

PYTHON FULL STACK PROFESSIONAL

Web Designing Frontend Native

HTML

What is Markup Language

Basic Structure of HTML

Document Overview

- The Structure Tags
- Getting Started With HTML
- Writing the Code
- Head Section
- Meta Tags
- External Link Tags
- HTML Tags
- HEAD Tags
- Title Tags
- Body Tags
- Displaying a web page in a web Browser

HTML Elements

- Block level elements
- Inline elements
- Empty elements

Working with Forms

- Creating a Form
- Form Tag
- POST and GET Method
- Text Input, Text Area, Checkbox, Image Input and Radio
- Select Option
- Option Group
- File Upload and Hidden Fields
- Submit Button, Reset Button
- Relation between HTML Form and PHP

Adding Special Characters

Block Oriented Elements

- Defining Paragraphs and new Lines
- Inserting Spaces
- Perforating the Text
- Changing Background Color

List

- Ordered List
- Unordered List
- Definition List

Attributes of List

- Using Type attribute with Unordered list
- Using Stat attribute with Ordered List
- Some other elements
- Visual Markup

Uniform Resource Locators

- Types of URLs
- Absolute URLs
- Relative URLs
- Document-Relative URLs
- Server-relative URLs

Hypertext Links

- Why links fail?

Images

- Adding Images
- Adding Border to an image

Tables

- How to create table
- Adding Border to a Table
- Apply Formatting Features to Table
- Merge row and columns

Introduction to style Sheets

- How style sheets work
- Style Sheet Structure

Changing the Background

- Changing the color of the text
- Changing the front
- Changing the Indent of the text
- Changing the Line Spacing
- Hide a Style Sheet

Creating Style Classes

- Div
- Span
- Frame
- Layer
- Meta
- HTML Frames
- Frame
- iframe

CSS

CSS

- CSS Introduction
- CSS Syntax
- CSS Id & Class
- Types of CSS links

Colors and Backgrounds

- color
- background-color
- background-image
- background-repeat
- background-position
- background-attachment
- background

Text and Fonts

- font
- font-family
- font-size
- font-weight
- font-style
- line-height
- letter-spacing
- word-spacing
- text-align
- text-decoration
- text-transform
- white-space

Lists

- list-style
- list-style-type
- list-style-image
- list-style-position

Tables

- table-layout
- border-collapse
- border-spacing

CSS Selectors

- Universal Selector
- Type Selector
- Class Selector
- ID Selector
- Child Selector
- Descendant Selector
- Attribute Selector
- Adjacent Sibling Selector
- General Sibling Selector
- Query Selector

CSS Box Model

- CSS Border
- CSS Outline
- CSS Margin
- CSS Padding

CSS Advanced

- CSS Grouping/Nesting
- CSS Dimension
- CSS Display
- CSS Positioning
- CSS Floating
- CSS Align
- CSS Pseudo-class
- CSS Pseudo-element
- CSS Navigation Bar
- CSS Image Gallery
- CSS Image Opacity
- CSS Attribute Selectors
- Styling Links

JAVASCRIPT

Introduction to JavaScript

- Syntax
- Statements
- Comments

Enabling in various browsers

Popup Boxes

- Alert
- Confirm
- Prompt

Variables

Operators

- Arithmetic
- Assignment
- Comparison
- Logical
- Conditional

Conditional Statements

- if
- if...else
- if...else if...else
- Switch

Loops

- while
- do...while
- for
- for...in Statement
- Break
- Continue

Functions

- User-defined Functions
 - Function Syntax
 - Function with Arguments
 - Returning Values from Functions
- Built-in Functions
- parseInt and parseFloat

Events

- Introduction
- Mouse Events
- Keyboard Events
- Form Events
- Document/Window Events

Cookies

Page redirection

Built-in Objects

- Introduction
- Number
- Strings
- Math
- Arrays
- Associative Array
- Array Properties and Methods
- Date
- Boolean
- Regexp

Advanced javascript

- Form Validations
 - Basics of Form Validation
 - Validating Radio Buttons
 - Validating Checkboxes
 - Validating Select Menus
 - Validating Textareas

JS Document Object Model (DOM)

- Introduction
- DOM HTML

- DOM CSS
- DOM Events

JS Browser Object Model (BOM)

- JS Cookies
- JS Window
- JS Location
- JS Popups
- JS Time

Introduction to OOP concept

JQUERY

What is JQuery?

Overview of JQuery features

Using JQuery links

JQuery Selectors

JQuery Events

JQuery Effects

- Hide() & show()
- Fade()
- Slide()
- Animate()
- Callback function
- Chaining

JQuery HTML

- Get() & Set()
- Add() & Remove()
- CSS()
- Dimensions()

JQuery Traversing

- Parent() & children()
- Next() & Prev()
- Find()

Jquery AJAX

Image slider using JQuery plugins

Form Validation

HTML5

- Introduction to HTML5
- Introduction to HTML5
- What's new in HTML5

HTML5 Syntax

- The DOCTYPE
- The <script> tag
- The <link> tag
- HTML5 Document

New input Elements

- Color
- Date
- Datetime
- datetime-local
- email
- month
- number
- range
- search
- tel
- time
- url
- week

New Input attributes

- autofocus
- formaction
- formmethod
- formnovalidate
- height and width
- list
- min and max
- multiple
- pattern (regexp)
- placeholder
- required
- step

Audio and Video

- <audio>
- <video>
- <source>

New Structural Elements

- <details>
- <dialog>
- <summary>
- <meter>
- <main>
- <header>&<footer>
- <section>
- <aside>
- <figure>

SVG

- What is SVG?
- SVG Advantages
- SVG in HTML
- SVG Shapes
- SVG Text
- SVG Stroke properties
- SVG Animation

Canvas

- What is canvas?
- Lines
- Curves
- Paths
- Shapes
- Color, gradients
- Image
- Arc
- Text
- Shadow

HTML5 APIs

- Google Map
- Drag & Drop

CSS 3.0

Introduction to CSS3.0

What's new in CSS 3.0

Border

- border-image
- border-radius

CSS Shadows

- Text-shadow
- Box-shadow

Background

- background-clip
- background-size
- background-origin
- background-image

Outline

Transitions

- transition
- transition-delay
- transition-duration
- transition-property

Transform

2D Transforms

- transform
- matrix()
- translate(x,y)
- scale(x,y)
- rotate(angle)
- skew(x-angle,y-angle)

3D Transforms

- transform
- transform-style
- perspective
- transform-origin

Animations

- @keyframes
- animation
- animation-direction
- animation-duration
- animation-name

Selectors

- CSS combinations
- Pseudo Elements

Gradients

- Linear Gradients
- Radial Gradients

Multiple Columns

- column-count
- column-fill
- column-gap
- column-width
- columns
- column-rule
- column-rule-color
- column-rule-style
- column-rule-width

User Interface

- resize
- box-sizing
- outline-offset

CSS Filters

- Blur
- Brightness
- Contrast
- Grayscale
- Hue-rotate

- Invert
- Opacity
- Saturate
- Sepia
- Drop-shadow

Media Query

- What is Responsive Web Design
- Intro to the Viewport
- The Viewport Tag
- Media Queries
- Fluid Layouts
- Tablet Styles
- Mobile Styles
- Making a Mobile Drop-down Menu
- Responsive Images & Polyfills

Web Fonts

- @font-face
- font-family
- src
- font-stretch
- font-style
- font-weight

Flexbox

- flex-grow
- flex-shrink
- flex-basis
- flex
- flex-wrap
- flex-direction
- flex-flow
- justify-content
- align-items
- order

Getting started with Bootstrap

Grid system in Bootstrap Adding

Header & Navigation

Adding Logo in Navigation Bar & Adding Banner

Adding Jumbotron

Adding Rows, Columns & Containers

Adding Column Width using offset

Ordering Columns using push or pull

Nesting Columns in Bootstrap Adding

Footer top Website Typography in

Bootstrap

Adding glyphsicons

Styling Tables

Adding Responsive or Utilities in Bootstrap Styling

Button using between classes

Styling Images and making images Responsive

Adding description list in bootstrap

Adding Panels

Photoshop

- Introduction to Adobe Photoshop
- Color mode & resolution
- Types of Graphics
- Export image
- Animated Image
- Tools

- Ruler and scaling
- Create Logos
- Photos masking
- Smart Objects
- Merge Layers
- Group Layers
- Layer Styles
- Blending Options
- View Menu / Window Menu
- Filter Effects
- Image Adjustments
- Realtime Website Layout Design

Frontend SPA

- What is Angular
- What is SPA
- Comparison between different versions
- Advantages and Disadvantages
- Key features

Environmental Setup

- Node /NPM
- Angular CLI
- Setup Project
- Directory Structure
- Code Editors
- How Angular Application Boot

Modules

- What is Module
- Decorator
- NgModule
- Core Module
- Bootstrapping
- Shared Modules

Components

- Introduction to Components
- Component Architecture Patterns
- Metadata
- State and Behaviors

Templates

- Template Expression or Interpolation
- Data Binding (Event ,Property , Two Way)
- *ngIf , *ngFor , *ngSwitch
- Built-in Structural and Attributes Directive

Pipes

- Built-in Pipes
- Custom Pipes

Routing

- Routes , RouterModule , routerLink
- Child Routing
- Params
- Guards

Custom Directives

- Structured Directives
- Attribute Directives

Validations

- Template Driven
- Reactive Form
- Custom Validators

Asynchronous Operations

- Observable vs Promise
- Network Call
- HTTP Request | Response

Services

- Introduction to Services
- Building a Service
- Dependency Injections
- Injectors and Providers

Lifecycle Hooks

- Component LifeCycle
- All LifeCycle Hooks

Local Data Storage

- Local Storage
- Session Storage
- Cookies

Communication Between Components

- @Input()
- @Output() with EventEmitter
- @ViewChild()
 - Shared Service
 - Subject

Server-side Rendering

- Introduction to Server-Side Rendering
- Angular Universal

Angular Testing

- Introduction to Testing
- Unit Testing with Karma and Jasmine

LAZY LOADING

UI COMPONENTS

- Angular Material
- PrimeNG

Third Party Modules

- Social Login
- Pagination
- Search
- Filter
- JWT Token
- File Upload
- Many More

Angular Application Deployment

- Build Application
- Deploy in Heroku

Introduction To React Js

- What is React JS?
- What is SPA?
- DOM vs Virtual DOM
- Advantages and Disadvantages
- Key Features

Environmental Setup

- Node | NPM
- Installation of CLI
- Setup Project
- Directory Structure
- Code Editors
- How React JS Application Boot

Key Features Of React Js

- Conditional Rendering
- List and Keys
- Forms Handling
- Forms Validations

Component Lifecycle Hook

- Understanding component lifecycle
- All Lifecycle Hooks

Event Handling React

- Understanding React Event System
- Passing arguments to event Handlers

Network Call

- Fetch
- Axios

Custom Services

- Introduction to Services
- Building a Service

Local Data Storage

- Local Storage
- Session Storage
- Cookies

Routing With React Router

- Setting up React Router
- Configuring route with Route Component
- Making routes dynamic with Route Params
- Working with nested routes
- Link and NavLink
- Redirect Routes

Ui Components

- Material Design
- PrimeNG

Introduction To Redux

- Why Redux
- Install and setup
- Store ,Reducer , actions
- Dispatcher
- High order Components
- mapStateToProps and mapDispatchToProps usage

Advance Redux

- Async Actions
- Middleware
- Redux Thunk and Redux Saga

React Hooks

- Why We Need Hooks.
- Different Types Of Hooks
- Using State And Effect Hooks
- Usereducer , Useref Etc.
- Custom Hooks
- Rules Of Hooks

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- Social Login
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BASIC FEATURES OF REACT JS

- React Concepts
- JSX and TSX
- Render Elements
- Function and Class Components
- Props and State
- Handling Events
- Dynamic Data Rendering
- Property Binding

Rest Js Testing

- Jest with Enzyme

Develop a CRUD Application in React Js

React JS Application Deployment

- Build Application and Deployment

Backend Server Side

- Why Python
- Application Areas of Python
- Features and Limitations of Python
- Python Versions
- Installing Python
- Python Interpreter Architecture
 - Python Byte Code Compiler
 - Python Virtual Machine(PVM)

Writing & Executing First Python Program

- Using Interactive Mode
- Using Script Mode
 - General Text Editor and Command Window
 - IDLE Editor and IDLE Shell
- Understanding print() function
- How to compile python program explicitly

Python Language Fundamentals

- Character Set
- Keywords
- Identifiers
- Comments
- Variables
- Literals
- Operators
- Reading input from console
- Parsing String to int , float

Python Conditional Statements

- If Statement
- If else Statement
- If elif Statement
- If elifelse Statement
- Nested If Statement

Looping Statements

- While Loop
- While else
- For Loop
- For else
- Nested Loops
- Pass ,Break and Continue keywords

Standard Data Types

- int , float , complex
- bool , NoneType
- str , list , tuple
- bytes , bytearray , range
- dict, set , frozenset

String Handling

- What is string
- String representations
- Unicode String
- String Functions, Methods
- String Repetition and concatenation
- String Indexing and Slicing
- String Formatting

Python List

- Creating and Accessing Lists
- Indexing and Slicing Lists
- List Methods
- Nested Lists
- Shallow v/s Deep Copy
- List Comprehension

Python Tuple

- Creating Tuple
- Accessing Tuple
- Immutability of tuple
- Tuple to list
- List to tuple

Python Set

- How to create a set
- Iteration Over Sets
- Python Set Methods
- Union ,intersection ,difference of sets
- Python Frozenset

Python Dictionary

- Creating a Dictionary
- Dictionary Methods
- Accessing values from Dictionary
- Updating dictionary
- Iterating dictionary
- Nested Dictionaries
- Dictionary Comprehension

Python Functions

- Defining a Function
- Calling a Function
- Types of Functions
- Function v/s Method
- Function Arguments
- Function Return Statement
- Nested Function
- Function as argument
- Function as return statement
- Decorator function
- Closure function
- map(), filter(), reduce(), any() functions
- Anonymous or lambda Function

Modules & Packages

- Why Modules
- Script v/s Module
- Importing Module
- Understanding PYTHONPATH Variable
- Commonly Used Library Modules
- Why Packages
- Understanding init .py file
- Understanding pip utility

File I/O

- Why File Handling
- File Pointer/Cursor
- File modes
- Functions and methods related to File Handling
- Understanding with block

Object Oriented Programming

- Procedural v/s Object Oriented Programming
- OOP Principles
- Defining a Class & Object Creation
- Object class and its methods
- Inheritance

Exception Handling

- Difference Between Syntax Errors and Exceptions
- Keywords used in Exception Handling
 - try , except , finally , raise , assert
- Types of Except Blocks

GUI Programming

- Introduction to Tkinter Programming
- Tkinter Widgets
 - Tk, Label , Entry , TextBox , Buttons
 - Frame , messagebox , filedialogetc
- Layout Managers
- Event handling
- Displaying image

Multi-Threading Programming

- Multi-processingv/sMulti- threading
- Need of threads
- Creating child threads
- Functions /methods related to threads

Regular Expressions(Regex)

- Need of regular Expressions
- re module
- Functions /Methods related to regex
- Meta Characters & Special Sequences

SQL

Introduction to Database

- Database Concepts
- What is Database Package?
- Understanding Data Storage
- Relational Database (RDBMS) Concept

SQL (Structured Query Language)

- SQL Basics
- DML, DDL & DQL
- DDL: Create,Alter,Drop
- SQL Constraints:
 - NOT NULL, UNIQUE,
 - PRIMARY & FOREIGN KEY, COMPOSITE KEY
 - CHECK, DEFAULT
- DML: Insert, Update, Delete and Merge
- DQL : Select
- SELECT DISTINCT
- SQL WHERE
- SQL Operators
- SQL LIKE
- SQL ORDER BY
- SQL Aliases

- SQL Views
- SQL JOINS
 - INNER JOIN
 - LEFT (OUTER) JOIN
 - RIGHT (OUTER) JOIN
 - FULL (OUTER) JOIN
- MySQL Functions
 - String Functions
 - CHAR_LENGTH
 - CONCAT
 - LOWER
 - REVERSE
 - UPPER
 - Numeric Functions
 - MAX, MIN, SUM
 - AVG, COUNT, ABS
 - Date Functions
 - CURDATE
 - CURTIME
 - NOW

Python Database Connectivity

- Introduction to Databases
- Installing MySQL Server
- Understanding basic SQL Statements
- Database Drivers and connectors
- Creating connection object
- Understanding cursor object
- Executing SQL statements using cursor
- Fetching records from cursor
- Storing and retrieving Date and Time

Django

Getting Started With Django

- Language v/s Framework
- What is Django Framework?
- Django Versions
- Installing Django

Understanding Django Project

- Creating Django Project
- Creating Django App
- Understanding Directory Structure of Project
- UrlMappings, Views,manage.py
- HttpRequest and HttpResponse Objects
- Registering App in settings.py
- Django Development Server
- Control flow of request processing
- MVT Design Pattern

Django Templates (Presentation Logic)

- Built-in Templates Tags & Filters
- Template Variables
- Template Inheritance
- Building custom template tag
- Integration of Static Contents
 - How to display static images
 - How to use CSS and bootstrap
 - Loading static data to template

Understanding Django Views (Business Logic)

- Why this Component?
- Types of Views
 - Function Based
 - Class Based
- How Views interact with other components
- How to get request data in views
- How to generate response in other formats

Understanding Django Forms

- Why this Component?
- Form class & Field Types
- GET and POST methods
- Form Validations
- How to render django form to template
 - as table
 - as paragraph
 - as li
- How to use Form in views

Django Models (ORM)

- Why this component?
- SQL v/s ORM approach
- Model class and Field Types
- Understanding makemigrations and migrate
- Performing CRUD operations
 - create (insert)
 - read (select)
 - update
 - delete
- Fetching Records from database
 - Understanding QuerySet
 - Fetching all records
 - Fetching records based on conditions
 - Fetching Data in an order
 - Data Slicing

- Understanding Association Mappings
 - one to one
 - one to many
 - many to one
 - many to many
- Integration with MySQL database

Django Admin Interface

- How to create super user
- How to access admin site
- Registering models with admin
- Managing users in the admin

Django State and Session Handling

- Why maintain state?
 - Understanding stateless behavior of http protocol
 - State management techniques
 - Cookies
 - URL-Rewriting (query strings)
 - Hidden form fields
 - Session
- Understanding Sessions in Details
 - Enable / Disable Session
 - Get and set data with session
 - Using session in template
 - Session Expiry

Django Middleware

- Why middleware?
- Understanding built-in middleware
- Creating custom middleware
 - Function based
 - Class based
- How to enable custom middleware

Django User Authentication

- Working with User objects
- Permissions and authorization
- Authentication in web requests
- Managing users in the admin
- Extending the existing User Model

Developing Web Services(APIs)

- What is a Web API?
- Difference between SOAP and RESTful APIs
- Django REST Framework for developing RESTful APIs

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Developing Web Services(APIs)

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- Difference between SOAP and RESTful APIs
- Django REST Framework for developing RESTful APIs
- Understanding JSON response
- How to consume RESTful API
 - requests package
 - get and post
 - how to parse JSON

Miscellaneous

- Sending email using django library
- Pagination

Project Deployment (Making Project LIVE)

- Deploy the project