**DAILY ASSESSMENT FORMAT**

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| **Date:** | **6/6/2020** | **Name:** | **GAURAV NR** |
| **Course:** | **Python** | **USN:** | **4AL15EC025** |
| **Topic:** | **Project on geocoding web service application** | **Semester & Section:** | **8th sem A sec** |
| **Github Repository:** | **gaurav** |  |  |

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| **FORENOON SESSION DETAILS** |
| **Demonstration of the Geocoding Web Service Application and Project Requirements**      **Index.html**    **Main.css**    **App\_ver1.py**  **App\_ver2.py**    **REPORT:**  Datasets are rarely complete and often require pre-processing. Imagine some datasets have only an address column without latitude and longitude columns to represent your data geographically. In that case, you need to convert your data into a geographic format. The process of converting addresses to geographic information — Latitude and Longitude — to map their locations is called **Geocoding**.  **Geocoding is the**[**computational**](https://en.wikipedia.org/wiki/Computational)**process of transforming a**[**physical address**](https://en.wikipedia.org/wiki/Address_(geography))**description to a**[**location**](https://en.wikipedia.org/wiki/Location_(geography))**on the Earth’s surface** to perform geocoding in Python with the help of Geopy and Geopandas Libraries. Let us install these libraries with Pip if you have already Anaconda environment setup.  pip install geopandas  pip install geopy  If you do not want to install libraries and directly interact with the accompanied Jupyter notebook of this tutorial, there are Github link with MyBinder at the bottom of this article. This is a containerised environment that will allow you to experiment with this tutorial directly on the web without any installations. The dataset is also included in this environment so there is no need to download the dataset for this tutorial. Geocoding Single Address To geolocate a single address, you can use Geopy python library. [Geopy](https://geopy.readthedocs.io/en/stable/" \t "_blank)has different Geocoding services that you can choose from, including Google Maps, ArcGIS, AzureMaps, Bing, etc. Some of them require API keys, while others do not need.  As our first example, we use Nominatim Geocoding service, which is built on top of OpenStreetMap data. Let us Geocode a single address, the Eifel tower in Paris.  Locator=Nominatim(user\_agent=”myGeocoder”) location = locator.geocode(“Champ de Mars, Paris, France”)  We create locator that holds the Geocoding service, Nominatim. Then we pass the locator we created to geocode any address, in this example, the Eifel tower address.  print(“Latitude = {}, Longitude = {}”.format(location.latitude, location.longitude))  Now, we can print out the coordinates of the location we have created.  Latitude = 48.85614465, Longitude = 2.29782039332223 |