Learning Python Modules: NumPy, Pandas, and Matplotlib

You may not bother to take notes of these functions since you can get the code lines and all the existing functions by ChatGPT just by mentioning the job you need to do using these python libraries. Alternatively, one can use the official documentation websites (each of the python libraries have **well** documented all of their functions online), even the engineers on field rely heavily on documentation to solve their questions.

However, it is customary to remove your phobia (or getting more comfortable) via these excercises and it is suggested that the assignment on this is solved **WITHOUT** any AI tool help, it will help you for the future.

Numpy Basics:(1 day)

NumPy is a Python library used for working with arrays. It also has functions for working in the domain of linear algebra, Fourier transform, and matrices.

If you have never used Numpy or are not familiar with it, please go through this documentation clearly, step by step. If you have learned some of the topics before, you can navigate to respective topics from the menu bar on the right. You can go through any one of the 3 materials provided.

Numpy Documentation:

https://numpy.org/doc/stable/user/absolute_beginners.html

Note: Do go through numpy broadcasting carefully: https://numpy.org/doc/stable/user/basics.broadcasting.html

Refer to this for the Numpy Video Tutorial in Hindi:

https://www.youtube.com/watch?v=awP79Yb3NaU Skip to 19:56

Refer to this for the Numpy Video Tutorial in English:

https://www.youtube.com/watch?v=QUT1VHiLmmI

Numpy Advanced:(Optional)

https://numpy.org/doc/stable/user/quickstart.html

If you are familiar with NumPy or have completed the basics documentation, go through this carefully.

Pandas:(2 days)

Pandas is a Python library used for working with data sets. It has functions for analyzing, cleaning, exploring, and manipulating data.

The following documentation contains a tutorial on Pandas from basic to advanced. Navigate through it using the menu bar on the left side according to your need, but do make sure on completion, you are aware of all the topics mentioned. You can go through any one of the 2 materials provided.

Pandas Compiled Documentation:

https://www.w3schools.com/python/pandas/default.asp

Refer to this for Pandas Video Tutorial in Hindi:

https://www.youtube.com/watch?v=JjuLJ3Sb_9U&list=PLjVLYmrlmjGdEE2jFpL71LsVH5QjDP5s4&index=2

Matplotlib:(1 day)

Matplotlib is a low-level graph plotting library in Python that serves as a visualization utility.

The following documentation contains a tutorial on Matplotlib from basic to advanced. Navigate through it using the menu bar on the left side according to your need. Again, you must only gain awarness through this official documentation website and I feel you will best learn MatPlotLib by experience.

Matplotlib Compiled Documentation:

https://www.w3schools.com/python/matplotlib_intro.asp

Refer to this for Matplotlib Video Tutorial in Hindi:

https://www.youtube.com/watch?v=9GvnrQv138s&list=PLjVLYmrlmjGcC0B_FP3bkJ-JIPkV5GuZR

Please make sure, you know these modules thoroughly as it will be used in the course very frequently.