Python Master

Basics: Variables, data types, basic operators, and input/output.

Control Flow: Conditional statements (if, elif, else) and loops (for, while).

Functions: Defining and using functions, parameters, return statements.

Data Structures: Lists, tuples, dictionaries, sets, stacks, queues, and their operations.

Algorithms: Basic algorithms like searching and sorting.

- **Searching Algorithms:**
    1. Linear Search
    2. Binary Search
- **Sorting Algorithms:**
    1. Bubble sort
    2. Insertion sort
    3. Selection sort

File Handling: Reading from and writing to files.

Exception Handling: Handling errors and exceptions.

Object-Oriented Programming (OOP): Classes, objects, inheritance, polymorphism, encapsulation.

Modules and Packages: Importing and using modules, creating packages.

Regular Expressions: Pattern matching using regular expressions.

Advanced Topics:

Decorators: Modifying or extending functions and methods.

Generators: Producing a sequence of values using functions.

Concurrency: Working with multiple threads or processes.

Data Science Libraries: NumPy, Pandas, Matplotlib.

Web Development: Flask or Django for web development.

Machine Learning: Libraries like TensorFlow or PyTorch for machine learning.

Testing: Unit testing using frameworks like unittest or pytest.

Debugging and Profiling: Techniques for debugging and optimizing code.