

Scraping using Geocoding API of Open Street Maps (OSM)

We would be using the Nominatim API to scrape geocoding information of any open ended address text using Python.

In []:

```
# no need to install these if using Google Colab
# !pip install geopandas
# !pip install geopy
```

In []:

```
#import nominatim api
from geopy.geocoders import Nominatim
```

In []:

```
#activate nominatim geocoder
locator = Nominatim(user_agent="myGeocoder")
#type any address text
location = locator.geocode("Champ de Mars, Paris, France")
```

In []:

```
#print latitude and longitude of the address
print("Latitude = {}, Longitude = {}".format(location.latitude, location.longitude))
```

Latitude = 48.85614465, Longitude = 2.297820393322227

In []:

```
#the API output has multiple other details as a json like altitude, latitude, longitude,
correct raw address, etc.
#printing all the information
location.raw,location.point,location.longitude,location.latitude,location.altitude,location.address
```

Out[]:

```
{'boundingbox': ['48.8522459', '48.8600801', '2.2918711', '2.303791'],
 'class': 'tourism',
 'display_name': 'Champ de Mars, Rue George Bernard Shaw, Quartier de Grenelle, Paris 15e Arrondissement, Paris, Île-de-France, France métropolitaine, 75015, France',
 'icon': 'https://nominatim.openstreetmap.org/ui/mapicons//poi_point_of_interest.p.20.png',
 'importance': 1.0080889235157509,
 'lat': '48.85614465',
 'licence': 'Data © OpenStreetMap contributors, ODbL 1.0. https://osm.org/copyright',
 'lon': '2.297820393322227',
 'osm_id': 4208595,
 'osm_type': 'way',
 'place_id': 85490064,
 'type': 'attraction'},
Point(48.85614465, 2.297820393322227, 0.0),
2.297820393322227,
48.85614465,
0.0,
'Champ de Mars, Rue George Bernard Shaw, Quartier de Grenelle, Paris 15e Arrondissement, Paris, Île-de-France, France métropolitaine, 75015, France')
```

In []:

```
#trying another address
location2 = locator.geocode("IIT Madras")
```

In []:

```
#printing all the informaton
```

```
location2.raw,location2.point,location2.longitude,location2.latitude,location2.altitude,location2.address
```

Out[]:

```
({'boundingbox': ['12.9914269', '12.9915269', '80.2336286', '80.2337286'],  
  'class': 'amenity',  
  'display_name': 'IIT Madras, Adayar, CMWSSB Division 174, Ward 174, Zone 13 Adyar, Chennai, Chennai District, Tamil Nadu, 600036, India',  
  'icon': 'https://nominatim.openstreetmap.org/ui/mapicons//education_university.p.20.png',  
  'importance': 0.6647465975709506,  
  'lat': '12.9914769',  
  'licence': 'Data © OpenStreetMap contributors, ODbL 1.0. https://osm.org/copyright',  
  'lon': '80.2336786',  
  'osm_id': 4727968819,  
  'osm_type': 'node',  
  'place_id': 55250561,  
  'type': 'university'},  
Point(12.9914769, 80.2336786, 0.0),  
80.2336786,  
12.9914769,  
0.0,  
'IIT Madras, Adayar, CMWSSB Division 174, Ward 174, Zone 13 Adyar, Chennai, Chennai District, Tamil Nadu, 600036, India')
```

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