

# 컴퓨터네트워크

## 숙제 1

Traceroute

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### 1. 과제 해결방법

#### 해결방법

subprocess를 이용하여 traceroute를 실행후, 반환 되는 값들 중 IP주소가 있는 것들을 모아 pygeoip를 이용하여 경도 위도를 출력함

#### 함수 설명

- `if __name__ == '__main__':`

```
if __name__ == '__main__':
    ip2geo = ipTogeo()
    ip2geo.main()
```

ipToGeo함수를 실행하는 함수. ipToGeo()함수의 객체를 생성하여 main함수를 호출하여 함수를 실행하도록 하였다.

- `main()`

```
def main(self):
    data = self.run_traceroute()
    self.count = 0
    self.print_result("start")
    for line in data:
        split_data = self.get_IP(line)
        diameter = self.change_Diameter(split_data)
        self.print_result(diameter)
```

- ipTogeo함수를 실제로 실행하는 함수이다. traceroute함수를 subprocess로부터 실행한 데이터 값을 받아와서먼저 목적지를 출력해준다('[destination] url')그후 traceroute로 부터 받은 데이터들을 IP만 파싱하여(get\_IP) 그 값을 geolocation으로 바꾸어주었다.(change\_Diameter) 바꾸어 준 값은 딕셔너리로 저장하고, 출력함수(diameter)에 맞게 출력을 해주도록 하였다.

- `__init__()`

```
def __init__(self):
    self.url = sys.argv[1]
    self.GeoToIP = pygeoip.GeoIP('GeoLiteCity.dat')
```

- 인자값 :없음

- 함수 설명 : 생성자 인스턴스 변수는 인자값으로 받은 url과 pygeoip로부터 받은 객체이다

- **run\_traceroute(self)**

```
def run_traceroute(self):
    proc = sp.Popen(["traceroute", self.url], stdout = sp.PIPE)
    stdout_data = proc.stdout
    return stdout_data
```

- 인자값 : 없음
- 함수 설명 : Popen을 이용하여 traceroute와 그 인자값을 받아와서 subprocess를 생성하여, 실행 후 subprocess의 값을 바로바로 stdout을 이용하여 stdout\_data값에 저장후 그값을 반환 하도록 하였다.
- 반환값 : 서브프로세스 실행 결과

- **get\_IP(self, line)**

```
def get_IP(self, line):
    split_data = line.decode('utf-8').split()
    need_data = split_data[2]
    filter_data = re.compile("[0-9]{1,3}\\.?[0-9]{1,3}\\.?[0-9]{1,3}\\.?[0-9]{1,3}")
    IP = filter_data.findall(need_data)
    return IP
```

- 인자값 : 서브프로세스 실행결과
- 함수 설명 :

```
[ '1', 'gateway', '(192.168.0.1)', '3.772', 'ms', '4.830', 'ms', '6.538', 'ms' ]
[ '2', '183.107.46.1', '(183.107.46.1)', '12.675', 'ms', '14.381', 'ms', '14.384', 'ms' ]
```

서브프로세스의 실행후 띄어쓰기 단위로 나누어 리스트에 저장을 하면 위와 같은 결과가 나온다. 여기서 세번째 인자가 IP주소이므로 IP주소만 정규표현식을 이용하여 가져오도록 하였다.

- 반환값 : IP주소

- **change\_Diameter(self, data):**

```
def change_Diameter(self, data):
    diameter = dict()
    geoIPInfo = dict()

    if len(data)>0:
        geoIPInfo.update({'IP':data[0]})
        result = self.GeoToIP.record_by_addr(data[0])
        if result is not None:
            diameter.update({'latitude':result['latitude']})
            diameter.update({'longitude':result['longitude']})
            geoIPInfo.update({'diameter':diameter})
        else:
            geoIPInfo.update({'diameter':None})

    return geoIPInfo
```

- 인자: IP주소

- IP주소가 찾아지지 않는 경우(\* 표시로 주소를 확인 할 수 없게 되어있는 경우)를 제외하고 record\_by\_addr를 이용하여 결과를 가져온다. 가져온 결과에서 latitude와 longitude의 값만 diameter딕셔너리에 저장을 한다. IP주소에 해당하는 diameter값을 표현하기위해 한번더 IP - 주소, diameter - diameter딕셔너리 의 값을 가지는 geoIPInfo에 저장을 해준다. 이때 IP주소 값이 찾아지지 않는 경우 {'diameter':None}으로 저장해준다.
- 반환값 - IP주소와 diameter값을 가진 딕셔너리

- **print\_result(self,geo\_data)**

```
def print_result(self,geo_data):
    if geo_data == ("start":lon) : www.google.com
        print("[Destination]:",self.url)
    elif len(geo_data)>0:
        if geo_data['diameter'] is None:
            print("[IP] ",geo_data['IP'],' - No Geolocation Info.')
        else:
            lat = geo_data['diameter']
            lon = geo_data['diameter']
            print("[IP] ",geo_data['IP'],' - Lat: ',lat['latitude'],' Lon:',lon['longitude'])
    return
```

- 인자 : IP주소와 diameter 값을 가진 딕셔너리
- 맨처음 프로그램시작시 최종목적지url를 출력하도록 하고, 그 이후로 받은 인자는 딕셔너리에 맞게 출력을 해준다.
- 반환값 : 없음

## 2. 결과화면

### a. Afghanistan

#### i. Acbar.org

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py Acbar.org
[Destination] Acbar.org
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.146.201 - No Geolocation Info.
[IP] 10.50.146.66 - No Geolocation Info.
[IP] 10.50.146.24 - No Geolocation Info.
[IP] 10.50.146.141 - No Geolocation Info.
[IP] 112.174.48.98 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.85.86 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.46 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 38.104.84.189 - Lat : 34.0616 Lon: -118.0818
[IP] 154.54.3.69 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.44.85 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.42.66 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.30.161 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.28.129 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.28.110 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.24.22.125 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.24.25.30 - Lat : 37.751000000000005 Lon: -97.822
[IP] 38.104.89.26 - Lat : 28.731300000000005 Lon: -81.5158
[IP] 72.29.88.46 - Lat : 28.538299999999992 Lon: -81.3792
```



ii. Bbc.com

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Bbc.com
[Destination] www.Bbc.com
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.158.197 - No Geolocation Info.
[IP] 10.50.158.58 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.157 - No Geolocation Info.
[IP] 112.174.42.218 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.18 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 209.8.177.5 - Lat : 38.98410000000001 Lon: -77.3827
[IP] 63.218.250.169 - Lat : 38.98410000000001 Lon: -77.3827
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$
```

iii. Jobs.af

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Jobs.af
[Destination] www.Jobs.af
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.32.251.197 - No Geolocation Info.
[IP] 112.174.8.214 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.85.130 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.50 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 199.229.230.189 - Lat : 48.41669999999999 Lon: 8.683300000000003
[IP] 89.149.141.181 - Lat : 48.41669999999999 Lon: 8.683300000000003
[IP] 173.205.41.90 - Lat : 40.6747 Lon: -73.6726
[IP] 67.212.190.230 - Lat : 41.8776 Lon: -87.6272
[IP] 99.198.126.129 - Lat : 41.8776 Lon: -87.6272
```

iv. Azadiradio.com

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py Azadiradio.com
[Destination] Azadiradio.com
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.147.197 - No Geolocation Info.
[IP] 10.50.147.62 - No Geolocation Info.
[IP] 10.50.146.24 - No Geolocation Info.
[IP] 10.50.146.177 - No Geolocation Info.
[IP] 112.174.60.34 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.188.245.54 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 119.206.197.194 - Lat : 37.453599999999994 Lon: 126.73169999999999
```

v. Varzesh3.com

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py Varzesh3.com
[Destination] Varzesh3.com
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.147.197 - No Geolocation Info.
[IP] 10.50.147.66 - No Geolocation Info.
[IP] 10.50.146.24 - No Geolocation Info.
[IP] 10.50.146.165 - No Geolocation Info.
[IP] 112.174.42.202 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.83.146 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.222 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 66.198.144.93 - Lat : 38.926600000000001 Lon: -77.3936
[IP] 64.86.21.1 - Lat : 38.926600000000001 Lon: -77.3936
[IP] 63.243.205.1 - Lat : 38.926600000000001 Lon: -77.3936
[IP] 63.243.128.28 - Lat : 38.926600000000001 Lon: -77.3936
[IP] 63.243.128.26 - Lat : 38.926600000000001 Lon: -77.3936
[IP] 216.6.90.22 - Lat : 38.926600000000001 Lon: -77.3936
[IP] 216.6.99.29 - Lat : 38.926600000000001 Lon: -77.3936
[IP] 80.231.131.161 - Lat : 47.0 Lon: 8.0
[IP] 195.219.194.5 - Lat : 47.0 Lon: 8.0
[IP] 195.219.194.150 - Lat : 47.0 Lon: 8.0
[IP] 195.219.156.133 - Lat : 47.0 Lon: 8.0
[IP] 195.219.87.50 - Lat : 47.0 Lon: 8.0
[IP] 94.182.163.52 - Lat : 35.6961 Lon: 51.423100000000005
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$
```

b. Belgium

i. Hln.be

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py Hln.be
[Destination] Hln.be
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.156.205 - No Geolocation Info.
[IP] 10.50.156.70 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.181 - No Geolocation Info.
[IP] 112.174.20.22 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.188.247.74 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 119.206.197.198 - Lat : 37.453599999999994 Lon: 126.73169999999999
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$
```

ii. 2ememain.be



```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py 2ememain.be
[Destination] 2ememain.be
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.156.205 - No Geolocation Info.
[IP] 10.50.156.62 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.129 - No Geolocation Info.
[IP] 112.174.42.186 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.83.150 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.218 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 62.159.61.205 - Lat : 51.29929999999999 Lon: 9.491000000000014
[IP] 217.5.118.249 - Lat : 51.29929999999999 Lon: 9.491000000000014
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ 

```

### iii. Zieuwblad.be

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py Kuleuven.be
[Destination] Kuleuven.be
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.32.251.197 - No Geolocation Info.
[IP] 112.174.49.126 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.83.154 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.82 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 38.88.253.233 - Lat : 47.12780000000001 Lon: -122.2534
[IP] 154.54.2.198 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.41.146 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.5.90 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.42.166 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.7.130 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.31.226 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.41.206 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.44.161 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.77.245 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.60.134 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.25.6.218 - Lat : 37.751000000000005 Lon: -97.822
[IP] 149.11.150.2 - Lat : 51.51419999999999 Lon: -0.09309999999999263
[IP] 134.58.253.61 - Lat : 50.87960000000001 Lon: 4.700899999999999
[IP] 134.58.253.43 - Lat : 50.87960000000001 Lon: 4.700899999999999
[IP] 134.58.253.43 - Lat : 50.87960000000001 Lon: 4.700899999999999

```

### iv. Kuleuven.be

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py Kuleuven.be
[Destination] Kuleuven.be
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.32.251.197 - No Geolocation Info.
[IP] 112.174.43.58 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.142 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.66 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 38.88.253.233 - Lat : 47.12780000000001 Lon: -122.2534
[IP] 154.54.2.198 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.42.98 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.31.90 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.44.170 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.7.130 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.31.234 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.42.90 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.44.165 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.58.70 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.60.134 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.25.6.218 - Lat : 37.751000000000005 Lon: -97.822
[IP] 149.11.150.2 - Lat : 51.514199999999999 Lon: -0.0930999999999263
[IP] 134.58.253.61 - Lat : 50.879600000000001 Lon: 4.700899999999999
[IP] 134.58.253.43 - Lat : 50.879600000000001 Lon: 4.700899999999999
[IP] 134.58.253.43 - Lat : 50.879600000000001 Lon: 4.700899999999999
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ 

```

#### v. Vrt.be

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Vrt.be
[Destination] www.Vrt.be
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.158.201 - No Geolocation Info.
[IP] 10.50.158.58 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.165 - No Geolocation Info.
[IP] 112.174.48.10 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.85.174 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.50 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 121.189.2.117 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 54.240.243.48 - Lat : 47.610299999999995 Lon: -122.3341
[IP] 54.240.243.37 - Lat : 47.610299999999995 Lon: -122.3341
[IP] 205.251.231.116 - Lat : 37.338799999999999 Lon: -121.8914
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ 

```

#### c. Cambodia

##### i. Sabay.com.kh



```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Sabay.com.kh
[Destination] www.Sabay.com.kh
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.32.251.193 - No Geolocation Info.
[IP] 112.174.8.18 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.85.106 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.50 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 66.220.12.29 - Lat : 38.4032 Lon: -122.86330000000001
[IP] 184.105.64.134 - Lat : 37.548300000000001 Lon: -121.98859999999999
[IP] 184.105.64.137 - Lat : 37.548300000000001 Lon: -121.98859999999999
[IP] 184.105.213.118 - Lat : 37.751000000000005 Lon: -97.822
[IP] 184.105.64.253 - Lat : 37.548300000000001 Lon: -121.98859999999999
[IP] 65.49.108.62 - Lat : 37.751000000000005 Lon: -97.822
[IP] 182.50.85.10 - Lat : 13.75 Lon: 100.4667
[IP] 182.50.85.7 - Lat : 13.75 Lon: 100.4667
[IP] 175.28.2.34 - Lat : 11.483300000000014 Lon: 104.89999999999998
[IP] 118.67.200.198 - Lat : 13.0 Lon: 105.0
[IP] 118.67.200.31 - Lat : 13.0 Lon: 105.0
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ █

```

ii. Khmerload.com

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Khmerload.com
[Destination] www.Khmerload.com
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.146.205 - No Geolocation Info.
[IP] 10.50.146.58 - No Geolocation Info.
[IP] 10.50.146.24 - No Geolocation Info.
[IP] 10.50.146.137 - No Geolocation Info.
[IP] 112.174.8.138 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.83.226 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 129.250.8.69 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.2.11 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.6.133 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.5.55 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 104.25.0.26 - Lat : 37.751000000000005 Lon: -97.822
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ █

```

iii. Popular.com.kh

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Popular.com.kh
[Destination] www.Popular.com.kh
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.158.197 - No Geolocation Info.
[IP] 10.50.158.58 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.161 - No Geolocation Info.
[IP] 112.174.8.90 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.158 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 129.250.2.153 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.7.39 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.3.90 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.2.122 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 116.51.17.194 - Lat : 1.2931000000000097 Lon: 103.85579999999999
[IP] 138.197.245.7 - Lat : 43.665500000000001 Lon: -79.4204
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ █

```

iv. Dkn.tv



```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Popular.com.kh
[Destination] www.Popular.com.kh
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.158.197 - No Geolocation Info.
[IP] 10.50.158.58 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.161 - No Geolocation Info.
[IP] 112.174.8.90 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.158 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 129.250.2.153 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.7.39 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.3.90 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.2.122 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 116.51.17.194 - Lat : 1.2931000000000097 Lon: 103.85579999999999
[IP] 138.197.245.7 - Lat : 43.66550000000001 Lon: -79.4204
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ 

```

v. Khmer24.com

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Khmer24.com
[Destination] www.Khmer24.com
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.158.201 - No Geolocation Info.
[IP] 10.50.158.58 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.169 - No Geolocation Info.
[IP] 112.174.8.10 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.130 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 129.250.8.69 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.2.11 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.7.81 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.7.31 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 129.250.3.88 - Lat : 39.623700000000014 Lon: -104.8738
[IP] 61.200.80.206 - Lat : 35.69 Lon: 139.69
[IP] 104.31.74.47 - Lat : 37.751000000000005 Lon: -97.822
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ 

```

d. China

i. sohu.com

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Sohu.com
[Destination] www.Sohu.com
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.146.193 - No Geolocation Info.
[IP] 10.50.146.66 - No Geolocation Info.
[IP] 10.50.146.24 - No Geolocation Info.
[IP] 10.50.146.149 - No Geolocation Info.
[IP] 112.174.8.214 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.182 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.58 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.88.97 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 121.189.2.182 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 218.189.5.53 - Lat : 22.25 Lon: 114.16669999999999
[IP] 218.189.31.238 - Lat : 22.25 Lon: 114.16669999999999
[IP] 175.100.207.205 - Lat : 22.25 Lon: 114.16669999999999
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$

```

## ii. Tmall.com

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py Tmall.com
[Destination] Tmall.com
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.147.197 - No Geolocation Info.
[IP] 10.50.147.70 - No Geolocation Info.
[IP] 10.50.146.24 - No Geolocation Info.
[IP] 10.50.146.157 - No Geolocation Info.
[IP] 112.174.43.34 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.14 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 219.158.32.105 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.3.137 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.4.173 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.7.130 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 124.160.189.106 - Lat : 30.293599999999998 Lon: 120.16140000000001
[IP] 42.120.247.201 - Lat : 30.293599999999998 Lon: 120.16140000000001
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$

```

## iii. Xinhuanet.com

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py Xinhuanet.com
[Destination] Xinhuanet.com
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.147.193 - No Geolocation Info.
[IP] 10.50.147.62 - No Geolocation Info.
[IP] 10.50.146.24 - No Geolocation Info.
[IP] 10.50.146.157 - No Geolocation Info.
[IP] 112.174.42.210 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.70 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.89.98 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 219.158.40.109 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.113.122 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.16.89 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 124.65.194.82 - Lat : 39.9289 Lon: 116.38830000000002
[IP] 61.51.112.250 - Lat : 39.9289 Lon: 116.38830000000002
[IP] 124.65.237.38 - Lat : 39.9289 Lon: 116.38830000000002
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$

```

## iv. Cnblongs.cn



```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py Sina.com.cn
[Destination] Sina.com.cn
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.158.197 - No Geolocation Info.
[IP] 10.50.158.58 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.169 - No Geolocation Info.
[IP] 112.174.8.210 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.70 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.89.170 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 219.158.40.109 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.113.126 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.113.105 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.6.165 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 124.65.194.94 - Lat : 39.9289 Lon: 116.38830000000002
[IP] 61.148.143.18 - Lat : 39.9289 Lon: 116.38830000000002
[IP] 210.74.178.198 - Lat : 39.9289 Lon: 116.38830000000002
[IP] 202.108.33.60 - Lat : 39.9289 Lon: 116.38830000000002
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ █

```

#### v. 1688.com

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py 1688.com
[Destination] 1688.com
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.156.205 - No Geolocation Info.
[IP] 10.50.156.58 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.129 - No Geolocation Info.
[IP] 112.174.49.106 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.70 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 219.158.32.105 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.3.49 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.18.69 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 219.158.6.190 - Lat : 34.77250000000001 Lon: 113.72660000000002
[IP] 139.226.210.62 - Lat : 31.04560000000007 Lon: 121.3997
[IP] 139.226.213.194 - Lat : 31.04560000000007 Lon: 121.3997
[IP] 140.205.50.234 - Lat : 30.293599999999998 Lon: 120.16140000000001
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ █

```

#### e. Russia

##### i. Vk.com

```

kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Vk.com
[Destination] www.Vk.com
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.146.201 - No Geolocation Info.
[IP] 10.50.146.66 - No Geolocation Info.
[IP] 10.50.146.24 - No Geolocation Info.
[IP] 10.50.146.169 - No Geolocation Info.
[IP] 112.174.43.58 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.83.74 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.80.122 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 80.81.193.166 - Lat : 50.11529999999999 Lon: 8.682299999999998
[IP] 80.64.96.74 - Lat : 56.63329999999999 Lon: 36.19999999999999
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ █

```



ii. Olx.ro

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Olx.ro
[Destination] www.Olx.ro
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.158.193 - No Geolocation Info.
[IP] 10.50.158.58 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.161 - No Geolocation Info.
[IP] 112.174.99.2 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.188.246.98 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 222.122.7.106 - Lat : 37.5112 Lon: 126.97410000000002
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$
```

iii. Gsp.ro

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Gsp.ro
[Destination] www.Gsp.ro
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.146.193 - No Geolocation Info.
[IP] 10.50.146.66 - No Geolocation Info.
[IP] 10.50.146.24 - No Geolocation Info.
[IP] 10.50.146.137 - No Geolocation Info.
[IP] 112.174.48.10 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.85.174 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.18 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 38.104.84.189 - Lat : 34.0616 Lon: -118.0818
[IP] 154.54.27.117 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.45.161 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.42.66 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.30.161 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.28.129 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.24.221 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.40.105 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.41.61 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.43.17 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.44.161 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.58.70 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.38.210 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.59.62 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.59.106 - Lat : 37.751000000000005 Lon: -97.822
[IP] 130.117.3.138 - Lat : 47.0 Lon: 8.0
[IP] 154.54.38.246 - Lat : 37.751000000000005 Lon: -97.822
[IP] 154.54.59.234 - Lat : 37.751000000000005 Lon: -97.822
[IP] 149.14.244.2 - Lat : 37.751000000000005 Lon: -97.822
[IP] 91.209.102.6 - Lat : 46.0 Lon: 25.0
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$
```



#### iv. Yandex.ru

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Yandex.ru
[Destination] www.Yandex.ru
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.158.193 - No Geolocation Info.
[IP] 10.50.158.70 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.169 - No Geolocation Info.
[IP] 112.174.42.206 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.84.162 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.80.122 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 80.81.194.14 - Lat : 50.11529999999999 Lon: 8.682299999999998
[IP] 87.245.248.192 - Lat : 51.496399999999994 Lon: -0.12239999999999895
[IP] 87.245.233.89 - Lat : 51.496399999999994 Lon: -0.12239999999999895
[IP] 87.245.229.253 - Lat : 51.496399999999994 Lon: -0.12239999999999895
[IP] 77.88.55.77 - Lat : 55.73859999999999 Lon: 37.60679999999999
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$
```

#### v. Gosuslugi.ru

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py www.Gosuslugi.ru
[Destination] www.Gosuslugi.ru
[IP] 172.20.10.1 - No Geolocation Info.
[IP] 110.70.226.233 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 10.50.158.201 - No Geolocation Info.
[IP] 10.50.158.62 - No Geolocation Info.
[IP] 10.50.147.25 - No Geolocation Info.
[IP] 10.50.147.153 - No Geolocation Info.
[IP] 112.174.42.210 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.85.170 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.87.14 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 199.229.230.189 - Lat : 48.41669999999999 Lon: 8.683300000000003
[IP] 89.149.182.78 - Lat : 53.34719999999999 Lon: -6.2438999999999965
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$
```

Traceroute \*의 의미 : 보안으로 막혀져 있는 경우나 라우터가 응답이 없을경우 \*이 사용됨

#### 결과화면 설명

```
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$ python3 IpTogeo.py Rakuten.co.jp
[Destination] Rakuten.co.jp
[IP] 172.30.1.254 - No Geolocation Info.
[IP] 61.78.45.76 - Lat : 37.5985 Lon: 126.97829999999999
[IP] 112.188.144.21 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.188.133.69 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.43.70 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 112.174.83.182 - Lat : 37.5112 Lon: 126.97410000000002
[IP] 210.132.124.181 - Lat : 35.69 Lon: 139.69
[IP] 27.85.228.25 - Lat : 35.685 Lon: 139.7514
[IP] 27.85.196.21 - Lat : 35.685 Lon: 139.7514
[IP] 27.85.128.34 - Lat : 35.685 Lon: 139.7514
kimsoohyun@kimsoohyun-900X5N:~/Desktop/network/project1$
```

61.78.45.76 , 112로 시작하는것 모두 KT기지국으로 부터 나가고 들어온다,  
210.132.124.181 부터 Japan으로 받으며,  
27.85.228.25 부터 일본의 Rakuten.co.jp 회사가 있는 KDDI CORPORATION 의 IP주소임을 확인 할 수 있다.