# PYTHON

## CURRICULUM

Python is a general-purpose interpreted, interactive, object-oriented and high-level programming language. Currently Python is the most popular Language in IT. Python adopted as a language of choice for almost all the domain in IT including Web Development, Cloud Computing (AWS, OpenStack, VMware, Google Cloud, etc.. ), Infrastructure Automations , Software Testing, Mobile Testing, Big Data and Hadoop, Data Science, etc. This course to set you on a journey in python by playing with data, creating your own application, and also testing the same.

### An Introduction to Python
- Brief History
- Why Python
- Where to use

### Beginning Python Basics
- The print statement
- Comments
- Python Data Structures & Data Types
- String Operations in Python
- Simple Input & Output
- Simple Output Formatting

### Python Program Flow
- Indentation
- The If statement and its' related statement
- An example with if and it's related statement
- The while loop
- The for loop
- The range statement
- Break & Continue
- Assert
- Examples for looping

### Functions & Modules
- Create your own functions
- Functions Parameters
- Variable Arguments
- Scope of a Function
- Function Documentation/Docstrings
- Lambda Functions & map
- An Exercise with functions
- Create a Module
- Standard Modules

### Exceptions
- Errors

- Exception Handling with try
- Handling Multiple Exceptions
- Writing your own Exceptions

## File Handling
- File Handling Modes
- Reading Files
- Writing & Appending to Files
- Handling File Exceptions
- The with statement

## Classes In Python
- New Style Classes
- Variable Type
- Static Variable in class
- Creating Classes
- Instance Methods
- Inheritance
- Polymorphism
- Encapsulation
- Scope and Visibility of Variables
- Exception Classes & Custom Exceptions

## Regular Expressions
- Simple Character Matches
- Special Characters
- Character Classes
- Quantifiers
- The Dot Character
- Greedy Matches
- Grouping
- Matching at Beginning or End
- Match Objects
- Substituting
- Splitting a String
- Compiling Regular Expressions
- Flags

## Data Structures
- List Comprehensions
- Nested List Comprehensions
- Dictionary Comprehensions
- Functions
- Default Parameters
- Variable Arguments
- Specialized Sorts
- Iterators
- Generators
- The Functions any and all
- The with Statement
- Data Compression
- Closer
- Decorator

## Writing GUIs in Python
- Introduction
- Components and Events
- An Example GUI
- The root Component

- Adding a Button
- Entry Widgets
- Text Widgets
- Checkbuttons
- Radiobuttons
- Listboxes
- Frames
- Menus
- Binding Events to Widgets

## Thread In Python
- Thread life Cycle
- Thread Definition
- Thread Implementation

## Network Programming Introduction
- A Daytime Server
- Clients and Servers
- The Client Program
- The Server Program
- Recap
- An Evaluation Client and Server
- The Server Portion
- A Threaded Server

## Python MySQL Database Access Introduction
- Installation
- DB Connection
- Creating DB Table
- INSERT, READ,UPDATE, DELETE operations
- COMMIT & ROLLBACK operation
- Handling Errors

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