Lae Codes

Python Course Structure

Introduction:

- Programming Overview and Fundamentals
- Features of Python
- Python version 2.x vs 3.x

Python Environment Setup:

- Python Installation
- Environment selection
- Jupyter notebooks
- VS Code
- Difference between interpreter and compiler
- Git and Github

Code execution and Syntax:

- How the Python interpreter works
- High level Python syntax
- Python doctrings and comments
- Indentation in Python

Python Basics:

- Variables
- Global and local variables
- Global keyword
- Basic data types – int, float, string
- Python strings
- String indexing and slicing
- String methods
- Python operators
- Input/output operations

Control Flows:

- Conditionals – if, if-else, if-elif
- Looping statements – while, for, break and continue, pass

Data Structures:

- List
- Tuple
- Set
- Dictionary

Functions:

- Function definitions
- Function calling
- Function arguments
- Call-by-value
- Call-by-reference
- Use cases

Built-in functions:

- Len()
- Int()
- Float()
- Type()
- Str()
- Dir()
- Range()
- Id()
- None
- __str__()
- __name__

File operations:

- CRUD operations on files
- Tell() and seek() methods

Modules and standard libraries

- OS
- Sys
- Json
- Math
- Datetime
- Time

Errors and exception handling

- Try – except
- Finally
- Try, except and finally
- Try multiple except blocks

Object Oriented Programming

- OOP and concepts
- Inheritance
- Polymorphism
- Encapsulation
- Abstraction
- Method overloading and overriding
- Class methods

Python Classes

- Naming classes – naming rules and guidelines
- Constructors - __init
- Self parameter
- Class syntax
- Class variables
- Instance variables

Modules and Namespaces

- Create a Module
- Use a Module
- Variables om Module
- Naming a Module
- Built-in Modules
- Import statements
- How to import third part Modules
- Working with third party modules
- Packages
- __init__.py significance
- Locals() and globals()

The Pandas Library

- CRUD operations using Pandas
- Data cleansing and manipulation