

Python Course Curriculum:

Objective

Learning all aspects of python programming i.e. fundamentals and advanced topics. We shall discuss most used libraries, it's programming style and rules with lot of exercises/hands-on. The course is focused more towards practical python programming to enable you to write complex scripts, applications, automations in a confident way. At the end of the course, learner shall be able to solve typical programming problems in pythonic way.

1. Introduction

Why do we need Python?, Why is it so popular?, Program structure, Comments, Indentation, Keywords, constants and variables, Identifiers and rules for defining them, Physical and Logical Lines, Getting help in python!!

2. Installation and execution

Interactive Shell, Executable or script files, User Interface or IDE, Operators(Relational, Logical, Arithmetic, Containment), User input methods, Assignments, Expressions and prints, Writing your first program.

3. Data Types and Operations

Numbers, Strings, Lists, List Comprehension, Tuple, Dictionary, Dictionary comprehension, Set, Comparison of these data types, Operations on data types – creating, deleting, adding, in-built methods of data types objects

4. Conditions and Looping

Conditions – if/elif/else conditions, nested conditions, Truth value testing While and For Loops range() function, continue and break statements Iterations and Comprehensions

5. File Operations

Opening a file, reading/writing file, closing the file, seeking, reading lines, appending, modes of opening a file, using the with statement

6. Functions

Function definition and call Understanding Function return, multiple value return and pass by reference. Arguments, parameters, default arguments Variable arguments - *args, **kwargs Scope – Global, local lambda functions, map function, docstrings

7. Modules and Packages

Module Creations and Usage Module Search Path Module Vs. Script Walkthrough of few inbuilt modules like, sys, os, time, calendar, Requests Module, Command line arguments, Detailed insights on Regular expression module(re module) like search, findall, grouping, Package Creation and Importing, Understanding an ideal way of organizing your code.

8. Classes

Classes and instances, understanding self, __init__ method, Inheritance, Multiple Inheritance Static and Class Methods Overloading Polymorphism

9. Exception Handling

Default Exception Handler, Catching Exceptions, Raise an exception, User defined exception, Different exception classes, try-except, finally, else

10. PEP8 Guidelines

Code Layout, Comments, Naming Conventions, Whitespaces and more.

11. Project Time!!

Wide range of projects to choose from - get your hands dirty with some real coding!!