19 of Set 1 | kapaa
Processing Record 20 of Set 1 | rikitea
Processing Record 21 of Set 1 | rio gallegos
Processing Record 22 of Set 1 | kropotkin
Processing Record 23 of Set 1 | butaritari
Processing Record 24 of Set 1 | dahra
Processing Record 25 of Set 1 | khatanga
Processing Record 26 of Set 1 | stephenville
Processing Record 27 of Set 1 | hobart
Processing Record 28 of Set 1 | north bend
Processing Record 29 of Set 1 | ponta do sol
Processing Record 30 of Set 1 | faya
Processing Record 31 of Set 1 | vryburg
Processing Record 32 of Set 1 | lolua

```

City not found. Skipping...

```

Processing Record 33 of Set 1 | hasaki
Processing Record 34 of Set 1 | zhigansk
Processing Record 35 of Set 1 | ushuaia
Processing Record 36 of Set 1 | thompson
Processing Record 37 of Set 1 | margate
Processing Record 38 of Set 1 | oksfjord
Processing Record 39 of Set 1 | chumikan
Processing Record 40 of Set 1 | kudat
Processing Record 41 of Set 1 | jamestown
Processing Record 42 of Set 1 | laguna
Processing Record 43 of Set 1 | abu zabad
Processing Record 44 of Set 1 | jiroft

```

City not found. Skipping...

```

Processing Record 45 of Set 1 | saint-joseph
Processing Record 46 of Set 1 | cabo san lucas
Processing Record 47 of Set 1 | new norfolk
Processing Record 48 of Set 1 | port alfred
Processing Record 49 of Set 1 | kirkwall
Processing Record 50 of Set 1 | luderitz
Processing Record 0 of Set 2 | bethel
Processing Record 1 of Set 2 | vao
Processing Record 2 of Set 2 | saldanha
Processing Record 3 of Set 2 | melo
Processing Record 4 of Set 2 | taolanaro

```

City not found. Skipping...

```

Processing Record 5 of Set 2 | college

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```
Processing Record 6 of Set 2 | prinos
Processing Record 7 of Set 2 | kodiak
Processing Record 8 of Set 2 | cabo rojo
Processing Record 9 of Set 2 | nuevo ideal
Processing Record 10 of Set 2 | yumen
Processing Record 11 of Set 2 | khonsa
Processing Record 12 of Set 2 | biloela
Processing Record 13 of Set 2 | sungaipenuh
Processing Record 14 of Set 2 | namatanai
Processing Record 15 of Set 2 | kungurtug
Processing Record 16 of Set 2 | port elizabeth
Processing Record 17 of Set 2 | busselton
Processing Record 18 of Set 2 | san rafael
Processing Record 19 of Set 2 | cape town
Processing Record 20 of Set 2 | hovd
Processing Record 21 of Set 2 | isangel
Processing Record 22 of Set 2 | ancud
Processing Record 23 of Set 2 | humenne
Processing Record 24 of Set 2 | natal
Processing Record 25 of Set 2 | moron
Processing Record 26 of Set 2 | saryshagan
City not found. Skipping...
Processing Record 27 of Set 2 | kaitangata
Processing Record 28 of Set 2 | poya
Processing Record 29 of Set 2 | yellowknife
Processing Record 30 of Set 2 | pangai
Processing Record 31 of Set 2 | havre-saint-pierre
Processing Record 32 of Set 2 | takoradi
Processing Record 33 of Set 2 | bathsheba
Processing Record 34 of Set 2 | kirksville
Processing Record 35 of Set 2 | pangody
Processing Record 36 of Set 2 | qaanaaq
Processing Record 37 of Set 2 | hithadhoo
Processing Record 38 of Set 2 | borujan
City not found. Skipping...
Processing Record 39 of Set 2 | cambridge
Processing Record 40 of Set 2 | damaturu
Processing Record 41 of Set 2 | bardiyah
City not found. Skipping...
Processing Record 42 of Set 2 | carbonear
Processing Record 43 of Set 2 | nikolskoye
Processing Record 44 of Set 2 | mar del plata
Processing Record 45 of Set 2 | charlestown
Processing Record 46 of Set 2 | mixtepec
City not found. Skipping...
Processing Record 47 of Set 2 | touros
Processing Record 48 of Set 2 | boissevain
Processing Record 49 of Set 2 | bluff
Processing Record 0 of Set 3 | kudahuvadhoo
Processing Record 1 of Set 3 | illoqqortoormiut
City not found. Skipping...
Processing Record 2 of Set 3 | tairua
Processing Record 3 of Set 3 | tuatapere
Processing Record 4 of Set 3 | bredasdorp
Processing Record 5 of Set 3 | silver city
Processing Record 6 of Set 3 | veracruz
Processing Record 7 of Set 3 | barentsburg
City not found. Skipping...
Processing Record 8 of Set 3 | rincon
Processing Record 9 of Set 3 | hermanus
Processing Record 10 of Set 3 | toktogul
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Processing Record 11 of Set 3 | lebu
Processing Record 12 of Set 3 | mahebourg
Processing Record 13 of Set 3 | yilan
Processing Record 14 of Set 3 | mumford
Processing Record 15 of Set 3 | atuona
Processing Record 16 of Set 3 | diffa
Processing Record 17 of Set 3 | saskylakh
Processing Record 18 of Set 3 | yambio
City not found. Skipping...
Processing Record 19 of Set 3 | lompoc
Processing Record 20 of Set 3 | ribeira grande
Processing Record 21 of Set 3 | dana point
Processing Record 22 of Set 3 | castro
Processing Record 23 of Set 3 | upernavik
Processing Record 24 of Set 3 | kavieng
Processing Record 25 of Set 3 | barabinsk
Processing Record 26 of Set 3 | port lincoln
Processing Record 27 of Set 3 | malinovoye ozero
Processing Record 28 of Set 3 | ambatofinandrahana
Processing Record 29 of Set 3 | puerto del rosario
Processing Record 30 of Set 3 | pevek
Processing Record 31 of Set 3 | chuy
Processing Record 32 of Set 3 | zhezkazgan
Processing Record 33 of Set 3 | avarua
Processing Record 34 of Set 3 | batagay-alyta
Processing Record 35 of Set 3 | baltiysk
Processing Record 36 of Set 3 | parfino
Processing Record 37 of Set 3 | barrow
Processing Record 38 of Set 3 | hilo
Processing Record 39 of Set 3 | mackenzie
Processing Record 40 of Set 3 | lebanon
Processing Record 41 of Set 3 | nishihara
Processing Record 42 of Set 3 | antalaha
Processing Record 43 of Set 3 | narsaq
Processing Record 44 of Set 3 | hami
Processing Record 45 of Set 3 | shaoyang
Processing Record 46 of Set 3 | chokurdakh
Processing Record 47 of Set 3 | petropavlovsk-kamchatskiy
Processing Record 48 of Set 3 | leningradskiy
Processing Record 49 of Set 3 | amderma
City not found. Skipping...
Processing Record 0 of Set 4 | mehamn
Processing Record 1 of Set 4 | vaini
Processing Record 2 of Set 4 | bara
Processing Record 3 of Set 4 | krasnoselkup
City not found. Skipping...
Processing Record 4 of Set 4 | risch
Processing Record 5 of Set 4 | along
Processing Record 6 of Set 4 | vestmanna
Processing Record 7 of Set 4 | mwinilunga
Processing Record 8 of Set 4 | kamenskoye
City not found. Skipping...
Processing Record 9 of Set 4 | pozo colorado
Processing Record 10 of Set 4 | tumanny
City not found. Skipping...
Processing Record 11 of Set 4 | werder
Processing Record 12 of Set 4 | lovington
Processing Record 13 of Set 4 | qasigiannguait
Processing Record 14 of Set 4 | mackay
Processing Record 15 of Set 4 | pisco
Processing Record 16 of Set 4 | marcona
```

City not found. Skipping...

Processing Record 17 of Set 4		sisimiut
Processing Record 18 of Set 4		banda aceh
Processing Record 19 of Set 4		fortuna
Processing Record 20 of Set 4		ouadda
Processing Record 21 of Set 4		sucua
Processing Record 22 of Set 4		nanortalik
Processing Record 23 of Set 4		longyearbyen
Processing Record 24 of Set 4		araouane
Processing Record 25 of Set 4		barra patuca
Processing Record 26 of Set 4		warqla

City not found. Skipping...

Processing Record 27 of Set 4		louisbourg
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City not found. Skipping...

Processing Record 28 of Set 4		wattegama
Processing Record 29 of Set 4		tuktoyaktuk
Processing Record 30 of Set 4		tabou
Processing Record 31 of Set 4		arraial do cabo
Processing Record 32 of Set 4		stabat
Processing Record 33 of Set 4		klaksvik
Processing Record 34 of Set 4		alofi
Processing Record 35 of Set 4		sumbawanga
Processing Record 36 of Set 4		lagoa
Processing Record 37 of Set 4		sentyabrskiy

City not found. Skipping...

Processing Record 38 of Set 4		bambous virieux
Processing Record 39 of Set 4		saint george
Processing Record 40 of Set 4		hibbing
Processing Record 41 of Set 4		bandar-e lengeh
Processing Record 42 of Set 4		viedma
Processing Record 43 of Set 4		kazalinsk

City not found. Skipping...

Processing Record 44 of Set 4		grand river south east
-------------------------------	--	------------------------

City not found. Skipping...

Processing Record 45 of Set 4		port keats
Processing Record 46 of Set 4		jinchang
Processing Record 47 of Set 4		lata
Processing Record 48 of Set 4		fairbanks
Processing Record 49 of Set 4		olupona
Processing Record 0 of Set 5		genhe
Processing Record 1 of Set 5		dingle
Processing Record 2 of Set 5		williamsburg
Processing Record 3 of Set 5		anloga
Processing Record 4 of Set 5		esperance
Processing Record 5 of Set 5		saint-philippe
Processing Record 6 of Set 5		provideniya
Processing Record 7 of Set 5		bargal

City not found. Skipping...

Processing Record 8 of Set 5		cockburn harbour
------------------------------	--	------------------

City not found. Skipping...

Processing Record 9 of Set 5		dalvik
Processing Record 10 of Set 5		salalah
Processing Record 11 of Set 5		inta
Processing Record 12 of Set 5		naze
Processing Record 13 of Set 5		juneau
Processing Record 14 of Set 5		kurumkan
Processing Record 15 of Set 5		ranong
Processing Record 16 of Set 5		cockburn town
Processing Record 17 of Set 5		sakakah

City not found. Skipping...

Processing Record 18 of Set 5		norman wells
-------------------------------	--	--------------

Processing Record 19 of Set 5 | hoquiam
Processing Record 20 of Set 5 | georgetown
Processing Record 21 of Set 5 | marv dasht
City not found. Skipping...
Processing Record 22 of Set 5 | ostrovnoy
Processing Record 23 of Set 5 | placido de castro
Processing Record 24 of Set 5 | anar darreh
City not found. Skipping...
Processing Record 25 of Set 5 | suksun
Processing Record 26 of Set 5 | bengkulu
City not found. Skipping...
Processing Record 27 of Set 5 | samusu
City not found. Skipping...
Processing Record 28 of Set 5 | belushya guba
City not found. Skipping...
Processing Record 29 of Set 5 | faanui
Processing Record 30 of Set 5 | ust-barguzin
Processing Record 31 of Set 5 | itacare
Processing Record 32 of Set 5 | nacogdoches
Processing Record 33 of Set 5 | cape canaveral
Processing Record 34 of Set 5 | puri
Processing Record 35 of Set 5 | umzimvubu
City not found. Skipping...
Processing Record 36 of Set 5 | jubayl
City not found. Skipping...
Processing Record 37 of Set 5 | tarnow
Processing Record 38 of Set 5 | vicuna
City not found. Skipping...
Processing Record 39 of Set 5 | jumla
Processing Record 40 of Set 5 | ust-kuyga
Processing Record 41 of Set 5 | saleaula
City not found. Skipping...
Processing Record 42 of Set 5 | rocha
Processing Record 43 of Set 5 | tasiilaq
Processing Record 44 of Set 5 | ribeira brava
Processing Record 45 of Set 5 | norrtalje
Processing Record 46 of Set 5 | warrington
Processing Record 47 of Set 5 | noumea
Processing Record 48 of Set 5 | akyab
City not found. Skipping...
Processing Record 49 of Set 5 | meadow lake
Processing Record 0 of Set 6 | chimoio
Processing Record 1 of Set 6 | oussouye
Processing Record 2 of Set 6 | gazojak
Processing Record 3 of Set 6 | balikpapan
Processing Record 4 of Set 6 | jabiru
City not found. Skipping...
Processing Record 5 of Set 6 | torbay
Processing Record 6 of Set 6 | elko
Processing Record 7 of Set 6 | sao joao da barra
Processing Record 8 of Set 6 | saquena
Processing Record 9 of Set 6 | makokou
Processing Record 10 of Set 6 | hambantota
Processing Record 11 of Set 6 | beidao
Processing Record 12 of Set 6 | praia da vitoria
Processing Record 13 of Set 6 | port blair
Processing Record 14 of Set 6 | tsihombe
City not found. Skipping...
Processing Record 15 of Set 6 | awbari
Processing Record 16 of Set 6 | reconquista
Processing Record 17 of Set 6 | aklavik

Processing Record 18 of Set 6 | teya
Processing Record 19 of Set 6 | toliary
City not found. Skipping...
Processing Record 20 of Set 6 | edinet
Processing Record 21 of Set 6 | taoudenni
Processing Record 22 of Set 6 | goundam
Processing Record 23 of Set 6 | socorro
Processing Record 24 of Set 6 | merrill
Processing Record 25 of Set 6 | vagay
Processing Record 26 of Set 6 | comodoro rivadavia
Processing Record 27 of Set 6 | pudozh
Processing Record 28 of Set 6 | sambava
Processing Record 29 of Set 6 | batesville
Processing Record 30 of Set 6 | mys shmidta
City not found. Skipping...
Processing Record 31 of Set 6 | itaituba
Processing Record 32 of Set 6 | la asuncion
Processing Record 33 of Set 6 | east london
Processing Record 34 of Set 6 | chipinge
Processing Record 35 of Set 6 | cedartown
Processing Record 36 of Set 6 | miranda
Processing Record 37 of Set 6 | utiroa
City not found. Skipping...
Processing Record 38 of Set 6 | sabang
Processing Record 39 of Set 6 | abong mbang
Processing Record 40 of Set 6 | port hardy
Processing Record 41 of Set 6 | canon city
Processing Record 42 of Set 6 | santa quiteria do maranhao
Processing Record 43 of Set 6 | ryotsu
Processing Record 44 of Set 6 | pacific grove
Processing Record 45 of Set 6 | kishi
Processing Record 46 of Set 6 | obihiro
Processing Record 47 of Set 6 | katsuura
Processing Record 48 of Set 6 | saint augustine
Processing Record 49 of Set 6 | bushehr
Processing Record 0 of Set 7 | nizhniy kuranakh
Processing Record 1 of Set 7 | bonthe
Processing Record 2 of Set 7 | saint-augustin
Processing Record 3 of Set 7 | nizwa
Processing Record 4 of Set 7 | kamenka
Processing Record 5 of Set 7 | tiksi
Processing Record 6 of Set 7 | saint anthony
Processing Record 7 of Set 7 | vardo
Processing Record 8 of Set 7 | riyadh
Processing Record 9 of Set 7 | malim
Processing Record 10 of Set 7 | makakilo city
Processing Record 11 of Set 7 | henties bay
Processing Record 12 of Set 7 | caravelas
Processing Record 13 of Set 7 | gazli
Processing Record 14 of Set 7 | nizhneyansk
City not found. Skipping...
Processing Record 15 of Set 7 | san juan
Processing Record 16 of Set 7 | moose factory
Processing Record 17 of Set 7 | kashi
City not found. Skipping...
Processing Record 18 of Set 7 | fuerte olimpo
Processing Record 19 of Set 7 | saint-pierre
Processing Record 20 of Set 7 | raca
Processing Record 21 of Set 7 | san quintin
Processing Record 22 of Set 7 | sedro-woolley
Processing Record 23 of Set 7 | berdigestyakh

```
Processing Record 24 of Set 7 | high level
Processing Record 25 of Set 7 | khorramshahr
Processing Record 26 of Set 7 | san jose
Processing Record 27 of Set 7 | emba
Processing Record 28 of Set 7 | farcasu
Processing Record 29 of Set 7 | kruisfontein
Processing Record 30 of Set 7 | garango
Processing Record 31 of Set 7 | boa vista
Processing Record 32 of Set 7 | novopskov
Processing Record 33 of Set 7 | shimoda
Processing Record 34 of Set 7 | portland
Processing Record 35 of Set 7 | waingapu
Processing Record 36 of Set 7 | zuwarah
Processing Record 37 of Set 7 | muroto
Processing Record 38 of Set 7 | sao filipe
Processing Record 39 of Set 7 | attawapiskat
City not found. Skipping...
Processing Record 40 of Set 7 | lunenburg
Processing Record 41 of Set 7 | novyy urengoy
Processing Record 42 of Set 7 | ferry pass
Processing Record 43 of Set 7 | crotone
Processing Record 44 of Set 7 | arlit
Processing Record 45 of Set 7 | auki
Processing Record 46 of Set 7 | ambilobe
Processing Record 47 of Set 7 | ilhabela
Processing Record 48 of Set 7 | kirakira
Processing Record 49 of Set 7 | cidreira
Processing Record 0 of Set 8 | chambas
Processing Record 1 of Set 8 | gat
Processing Record 2 of Set 8 | petatlan
Processing Record 3 of Set 8 | nha trang
Processing Record 4 of Set 8 | hermosillo
Processing Record 5 of Set 8 | airai
Processing Record 6 of Set 8 | kahului
Processing Record 7 of Set 8 | yeppoon
Processing Record 8 of Set 8 | manavgat
Processing Record 9 of Set 8 | jarjis
City not found. Skipping...
Processing Record 10 of Set 8 | xambioa
City not found. Skipping...
Processing Record 11 of Set 8 | katima mulilo
Processing Record 12 of Set 8 | carutapera
Processing Record 13 of Set 8 | yar-sale
Processing Record 14 of Set 8 | haines junction
Processing Record 15 of Set 8 | half moon bay
Processing Record 16 of Set 8 | vanavara
Processing Record 17 of Set 8 | santander
Processing Record 18 of Set 8 | amuntai
Processing Record 19 of Set 8 | esmeraldas
Processing Record 20 of Set 8 | okhotsk
Processing Record 21 of Set 8 | datong
Processing Record 22 of Set 8 | sidi ali
Processing Record 23 of Set 8 | muravlenko
Processing Record 24 of Set 8 | amahai
Processing Record 25 of Set 8 | santa isabel do rio negro
Processing Record 26 of Set 8 | wageningen
Processing Record 27 of Set 8 | svetlogorsk
Processing Record 28 of Set 8 | paita
Processing Record 29 of Set 8 | maniitsoq
Processing Record 30 of Set 8 | port augusta
Processing Record 31 of Set 8 | yulara
```

Processing Record 32 of Set 8 | bur gabo
City not found. Skipping...
Processing Record 33 of Set 8 | hofn
Processing Record 34 of Set 8 | pulupandan
Processing Record 35 of Set 8 | wajima
Processing Record 36 of Set 8 | dnestrovsc
Processing Record 37 of Set 8 | biak
Processing Record 38 of Set 8 | bam
Processing Record 39 of Set 8 | tacoronte
Processing Record 40 of Set 8 | otavi
Processing Record 41 of Set 8 | adrar
Processing Record 42 of Set 8 | srednekolymsk
Processing Record 43 of Set 8 | belmonte
Processing Record 44 of Set 8 | san cristobal
Processing Record 45 of Set 8 | kalomo
City not found. Skipping...
Processing Record 46 of Set 8 | callaway
Processing Record 47 of Set 8 | birao
Processing Record 48 of Set 8 | itoman
Processing Record 49 of Set 8 | uch
Processing Record 0 of Set 9 | santona
Processing Record 1 of Set 9 | onguday
Processing Record 2 of Set 9 | hangu
Processing Record 3 of Set 9 | geraldton
Processing Record 4 of Set 9 | gorele
Processing Record 5 of Set 9 | erenhot
Processing Record 6 of Set 9 | hauterive
Processing Record 7 of Set 9 | kerema
Processing Record 8 of Set 9 | jalu
Processing Record 9 of Set 9 | inhambane
Processing Record 10 of Set 9 | kenai
Processing Record 11 of Set 9 | azimur
City not found. Skipping...
Processing Record 12 of Set 9 | joshimath
Processing Record 13 of Set 9 | hamilton
Processing Record 14 of Set 9 | talnakh
Processing Record 15 of Set 9 | nam tha
City not found. Skipping...
Processing Record 16 of Set 9 | dzhusaly
City not found. Skipping...
Processing Record 17 of Set 9 | egvekinot
Processing Record 18 of Set 9 | victoria
Processing Record 19 of Set 9 | atbasar
Processing Record 20 of Set 9 | bulembu
Processing Record 21 of Set 9 | hohhot
Processing Record 22 of Set 9 | halifax
Processing Record 23 of Set 9 | rehoboth
Processing Record 24 of Set 9 | beloha
Processing Record 25 of Set 9 | sehithwa
Processing Record 26 of Set 9 | burdur
Processing Record 27 of Set 9 | baruun-urt
Processing Record 28 of Set 9 | fagernes
Processing Record 29 of Set 9 | domoni
City not found. Skipping...
Processing Record 30 of Set 9 | toyooka
Processing Record 31 of Set 9 | nantucket
Processing Record 32 of Set 9 | martaban
Processing Record 33 of Set 9 | puerto escondido
Processing Record 34 of Set 9 | port moresby
Processing Record 35 of Set 9 | malinovskiy
Processing Record 36 of Set 9 | kumluca

Processing Record 37 of Set 9 | salinas
Processing Record 38 of Set 9 | mount isa
Processing Record 39 of Set 9 | cherskiy
Processing Record 40 of Set 9 | gobabis
Processing Record 41 of Set 9 | bilma
Processing Record 42 of Set 9 | abiy adi
City not found. Skipping...
Processing Record 43 of Set 9 | fort nelson
Processing Record 44 of Set 9 | quesnel
Processing Record 45 of Set 9 | dakar
Processing Record 46 of Set 9 | maloshyuka
City not found. Skipping...
Processing Record 47 of Set 9 | santiago del estero
Processing Record 48 of Set 9 | buala
Processing Record 49 of Set 9 | irbeyskoye
Processing Record 0 of Set 10 | vila franca do campo
Processing Record 1 of Set 10 | coihaïque
Processing Record 2 of Set 10 | los llanos de aridane
Processing Record 3 of Set 10 | muros
Processing Record 4 of Set 10 | port hedland
Processing Record 5 of Set 10 | kieta
Processing Record 6 of Set 10 | satitoa
City not found. Skipping...
Processing Record 7 of Set 10 | green river
Processing Record 8 of Set 10 | mosonmagyarovar
Processing Record 9 of Set 10 | mindelo
Processing Record 10 of Set 10 | roblin
Processing Record 11 of Set 10 | la ronge
Processing Record 12 of Set 10 | tubuala
Processing Record 13 of Set 10 | port-gentil
Processing Record 14 of Set 10 | mordovo
Processing Record 15 of Set 10 | clyde river
Processing Record 16 of Set 10 | karaul
City not found. Skipping...
Processing Record 17 of Set 10 | aykhal
Processing Record 18 of Set 10 | tuensang
Processing Record 19 of Set 10 | pascagoula
Processing Record 20 of Set 10 | korla
City not found. Skipping...
Processing Record 21 of Set 10 | canto do buriti
Processing Record 22 of Set 10 | bijie
Processing Record 23 of Set 10 | san-pedro
Processing Record 24 of Set 10 | luorong
Processing Record 25 of Set 10 | yei
City not found. Skipping...
Processing Record 26 of Set 10 | berlevag
Processing Record 27 of Set 10 | hihifo
City not found. Skipping...
Processing Record 28 of Set 10 | satipo
Processing Record 29 of Set 10 | rawson
Processing Record 30 of Set 10 | marsh harbour
Processing Record 31 of Set 10 | taupo
Processing Record 32 of Set 10 | san carlos de bariloche
Processing Record 33 of Set 10 | pervomayskoye
Processing Record 34 of Set 10 | chicama
Processing Record 35 of Set 10 | angoche
Processing Record 36 of Set 10 | brae
Processing Record 37 of Set 10 | manokwari
Processing Record 38 of Set 10 | mauganj
Processing Record 39 of Set 10 | te anau
Processing Record 40 of Set 10 | vila velha

```
Processing Record 41 of Set 10 | tautira
Processing Record 42 of Set 10 | dong xoai
Processing Record 43 of Set 10 | batemans bay
Processing Record 44 of Set 10 | diapaga
Processing Record 45 of Set 10 | mangrol
Processing Record 46 of Set 10 | mersing
Processing Record 47 of Set 10 | maldonado
Processing Record 48 of Set 10 | mikhaylovka
Processing Record 49 of Set 10 | temple
Processing Record 0 of Set 11 | gigmoto
Processing Record 1 of Set 11 | makow mazowiecki
Processing Record 2 of Set 11 | lasa
Processing Record 3 of Set 11 | mazamari
Processing Record 4 of Set 11 | matagami
Processing Record 5 of Set 11 | steamboat springs
Processing Record 6 of Set 11 | mount gambier
Processing Record 7 of Set 11 | chyhyryn
Processing Record 8 of Set 11 | nortelandia
Processing Record 9 of Set 11 | imperial
Processing Record 10 of Set 11 | progreso
Processing Record 11 of Set 11 | hvammstangi
City not found. Skipping...
Processing Record 12 of Set 11 | arriaga
Processing Record 13 of Set 11 | qusar
Processing Record 14 of Set 11 | tessalit
Processing Record 15 of Set 11 | de aar
Processing Record 16 of Set 11 | kutum
Processing Record 17 of Set 11 | ketchikan
Processing Record 18 of Set 11 | peleduy
Processing Record 19 of Set 11 | libenge
Processing Record 20 of Set 11 | kapoeta
City not found. Skipping...
Processing Record 21 of Set 11 | tomatlan
Processing Record 22 of Set 11 | lalmohan
Processing Record 23 of Set 11 | vastervik
City not found. Skipping...
Processing Record 24 of Set 11 | serowe
Processing Record 25 of Set 11 | mihail kogalniceanu
Processing Record 26 of Set 11 | broken hill
Processing Record 27 of Set 11 | ajaccio
Processing Record 28 of Set 11 | suntar
Processing Record 29 of Set 11 | mezica
Processing Record 30 of Set 11 | sitka
Processing Record 31 of Set 11 | ewa beach
Processing Record 32 of Set 11 | songea
Processing Record 33 of Set 11 | monroe
Processing Record 34 of Set 11 | cravo norte
Processing Record 35 of Set 11 | ystad
Processing Record 36 of Set 11 | beyneu
Processing Record 37 of Set 11 | almaznyy
Processing Record 38 of Set 11 | vestmannaeyjar
Processing Record 39 of Set 11 | cananeia
Processing Record 40 of Set 11 | alta floresta
Processing Record 41 of Set 11 | maketu
Processing Record 42 of Set 11 | mecca
Processing Record 43 of Set 11 | felidhoo
City not found. Skipping...
Processing Record 44 of Set 11 | manta
Processing Record 45 of Set 11 | nebug
Processing Record 46 of Set 11 | temaraia
City not found. Skipping...
```

Processing Record 47 of Set 11 | constitution
Processing Record 48 of Set 11 | cabimas
Processing Record 49 of Set 11 | palabuhanratu
City not found. Skipping...
Processing Record 0 of Set 12 | khudumelapye
Processing Record 1 of Set 12 | husavik
Processing Record 2 of Set 12 | olinda
Processing Record 3 of Set 12 | coquimbo
Processing Record 4 of Set 12 | kambove
Processing Record 5 of Set 12 | iquique
Processing Record 6 of Set 12 | yenagoa
Processing Record 7 of Set 12 | konakovo
Processing Record 8 of Set 12 | labuhan
Processing Record 9 of Set 12 | sampit
Processing Record 10 of Set 12 | gayny
Processing Record 11 of Set 12 | trafaria
Processing Record 12 of Set 12 | zyryanka
Processing Record 13 of Set 12 | soavinandriana
Processing Record 14 of Set 12 | xiongzhou
Processing Record 15 of Set 12 | labutta
City not found. Skipping...
Processing Record 16 of Set 12 | chagda
City not found. Skipping...
Processing Record 17 of Set 12 | batamshinskiy
Processing Record 18 of Set 12 | kailua
Processing Record 19 of Set 12 | kaliyaganj
Processing Record 20 of Set 12 | cozumel
City not found. Skipping...
Processing Record 21 of Set 12 | obo
Processing Record 22 of Set 12 | mushie
Processing Record 23 of Set 12 | ishigaki
Processing Record 24 of Set 12 | newport
Processing Record 25 of Set 12 | quang ngai
Processing Record 26 of Set 12 | butembo
Processing Record 27 of Set 12 | palmer
Processing Record 28 of Set 12 | motril
Processing Record 29 of Set 12 | patitirion
Processing Record 30 of Set 12 | omboue
Processing Record 31 of Set 12 | waipawa
Processing Record 32 of Set 12 | sakaiminato
Processing Record 33 of Set 12 | raga
City not found. Skipping...
Processing Record 34 of Set 12 | xingcheng
Processing Record 35 of Set 12 | necochea
Processing Record 36 of Set 12 | gao
Processing Record 37 of Set 12 | mrirt
City not found. Skipping...
Processing Record 38 of Set 12 | gardan diwal
City not found. Skipping...
Processing Record 39 of Set 12 | jiwani
Processing Record 40 of Set 12 | yurla
Processing Record 41 of Set 12 | codrington
Processing Record 42 of Set 12 | kalmunai
Processing Record 43 of Set 12 | flinders
Processing Record 44 of Set 12 | primorsko-akhtarsk
Processing Record 45 of Set 12 | ilulissat
Processing Record 46 of Set 12 | vaitupu
City not found. Skipping...
Processing Record 47 of Set 12 | isfana
Processing Record 48 of Set 12 | borshchiv
Processing Record 49 of Set 12 | hobyu

```
Processing Record 0 of Set 13 | aktash
City not found. Skipping...
Processing Record 1 of Set 13 | syamzha
Processing Record 2 of Set 13 | mahibadhoo
Processing Record 3 of Set 13 | tiznit
Processing Record 4 of Set 13 | point fortin
-----
Data Retrieval Complete
-----
```

Convert Raw Data to DataFrame

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

In [4]:

Out[4]:

```
City          535
Cloudiness    535
Country       535
Date          535
Humidity      535
Lat           535
Lng           535
Max Temp      535
Wind Speed    535
dtype: int64
```


In [92]:

```

weather_data = pd.DataFrame({
    'City': City,
    'Cloudiness': Cloudiness,
    'Country': Country,
    'Date': Date,
    'Humidity': Humidity,
    'Lat': Lat,
    'Lng': Lng,
    'Max Temp': Max_Temp,
    'Wind Speed': Wind_Speed,
})

#Because the missing data is not included, I don't need to drop na because of missingness
#weather_data_rd = weather_data.dropna()
#weather_data_rd.shape

weather_data.head()
#weather_data.info()

```

Out[92]:

	City	Cloudiness	Country	Date	Humidity	Lat	Lng	Max Temp	Wind Speed
0	Byron Bay	75	AU	1587265703	65	-28.65	153.62	298.15	3.10
1	Albany	1	US	1587265932	44	42.60	-73.97	277.59	0.45
2	Snåase	99	NO	1587265997	85	64.25	12.38	276.19	1.49
3	Thompson	5	CA	1587265933	40	55.74	-97.86	263.15	3.10
4	Bandarbeyla	73	SO	1587266208	69	9.49	50.81	300.31	2.68

In [94]:

```

weather_data.to_csv('../output_data/weather_data.csv', encoding='utf-8', index=False)

```

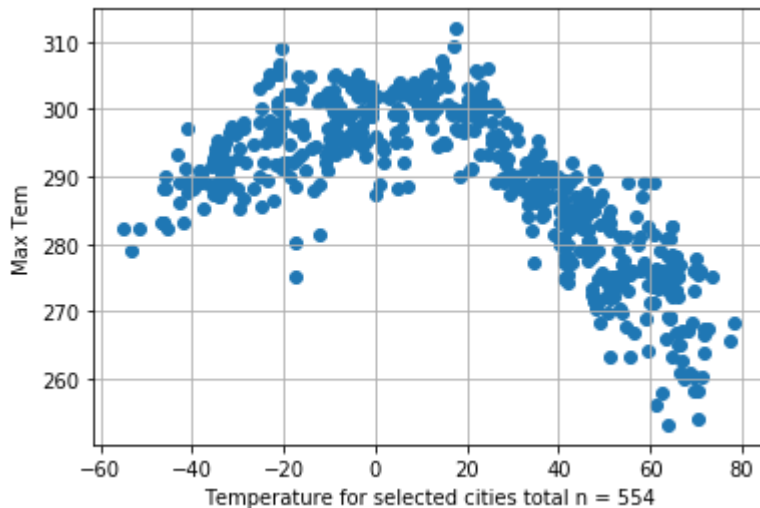
Plotting the Data

- 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 [210]:

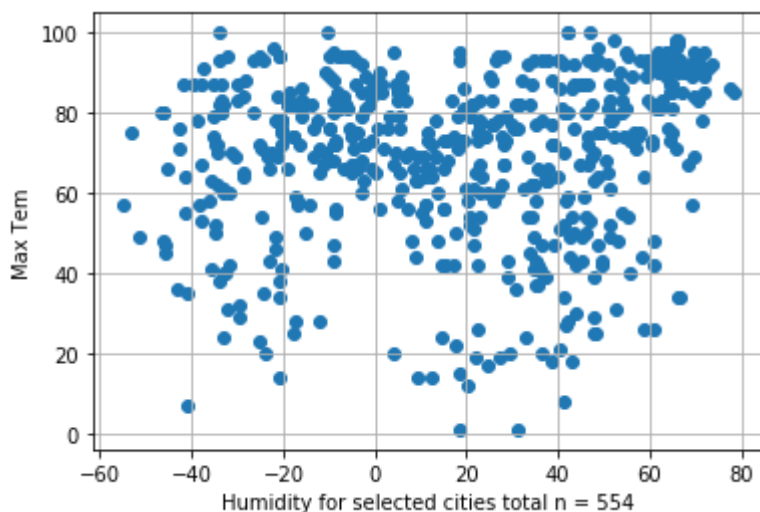
```
y_values = weather_data['Max Temp']  
x_values = weather_data['Lat']  
plt.scatter(x_values,y_values)  
plt.ylabel("Max Tem")  
plt.xlabel(f"Temperature for selected cities total n = {n}")  
plt.grid()  
plt.show()
```



Latitude vs. Humidity Plot

In [211]:

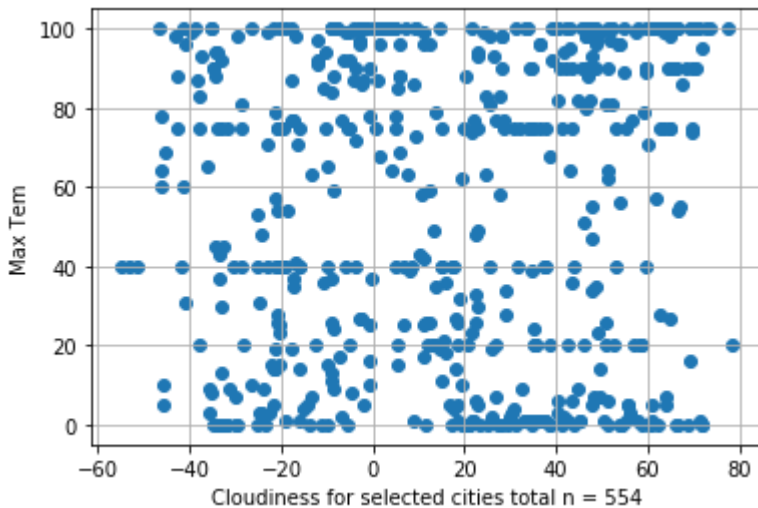
```
y_values = weather_data['Humidity']  
x_values = weather_data['Lat']  
plt.scatter(x_values,y_values)  
plt.ylabel("Max Tem")  
plt.xlabel(f"Humidity for selected cities total n = {n}")  
plt.grid()  
plt.show()
```



Latitude vs. Cloudiness Plot

In [212]:

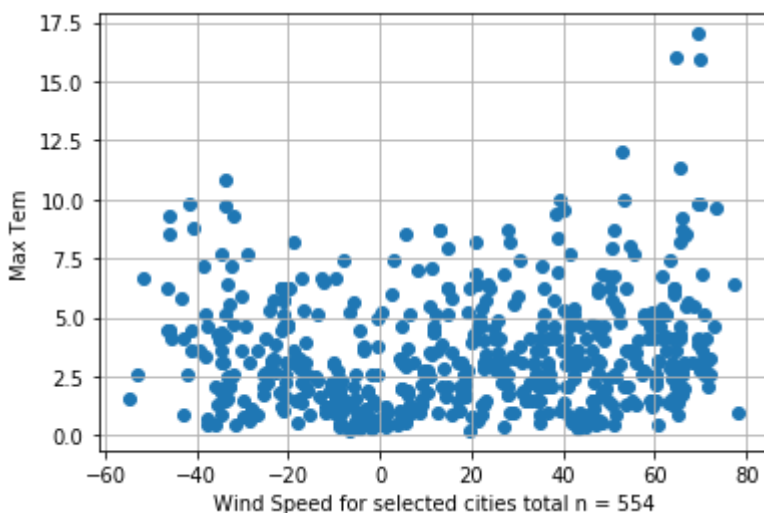
```
y_values = weather_data['Cloudiness']  
x_values = weather_data['Lat']  
plt.scatter(x_values,y_values)  
plt.ylabel("Max Tem")  
plt.xlabel(f"Cloudiness for selected cities total n = {n}")  
plt.grid()  
plt.show()
```



Latitude vs. Wind Speed Plot

In [213]:

```
y_values = weather_data['Wind Speed']  
x_values = weather_data['Lat']  
plt.scatter(x_values,y_values)  
plt.ylabel("Max Tem")  
plt.xlabel(f"Wind Speed for selected cities total n = {n}")  
plt.grid()  
plt.show()
```



Linear Regression

In [215]:

```
# OPTIONAL: Create a function to create Linear Regression plots
# Perform a linear regression on temperature vs. latitude
from scipy.stats import linregress

def do_linreg(x_values, y_values):
    (slope, intercept, rvalue, pvalue, stderr) = linregress(x_values, y_values)
    regress_values = x_values * slope + intercept
    # Plot scatter plot
    plt.scatter(x_values, y_values)
    plt.plot(x_values, regress_values, "r-")

    return [slope, intercept, rvalue, pvalue, stderr]
```

In []:

```
##### Northern Hemisphere - Max Temp vs. Latitude Linear Regression
```

In [227]:

```
weather_data_north = weather_data.loc[weather_data['Lat'] >= 0]
weather_data_north.head()

x = weather_data_north["Lat"]
y = weather_data_north["Max Temp"]

params = do_linreg(x,y)
slope = params[0]
intercept = params[1]
rvalue = params[2]

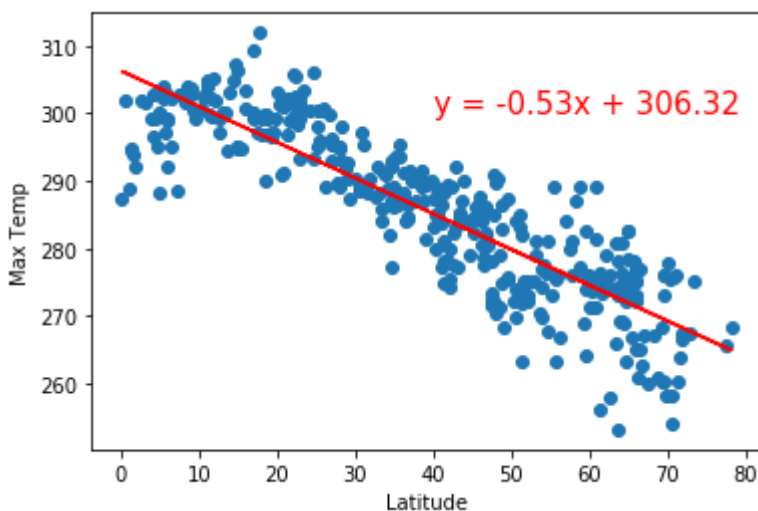
line_eq = "y = " + str(round(slope,2)) + "x + " + str(round(intercept,2))
plt.annotate(line_eq,(40,300),fontsize=15,color="red")

# Label plot
plt.xlabel('Latitude')
plt.ylabel('Max Temp')

# Print r square value
print(f"R squared: {rvalue**2}")
print(f"There is a strong negative linear relationship between max temp and latitude North Hemisphere,\
and the high value of R squared also showed this is a good fit.")
# Show plot
plt.show()
```

R squared: 0.7591379997281728

There is a strong negative linear relationship between max temp and latitude North Hemisphere, and the high value of R squared also showed this is a good fit.



Southern Hemisphere - Max Temp vs. Latitude Linear Regression

In [228]:

```

weather_data_south = weather_data.loc[weather_data['Lat'] <= 0]
weather_data_south.head()

x = weather_data_south["Lat"]
y = weather_data_south["Max Temp"]

params = do_linreg(x,y)
slope = params[0]
intercept = params[1]
rvalue = params[2]

line_eq = "y = " + str(round(slope,2)) + "x + " + str(round(intercept,2))
plt.annotate(line_eq, (-50,300), fontsize=15, color="red")

# Label plot
plt.xlabel('Latitude')
plt.ylabel('Max Temp')

# Print r square value
print(f"R squared: {rvalue**2}")

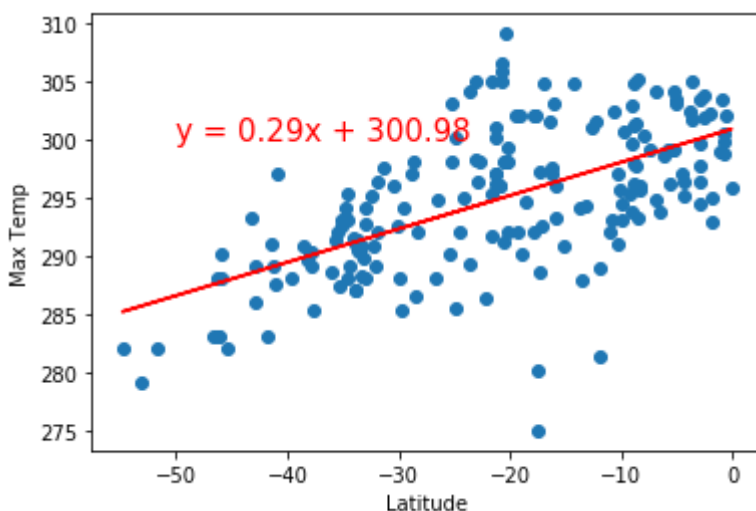
print(f"There is a strong postive linear relationship between max temp and latit
ude in South Hemisphere,\
but R squared dropped, which means a large proportion of the variations are not
explained by this model.")

# Show plot
plt.show()

```

R squared: 0.37502985775213254

There is a strong postive linear relationship between max temp and l
atitude in South Hemisphere, but R squared dropped, which means a la
rge proportion of the variations are not explained by this model.



Northern Hemisphere - Humidity (%) vs. Latitude Linear Regression

In [229]:

```
x = weather_data_north["Lat"]
y = weather_data_north["Humidity"]

params = do_linreg(x,y)
slope = params[0]
intercept = params[1]
rvalue = params[2]

line_eq = "y = " + str(round(slope,2)) + "x + " + str(round(intercept,2))
plt.annotate(line_eq,(10,30),fontsize=15,color="red")

# Label plot
plt.xlabel('Latitude')
plt.ylabel('Humidity')

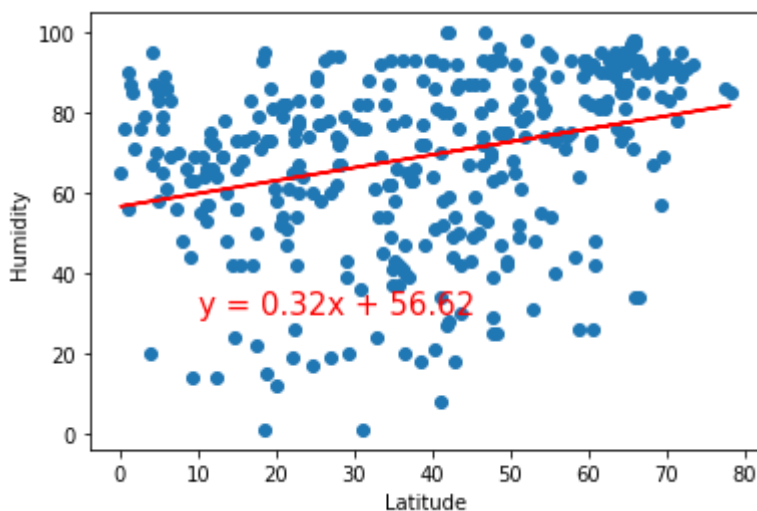
# Print r square value
print(f"R squared: {rvalue**2}")

print(f"Although we estimated a linear relationship between humidity and latitude in North Hemisphere,\
but R squared is very small, and we can see that there is not a strong linear relationship.")

# Show plot
plt.show()
```

R squared: 0.08980111365260919

Although we estimated a linear relationship between humidity and latitude in North Hemisphere, but R squared is very small, and we can see that there is not a strong linear relationship.



Southern Hemisphere - Humidity (%) vs. Latitude Linear Regression

In [230]:

```

x = weather_data_south["Lat"]
y = weather_data_south["Humidity"]

params = do_linreg(x,y)
slope = params[0]
intercept = params[1]
rvalue = params[2]

line_eq = "y = " + str(round(slope,2)) + "x + " + str(round(intercept,2))
plt.annotate(line_eq,(40,-50),fontsize=15,color="red")

# Label plot
plt.xlabel('Latitude')
plt.ylabel('Humidity')

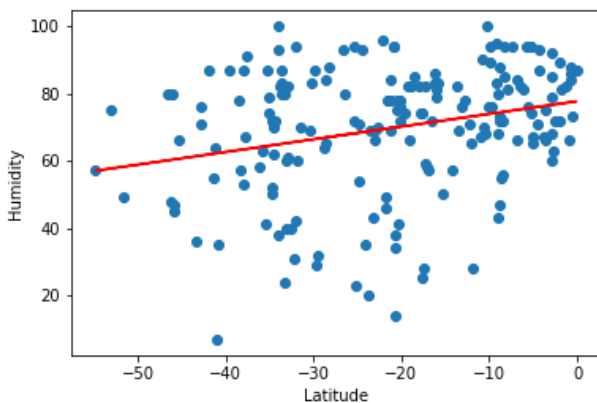
# Print r square value
print(f"R squared: {rvalue**2}")

print(f"Although we estimated a linear relationship between humidity and latitude in South Hemisphere,\
but R squared is very small, and we can see that there is not a strong linear relationship.")
# Show plot
plt.show()

```

R squared: 0.07138408343128497

Although we estimated a linear relationship between humidity and latitude in South Hemisphere, but R squared is very small, and we can see that there is not a strong linear relationship.



Northern Hemisphere - Cloudiness (%) vs. Latitude Linear Regression

In [231]:

```
x = weather_data_north["Lat"]
y = weather_data_north["Cloudiness"]

params = do_linreg(x,y)
slope = params[0]
intercept = params[1]
rvalue = params[2]

line_eq = "y = " + str(round(slope,2)) + "x + " + str(round(intercept,2))
plt.annotate(line_eq,(10,40),fontsize=15,color="red")

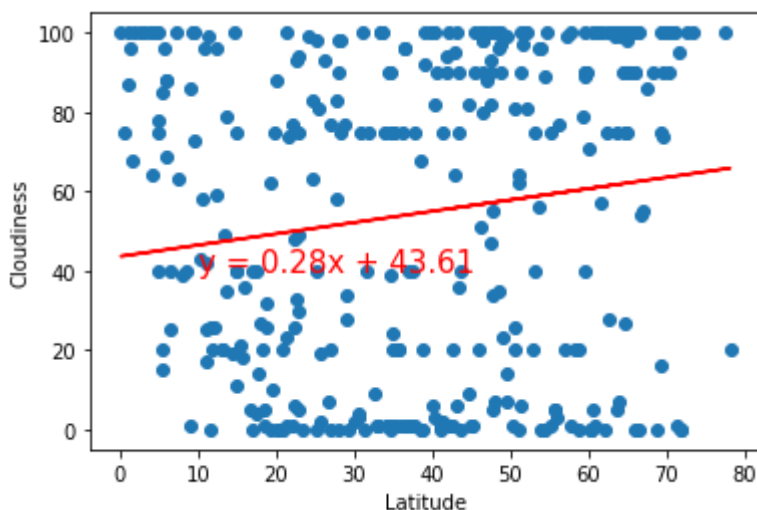
# Label plot
plt.xlabel('Latitude')
plt.ylabel('Cloudiness')

# Print r square value
print(f"R squared: {rvalue**2}")
print(f"Although we estimated a linear relationship between cloudiness and latitude in North Hemisphere,\
but R squared is very small, and we can see that there data is layered at different levels,\
suggesting very little evidence for linear relationship.")

# Show plot
plt.show()
```

R squared: 0.020909152377316716

Although we estimated a linear relationship between cloudiness and latitude in North Hemisphere, but R squared is very small, and we can see that there data is layered at different levels, suggesting very little evidence for linear relationship.



Southern Hemisphere - Cloudiness (%) vs. Latitude Linear Regression

In [235]:

```
x = weather_data_south["Lat"]
y = weather_data_south["Cloudiness"]

params = do_linreg(x,y)
slope = params[0]
intercept = params[1]
rvalue = params[2]

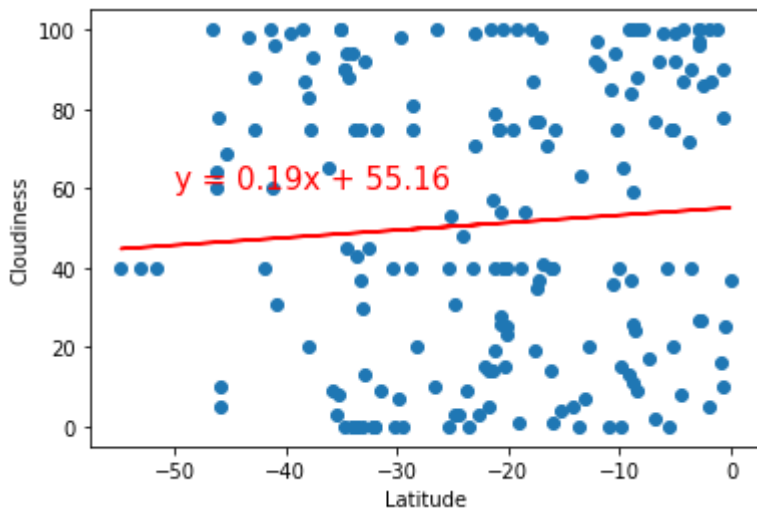
line_eq = "y = " + str(round(slope,2)) + "x + " + str(round(intercept,2))
plt.annotate(line_eq,(-50,60),fontsize=15,color="red")

# Label plot
plt.xlabel('Latitude')
plt.ylabel('Cloudiness')

# Print r square value
print(f"R squared: {rvalue**2}")
print(f"Although we estimated a linear relationship between cloudiness and latitude in South Hemisphere,\
but R squared is very small, and we can see that there data is layered at different levels,\
suggesting very little evidence for linear relationship.")
# Show plot
plt.show()
```

R squared: 0.004901393432580858

Although we estimated a linear relationship between cloudiness and latitude in South Hemisphere, but R squared is very small, and we can see that there data is layered at different levels, suggesting very little evidence for linear relationship.



Northern Hemisphere - Wind Speed (mph) vs. Latitude Linear Regression

In [233]:

```
x = weather_data_north["Lat"]
y = weather_data_north["Wind Speed"]

params = do_linreg(x,y)
slope = params[0]
intercept = params[1]
rvalue = params[2]

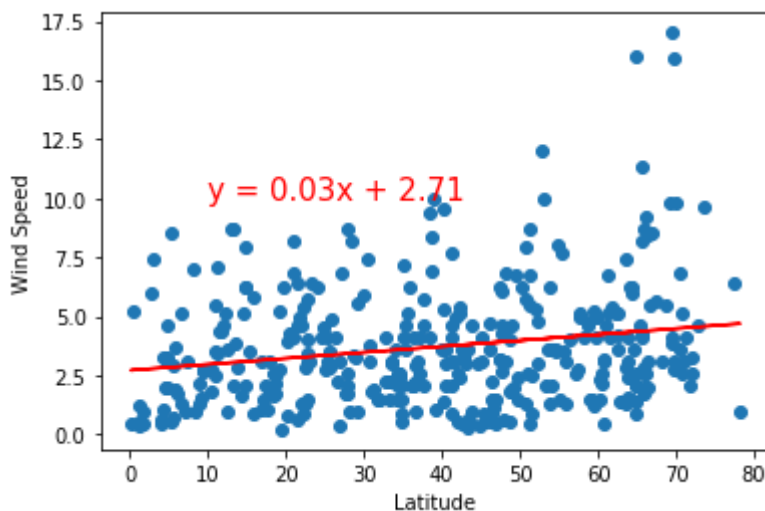
line_eq = "y = " + str(round(slope,2)) + "x + " + str(round(intercept,2))
plt.annotate(line_eq,(10,10),fontsize=15,color="red")

# Label plot
plt.xlabel('Latitude')
plt.ylabel('Wind Speed')

# Print r square value
print(f"R squared: {rvalue**2}")
print(f"Although we estimated a linear relationship between cloudiness and wind
speed in North Hemisphere,\
but R squared is very small, and we can see that there data is clustered in low
wind speed,\
suggesting very little evidence for linear relationship.")
# Show plot
plt.show()
```

R squared: 0.039906636331083184

Although we estimated a linear relationship between cloudiness and wind speed in North Hemisphere, but R squared is very small, and we can see that there data is clustered in low wind speed, suggesting very little evidence for linear relationship.



Southern Hemisphere - Wind Speed (mph) vs. Latitude Linear Regression

In [234]:

```

x = weather_data_south["Lat"]
y = weather_data_south["Wind Speed"]

params = do_linreg(x,y)
slope = params[0]
intercept = params[1]
rvalue = params[2]

line_eq = "y = " + str(round(slope,2)) + "x + " + str(round(intercept,2))
plt.annotate(line_eq,(-40,8),fontsize=15,color="red")

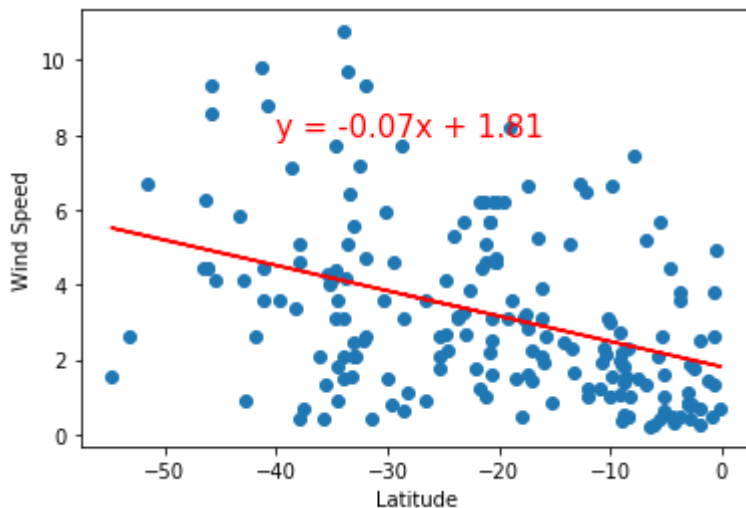
# Label plot
plt.xlabel('Latitude')
plt.ylabel('Wind Speed')

# Print r square value
print(f"R squared: {rvalue**2}")
print(f"We estimated a linear relationship between wind speed and latitude in South Hemisphere,\
but R squared is relatively small, and we can see that there data is scattered,\
suggesting some evidence for linear relationship.")
# Show plot
plt.show()

```

R squared: 0.15490002926030422

We estimated a linear relationship between wind speed and latitude in South Hemisphere, but R squared is relatively small, and we can see that there data is scattered, suggesting some evidence for linear relationship.



In []: