Lab 6

Nominatim API (OpenStreetMap)

In [10]:
```
import warnings
warnings.filterwarnings('ignore') # ignore warnings from usna
import requests
import json

location = "annapolis, md"
resp = requests.get(f"https://nominatim.openstreetmap.org/search?q={location}&
data = resp.json()
print(json.dumps(data, indent=2)) # print data from nominatim api response
```


```
[
  {
    "place_id": 3809116,
    "licence": "Data \u00a9 OpenStreetMap contributors, ODbL 1.0. http://os
m.org/copyright", (http://osm.org/copyright",)
    "osm_type": "relation",
    "osm_id": 133571,
    "lat": "38.9786401",
    "lon": "-76.492786",
    "class": "boundary",
    "type": "administrative",
    "place_rank": 16,
    "importance": 0.5722443958642912,
    "addresstype": "city",
    "name": "Annapolis",
    "display_name": "Annapolis, Anne Arundel County, Maryland, United State
s",
    "boundingbox": [
      "38.9424993",
      "39.0025548",
      "-76.5395832",
      "-76.4686762"
    ]
  }
]
```


In [2]:
```
print(f"{location.title()} is at {data[0]['lat']}, {data[0]['lon']}")
```

```
Annapolis, Md is at 38.9786401, -76.492786
```

OpenWeather API

In [4]:
```
import warnings
warnings.filterwarnings('ignore')
import requests
import json

def kelvinToFahrenheit(temp):
    return int((temp - 273.15) * 9/5 + 32)

lat = 38.9786401
lon = -76.492786
api_key = "197b9050b68f6d378aebcc356d83f3e5"
resp = requests.get(f"https://api.openweathermap.org/data/2.5/weather?lat={la
data = resp.json()

weather_description = data['weather'][0]['description']
temperature = data['main']['temp']
print(f"Currently the weather in Annapolis, MD is {weather_description} and {
```

```
Currently the weather in Annapolis, MD is mist and 65°F
```

Writing a Complete Application

In [4]:
```
import warnings
warnings.filterwarnings('ignore')
import requests
import json

def kelvinToFahrenheit(temp):
    return int((temp - 273.15) * 9/5 + 32)

location = input("Enter a location: \n") # prompt user to input a location to
loc_resp = requests.get(f"https://nominatim.openstreetmap.org/search?q={locat
loc_data = loc_resp.json()

lat = loc_data[0]['lat']
lon = loc_data[0]['lon']
api_key = "197b9050b68f6d378aebcc356d83f3e5"
weather_resp = requests.get(f"https://api.openweathermap.org/data/2.5/weather
weather_data = weather_resp.json()

weather_description = weather_data['weather'][0]['description']
temperature = weather_data['main']['temp']
print(f"Currently the weather in {location.title()} is {weather_description} a
```

```
Enter a location:
san francisco, ca
Currently the weather in San Francisco, Ca is few clouds and 53°F
```

Bonus: Error Handling

In [5]:
```
import warnings
warnings.filterwarnings('ignore')
import requests
import json

location = input("Enter a location: \n")
loc_resp = requests.get(f"https://nominatim.openstreetmap.org/search?q={locat
loc_data = loc_resp.json() # loc_data will return an empty string if there is

if loc_data:
    lat = loc_data[0]['lat']
    lon = loc_data[0]['lon']
    api_key = "197b9050b68f6d378aebcc356d83f3e5"
    weather_resp = requests.get(f"https://api.openweathermap.org/data/2.5/wea
    weather_data = weather_resp.json()

    weather_description = weather_data['weather'][0]['description']
    temperature = weather_data['main']['temp']
    print(f"Currently the weather in {location.title()} is {weather_descripti

else:
    print(f"Sorry, there is no data for {location.title()}")
```

```
Enter a location:
pythonville, py
Sorry, there is no data for Pythonville, Py
```

In [ ]: