Python programming for Everyone by Dharma Appana

No prerequistes

Duration : 30 Days

Daily 60 Mins session
Note: sometime session will continue until 90 mins

Day 1

Introduction to Python

What is Python?

WHY PYTHON?

History

Features – Dynamic, Interpreted, Object oriented, Embeddable, Extensible, Large standard libraries, Free and Open source

Why Python is General Language?

Limitations of Python

Python Language Fundamentals

Keywords

Identifiers

variables

Data types

Python VS JAVA

Python Syntax

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Operators

Arithmetic Operators
Comparison Operators
Python Assignment Operators
Logical Operators
Bitwise Operators
Shift operators
Membership Operators
Identity Operator

Day 2 and Day 3

Strings

What is string
Representation of Strings
Processing elements using indexing
Processing elements using Iterators
Manipulation of String using Indexing and Slicing
String operators
Methods of String object
String Formatting
String functions
String Immutability

Day 4

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List Collection

What is List
Need of List collection
Different ways of creating List
List comprehension
List indices
Processing elements of List through Indexing and Slicing
List object methods
List is Mutable
Mutable and Immutable elements of List
Nested Lists
List_of_lists

Tuple Collection

What is tuple?
Different ways of creating Tuple
Method of Tuple object
Tuple is Immutable
Mutable and Immutable elements of Tuple
Process tuple through Indexing and Slicing
List v/s Tuple

Day 5

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Set Collection

What is set?
Different ways of creating set
Difference between list and set
Accessing elements of set
Python Set Methods
Python Set Operations
Union of sets
functions and methods of set
Python Frozen set
Difference between set and frozenset ?

Dictionary Collection

What is dictionary?
Difference between list, set and dictionary
How to create a dictionary?
Accessing values of dictionary
Python Dictionary Methods
Copying dictionary
Updating Dictionary
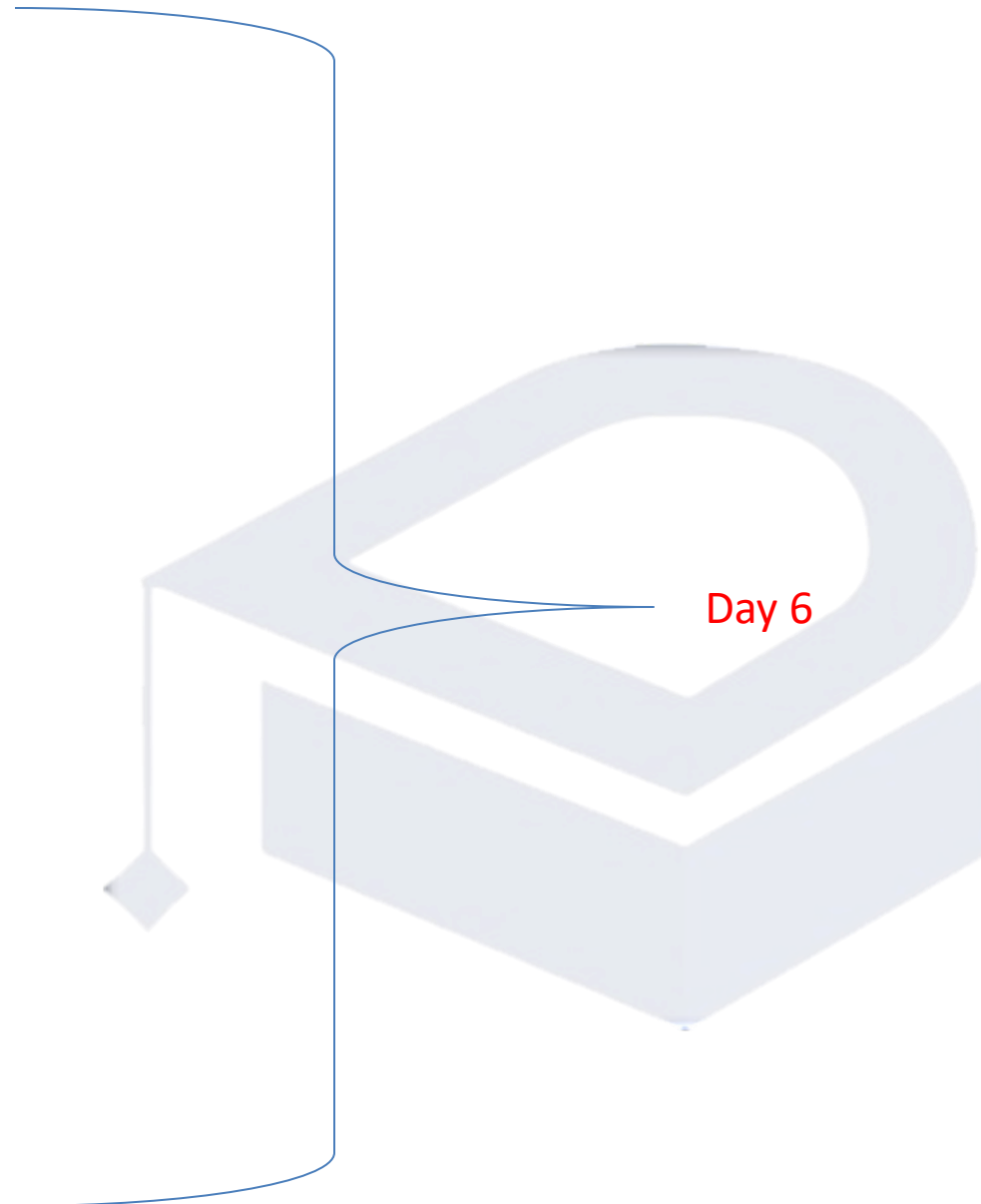Reading keys from Dictionary
Reading values from Dictionary
Reading items from Dictionary
Delete Keys from the dictionary
Sorting the Dictionary
Python Dictionary Functions and methods

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Control flow statements

Conditional Statements
If
If else
If elif else
Nested if else

Loops
While loop
For loop

Transfer Statements
break
continue
pass

Day 7,Day 8,Day 9

- **How to take input to the list,tuple,set,Dictionary**
- **List comprehension,tuple comprehension,set comprehension,Dictionary comprehension**

Day 10 and Day 11

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Functions

What is Function?
Advantages of functions
Syntax and Writing function
Calling or Invoking function
Classification of Functions
Lambda functions/Anonymous
functions
map()
filter()
reduce()
Non local variables, global variables

Day 12,Day 13,Day 14

Python Modules

Importance of modular programming
What is module
Types of Modules – Pre defined, User
defined.
User defined modules creation
Functions based modules
Import module
From ... import

Web Scraping Project

Day 16

Day 15

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 Packages

OOPS

Procedural v/s Object oriented programming

Principles of OOP – Encapsulation , Abstraction (Data Hiding)

Classes and Objects

How to define class in python

Types of variables – instance variables, class variables.

Types of methods – instance methods, class method, static method

self' reference variable

Encapsulation(Data Binding)

What is polymorphism?

Overriding

i) Method overriding

ii)Constructor overriding

Overloading

iii) Method Overloading

iv) Constructor Overloading

inheritance – single , multi level, multiple, hierarchical and

hybrid inheritance and Diamond inheritance

Constructors in inheritance

Object class

super()

Abstraction

Day 17,Day 18,Day 19

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Exception Handling

 Types of Errors

 What is Exception?

Why exception handling? Syntax error

v/s Runtime error Try with multi except

Handling multiple exceptions with single except block

Finally block

Try-except-finally Try with

finally Raise keyword

Custom exceptions / User defined exceptions

Need to Custom exception

Day 20

File &Directory handling

Introduction to files Opening

file

File modes

Reading data from file

Writing data into file

Appending data into file

Line count in File

Day 21

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- Decorators ─── Day 22
- Iterators
- Generators ─── Day 23
- Multithreading ─── Day 24
- Regular Expressions ─── Day 25

Python for Data science
- Numpy
- Pandas
- Matplotlib ─── Day 26,Day 27,Day 28
- Data Analysis project using above modules

GUI Programming using tkinter ─── Day 29 and Day 30

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