



**IT Training | Developments | Placements**

## **Python Training Course Syllabus**

### **Session 1: Introduction**

- Python Overview
- History Of Python
- Cpython, Jython, PyPy
- Python Features
- Areas Of Application of Python
- Understanding More About Python
- Writing your First Python Program
- Interactive Mode Programming
- Script Mode Programming
- Why do we need Python?
- Program structure

### **Session 2: Installation and Execution**

- Python 2.7 vs Python 3
- Local Environment Setup
- Installing Python on different Platforms(Windows and Linux)
- Python Interpreter and Python Interactive Shell
- Python IDE(Pydev,Pycharm,VIM)

### **Execution steps**

- Interactive Shell
- Executable or script files
- User Interface or IDE

### **Session 3: Memory management and Garbage collections**

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- Object creation and deletion
- Object properties

### **Data Types and Operations**

- Numbers
- Strings
- List
- Tuple
- Dictionary
- Other Core Types

### **Session 4: Statements and Syntax**

- Assignments, Expressions and prints
- If tests and Syntax Rules
- While and For Loops
- Iterations and Comprehensions

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### **Session 5: File Operations**

- Opening a file
- Using Files
- Other File tools

### **Session 6: Functions**

- Function definition and call
- Function Scope
- Arguments
- Function Objects
- Anonymous Functions
- Variable scope and Returning Values
- Lambda Functions
- Object-Oriented Concepts

### **Session 7: Modules and Packages**

- Module Creations and Usage
- Module Search Path
- Module Vs. Script
- Package Creation and Importing

### **Session 8: Classes**

- Classes and instances
- Classes method calls
- Inheritance and Compositions
- Static and Class Methods
- Bound and Unbound Methods
- Operator Overloading
- Polymorphism

### **Session 9: Exception Handling**

- Standard Libraries
- Modules Used in Python (OS, Sys, Date and Time etc.)
- The Import statements
- Module search path
- Package installation ways
- Errors and Exception Handling
- Handling multiple exceptions

### **Session 10: Advanced Concepts**

#### **Intro to NumPy and Pandas**

- NumPy - arrays
- Operations on arrays
- Indexing slicing and iterating

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- Reading and writing arrays on files
- Pandas - data structures & index operations
- Reading and Writing data from Excel/CSV formats into Pandas

### **Session 11:GUI Programming**

- Ipywidgets package
- Numeric Widgets
- Boolean Widgets
- Selection Widgets
- String Widgets
- Date Picker
- Color Picker
- Container Widgets
- Creating a GUI Application

### **Session 12: Frame works**

- Intro to Flask, CherryPy and Django Frame works
- Rest API
- Flask Routing
- Flask Server hosting and configuration
- JINJA2 templates

### **Session 13:cherryPy**

- CherryPy Rest API
- CherryPy Routing
- CherryPy Server hosting and configuration

### **Session 14: Data base**

- Intro to Mongo DB
- SQL vs NoSQL
- CRUD with MongoDB
- Python Mongo Connectors
- MongoDb ORM

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### Session 15: Network Programming and Multithreading

- Understand the concept of Database
- Access MySQL DB
- Create socket for sending short messages
- Learn Multithreading concepts
- MySQL DB access
- Network programming
- Multithreading

### Session 16: GraphQL and Prisma

- Intro to GraphQL
- GraphQL schema
- Using Prisma as ORM
- Prisma Schemas
- Prisma migrations

### Session 17: Web Application Assignment

- Creating a Web application with Prisma , cherrypy ,Jinja2
- Getting templates form external sources
- Creating Sample Exercise