

Course Name Python Programming

Course Objective

1. To make the learner identify potential zones of uses of Python Programming in different-2 fields.
2. Providing experience of working with real time applications of Python to the learner.
3. Make a learner easily land up to Artificial Intelligence, Python Web development and Desktop Application.

Course Overview

The Course Covers-

Core Python:-

1. Python training overview
2. Introduction to script
3. Introduction to python
4. Different modes in PYTHON
5. Python new IDEs
6. Variables in Python
7. String Handling
8. Python operators and operand
9. Python conditional statements
10. Python Loops
11. Learning Python Strings
12. Sequence or Collection in python
13. Python List
14. Python Tuple
15. Python Sets
16. Python Dictionary
17. Python Functions

Advance Python

1. Python Modules
2. Packages in Python
3. Python Date and Time
4. File Handling
5. Python OS Module
6. Python Exception Handling
7. More advance Python
8. Python Class and Objects
9. Python Regular Expressions
10. Python XML Parser
11. Python Database Communication
12. Multi-Threading
13. Web Scrapping

Course Outcome	After Completion of this course – <ol style="list-style-type: none"> 1. The learner will be able to land in a job role related to develop python application. 2. The learner can easily get into other relevant courses such as Artificial Intelligence, Machine Learning, Deep Learning, Data science, Python webdevelopment. 3. The Learner can also easily switch from existing job role with around of 20% hike from the current salary switch to any of the field where AI and machine Learning is being used. 4. The learner will become capable o handling any project relevant to AI and ML in a proper way. 5. The learner will have complete idea of implementing Django and python webdevelopment.
Duration	45 Hours For classroom Training
Modules	30 Modules
Prerequisite	Basic Ubdertanding of Programming Language.
Machine Requirement	Windows Machine (Windows 7 or Above)/ Linux Machine Only 64 Bit Minimum 2 Gb Ram Graphics Card (Optional)
Software used	Python 3.X
Software Free / Licensed	Free
If licensed, is demo version available	Free
Download link	https://www.python.org/fto/python/3.7.0/python-3.7.0.exe
Any extra hardware other than PC required	NO
Hands on	75%
Projects Covered	2
Study Material	<ol style="list-style-type: none"> 1. PPTs 2. Practice Examples 3. Reading Material in softcopy 4. Project Codes
Any other relevant information	<ol style="list-style-type: none"> 1. Life time access to LMS 2. 24*7 Technical Support 3. Python course will be complementary

Detailed Content:

Module 1 Introduction to Script	<ol style="list-style-type: none"> 1. What is Script, program? 2. Types of Scripts 3. Difference between Script and Programming Languages 4. Features and Limitation of Scripting 5. Types of programming Language Pradigms
Module 2 Introduction to Python	<ol style="list-style-type: none"> 1. What is Python? 2. Why Python 3. Who uses Python? 4. Characteristics of Python 5. History of Python 6. What is PSF? 7. Python Versions 8. How to Download and install python 9. Python Applications 10. Creating your first Python Program 11. Printing to the Screen 12. Reading Keyboard Input 13. Using Command Prompt and GUI or IDE 14. Python Distributions
Assignment 1	
Module 3 Different Modes in Python	<ol style="list-style-type: none"> 1. Execute the script 2. Interactive and Script Mode 3. Python File Extensions 4. Settings Path in Windows 5. Clear Screen inside Python 6. Learn Comments 7. Quit the Python Shell 8. Shell as a Simple Calculator 9. Order of Operations 10. Multiline Statements 11. Quotations in Python 12. Python Path Testing 13. Joining two Lines 14. Python Implementation Alternatives 15. Sub Packages in Python 16. Uses of Python in Data Science, IoT and Web development 17. Working with Python in Linux/Unix/Windows/Mac/Android.!!
Module 4 Python New IDEs	<ol style="list-style-type: none"> 1. PyCharm IDE 2. How to Work on PyCharm 3. PyCharm Components 4. Debugging process in PyCharm 5. PYTHON Install Anaconda 6. What is Anaconda?

	<ol style="list-style-type: none"> Coding Environments Spyder Components General Spyder Features Spyder Shortcut Keys Jupyter Notebook What is Conda? and Conda List? Jupyter and Kernels What is PIP?
Assignment 2	
Module 5 Variables in Python	<ol style="list-style-type: none"> 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
Module 6 String Hanling	<ol style="list-style-type: none"> 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
Assignment 3	
Module 7 Python Operators and Operands	<ol style="list-style-type: none"> Arithmetic, Relational Operators and Comparison Operators Python Assignment Operators Short hand Assignment Operators Logical Operators or Bitwise Operators Membership Operators Identity Operators

	<ol style="list-style-type: none"> 7. Operator precedence 8. Evaluating Expressions
Module 8 Python Conditional Statements	<ol style="list-style-type: none"> 1. How to use “if condition” in conditional structures 2. if statement (One-Way Decisions) 3. if .. else statement (Two-way Decisions) 4. How to use “else condition” 5. if .. elif .. else statement (Multi-way) 6. When “else condition” does not work 7. How to use “elif” condition 8. How to execute conditional statement with minimal code 9. Nested IF Statement
Assignment 4	
Module 9 Python LOOPS	<ol style="list-style-type: none"> 1. How to use “While Loop” and “For Loop” 2. How to use For Loop for set of other things besides numbers 3. Break statements, Continue statement, Enumerate function for For Loop 4. Practical Example 5. How to use for loop to repeat the same statement over and again
Module 10 Learning Python String	<ol style="list-style-type: none"> 1. Accessing Values in Strings 2. Various String Operators 3. Some more examples 4. Python String replace() Method 5. Changing upper and lower case strings 6. Using “join” function for the string 7. Reversing String 8. Split Strings
Assignment 5	
Module 10 Sequence or Collections in Python	<ol style="list-style-type: none"> 1. Strings 2. Unicode Strings 3. Lists 4. Tuples 5. buffers 6. xrange
Module 11 Python Lists	<ol style="list-style-type: none"> 1. Lists are mutable 2. Getting to Lists 3. List indices

	<ol style="list-style-type: none"> 4. Traversing a list 5. List operations, slices and methods 6. Map, filter and reduce 7. Deleting elements 8. Lists and strings
Assignment 6	
Module 12 Python Tuple	<ol style="list-style-type: none"> 1. Advantages of Tuple over List 2. Packing and Unpacking 3. Comparing tuples 4. Creating nested tuple 5. Using tuples as keys in dictionaries 6. Deleting Tuples 7. Slicing of Tuple 8. Tuple Membership Test 9. Built-in functions with Tuple 10. Dotted Charts
Module 13 Python Sets	<ol style="list-style-type: none"> 1. How to create a set? 2. Iteration Over Sets 3. Python Set Methods 4. Python Set Operations 5. Union of sets 6. Built-in Functions with Set 7. Python Frozenset
Assignment 7	
Module 14 Python Dictionary	<ol style="list-style-type: none"> 1. How to create a dictionary? 2. PYTHON HASHING? 3. Python Dictionary Methods 4. Copying dictionary 5. Updating Dictionary 6. Delete Keys from the dictionary 7. Dictionary items() Method 8. Sorting the Dictionary 9. Python Dictionary in-built Functions 10. Dictionary len() Method 11. Variable Types 12. Python List cmp() Method 13. Dictionary Str(dict)
Module 15 Python Functions	<ol style="list-style-type: none"> 1. What is a function? 2. How to define and call a function in Python 3. Types of Functions 4. Significance of Indentation (Space) in Python 5. How Function Return Value? 6. Types of Arguments in Functions

	<ol style="list-style-type: none"> 7. Default Arguments and Non-Default Arguments 8. Keyword Argument and Non-keyword Arguments 9. Arbitrary Arguments 10. Rules to define a function in Python 11. Various Forms of Function Arguments 12. Scope and Lifetime of variables 13. Nested Functions 14. Call By Value, Call by Reference 15. Anonymous Functions/Lambda functions 16. Passing functions to function 17. map(), filter(), reduce() functions 18. What is a Docstring?
Assignment 8	
Module 16 Python Modules	<ol style="list-style-type: none"> 1. What is a Module? 2. Types of Modules 3. The import Statement 4. The from...import Statement 5. ..import * Statement 6. Underscores in Python 7. The dir() Function 8. Creating User defined Modules 9. Command line Arguments 10. Python Module Search Path
Module 17 Package in Python	<ol style="list-style-type: none"> 1. What is a Package? 2. Introduction to Packages? 3. py file 4. Importing module from a package 5. Creating a Package 6. Creating Sub Package 7. Importing from Sub-Packages 8. Popular Python Packages
Assignment 9	
Module 18 Python Date and Time	<ol style="list-style-type: none"> 1. How to Use Date & DateTime Class 2. How to Format Time Output 3. How to use Timedelta Objects 4. Calendar in Python 5. datetime classes in Python 6. How to Format Time Output? 7. The Time Module 8. Python Calendar Module 9. Python Text Calendar, HTML Calendar Class 10. Unix Date and Time Commands
Module 19	<ol style="list-style-type: none"> 1. What is a data, Information File?

File Handling	<ol style="list-style-type: none"> 2. File Objects 3. File Different Modes and Object Attributes 4. How to create a Text File and Append Data to a File and Read a File 5. Closing a file 6. Read, read line, read lines, write, write lines...!! 7. Renaming and Deleting Files 8. Directories in Python 9. Working with CSV files and CSV Module 10. Handling IO Exceptions
Assignment 10	
Module 20 Python OS Module	<ol style="list-style-type: none"> 1. Shell Script Commands 2. Various OS operations in Python 3. Python File System Shell Methods
Module 21 Python Exception Handling	<ol style="list-style-type: none"> 1. Python Errors 2. Common RunTime Errors in PYTHON 3. Abnormal termination 4. Chain of importance Of Exception 5. Exception Handling 6. Try ... Except 7. Try .. Except .. else 8. Try ... finally 9. Argument of an Exception 10. Python Custom Exceptions 11. Ignore Errors 12. Assertions 13. Using Assertions Effectively
Assignment 11	
Module 22 More Advance Python	<ol style="list-style-type: none"> 1. Python Iterators, Generators, Closures, Decorators and Python @property
Module 23 Python Class and Objects	<ol style="list-style-type: none"> 1. Introduction to OOPs Programming 2. Object Oriented Programming System 3. OOPS Principles 4. Define Classes 5. Creating Objects 6. Class variables and Instance Variables Constructors 7. Basic concept of Object and Classes 8. Access Modifiers 9. How to define Python classes 10. Python Namespace 11. Self-variable in python 12. Garbage Collection 13. What is Inheritance? Types of Inheritance? 14. How Inheritance works?

	15. Python Multiple Inheritance 16. Overloading and Over Riding 17. Polymorphism 18. Abstraction 19. Encapsulation 20. Built-In Class Attributes
Assignment 12	
Module 24 Python Regular Expressions	1. What is Regular Expression? 2. Regular Expression Syntax 3. Understanding Regular Expressions 4. Regular Expression Patterns 5. Literal characters 6. Repetition Cases 7. Example of w+ and ^ Expression 8. Example of \s expression in re.split function 9. Using regular expression methods 10. Using re.match() 11. Finding Pattern in Text (re.search()) 12. Using re.findall for text 13. Python Flags 14. Methods of Regular Expressions
Module 25 Python XML Parser	1. What is XML? 2. Difference between XML and HTML and XML, JSON, Gson 3. How to Parse XML and Create XML Node 4. Python vs JAVA 5. XML and HTML
Assignment 13	
Module 26 Python Database Communication	1. What is Database? Types of Databases? 2. What is DBMS?, RDBMS? 3. What is Big Data? Types of data? 4. Oracle 5. MySQL 6. SQL server 7. DB2 8. Postgre SQL 9. Executing the Queries 10. Bind Variables 11. Installing of Oracle Python Modules 12. Executing DML Operations...!!
Module 27 Multi Threading	1. What is Multi-Threading 2. Threading Module 3. Defining a Thread

	4. Thread Synchronization
Assignment 14	
Module 28 Web Scrapping	1. The components of a web page 2. BeautifulSoup 3. Urllib2 4. HTML,CSS,JS,jQuery 5. Dataframes 6. PIP 7. Installing External Modules Using PIP
Module 29 Working on Projects	
Assignment 15	

Thank you for query

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