# Python - REST API's, Requests and JSON Labs

## Setup

Make sure the requests module is installed on your system/ environment.

```
pip list
```

```
python3 -m pip install requests
```

Windows = python

## Geo Restriction Lab

This lab shows you how to use the REST API from ip-api.com to get the country of an IP Address and then print a response based on that value.

You could use this basic process with a Web App Framework such as Bottle or Django to geographically restrict the users to your App.

**lab-restrict.py**

```
from requests import get

response = get(f'http://ip-api.com/json/').json()

#print(response)

country = response['country']
#country = 'Canada'

if country == 'United States':
    print(f'Welcome In! We love people from {country}')
else:
    print(f'Go Away! We dont like stinky {country} people')
```

# Language App

This lab allows you to create an App where a user can input the name of a language, and the app will print out the countries where that language is spoken.

We use the REST API from restcountries.com. There is an if/else statement to check if the language was found. Based on the status code either the countries will be printed, or the user will be told that the language was not found. Status Code 200 means that the request was successful.

We have also added some code for troubleshooting. There is a line that will print out the JSON results so that you can troubleshoot. Also there are 2 lines of code that will write the full results to a text file.

**lab-language.py**

```
from requests import get
from json import dumps

while True:
    language = input('What Language: ')
    response = get(f'https://restcountries.com/v3.1/lang/{language}')
    response_json = response.json()

    #print(dumps(response, indent=2))

    # with open('out.txt', 'w') as file:
    #     file.write(dumps(response, indent=2))

    status = response.status_code
    if status == 200:
        for country in response_json:
            print(f'{country['name']['common']}')
    else:
        print(f'Language {language} not found - {status}')
```

# Geography Data App

This script finds the location data about the user from the ip-api.com API.  We then take the value for Country that we received and make a request to restcountries.com api to ask for the Capital City for the user.

This shows you how to make progressive api requests to provide and end result.

Note: There is no Status Code check for restcountries.com

**lab-geo.py**

```
from requests import get
from json import dumps

response = get(f'http://ip-api.com/json/').json()

#print(response)

country = response['country']
#country = 'canada'

response_geo = get(f'https://restcountries.com/v3.1/name/{country}?
fulltext=true').json()

#print(dumps(response_geo, indent=2))

for record in response_geo:
    print(record['name']['common'])
    print(record['capital'][0])
```