

45Day Python Training Plan (AquaSub)

WEEK 1 – Python Fundamentals & Execution

- 1 Python Overview, History, Features, Applications
- 2 CPython, Jython, PyPy, Writing your First Program
- 3 Interactive vs Script Mode, Program Structure
- 4 Python 2.7 vs 3.x, Installation (Windows/Linux), IDLE, PyCharm
- 5 Running via Shell, Script, IDE – Demo Exercises

WEEK 2 – Data Types, Memory, Syntax

- 6 Memory Management, Garbage Collection, Object Lifecycle
- 7 Data Types – int, float, str, bool, conversion
- 8 List, Tuple, Set, Dictionary – with examples
- 9 Operators: Arithmetic, Assignment, Logical, Membership
- 10 IfElse Conditions, Syntax, Indentation, Nested Conditions

WEEK 3 – Loops, Functions, File Handling

- 11 For Loop, While Loop, Break, Continue, Pass
- 12 List Comprehension, Nested Loops, Loop Practice
- 13 File Handling: Open, Read, Write, Append
- 14 Userdefined Functions, Return, Parameters
- 15 Lambda, args, kwargs, Variable Scope, Closures

WEEK 4 – OOP, Modules, Exception Handling

- 16 ObjectOriented Concepts – Class, Object, Attributes
- 17 Inheritance, Composition, Method Overriding
- 18 Static Method, Class Method, Operator Overloading
- 19 Creating & Using Modules, Packages, Search Path
- 20 Exception Handling – Try, Except, Finally, Multiple Exceptions

WEEK 5 – Libraries: NumPy, Pandas, OS, sys

- 21 Builtin Libraries: OS, Sys, Datetime, Math
- 22 NumPy Arrays – Creation, Indexing, Operations
- 23 NumPy Continued – Slicing, File Operations
- 24 Pandas: Series, DataFrame, Indexing, Filter
- 25 Pandas: Read/Write Excel & CSV – Analysis Practice