### **Dhaapps Basics to Advance python Training**

### 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** 

### **Operators**

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

### **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

#### **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

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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

### **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

### **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

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** 

### **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

### 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

### Advanced concepts

**Decorators** 

**Iterators** 

Generators

Multithreading

Regular Expressions



# Gui Programming using Tkinter, turtle

### Python for Datascience

- Numpy
- Pandas
- matplotlib

**GUI based Projects Data Analysis using Python Project**