Weekly progress report on Python (Week – 03)

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Domain: Python

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Week Ending – 01:

1. Overview:

This week, the primary focus was on understanding on how NumPy and Pandas module operation works in Python. Additionally, used PYPI website to gain more understanding about the modules.

1. Tasks done this week:

* Data Manipulation with NumPy:

Utilized NumPy arrays to perform mathematical operations on large datasets efficiently. Implemented slicing and indexing techniques to extract specific data subsets for analysis.

* Data Analysis with pandas:

Conducted data exploration and cleaning using pandas Data Frame. Employed group by and aggregation functions to summarize data and derive insights.

* Visualization with Matplotlib:

Integrated Matplotlib with pandas to create informative visualizations for data analysis. Generated plots such as histograms, scatter plots, and line graphs to visualize trends and patterns in the data.

1. Challenges and Hurdles:

* Handling Missing Data:

Faced challenges with handling missing data in pandas Data Frame. Implemented techniques like filling missing values with mean or median and dropping rows with missing data to address the issue.

1. Lessons Learned:

* Effective Data Handling Strategies:

Acquired proficiency in various data handling techniques within pandas, including data cleaning, manipulation, and analysis.

* Understanding NumPy Fundamentals:

Gained a solid understanding of fundamental concepts in NumPy, such as arrays and indexing. Realized the significance of NumPy arrays for efficient numerical computations and data manipulation tasks.

* Problem-Solving Skills Enhancement:

Developed problem-solving skills through encountering and resolving challenges while working with NumPy and pandas. Learned to approach problems systematically, seek assistance from documentation and online resources, and experiment with different solutions to overcome obstacles effectively.

* Application of Data Analysis Techniques:

Applied data analysis techniques learned through tutorials and practice exercises to real-world datasets.

1. Comments:

This week's progress in NumPy and Pandas operations has been engaging. Overcoming challenges and applying newfound knowledge have reinforced my understanding and skills in Python data analysis. I look forward to applying these skills in future projects and continuing to expand my expertise in data science.