webgurukul

सर्व हिताय शिक्षा

Webgurukul Programming Language Course

"Take One step towards IT profession with us"

Python Syllabus

- **Python Training Overview**
  - What are the Python Course Pre-requisites
  - Objectives of the Course
  - Who should do the course
  - Python Training Course Duration
- **Python Course Content**
  - Core Python
  - Introduction to Script
  - Introduction to Python
  - Different Modes in PYTHON
  - Variables in Python
  - String Handling
  - Python Operators and Operands
  - Python Conditional Statements
  - Python LOOPS
  - Learning Python Strings
  - Core Python
  - Sequence or Collections in PYTHON
  - Python Lists
  - Python TUPLE
  - Python Sets
  - Python Dictionary
  - Python Functions
  - Advanced Python
  - Python Modules
  - Packages in Python
  - Python Date and Time
  - File Handling
  - Python OS Module
  - Python Exception Handling
  - More Advanced PYTHON
  - Python Class and Objects
  - Python Regular Expressions
  - Python XML Parser
  - Python-Data Base Communication
  - Multi-Threading
  - Web Scrapping
  - Unit Testing with PyUnit
  - Introduction to Python Web Frameworks
  - GUI Programming-Tkinter
  - Data Analytics
  - Introduction to Machine Learning with PYTHON
  - Data Science
  - Internet of Things
  - share training and course content with friends and students:

Python Course Content

Core Python

- **Introduction to Script**
  - What is Script, program?
  - Types of Scripts
  - Difference between Script and Programming Languages
  - Features and Limitation of Scripting
  - Types of programming Language Paradigms

- **Introduction to Python**
  - What is Python?
  - Why Python?
  - Who Uses Python?
  - Characteristics of Python
  - History of Python
  - What is PSF?
  - Python Versions
  - How to Download and Install Python
  - Install Python with Diff IDEs
  - Features and Limitations of Python
  - Python Applications
  - Creating Your First Python Program
  - Printing to the Screen
  - Reading Keyboard Input
  - Using Command Prompt and GUI or IDE
  - Python Distributions

- **Different Modes in PYTHON**
  - Execute the Script
  - Interactive and Script Mode

- Python File Extensions
- SETTING PATH IN Windows
- Clear screen inside python
- Learn Python Main Function
- Python Comments
- Quit the Python Shell
- Shell as a Simple Calculator
- Order of operations
- Multiline Statements
- Quotations in Python
- Python Path Testing
- Joining two lines
- Python Implementation Alternatives
- Sub Packages in Python
- Uses of Python in Data Science, IoT
- Working with Python in Unix/Linux/Windows/Mac/Android..!!

• PYTHON NEW IDEs

- PyCharm IDE
- How to Work on PyCharm
- PyCharm Components
- Debugging process in PyCharm
- PYTHON Install Anaconda
- What is Anaconda?
- Coding Environments
- Spyder Components
- General Spyder Features
- Spyder Shortcut Keys
- Jupyter Notebook

- What is Conda? and Conda List?
- Jupyter and Kernels
- What is PIP?

• Variables in Python

- What is Variable?
- Variables and Constants in Python
- Variable,Variable names and Value
- Mnemonic Variable Names
- Values and Types
- What Does “Type” Mean?
- Multiple Assignment
- Python different numerical types
- Standard Data Types
- Operators and Operands
- Order of Operations
- Swap variables
- Python Mathematics
- Type Conversion
- Mutable Versus Immutable Objects

• String Handling

- What is string?
- String operations and indices
- Basic String Operations
- String Functions, Methods
- Delete a string
- String Multiplication and concatenation
- Python Keywords, Identifiers and Literals

- String Formatting Operator
- Structuring with indentation in Python
- Built-in String Methods
- Define Data Structure?
- Data Structures in PYTHON

- **Python Operators and Operands**
  - Arithmetic, Relational Operators and Comparison Operators
  - Python Assignment Operators
  - Short hand Assignment Operators
  - Logical Operators or Bitwise Operators
  - Membership Operators
  - Identity Operators
  - Operator precedence
  - Evaluating Expressions

- **Python Conditional Statements**
  - How to use “if condition” in conditional structures
  - if statement (One-Way Decisions)
  - if .. else statement (Two-way Decisions)
  - How to use “else condition”
  - if .. elif .. else statement (Multi-way)
  - When “else condition” does not work
  - How to use “elif” condition
  - How to execute conditional statement with minimal code
  - Nested IF Statement

- **Python LOOPS**
  - How to use “While Loop” and “For Loop”
  - How to use For Loop for set of other things besides numbers
  - Break statements, Continue statement, Enumerate function for For Loop
  - Practical Example
  - How to use for loop to repeat the same statement over and again
  - Break, continue statements

- **Learning Python Strings**
  - Accessing Values in Strings
  - Various String Operators
  - Some more examples
  - Python String replace() Method
  - Changing upper and lower case strings
  - Using “join” function for the string
  - Reversing String
  - Split Strings

- **Sequence or Collections in PYTHON**
  - Strings
  - Unicode Strings
  - Lists
  - Tuples
  - buffers
  - xrange

- **Python Lists**
  - Lists are mutable
  - Getting to Lists

- List indices
- Traversing a list
- List operations, slices and methods
- Map, filter and reduce
- Deleting elements
- Lists and strings

Python TUPLE

- Advantages of Tuple over List
- Packing and Unpacking
- Comparing tuples
- Creating nested tuple
- Using tuples as keys in dictionaries
- Deleting Tuples
- Slicing of Tuple
- Tuple Membership Test
- Built-in functions with Tuple
- Dotted Charts

Python Sets

- How to create a set?
- Iteration Over Sets
- Python Set Methods
- Python Set Operations
- Union of sets
- Built-in Functions with Set
- Python Frozenset

- **Python Dictionary**
  - How to create a dictionary?
  - PYTHON HASHING?
  - Python Dictionary Methods
  - Copying dictionary
  - Updating Dictionary
  - Delete Keys from the dictionary
  - Dictionary items() Method
  - Sorting the Dictionary
  - Python Dictionary in-built Functions
  - Dictionary len() Method
  - Variable Types
  - Python List cmp() Method
  - Dictionary Str(dict)

- **Python Functions**
  - What is a function?
  - How to define and call a function in Python
  - Types of Functions
  - Significance of Indentation (Space) in Python
  - How Function Return Value?
  - Types of Arguments in Functions
  - Default Arguments and Non-Default Arguments
  - Keyword Argument and Non-keyword Arguments
  - Arbitrary Arguments
  - Rules to define a function in Python
  - Various Forms of Function Arguments
  - Scope and Lifetime of variables
  - Nested Functions

- Call By Value, Call by Reference
- Anonymous Functions/Lambda functions
- Passing functions to function
- map(), filter(), reduce() functions
- What is a Docstring?

Advanced Python

- **Python Modules**
  - What is a Module?
  - Types of Modules
  - The import Statement
  - The from...import Statement
  - ..import * Statement
  - Underscores in Python
  - The dir( ) Function
  - Creating User defined Modules
  - Command line Arguments
  - Python Module Search Path

- **Packages in Python**
  - What is a Package?
  - Introduction to Packages?
  - py file
  - Importing module from a package
  - Creating a Package
  - Creating Sub Package
  - Importing from Sub-Packages
  - Popular Python Packages

- **Python Date and Time**
  - How to Use Date & DateTime Class
  - How to Format Time Output
  - How to use Timedelta Objects
  - Calendar in Python
  - datetime classes in Python
  - How to Format Time Output?
  - The Time Module
  - Python Calendar Module
  - Python Text Calendar, HTML Calendar Class
  - Unix Date and Time Commands

- **File Handling**
  - What is a data, Information File?
  - File Objects
  - File Different Modes and Object Attributes
  - How to create a Text Fil and Append Data to a File and Read a File
  - Closing a file
  - Read, read line ,read lines, write, write lines...!!
  - Renaming and Deleting Files
  - Directories in Python
  - Working with CSV files and CSV Module
  - Handling IO Exceptions

- **Python OS Module**
  - Python Errors
  - Common RunTime Errors in PYTHON
  - Abnormal termination

- Chain of importance Of Exception
- Exception Handling
- Try ... Except
- Try .. Except .. else
- Try ... finally
- Argument of an Exception
- Python Custom Exceptions
- Ignore Errors
- Assertions
- UsingAssertionsEffectively

- **More Advanced PYTHON**
  - Python Iterators, Generators, Closures, Decorators and Python @property

- **Python Class and Objects**
  - Introduction to OOPs Programming
  - Object Oriented Programming System
  - OOPS Principles
  - Define Classes
  - Creating Objects
  - Class variables and Instance Variables Constructors
  - Basic concept of Object and Classes
  - Access Modifiers
  - How to define Python classes
  - Python Namespace
  - Self-variable in python
  - Garbage Collection
  - What is Inheritance? Types of Inheritance?

- How Inheritance works?
- Python Multiple Inheritance
- Overloading and Over Riding
- Polymorphism
- Abstraction
- Encapsulation
- Built-In Class Attributes

Python Regular Expressions

- What is Regular Expression?
- Regular Expression Syntax
- Understanding Regular Expressions
- Regular Expression Patterns
- Literal characters
- Repetition Cases
- Example of w+ and ^ Expression
- Example of \s expression in re.split function
- Using regular expression methods
- Using re.match()
- Finding Pattern in Text (re.search())
- Using re.findall for text
- Python Flags
- Methods of Regular Expressions

Python XML Parser

- What is XML?
- Difference between XML and HTML and XML, JSON, Gson
- How to Parse XML and Create XML Node

- Python vs JAVA
- XML and HTML

- **Python-Data Base Communication**
  - What is Database? Types of Databases?
  - What is DBMS?, RDBMS?
  - What is Big Data? Types of data?
  - Oracle
  - MySQL
  - SQL server
  - DB2
  - Postgre SQL
  - Executing the Queries
  - Bind Variables
  - Installing of Oracle Python Modules
  - Executing DML Operations..!!

- **Multi-Threading**
  - What is Multi-Threading
  - Threading Module
  - Defining a Thread
  - Thread Synchronization

- **Multi-Threading**
  - The components of a web page
  - BeautifulSoup

- Urllib2
- HTML,CSS,JS,jQuery
- Dataframes
- PIP
- Installing External Modules Using PIP

- **Unit Testing with PyUnit**
  - What is Testing?
  - Types of Testings and Methods?
  - What is Unit Testing?
  - What is PyUnit?
  - Test scenarios, Test Cases, Test suites

- **Introduction to Python Web Frameworks**
  - Django – Design
  - Advantages of Django
  - MVC and MVT
  - Installing Django
  - Designing Web Pages
  - HTML5, CSS3, AngularJS
  - PYTHON Flask, Bottle, Pyramid, Falcon

- **GUI Programming-Tkinter**
  - Introduction
  - Components and Events
  - Adding Controls
  - Entry Widget, Text Widget, Radio Button, Check Button
  - List Boxes, Menus, ComboBox

- **Data Analytics**
  - Introduction to data Big Data?
  - Introduction to NumPY and SciPY
  - Introduction to Pandas and MatPlotLib

- **Introduction to Machine Learning with PYTHON**
  - What is Machine learning?
  - Machine Learning Methods
  - Predictive Models
  - Descriptive Models
  - What are the steps used in Machine Learning?
  - What is Deep Learning?

- **Data Science**
  - What is Data Science?
  - Data Science Life Cycle?
  - What is Data Analysis, Data Mining
  - Analytics vs Data Science

- **Internet of Things**
  - IMPACT OF THE INTERNET
  - What is IOT
  - History of IoT
  - What is Network, Protocol, smart?
  - How IoT Works?
  - The Future of IoT

Features

- Interview Preparation.
- Live & Practical Projects.
- 1 Year of Membership.
- Company Training Certification.

Never Dream about Success
Work for it.

For More Information Contact Us:

+91-7387990061 / +91-8237733112

Head Office: Plot no.11, Madhav Nagar, Behind Domino's Pizza.Near Mate Square, Nagpur-440010.

Branch Office: 2nd Floor, Above Patni Multi-Speciality Dental Clinic,Near Wanjari Chowk, Wardha - 442001.

edu@webgurukul.co.in

www.webgurukul.co.in