

Core & Advanced

Python Scripting

Training Curriculum



Python Introduction and Getting Started

- Introduction to the Python programming language.
- Introduces Python's basic data types, files, functions, and error handling.
- Basic Python syntax.
- Reading and Converting User Input, Calculating with Stored Values
- Running a Python script ,python scripts on Unix and Windows
- Python Editors and IDE
- Language Components. (Control flow and Syntax, Intending, if statement ,relational operators ,logical operators ,true or false, Bite Wise Operators , while loop ,break and continue ,for loop)
- A Simple Case study.

Sequence Container and Collection Framework

- Collections (Introduction ,Lists , Tuples ,Sets ,Dictionaries ,Sorting Dictionaries ,Copying Collections , Summary)
- String Formatting and String Operations
- Writing Lists and Tuples
- Functions for Sequences
- Some Other Functions and Methods to Work with Sequences
- Slices With a Stride: Skipping Around Sequences
- Manipulating Lists and Tuples
- List comprehensions
- Sets and Dicts
- Working With Sets and Dicts
- Applying Dicts: Counting Words
- A More Complex Application: Word Pair Frequencies
- Python Debugging mechanism

Deep Dive-Working with different types of file and file operations and Regular Expressions

- Reading and Writing Files(Flat files, CSV files, Excel files, Xml file, JSON files)
- Parsing different types of XML file using python Element Tree
- Appending to a File and Seeking to Arbitrary Positions
- Parsing Techniques for large files.
- Regular Expressions : Match Function ,Search Function, Matching VS Searching
- Modifiers and Patterns in Regular expressions.

Modules, Functions

- Installing different inbuilt packages and modules as per the project requirement(pywinauto, pywin32, pyodbc-3.0.2.win-amd64-py2.7, MySQL-python, ftputil-2.2.3, PY2EXE)
- Standard modules(Importing Module ,Math Module ,Random Module ,Packages , Composition)
- Functions (Parameters ,Functional Documentation ,Keyword and Optional Parameters , Passing Collections to a Function , Variable Number Of Arguments , Scope ,Passing Functions to a Function)
- Mapping Functions in a Dictionary ,Lambda ,Closures
- Variable scope and Returning Single Values,Multipel values

Errors and Exceptions, logging Mechanism,Archives, import packages and standard libraries

- Handling different Error and Exception to achieve a hassle free Automation.
- Handling Multiple Exceptions
- The standard exception hierarchy Using Modules
- RAISE
- ASSERT
- Writing your own exception classes.
- Designing a Custom logger mechanism to record the automation script flow.
- Launching external programs
- Reading and Writing Archives Using tar file and zip file
- Creating a Recent File Archiver
- Operating System related task(STDIO,All System command),Walking Directory, Random Numbers, Dates and Times

Object Oriented Programming in Python and Apply multi-threading and multiprocessing to Python development

- Introduction To python Classes
- Defining Classes ,Initializes
- Instance Methods, Properties
- Class methods and data , Static methods ,private methods and Inheritance
- Polymorphism
- Threads and processes
- The Threading Library Module
- Thread synchronization
- The queue Standard Library

- The multiprocessing Library Module
 - A multiprocessing worker process pool
- Project: A Real time case study by using Class and multithreading concept

OS Module, Network Programming and Designing a standalone automation Tool

- The Environment
 - Launching Commands and Creating a process
 - Directory Commands
 - Other Process Methods and File Information (METADATA)
 - Miscellaneous OS Calls and Walking through Directories
 - Network programming and Introduction
 - The Client and server Program Evaluation Client and Server
 - create a stand-alone binary through python
 - Running python programs in a Schedulers and by creating windows services.
- Project Work:Designing a Real-time standalone tool through Python

Python for System and Server Administration

- Introduction about Dell and NetApp ESX server.
- How to Clone ESX images and taking a base snapshot through Python.
- Control various function on VM image through python
- Automation Script for VM Controller by using Vmrun.exe
- Creating a Watch Dog for Server monitoring

Web Scraping, Crawling Data, Working with API, Handling Databases and Electronic Mail Messages in python

- Scraping web based data using urllib2, urlparse, HTMLParser
- RSS Crawlers and Downloading binary files through Python
- Working with various secured third party API's through python.
- An intro about Relational Database and No SQL Database(MySQL,SQL Server, Mongo DB)
- CRUD Operations
- Use of Inbuilt database modules for MySQL, Sql Server
- Data insertion through Stored procedure, Getting DB Dump
- Alerting E-mails for Critical monitoring services through python.
- Generated automated mails for Daily, Weekly and Monthly KPI data.
- Creating database project

GUI and Graphics in Python

- Introduction and Components ,Event
- Root Components, Adding Buttons, Check Box, Radio Buttons.

Python unit test Framework

- Design Unit test framework through python

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