

Advanced Python

Instructors:

Shubham Sharma:

Having 3+ years of DataScience and Web Development expertise, proficient in data modelling, data preprocessing as well as scripting languages Python and PHP. I've also worked as a mentor and a freelancer. Machine Learning and Natural Language Processing (NLP) are two of my areas of expertise.

Curriculum:

Introduction to the course

- Course Introduction
- Who is this course for?
- Course Overview & Course outcome
- Course Pre-requisite

Python Flow Control

- What are control statements?
- Explanation of If-else
- Explanation of for loop
- Explanation of While Loop
- What is Break & Continue Pass
- Practical: Guess the Number
- Practical: Write a program to print a Right-Angle Triangle?

- Practical: Check the Leap Year
- Practical: Write a Program to Print Pyramid, Left /right triangle/ diamond?

Assignment 1:

- How to convert one unit to another?

Python Data Structure - List

- What is a List?
- Creating a List
- Accessing The List Elements
- Adding New Data in the List
- The Slice Operator With List
- Modifying a List
- Deletion in a List
- Appending Items In a List
- Multiplying a List
- Membership Operators On List
- Built In Functions For List
- Methods Of List
- Practical: Python program to interchange first and last elements in a list.
- Practical: Count occurrences of an element in a list

Assignment 2:

- Multiply all numbers in the list

Python Data Structure-Tuple

- What is a Tuple?
- Difference between list and tuple.
- Benefits Of Tuple
- Creating Tuple
- Packing/Unpacking a Tuple
- Accessing a Tuple
- Changing the Tuple
- Deleting the Tuple
- Functions used with Tuple
- Methods used with Tuple
- Operations allowed on Tuple
- Practical: Create a list of tuples from a given list having a number and its cube in each tuple.

Assignment 3:

- Sum of tuple elements

Python Sets

- What are Sets?
- Practical: Iterate over a set in Python

Assignment 4:

- Find lost element from a duplicated array using Set difference

Python Dictionary

- What Is a Dictionary ?
- What Is a Key-Value Pair ?
- Creating a Dictionary
- Important Characteristics of a Dictionary
- Different ways to access a Dictionary
- Updating elements In Dictionary
- Removing elements from Dictionary
- Functions used In Dictionary
- Dictionary Methods
- Removing elements from Dictionary
- Functions used In Dictionary
- Practical: Python program to find the sum of all items in a dictionary

Assignment 5:

- Extract Key's Value, if Key Present in List and Dictionary

Python Functions

- Global & Local Variables
- Function Argument
- Function Recursion
- Lambda Function
- The map() Function
- The filter() Function
- Using map() and filter() with Lambda Expressions
- Practical: Creating a calculator

Assignment 6:

- Create a scientific calculator

Projects

- Create a currency convertor using python.
- Create an alarm clock.
- Create a mail sending program.

Final Task

- Build an app that will track the number of calories that you eat every day.