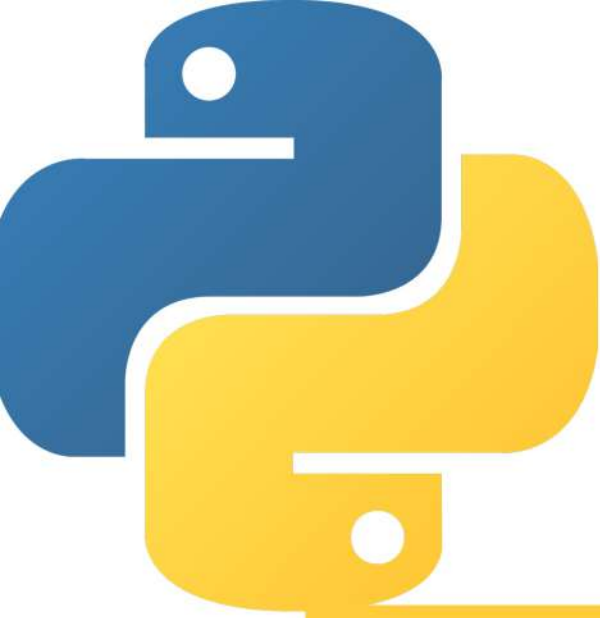




# *Python Certification*

## **e-Learning Course**

**[www.zetlantech.com](http://www.zetlantech.com)**

**Help Desk: +91 8680961847**

# COURSE MODULES

## Introduction python and setting up the Environment

- Introduction to Programming
- Python?
- Why Python for Data Science?
- Different Python IDEs
- Downloading and setting up the Python environment

## Python Basic Syntax and Data Types

- Python input and output operations.
- Variables, rules for naming variables
- Basic Data Types in Python
- Typecasting in Python

## Operators in Python

- Arithmetic operators
- Assignment operators
- Comparison operators
- Logical operators
- Identity operators
- Membership operators
- Bitwise operators

## Strings in Python

- Creating strings
- String formatting
- Indexing
- Slicing
- String methods

## Lists

- Creating lists
- Properties of lists
- List indexing
- List slicing
- List of lists
- List methods
- Adding, updating & removing elements from lists



## Tuples

- Syntax to create tuples
- Tuple properties
- Indexing on tuples
- Slicing on tuples
- Tuple methods

## Sets

- The syntax for creating sets
- Updating sets
- Set operations and methods
- Difference between sets, lists, and tuples

## Dictionaries

- The syntax for creating Dictionaries
- Storing data in Dictionaries
- Dictionaries keys and values
- Accessing the elements of Dictionaries
- Dictionary methods

## Python conditional statements

- Setting logic with conditional statements
- If statements
- If -else statements
- If-elif-else statements

## Loops in Python

- Iterating with Python loops
- while loop
- for loop
- range
- break
- continue
- pass
- enumerate
- zip
- assert

## List and Dictionaries comprehension

- Why List comprehension
- The syntax for list comprehension
- The syntax for dict comprehension

## Functions

- What are Functions
- Modularity and code reusability
- Creating functions
- Calling functions
- Passing Arguments
- Positional Arguments
- Keyword Arguments
- Variable-length arguments (\*args)
- Variable Keyword length arguments (\*\*kwargs)
- Return keyword in Python
- Passing function as an argument
- Passing function in return
- Global and local variables
- Recursion

## Anonymous Function

- Lambda
- Lambda with filter
- Lambda with map
- Lambda with reduce

## Generators

- Creating and using generators

## Modules

- Creating modules
- Importing functions from a different module
- Importing variables from different modules
- Python built-in modules

## Packages – Data Analysis

- Creating packages
- Importing modules from the package
- Different ways of importing modules and packages
- Working on Numpy, Pandas, and Matplotlib

## Exceptions and Error handling

- Syntax errors
- Logical errors
- Handling errors using try, except and finally

## Classes and Objects (OOPS)

- Creating classes & Objects
- Attributes and methods
- Understanding `__init__` constructor method
- Class and instance attributes
- Different types of methods
- Instance methods
- Class methods
- Static methods
- Inheritance
- Creating child and parent class
- Overriding parent methods
- The `super()` function
- Understanding Types of inheritance
- Single inheritance
- Multiple Inheritance
- Multilevel Inheritance
- Polymorphism
- Operator overloading

## Date and Time

- date module
- time module
- datetime module
- time delta
- formatting date and time
- `strftime()`
- `timeptime()`

## Regex

- Understanding the use of regex
- re.search()
- re.compile()
- re.find()
- re.split()
- re.sub()
- Meta characters and their use

## Files

- Opening file
- Opening different file types
- Read, write, close files
- Opening files in different modes

## Web Scraping

- Installing BeautifulSoup
- Understanding web structures
- Chrome devtools
- request
- Scraping data from the web using Beautiful Soup
- scraping static websites
- Scraping dynamic websites using BeautifulSoup

## Database Access

- Accessing Database using MySQL
- Creating tables
- Insert Values
- Commit changes
- Query
- Update and Delete

## Working on Data Analysis

- Introduction and Working on Numpy-Multidimensional Arrays
- Working on Pandas – EDA Process
- Data Visualization

## APIs the Unsung Hero of the Connected World

- Introduction to APIs
- Accessing Public APIs

## Python for Web Development – Flask

- Introduction to Python Web Framework Flask
  - Installing Flask
  - Working on GET, POST, PUT, METHODS using the Python Flask Framework
  - Working on Templates, render\_template function
- 