PIXEL COMPUTER INSTITUTE,MEERUT

Email:- pixel.computer.meerut@gmail.com Mobile No.:- +91 945 696 8800

Syllabus : Python

Duration : 60 hrs (Each Session 1 hour)

Session 1

- Why You Should Learn Programming Language
- How You Should Learn Programming Language
- Different Types of Software
- Different Types of Programming Paradigms
- History of Python
- Why to learn python
- Features of Python

Session 2

- Variable, Identifier & Keywords
- Statements & Comments
- Indentation
- Static Typing vs. Dynamic Typing
- Input and output
- Data types

Session 3

- Arithmetic operator
- Relational Operator
- Assignment Operator
- Logical operator
- Bitwise operator
- Membership Operator
- Identity Operator
- Precedence of operators

Session 4 & 5

- If statement, If – else, If – elif –else, Nested if – else
- While loop
- for – in loop

- Nested loop

- Loop with else
- Pass statement
- Break and continue

Session 6 - 8

- What is Function
- Defining function
- Calling Function
- Return statement
- Function parameters
- Call by value or call by reference
- Local and global variable
- Recursion
- Anonymous (lambda)function

Session 9 & 10

- Defining module
- How to create module
- Importing module
- Module search path
- Reloading a module
- Defining package
- How to create package
- Importing package
- Installing third party packages

Session 11-12

- Basic Data Types
- Type casting
- Defining a string
- Different ways to create string
- Accessing elements of string
- Escape sequence
- String formatting Expressions

Session 13-14

- Defining a list
- Creating list
- Accessing list elements of list
- Deleting list
- List methods
- Functions used with list
- List comprehension
- Implementation of stack and queue using list
- Matrix operations using list
- Matrix operations using list comprehension

Session 15

- Defining a Tuple
- Creating a Tuple
- Accessing elements of Tuple
- Immutability
- List vs. Tuples
- Tuple Methods
- Functions used with tuple
- Advantage of Tuple

Session 16

- Defining a dictionary
- Creating a dictionary
- Accessing elements of dictionary
- Deleting a dictionary
- Dictionary methods
- Dictionary Comprehension

Session 17

- Defining a set
- Creating set
- Set operations
- Set methods
- Set comprehension

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Session 18 & 19

- Types of file
- File operations: Opening a File, Closing file, Writing to File, Reading from file
- Random access in file
- Tell() and seek()
- Binary file
- Copy binary file
- Pickle module

Session 20 & 21

- Defining an exception?
- Default exception handler
- Exception handling techniques
- Detecting Exception (try)
- Catching exceptions (catch)
- Catching multiple exceptions
- Raising exception (raise)
- Finally block
- User defined exceptions

Session 22-24

- OOPS Concepts
- Defining a class, Creating object
- Instance attribute vs. class attribute
- Instance method vs. class method
- Access Specifier
- Method Overloading
- Constructor
- Destructor
- Inheritance
- Method overriding
- Super()
- Method resolution order
- Operator overloading
- Abstract method
- Abstract class

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Session 25 - 27

- Process based multi tasking
- Thread based multi tasking
- Creating a Thread without using class
- Creating thread using class
- Sleep() method, Join() Methods
- Getting and setting name of Thread
- Is_Alive() Method
- Active_count() method
- Enumerate() method
- Current_thread() method
- Synchronization
- Lock concept
- Acquire() and release()

Session 28 & 30

- Introduction to Tkinter
- Creating a window
- Tkinter widgets
- Label
- Button
- Entry
- Message box
- Tkinter widgets
- List box
- Radio Button
- Check Button
- Creating Frame
- Mini Project

Session 31 – 33

- Introduction to SQLite module
- Connecting to database by using sqlite3
- Creating table by sqlite3
- Performing sql operations
- Introduction to MySQL
- Creating database using MySQL
- Connecting MySQL database from python

- CURD Operation

Session 34

- Introduction to Network programming
- Ip address
- Port Number
- Socket module
- Server socket
- Client socket
- Socket methods
- creating a client server application

Session – 35

- What is machine Learning
- Supervised Learning
- Unsupervised learning
- Why python is suitable for ML
- Application of machine learning

Session – 36-40

- Numpy
- pandas
- sklearn
- matplotlib

Session – 41 – 46

- Live Project