Module2: Introduction to Python

Theoretical Assignments:

1. Explain Python's Role in Data Science ?

→ Python is the **backbone of modern Data Science** because it combines **simplicity, power, and a collection of large amounts of libraries** used for data work. From collecting raw data to building intelligent models, Python supports the entire data science pipeline.

→ Python is used in every step :

- Data collection:
  Python can collect data from various sources. Such as APIs , Databases , CSV files , excel, etc.
- Data cleaning and preparation:
  To clean raw data python is useful.Such as removing null values , handling duplicates values ,converting data types , filter , reshape data , etc.
- Data analysis :
  Python is used for finding patterns , statistical analysis ,calculating correlations ,etc. Through which we can make decisions.
- Data visualizations:
  We can understand our data using visualising plotting tools . Such as bar charts , heatmaps , line charts , interactive dashboards ,etc.
- Machine learning and predictive models:
  Python is dominant in machine learning because it includes ready to use algorithms. Algorithms for classification , regression , clustering ,etc.
- Deep learning and AI:
  For advanced tasks such as Image recognition , Natural language processing , Speech recognition.
- Automation and Reproductibility:
  Python scripts automate repetitive tasks and ensure experiments can be reproduced easily.

2. Presentation: Object-Oriented Programming (OOP) Concepts in Python.

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https://github.com/mansibhagwat006-ai/python-atmsystem/blob/main/Presentation%20-%20Object-Oriented%20Programming%20in%20Python.pdf

PRACTICAL TASKS:

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https://github.com/mansibhagwat006-ai/python-atmsystem/blob/main/assignment.ipynb