



Python Fullstack Developer Course Content

Core Python

Introduction:

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

Data Types:

String

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

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Number

- Introduction
- int
- float
- complex

Boolean

- Boolean

Sequences

- List
- Tuple
- Set
- Frozen set
- Dictionary

String methods

Boolean Methods

Indexing and Slicing

Operators:

- Arithmetic Operators
- Assignment Operators
- Unary Operators
- Logical Operators
- Relational Operators
- Membership Operators
- Identity Operators
- Bitwise Operators

Control Statements:

Conditional statements

- If
- else

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- elif

Iteration statements

- for
- while

Transfer statements

- Break
- Continue
- Pass

Sequences

List

- List properties
- List Creation
- List indexing and slicing
- List Operations
- Nested Lists
- List modification
- List insertion and deletion
- List Methods

Tuple

- Tuple properties
- Tuple Creation
- Tuple indexing and slicing
- Tuple Operations
- Nested Tuples
- Tuple Methods
- Differences b/w List and Tuple

Set

- Set properties
- Set Creation
- Set Operations
- Set Mathematical Operations
- Set Methods
- Insertion and Deletion operation

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Dictionary

- Dictionary properties
- Dictionary Creation
- Dictionary Operations
- Dictionary Methods
- Insertion and Deletion of elements
- Differences b/w list tuple and set and Dictionary

Frozen set

- Frozen set properties
- Frozen set creation

Functions

Introduction

- What is Function?
- Advantages of functions
- Syntax and Writing function
- Calling function

Classification of Functions

- Functions without parameters and without return values
- Function with parameters and without return values
- Functions without parameters and with return values
- Functions with parameters and with return values

Functions argument types

- Default arguments
- Required (Positional) arguments
- Keyword arguments
- Variable arguments
- Keyword variable arguments

Lambda functions & Recursion

Map()

Filter()

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Reduce()

Python Variables

- Local variables
- Global variables

Advanced Python

Introduction to OOPS

- Class and Object
- How to define class in python?
- Encapsulation
- DocStrings
- Methods
- Diff b/w functions & methods
- Constructor
- Object Reference
- oops variables (Instance variables, Static variables, Local variables)
- oops methods (Instance method, class method, static method)

Inheritance

- Advantages
- Single level Inheritance
- Multi-level Inheritance
- Hierarchical Inheritance
- Multiple Inheritance
- Super()

Polymorphism

- Introduction
- Duck typing
- has attribute
- Operator overloading
- Method overloading
- Constructor overloading

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- Constructor overriding

Abstraction

- Introduction
- Abstract class
- Abstract method

Exception Handling

- What is Exception?
- Need of Exception handling
- Types of errors
- Predefined Exceptions
- User defined Exceptions
- try
- except
- else
- finally
- raise

Modules

- What is a module?
- How to Import Modules?
- alias name to the modules
- alias name to the members

Working with standard modules

- Math
- Random
- Datetime
- os
- copy

Packages

- Introduction to packages
- Defining packages
- Importing from packages

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File Handling

- Introduction
- Types of Files in Python
- Opening a file
- Closing a file
- Writing data to files
- Reading a data from files

Regular Expressions

- What is regular expression?
- Quantifiers
- Special characters
- Compile()
- Finditer()
- Sub()
- Fullmatch()
- Match()
- Findall()
- Search()
- Matching vs searching
- Forming regular expression
- Compiling regular expressions
- validations

Multi-threading

- Introduction
- How to find Thread?
- How to Define Threads?
- Creating a Thread without using any class
- Creating a Thread by extending thread class
- Creating a thread by without extending thread class.
- How to get Thread Names?
- How to set Thread Names?
- Join()
- Example for Normal vs Multithreading based program

Access modifiers

- Public

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- Protected
- Private

Advanced concepts

- Iterator
- Generator
- Decorator
- PIP

JSON

- What is JSON?
- Why json is popular?
- Serialization
- Deserialization
- How to get values from API?

Jupyter notebook

- Installation
- How to use?

NUMPY

- Introduction
- Why Use NumPy?
- Why is NumPy Faster than Lists?
- Installation of NumPy
- Creating Array
- Array()
- asarray() with nditer()
- frombuffer()
- fromiter()
- NumPy Array Indexing & slicing

Source editors

- Sublime
- Atom
- Pycharm

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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
- The Project Structure
- Setting Up Your Project
- Create and configure Django apps
- Django App Structure
- Configuring App in Project
- Running the in the server

URLs and Views

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

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Django Templates

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

Working with Static Files

- Include Static Files inside template
- Configuring static files
- Creating Project with static resources

Advanced Template features

- Template Inheritance
- Template filters

Django models

- Define Database?
- What is Model?
- Database Configuration
- How to Check Django Database Connection
- Defining Django Models
- Django Model fields
- Field option
- Model creation
- Makemigrations
- migrate Command
- Difference between makemigrations and migrate
- Creation of Super User
- Register Model Inside Admin Interface
- Define Jinja2 tag
- HTML Tables
- Display model data to users

Django Forms & Model Forms

- What is Form?
- Advantages of Django Forms

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- Creating Django Forms
- CSRF Token
- Form tag
- add form in templates
- What is Model Forms
- Model Form creation
- Model Form view creation

CRUD operations

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

User Authentication

- Register
- Login
- Logout

Outputting CSV with Django

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

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?

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Django middleware

- What is middleware?
- How to define our own middleware?
- `__init__()`, `__call__()`
- `Process_exception()`

Session Management

- Cookies
- Django Session framework

MySQL:

- Introduction
- Installation
- Show Databases
- Use Databases
- Create Databases
- Delete Databases
- Display Tables

CRUD Operations:

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

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Data base connections

- Introduction
- MySQL client Installation
- Database settings
- Django application with MySQL Database

GITHUB

- Introduction
- Account creation
- Repositories
- File creation, upload
- Branches or Versions
- Issues
- Download files
- Send files through GITHUB

Frontend Technologies

HTML & HTML 5

- What is website
- Types of Webpages
- Static Webpage
- Dynamic Webpage
- Types Of Languages
- Programming Languages
- Scripting Languages
- Introduction To HTML
- What is Doctype?
- HTML Editors
- Structure Of HTML
- HTML Headings
- HTML Paragraphs
- HTML Basic Tags
- HTML Elements
- HTML Attributes
- HTML Formatting

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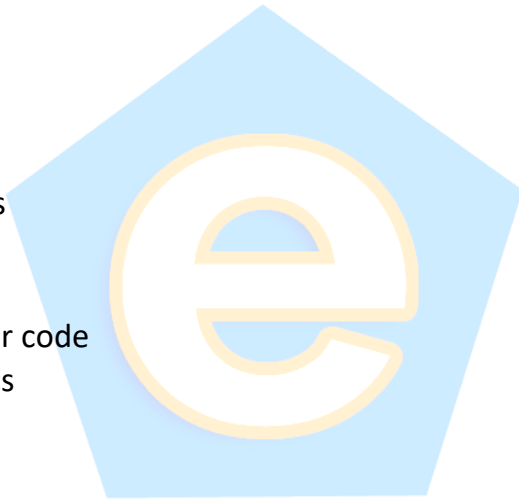
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- HTML Quotations
- HTML Images
- HTML Fonts
- HTML Styles
- HTML Span
- HTML Comments
- HTML Colors
- HTML Links
- HTML Favicon
- HTML Tables
- HTML Lists
- HTML Block & Inline
- HTML Marquee
- HTML Classes
- HTML Id
- HTML Iframes
- HTML File Paths
- HTML Head
- HTML Meta
- HTML Computer code
- HTML Semantics
- HTML Entities
- HTML Symbols
- HTML Emoji's
- HTML Forms
- HTML Form Attributes
- HTML Form Elements
- HTML Input Types
- HTML Input Attributes
- HTML Input Form Attributes
- HTML New Structure
- HTML Canvas
- HTML SVG
- HTML Picture, Map
- HTML Media
- HTML Video
- HTML Audio



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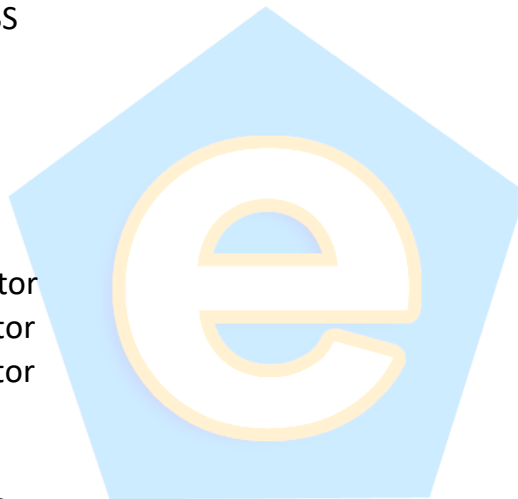


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- HTML YouTube
- HTML Geolocation
- Messaging app's Integration
- Code auto generate tools
- HTML Layout Design
- Webpage Live Implementation

CSS & CSS 3

- Introduction CSS
- Types of CSS
- CSS Selectors
- Class Selector
- ID Selector
- Tag Selector
- Universal Selector
- Grouping selector
- Attribute Selector
- Child Selector
- CSS Properties
- Type Properties
- CSS Comments
- CSS Colors
- Background Properties
- CSS Margins & Padding
- Box Properties
- CSS Links
- CSS Tables
- CSS Display
- CSS Flex
- List Properties
- Border & Outline Properties
- Positioning Properties
- CSS Layers



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- CSS Overflow
- CSS Float
- CSS Inline-block
- CSS Align
- CSS Pseudo-class
- CSS Pseudo-element
- First-line and First-letter selector
- Before and After Selector
- Realtime Implementation
- Conversation of Table CSS Layout
- CSS Menu Design (Horizontal, Vertical)
- Form Designing
- Introduction CSS 3
- New CSS 3 Selectors
- Adjacent Sibling Selector
- General Sibling Selector
- Rounded Corners
- Multiple backgrounds
- Border Images
- Colors
- Gradients
- Box Shadows
- CSS Web Fonts
- Custom Fonts
- Text-Shadow Property
- Text-Stroke Property
- Opacity Property
- Transition effect
- CSS 2D Transforms
- CSS 3D Transforms
- Transform effect
- Animation effects
- CSS Media Queries
- Using CSS3 in Practical Layout

Java Script

- Introduction Java Script

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- JavaScript Types
- JS Syntax
- JS Statements
- JS Output
- JS Comments
- Variables in JS
- Operators in JS
- Conditions Statements
- JS If Else
- JS Switch
- Java Script Loops
- JS Popup Boxes
- JS Events
- JS Objects
- JS Functions
- Exception Handling
- JS String Methods
- JS Numbers
- JS Array Methods
- JS Dates
- JS Math
- JS RegExp
- Using Java Script in Realtime
- Validation of Forms
- Related Examples

Bootstrap

- Introduction to Bootstrap
- Bootstrap Installation
- Containers
- Grid Basic
- Typography
- Colors
- Tables
- Images
- Jumbotron
- Alerts

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- Buttons
- Button Groups
- Badges
- Progress Bars
- Spinners
- Pagination
- List Groups
- Cards
- Dropdowns
- Collapse
- Navs
- Navbar
- Forms
- Inputs
- Input Groups
- Custom Forms
- Carousel
- Modal
- Tooltip
- Popover
- Toast
- Scrollspy
- Utilities
- Flex
- Icons
- Media Objects



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JQuery

- Introduction to jQuery
- jQuery Features
- Installing jQuery
- jQuery Syntax
- jQuery Ready Function
- jQuery Selectors
- jQuery Actions
- jQuery Events
- jQuery UI

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- Working with jQueryUI
- jQuery Accordions
- jQuery Tabs
- jQuery Tooltips
- jQuery Autocomplete
- Date Picker
- Menu
- Dialog Box
- jQuery plugins
- jQuery Validation plugin
- jQuery Slideshow

Other

- 5 projects
- Class recording videos facility
- Softcopy material
- Resume preparation
- Interview questions
- Python Important programs
- Placement assistance



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