

Programming with Python

Duration: 144 hours

Unit 1: Introduction to Python

- What is Python
- Features of Python
- History and Versions
- Applications of Python
- Installing Python (Environment setup)
- First Python Program
- Working in Console and Python Shell
- Introduction to PYcharm
- Basic Syntax
- Variables and Data Types
- Keywords and Comments
- Numbers and Strings
- Strings
- Booleans
- Operators

Unit2: Control Statements

- if-else
- Nested If
- For loop
- While loop
- Break and Continue
- Pass

Unit 3: Data Structures

- Lists
- Tuples
- Sets

- Dictionary

Unit 4: Functions

- Defining a functions
- Calling a function
- Pass by reference vs value
- Function Arguments
- The return Statement
- Built-In Functions
- Passing Function to Functions
- Python Lambda function

Unit 5: File Handling

- Writing data to a file
- Reading data from a file
- Working with files
- Working with directories

Unit 6: Python Modules and Packages

- Creating and using a Module
- Package creation and importing

Unit 7: python – Object oriented

- Overview of OOP Terminology
- Creating Classes
- Creating Instance Objects
- Accessing Attributes
- Constructors and Destructors
- Class Inheritance
- Overriding Methods
- Overloading operators and methods
- Data Hiding

Unit 8: Exception Handling

- What is Exception
- Default Exception Handler
- Catching Exception
- Raise an Exception
- User defined Exception

Unit 9: Regular Expressions

- Pattern matching and searching
- Password, email, url validation using regular expression

Unit 10: Database

- Introduction
- Connections
- Executing queries
- Transactions
- Handling error

Unit 11: Multithreading

- Thread
- Starting a thread
- Threading module
- Synchronizing threads
- Multithreaded Priority Queue

Unit 12: Sending email

- Installing smtp python module
- Sending email
- Reading from file and sending emails to all users addressing them