



- CYU – Check Your Understanding
- LOTW – Learning On The Walls
- PPR – Participant Progress Report
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PYTHON

Duration: 2 Days

AN OVERVIEW OF PYTHON WHAT IS PYTHON?

- ❖ What is Python and the birth of Python
- ❖ About Interpreted languages
- ❖ Advantages and disadvantages of Python
- ❖ Installing Python
- ❖ Current Versions : 2.x and 3.x

PYTHON ENVIRONMENT

- ❖ Starting Python
- ❖ Using Interpreter
- ❖ Interactive prompt
- ❖ Running Python scripts in Linux/Unix
- ❖ Running Python scripts in Windows
- ❖ Python IDLE and other available IDEs

BASIC PYTHON SYNTAX

- ❖ Comments : Single line and multi-line comments
- ❖ String values and operations
- ❖ String format method
- ❖ String slices
- ❖ String operators
- ❖ Numeric data types
- ❖ Conversions
- ❖ Simple Input and Output
- ❖ Get user input with input()
- ❖ The print function

LANGUAGE COMPONENT

- ❖ Control flow and syntax
- ❖ Indenting
- ❖ If statement
- ❖ Relational and Logical Operators
- ❖ True or false
- ❖ The while loop
- ❖ Break and continue
- ❖ For loop

COLLECTIONS IN PYTHON

- ❖ Creating and using lists
- ❖ len() with lists
- ❖ in operator with lists
- ❖ Indexing, slicing and concatenating
- ❖ Deleting list element with del function
- ❖ List methods
- ❖ Nested sequence
- ❖ Creating and using tuple
- ❖ List and tuple
- ❖ Using collections module



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DICTIONARIES

- ❖ Using dictionaries
- ❖ Accessing dictionary values
- ❖ Adding , replacing and deleting key value pairs
- ❖ Dictionary methods

SETS

- ❖ What are sets ?
- ❖ Basic syntax
- ❖ Creating sets
- ❖ Working with sets

FUNCTIONS

- ❖ Types of functions : built-in and user defined
- ❖ Function documentation
- ❖ Keyword and optional parameters
- ❖ Passing collections to a function
- ❖ Variable number of arguments
- ❖ Scope
- ❖ Passing functions to a function
- ❖ Lambda, map, filter, reduce functions

FILE HANDLING

- ❖ Open function
- ❖ Input from text files
- ❖ Output to text files
- ❖ Access modes
- ❖ Pickle and shelve module
- ❖ With keyword, context manager

ERRORS AND EXCEPTION HANDLING

- ❖ Syntax errors
- ❖ Exceptions
- ❖ Handling exceptions with try
- ❖ Handling multiple exceptions
- ❖ Using else
- ❖ Cleanup up with finally

USING MODULES

- ❖ What is a module?
- ❖ The import module
- ❖ Where did the .pyc file come from?
- ❖ Module search path
- ❖ Writing and creating modules

REGULAR EXPRESSIONS

- ❖ Where to use regular expressions?
- ❖ Special characters
- ❖ Quantifiers
- ❖ Match objects
- ❖ Substituting
- ❖ Splitting a string



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MODULES

- ❖ Modules
- ❖ Standard module - math
- ❖ Standard module - sys
- ❖ Standard module - os
- ❖ Standard module - datetime
- ❖ Standard module – sysconfig

PYTHON CLASSES & OBJECTS

- ❖ Classes in Python
- ❖ Principles of object orientation
- ❖ Creating classes
- ❖ Instance methods and class variables
- ❖ Inheritance & Polymorphism
- ❖ Splitting a string

DIRECTORY HANDLING

- ❖ In depth introduction to os module
- ❖ os module methods
- ❖ executing Linux and DOS commands with os module
- ❖ file information
- ❖ current working directory & Listing directories
- ❖ directory & file validations
- ❖ creating, renaming, removing directories and files
- ❖ shutil module for high level operations

INSTALLATION OF THIRD PARTY LIBRARIES

- ❖ What are third party libraries and its necessity?
- ❖ Introduction to pypi.python.org portal
- ❖ Manual installation of any python library
- ❖ Pip tool
- ❖ Easy_install tool
- ❖ Splitting a string

THIRD PARTY LIBRARIES

- ❖ Connecting to an SQLite database
- ❖ Working with spreadsheets
- ❖ Emailing libraries
- ❖ Other important libraries