

컴퓨터 네트워크

- 02. Traceroute & Python CGI -

※ 과제 해결 방법

```
#!/usr/bin/python3

import pygeoip
import subprocess
import cgi, cgitb

form = cgi.FieldStorage()

print ("Content-type:text/html")
print ()

print ('<html>')
print ('<head>')
print ('<meta charset="utf-8">')
print ('<title>CN_201402391</title>')
print ('</head>')

print ('<body>')
print ('<h2>Traceroute - Visualize on Kakao Map</h2>')
print ('<div id="map" style="width:500px;height:400px;"></div>')

print ("<script type='text/javascript' src='//dapi.kakao.com/v2/maps/sdk.js?appkey=176f39fad4b61f527fb42357eb5c36c7'></script>")

print ('<script>')
print ('var container = document.getElementById("map");')
print ('var options = {center : new daum.maps.LatLng(36.7844993, 126.4503169),level: 13};')
print ('var map = new daum.maps.Map(container, options);')
print ('</script>')

print ("<form method='get' action='test.cgi'>")
print ("<input type='text' name='target' />", "<input type='submit' />")
print ("</form>")

argv_data = form.getvalue('target') # 기존의 인자 값을 form으로 받는다.

print ('<H2>Destination : ', argv_data, '</H2>')

print ('<H2>Destination : ', argv_data, '</H2>')


gi = pygeoip.GeoIP('GeoLiteCity.dat')


proc = subprocess.Popen(["traceroute", "-m", "30", argv_data], stdout = subprocess.PIPE)
out, err = proc.communicate()


output = out.decode('utf-8')
output = output.split("\n")
```

이전 과제와 실습에서 했던 코드를 합쳐서 과제를 진행했다.

 : 맵을 띄어주기 위해 div태그를 사용하였다.

 : 띄워진 맵에서 위치를 지정해주기 위해 위/경도를 입력해준다.(초기값은 서산으로 하였다.)

 : 이전 과제에서는 인자의 값으로 traceroute를 실행했더라면 이번에는 form의 입력 값인 argv_data를 이용하여 traceroute를 실행하였다.

 : 이전 과제에서 "import sys"를 하여 argv[1]의 값으로 traceroute를 실행했는데 form의 입력값인 argv_data로 실행한다.


```

for i in range(1, len(output) - 1):
    outline = output[i].split()
    ip_addr = outline[1]
    if outline[1] != '*':
        if gi.record_by_addr(ip_addr) is None:
            print('(', ip_addr, ')', " - No Geolocation Info.")
            print('<br>')
        else:
            a = gi.record_by_addr(ip_addr)
            print('(', ip_addr, ') - ', '(', a.get('latitude'), a.get('longitude'), ')')
            print('<br>')
            # 지도에 마커를 표시한다.
            print('<script>')
            print('var markerPosition = new daum.maps.LatLng(' , a.get('latitude'), ',' ,a.get('longitude'), ');')
            print('var marker = new daum.maps.Marker({position: markerPosition});')
            print('marker.setMap(map);')
            print('</script>')

    elif outline[2] != '*':
        if gi.record_by_addr(ip_addr) is None:
            print('(', ip_addr, ')', " - No Geolocation Info.")
            print('<br>')
        else:
            a = gi.record_by_addr(ip_addr)
            print('(', ip_addr, ') - ', '(', a.get('latitude'), a.get('longitude'), ')')
            print('<br>')
            # 지도에 마커를 표시한다.
            print('<script>')
            print('var markerPosition = new daum.maps.LatLng(' , a.get('latitude'), ',' ,a.get('longitude'), ');')
            print('var marker = new daum.maps.Marker({position: markerPosition});')
            print('marker.setMap(map);')
            print('</script>')

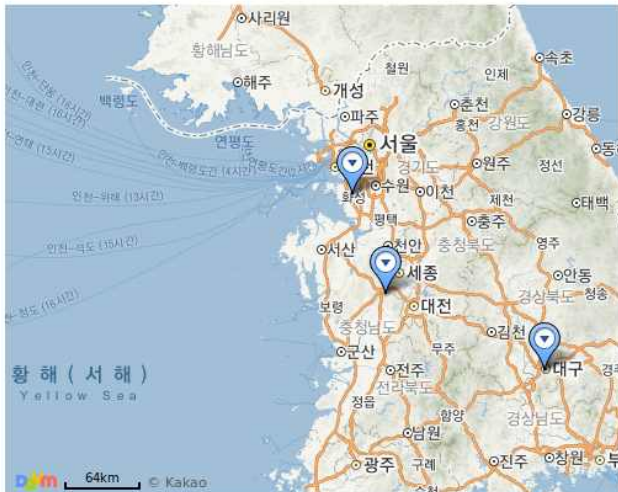
print('</body>')
print('</html>')

```

 : 이전 코드와 다른 점이 없지만 추가된 부분은 Geolocation의 값이 있다면 해당 IP와 IP의 위/경도를 입력 값으로 맵에 마커를 찍는다.

※ 실행 결과

Traceroute - Visualize on Kakao Map



Submit Query

Destination : Tistory.com

(192.168.0.1) - No GeoLocation Info.
 (192.168.25.1) - No GeoLocation Info.
 (116.125.253.1) - (35.8702999999999986 128.591099999999998)
 (118.217.135.169) - (36.4556000000000004 127.124700000000002)
 (10.222.10.194) - No GeoLocation Info.
 (211.108.122.53) - (37.2067999999999999 126.816899999999998)

Traceroute - Visualize on Kakao Map

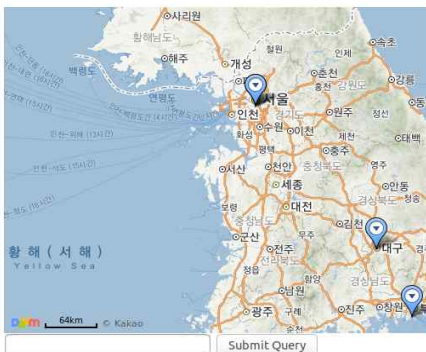


Submit Query

Destination : Gmarket.co.kr

(192.168.0.1) - No GeoLocation Info.
 (192.168.25.1) - No GeoLocation Info.
 (116.125.253.1) - (35.8702999999999986 128.591099999999998)
 (118.217.135.169) - (36.4556000000000004 127.124700000000002)
 (10.222.10.198) - No GeoLocation Info.
 (203.233.35.5) - (37.5112 126.974100000000002)

Traceroute - Visualize on Kakao Map

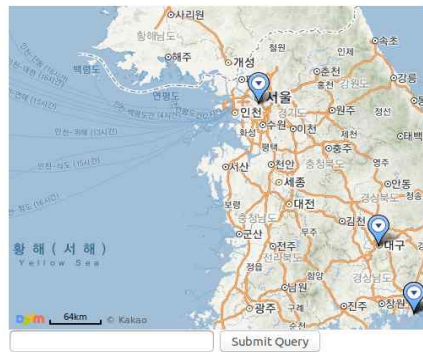


Submit Query

Destination : www.naver.com

(192.168.0.1) - No GeoLocation Info.
 (192.168.25.1) - No GeoLocation Info.
 (116.125.253.1) - (35.8702999999999986 128.591099999999998)
 (123.214.210.157) - (35.1028 129.0403)
 (1.255.26.122) - (37.5112 126.974100000000002)
 (1.255.36.67) - (37.5112 126.974100000000002)

Traceroute - Visualize on Kakao Map



Submit Query

Destination : www.daum.net

(192.168.0.1) - No GeoLocation Info.
 (192.168.25.1) - No GeoLocation Info.
 (116.125.253.1) - (35.8702999999999986 128.591099999999998)
 (123.214.210.153) - (35.1028 129.0403)
 (118.221.4.150) - (35.1028 129.0403)
 (58.229.12.238) - (37.5112 126.974100000000002)

Traceroute - Visualize on Kakao Map



Submit Query

Destination : www.nexen.com

(192.168.0.1) - No GeoLocation Info.
 (192.168.25.1) - No GeoLocation Info.
 (116.125.253.1) - (35.8702999999999986 128.591099999999998)
 (123.214.210.157) - (35.1028 129.0403)
 (10.222.10.138) - No GeoLocation Info.
 (10.222.6.47) - No GeoLocation Info.
 (104.25.6.101) - (37.7510000000000005 -97.822)