

# ***LIFETECH SOFTWARE***

**Python Syllabus**

**Duration**

**45 Days**

## **Chapter 1: Introduction to Python**

What is Python and history of Python?

Unique features of Python

Python-2 and Python-3 differences

Install Python and Environment Setup

First Python Program

Python Identifiers, Keywords and Indentation

Comments and document interlude in Python

Command line arguments

Getting User Input

Python Data Types

What are variables?

Python Core objects and Functions

Number and Maths

Week 1 Assignments

## **Chapter 2: List, Ranges & Tuples in Python**

Introduction

Lists in Python

More About Lists

Understanding Iterators

Generators , Comprehensions and Lambda Expressions

Introduction

Generators and Yield

Next and Ranges

Understanding and using Ranges

More About Ranges

Ordered Sets with tuples

### **Chapter 3: Python Dictionaries and Sets**

Introduction to the section

Python Dictionaries

More on Dictionaries

Sets

Python Sets Examples

### **Chapter 4: Input and Output in Python**

Reading and writing text files

writing Text Files

Appending to Files and Challenge

Writing Binary Files Manually

Using Pickle to Write Binary Files

### **Chapter 5: Python built in function**

Python user defined functions

Python packages functions

Defining and calling Function

The anonymous Functions

Loops and statement in Python

Python Modules & Packages

## **Chapter 6: Python Object Oriented**

Overview of OOP

Creating Classes and Objects

Accessing attributes

Built-In Class Attributes

Destroying Objects

## **Chapter 7: Python Exceptions Handling**

What is Exception?

Handling an exception

try....except...else

try-finally clause

Argument of an Exception

Python Standard Exceptions

Raising an exceptions

User-Defined Exceptions

## **Chapter 8: Python Regular Expressions**

What are regular expressions?

The match Function

The search Function

Matching vs searching

Search and Replace

Extended Regular Expressions

Wildcard

## **Chapter 9: Python Multithreaded Programming**

What is multithreading?

Starting a New Thread

The Threading Module

Synchronizing Threads

Multithreaded Priority Queue

## **Python Spreadsheet Interfaces**

## **Python XML interfaces**

## **Chapter 10: Using Databases in Python**

Python MySQL Database Access

Install the MySQLdb and other Packages

Create Database Connection

CREATE, INSERT, READ, UPDATE and DELETE Operation

DML and DDL Operation with Databases

Performing Transactions

Handling Database Errors

## **Web Scraping in Python**

## Chapter 11: Python For Data Analysis

### Numpy:

Introduction to numpy

Creating arrays

Using arrays and Scalars

Indexing Arrays

Array Transposition

Universal Array Function

Array Processing

Array Input and Output

### Pandas:

What is pandas?

Where it is used?

Series in pandas

Index objects

Reindex

Drop Entry

Selecting Entries

Data Alignment

Rank and Sort

Summary Statics

Missing Data

Index Hierarchy

Matplotlib: Python For Data Visualization

Welcome to the Data Visualization Section

Introduction to Matplotlib

## **Chapter 12: Django Web Framework in Python**

Introduction to Django and Full Stack Web Development