**BASIC LEVEL TRAINING**

**Duration: 15 hours**

**Chapter 1: An Introduction to Python [1 hr]**

Introduction and Importance

Python Versions (2.x & 3.x)

Installing Python (in Windows/Linux)

IDLE and IDEs for Python

Getting Help

Python distributions – pip, Anaconda, python(x,y), Active Python

**Chapter 2: Basics [3 hr]**

Basic Syntax and Indenting

Identifier Naming Conventions

Python Reserved Words

Built-in functions

Arithmetic Operations

String Operations

Input and Output Operations

**Chapter 3: Language Components [3 hr]**

Relational Operators

Logical Operators

Boolean Operations-True or False

Bit Wise Operators

Type Conversions

Control Operations

If, else and elif

range and xrange functions

Loops

for and while

break, continue, pass and sys.exit

**Chapter 4: Collections [3 hr]**

Lists

Tuples

Sets

Dictionaries

Comprehensions

**Chapter 5: Functions [2 hr]**

User-defined functions

Scope -Global versus local variables

Keyword and Optional Parameters

Lambda

Map and zip

Filter and Reduce

**Chapter 6: Modules [3 hr]**

import statement

Function aliases

Basic essential modules – sys, math, os,random, time, datetime

Importing user-defined .py files

Importance of .pyw and .pyc files

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**INTERMEDIATE LEVEL TRAINING**

**Duration: 09 hours**

**Chapter 7: Exceptions [2hr]**

Types of Errors

Error Handling in Python

The Exception Model

Exception Hierarchy

Handling Multiple Exceptions

raise

assert

Writing Your Own Exception Classes

**Chapter 8: Debugging [1 hr]**

Interactive debugging

Using Pdb

IDE-based debugging

Using pydevd

**Chapter 9: Iterators and Generators [1 hr]**

Iterators

Iter protocol

Generators

**Chapter 10: Working with Files**  **[2 hr]**

bytearray function

Creating a new text file

Reading and writing data from/to files

Working with csv files

Working with xml files

Working with image files

**Chapter 11: Serialization**   **[1 hr]**

Using Pickle

Using Cpickle

Using Shelve

Using JSON

Using YAML

**Chapter 12: Logging [1 hr]**

Necessity of Logging

Logging to a file

Formatting logs

Advanced logging

**ADVANCED LEVEL TRAINING**

**Duration: 12 hours**

**Chapter 13: OOP in Python [3 hr]**

Creating Classes

Instance Methods

Constructors & Destructors

Special Methods

Class Variables

Inheritance

Polymorphism

Custom Exception Classes

**Chapter 14: Consuming Web Services [1 hr]**

Consuming RESTful services

Urllib, Urllib2, requests

Creating real time application consuming these services

**Chapter 15: Code Quality [1 hr]**

Doctest

Unit testing

**Chapter 16: Regular Expressions [2 hr]**

Simple Character Matches

Special Characters

The Dot Character

Greedy Matches

Grouping

Matching at Beginning or End

**Chapter 17: Advanced Python Topics [2 hr]**

Decorators

Default Decorators- Static and Class Methods

PEP 8 coding style recommendations

autopep8 module

Python 2 to 3 code conversion

Basic level Training (*Chapters 1-6*) addresses the basic Python Programming concepts

Intermediate level Training (*Chapters 7-12*) covers the intermediate level Python programming concepts, required for starting a real-time project.

Advanced level Training (*Chapters 13-17*) covers the advanced concepts required for building a real-time project.

Total Hours for complete Course: - 33 Hours