



## **PYTHON FULL STACK DEVELOPER COURSE CONTENT**

### **PYTHON**

#### **Core Python**

##### **Getting Started:**

- What is Python?
- Comparison of Python with other languages
- Salient feature of Python
- Execution model of Python
- User Domains for Python
- Industries using Python

##### **Introduction:**

- Installing Python
- Python Installer
- Indentation in Python Editors
- Programming Elements
- Structure of Python program
- Comments in Python
- Python file extensions
- Setting Path in Windows
- Edit and Run python program without IDE
- Edit and Run python program using IDEs

##### **Variable:**

- String Formatting in Python
- Initialization of variables
- Input and Output operations

##### **Operators:**

- Arithmetic Operators
- Comparison Operators
- Assignment Operators
- Logical Operators
- Bitwise Operators

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- Shift operators
- Membership Operators
- Identity Operators

### **Control Statements:**

Conditional control statements

- If
- If-else
- If-elif-else

Loop control statements

- for
- while

Transfer statements

- Break
- Continue
- Pass

### **Data Types:**

String

- What is String?
- How to Write String in Python?
- Methods of String

Number

- Introduction
- int
- float
- complex

Boolean

- Boolean Methods

Sequences



- List
- Tuple
- Set
- FrozenSet
- Dictionary

### **Functions**

- What is Function?
- Advantages of functions
- Syntax and Writing function
- Calling or invoking function
- Classification of Functions
- No arguments and No return values
- With arguments and No return values
- With arguments and with return values
- No arguments and with return values
- Recursion

### **Functions Argument types**

- Default argument functions
- Required (Positional) arguments function
- Keyword arguments function
- Variable arguments functions

### **Lambda functions**

### **Nested functions**

### **Recursion**

### **Decorators**

### **Generators**

### **Iterators**

### **Map()**

### **Filter ()**

### **Reduce()**



## **Python Variables**

- Local variables
- Global variables

## **Adv Python**

### **Introduction to OOPS**

- Classes and Objects
- How to define class in python
- Encapsulation
- DocStrings
- Constructor
- Types of variables – instance variables, class variables
- Types of methods – instance methods, class method, static

### **Inheritance**

- Single Level Inheritance
- Multi Level Inheritance
- Hierarchical Inheritance
- Multiple Inheritance

### **Polymorphism**

- Introduction
- Case Studies
- Operator Overloading
- Method Overloading
- Constructor Overloading
- Constructor Overriding

### **Abstract Classes**

### **Exception Handling**

- Introduction
- try
- except
- else
- finally



- raise

### **Modules**

- How to Import Modules?
- alias name to the modules
- alias name to the members

### **Package**

- Math module
- OS module
- Random Module
- datetime module

### **Access Modifiers**

### **File Handling**

### **Date and Time**

### **Regular Expression**

### **Multi-threading**

### **Deep Copying and Shallow Copying etc.**

### **JSON**

## **MySQL:**

- Introduction
- Installation
- SHOW DATABASES
- USE DATABASES
- CREATE DATABASES
- Delete Database
- Display Tables

### **CRUD OPERATIONS:**

- C- Create table

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- R- read data from a table
- U- update data in a table
- D- delete data from a table
  
- LIKE
- Logical Operators
- IN, NOT IN
- Between, Not Between
- IS NULL, IS NOT NULL
- ORDER BY Clause
- LIMIT Clause
- AS - Alias
- CONCAT()
- DISTINCT
- GROUP BY
- GROUP BY Aggregate Functions

## **Django:**

### **Introduction**

- Introduction to Web
- What is WEB?
- Features of WEB?
- Introduction to HTML & HTML5
- Introduction to CSS & CSS3
- Introduction to JAVASCRIPT
- Introduction to Bootstrap
- Creating Basic Web Pages

### **Django Web Framework**

- What is a Framework
- Introduction to Django
- Django – Design Philosophies
- History of Django
- Django Features



- Environment setup
- Web Server

### **Getting Started with Django**

- Creating the first Project
- Integrating the Project to PYCHARM & Other IDEs
- The Project Structure
- Running the in the server
- Setting Up Your Project
- Create and configure Django apps
- Django App Structure
- Configuring App in Project

### **URLs and Views**

- What is URL?
- Define URL patterns
- What is View
- Configure URLs
- Developing different views

### **Django Templates**

- Define Django Template
- Django MVT Pattern
- Django Template Configuration
- render() function
- Django Template Language
- Template Tags or Template Variables

### **Working with Static Files**

- include Static Files inside Template
- Configuring static files
- Creating Project with static resources
- HTML, CSS, Images

### **DJANGO MODEL**

- Define Database?
- What is Model?



- Database Configuration
- How to Check Django Database Connection
- Defining Django Models
- Django Model Fields
- Field Options
- What is a Migration?
- migrate Command
- Creation of Super User
- Register Model Inside Admin Interface
- Difference between makemigrations and migrate
- Define QuerySet
- The Python Template Engine
- Define Jinja2
- Faker Module

### **Django Forms or Model Forms**

- What is Model Form?
- Advantages of Django Forms
- Creating Django Forms
- CSRF
- Creating a Login form
- Creating Registration Form

### **Outputting CSV with Django**

- What is CSV?
- CSV Using Models
- Creating a Live CSV Project

### **Advanced Template Features**

- Template Inheritance
- Template Filters

### **Session Management**

- Cookies
- Django Session Framework

### **User Authentication**



- Register
- Login
- Logout

### **CRUD Operations**

- C= Create
- R= Retrieve
- U= Update
- D= Delete

### **Django ORM (Object Relational Mapper)**

- Querysets in Django
- filters
- How to Implement OR queries?
- How to Implement AND queries?
- How to Implement NOT queries?
- How to Implement Union Operation for queries?
- How to work with aggregate functions?
- How to order queryset in sorting order?
- How to add/create records?
- How delete records?
- How to update records?

### **Django middleware**

- What is middleware?
- How to define our own middleware?
- Process\_exception()

## **UI Technologies**

### **HTML**

What is Markup Language

Basic Structure of HTML

Head Section and Elements of Head Section

Meta Tags

CSS Tags

Script Tag

Table Tag

Div Tag

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Header Tags	Paragraph, Span, Pre Tags
Anchor Links and Named Anchors	Image Tag
Iframe Tag	Types of Lists
Forms	Form Tag
Attributes of Form	POST and GET Method
Text input, Text area	Checkbox and Radio Button
Dropdown List	File Upload and Hidden Fields
Submit, Image, Normal, Reset Button	Creating a Live Website Form

## **HTML 5**

Introduction to HTML5	Features of HTML5
HTML5 DocType	New Structure Tags
Section	Nav
Article	Aside
Header	Footer
Designing a HTML Structure of Page	New Media Tags
Audio Tag	Video Tag
Canvas and Svg Tag	Introduction to HTML5 Forms
New Attributes	Placeholder Attribute
Require Attribute	Pattern Attribute
Autofocus Attribute	email , tel, url types
Number type	date type
Range type	Examples of Form



## **CSS**

Introduction to Cascading Style Sheets

CSS Selectors

ID Selector

Class Selector

Attribute Selector

First-line and First-letter Selector

CSS Properties

Background Properties

Border Properties

Real-time Implementation

CSS Menu Design (Horizontal, Vertical)

Types of CSS

Universal Selector

Tag Selector

Child Selector

Group Selector

Before and After Selector

Type Properties

List Properties

Positioning Properties

Converting Table to CSSLayout

Form Designing

## **CSS 3**

Introduction to CSS 3

First-f-type

Nth-child

Text-Shadow Property

Box Shadow

CSS Multiple backgrounds

Transform effect

CSS Media Queries

New CSS 3 Selector

Last-f-type

Custom Fonts

Rounded Corners

CSS Gradients

Transition effect

Animation effect

Using CSS3 in Practical Layout



## **BOOTSTRAP 3& 4**

BS Home

BS Typography

BS Images

BS Buttons

BS Badges/Labels

BS Pagination

BS Panels

BS Collapse

BS Navbar

BS Inputs

BS Modal

BT Grids

BS Stacked/Horizontal

BS Grid Medium

BS Grid Examples

BS Grid Basic

BS Tables

BS Alerts

BS Button Groups

BS Progress Bars

BS List Groups

BS Dropdowns

BS Tabs/Pills

BS Forms

BS Input Sizing

BS Tooltip

BS Grid System

BS Grid Small

BS Grid Large

## **JAVA SCRIPT**

Introduction to Client Side Scripting

JavaScript Types

Operators in JS

Java Script Loops

JS Events

Working with Arrays

Introduction to Java Script

Variables in JS

Conditional Statements

JS Popup Boxes

JS Arrays

JS Objects

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JS Functions

Using Java Script in Real-time

Validation Forms

Related Examples

## **GITHUB**

**Source Editors**

**2 Live Projects**

**Resume Preparation & Interview Questions**

**Regular Assignments & Material Softcopy**

**Placement Assistance**

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