Syllabus of Python Online Training

Introduction to Python:

Objective:

In this module, you will get a basic understanding of python programming, Virtual environment, Package manager, version differences of python programming and detailed knowledge about the python installation and environment setup for working with python.

Topic:

- Python programming history & features
- Python compiler and IDE installation
- Virtual Environment
- Pip – Package Manager

Hands-on:

How to set up an environment for python development.

Basics of Python:

Objective:

In this module, you will get a basic understanding of python Syntax and a detailed understanding of Input/Output [I/O] operations, Variables, Operators Datatypes and Data structure.

Topic:

- Python Syntax Overview, Indentation, comments
- Variable declaration
- Datatypes and data structure
  - Primitive
  - Non-primitive
- Operators in python

Hands-on:

How to write a basic Python code, variable declaration datatypes, and operators usage.

Program flow/ Data flow of Python:

Objective:

In this module, you will get a detailed understanding of conditional statements, looping, control statements of python.
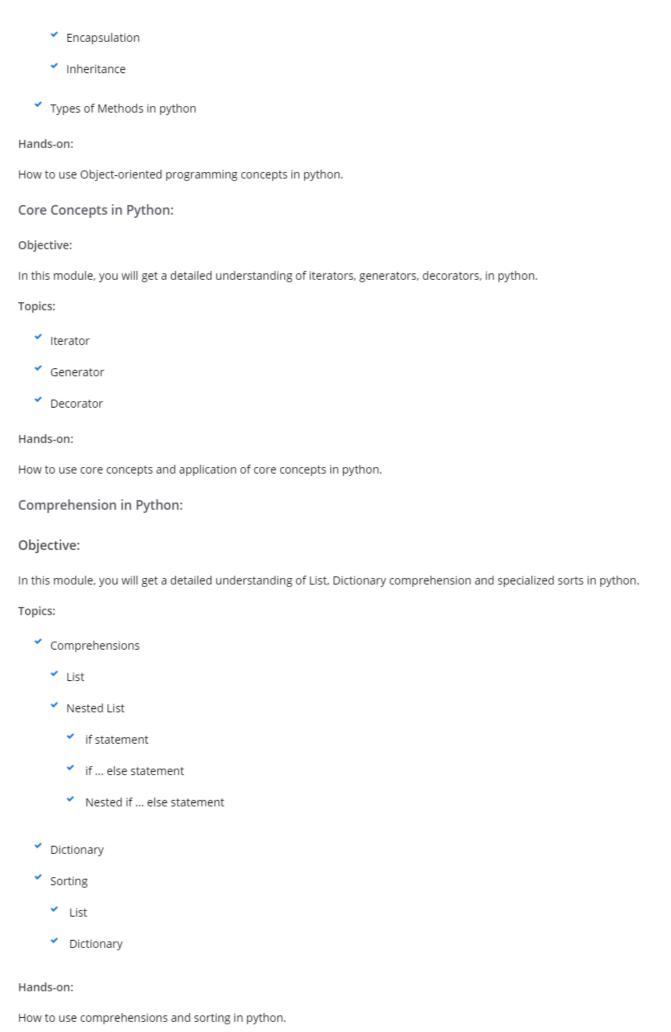
Topics:

- Conditional Statements
  - if statement

- if ... else statement

- if ... elif... else statement

- Looping

  - for loop

  - for with else statement

  - while loop

  - while with else statement

- Control Statements

  - break

  - Continue

  - pass

- Assert Statement

Hands-on:

How to use conditional, looping and control statements in python.

Function in Python:

Objective:

In this module, you will get a detailed understanding of writing function, the scope of variables, function with arguments, keyword arguments, lambda functions and Modules in python.

Topics:

- Syntax of Function

- Function with *args & **kwargs

- Scope of variables

- Lambda function with map, filter, reduce method

- DocString

- Modules and standard Modules

Hands-on:

How to create and use functions and different types of argument, lambda function, and modules in python.

File Handling in Python:

Objective:

In this module, you will get a detailed understanding of file concepts like create, read, write, update, delete operation of file with python.

Topic:

- File Opening modes

- ✔ Context Manager in python
- ✔ File Operations
  - ✔ Open
  - ✔ Create
  - ✔ Read
  - ✔ Write
  - ✔ Update
  - ✔ Delete

Hands-on:

How to create and use file operation in python.

Exception Handling in Python:

Objective:

In this module, you will get a detailed understanding of exception handling and creating your own exception classes in python.

Topic:

- ✔ Types of Errors in python
- ✔ Exception handling with
  - ✔ try ... except
  - ✔ try ... except... finally
  - ✔ try ... except... else
- ✔ Multiple Exception
- ✔ Raising Exception
- ✔ User-defined Exception

Hands-on:

How to create and use built-in and user-defined exception handling in python.

Oops in Python:

Objective:

In this module, you will get a detailed understanding of Object-Oriented Programming Concepts in python.

Topics:

- ✔ Oops Concepts with programming syntax
  - ✔ Class
  - ✔ Object
  - ✔ Polymorphism

- ✔ Encapsulation

- ✔ Inheritance

✔ Types of Methods in python

Hands-on:

How to use Object-oriented programming concepts in python.

Core Concepts in Python:

Objective:

In this module, you will get a detailed understanding of iterators, generators, decorators, in python.

Topics:

✔ Iterator

✔ Generator

✔ Decorator

Hands-on:

How to use core concepts and application of core concepts in python.

Comprehension in Python:

Objective:

In this module, you will get a detailed understanding of List, Dictionary comprehension and specialized sorts in python.

Topics:

✔ Comprehensions

- ✔ List

- ✔ Nested List

  - ✔ if statement

  - ✔ if … else statement

  - ✔ Nested if … else statement

✔ Dictionary

✔ Sorting

- ✔ List

- ✔ Dictionary

Hands-on:

How to use comprehensions and sorting in python.

Thread and DateTime in Python:

Objective:

In this module, you will get a detailed understanding of multi-threading concepts, datetime module alone with sleep and execution of code in python.

Topics:

- Terms in threading
  - process
  - thread
  - multithreading
  - Time complexity

- Thread Life cycle
- Programming with Threading & Multithreading
- Synchronization
- Sleep and execution time of code
- DateTime module

Hands-on:

How to use threading and data time concepts in python.

Advanced data Structure/ collections in Python:

Objective:

In this module, you will get a detailed understanding of advanced data structures in python.

Topics:

- Deque
- namedtuple
- ChainMap
- Counter
- Ordered Dictionary
- Default Dictionary

Hands-on:

How to use advanced data structure in python.

MySQL with Python:

Objective:

In this module, you will get a detailed understanding of SQL statements and database connection along with CRUD operation using python.

Topics:

- SQL statements & Operations
  - Create
  - Read
  - Update
  - Delete

- Python – SQL connector package installation
- Python with CRUD Operations
- Commit & Rollback
- SQL Related Exception Handling

Hands-on:

How to use and manipulate data in a database using python.

Network programming with Python:

Objective:

In this module, you will get a detailed understanding of Network programming, Client & server concepts with python.

Topics:

- Terms and Basics of network programming
- The architecture of data transmission between sender and receiver using python
- Getting data from the remote server
- Client & Server-side programming

Hands-on:

How to use and networking module of python, data transmission between client to server and server to client python.

Regular Expression with Python:

Objective:

In this module, you will get a detailed understanding of writing Regex with python.

Topics:

- Regex Syntax
  - Quantifiers
  - Metacharacters
  - Special Sequences
  - Sets

- Python re module
- Methods with regex usage

Hands-on:

How to use and write regex in python.

GUI programming with Python:

Objective:

In this module, you will get a detailed understanding of developing the GUI application using the PyQt5 module with python.

Topics:

- Introduction
- Components and Events
- An Example GUI
- Widgets
- Layout Management
- Signals & Slots
- QMessagesBox, QDialog
- Database Handling

Hands-on:

How to develop a GUI application with PyQt5 and python.

API access with Python:

Objective:

In this module, you will get a detailed understanding of accessing open APIs using python.

Topics:

- Google Text to Speech
- Google Speech to Text
- OpenWeatherMap

Hands-on:

How to use open APIs using python.

Django with Python:

Objective:

In this module, you will get a detailed understanding of Web app development using the Django framework and python.

Topics:

- Creating a simple web app
- Application structure
- Personal Website Creation

Hands-on:

How to develop Web-application with python.

DataScience with Python:

Objective:

In this module, you will get a Basic understanding of data science modules in python.

Topics:

- Pandas – Series and Dataframe
- Numpy
- Matplotlib

Hands-on:

How to use data science modules of python.

The project with Python:

Objective:

In this module, you are going to develop an application for own scenario.

Topics:

- Creating own application with any one of the frameworks