



This is a reference document to understand how class flows.

Python Full Stack Web Development

Data Science Overview

Learning Objective

- ❖ Understanding Full Stack Development.

Topics Covered

- ❑ Introduction To Full Stack Development
- ❑ Life Cycle of Full Stack Development
- ❑ Front End, Back End, Life cycle of web development
- ❑ Skills required for Full Stack Development
- ❑ Careers Path in Full Stack Development
- ❑ Future Of Full Stack Development
- ❑ Tools and Technologies used in Full Stack Development.

Fundamentals of computer science

Learning Objective

- ❖ Learning fundamentals of computer science

Topics Covered:

- ❑ Programming Basics
- ❑ Fundamentals of Computer
- ❑ Using Windows Explorer & File Structure

- ❑ **Number Systems**
- ❑ **Application Software**
- ❑ **Operating System & Networking**
- ❑ **Need for operating system**
- ❑ **Functions of Operating System**
- ❑ **Process Management**
- ❑ **Memory Management**
- ❑ **File Management**
- ❑ **Device Management**
- ❑ **Types of operating system**
- ❑ **TCP/IP fundamentals**
- ❑ **Networks and computer networks**
- ❑ **2 tier, 3 tier and n-tier architecture**
- ❑ **SDLC**

- ❑ **Relational Database Management System:**
 - ❑ **Introduction to RDBMS**
 - ❑ **Installing MySQL**
 - ❑ **Retrieving**
 - ❑ **Updating**
 - ❑ **Inserting**
 - ❑ **Deleting**
 - ❑ **Sorting AND Filtering**
 - ❑ **Summarizing AND Grouping**
 - ❑ **Using Subqueries**
 - ❑ **Joining Tables**
 - ❑ **Views**
 - ❑ **Stored Procedure**
 - ❑ **Python Database Connection API Subnets**

Python for Web development

Learning Objective

- ❖ **Learning and Building a foundation for the most in-demand programming language of the 21st century**

Topics Covered

- Python programming:
- Environment Setup
- Jupyter Notebook Overview
- Data types: Numbers, Strings, Printing, Lists, Dictionaries, Booleans, Tuples, Sets
- Comparison Operators
- if, elif, else Statements
- Loops: for Loops, while Loops
- range()
- list comprehension
- functions
- lambda expressions
- map and filter
- methods
- Programming Exercises.
- Object Oriented Programming
- Modules and packages
- Errors and Exception Handling
- Python Decorators
- Python generators
- Collections
- Regular Expression

Note :All topics are delivered as Hands-On sessions.

HTML

Learning Objective

- ❖ **Understanding HTML and its purpose, and understanding how HTML is used to produce web pages.**

Topics Covered

- What is HTML
- Setting up the environment
- HTML elements and Tags
- Singular and Paired tags
- Structure of an HTML page
- Heading and Paragraph Tags
- Attributes in HTML
- Images
- Links - Internal and External
- Lists
- Tables
- The style attribute
- Colors in HTML
- HTML5 semantic tags
- HTML5 audio and video tags

CSS

Learning Objective

- ❖ Understanding Cascading Style Sheets (CSS) and its role in styling HTML documents.

Topics Covered

- What is CSS and why it is required.
- Inline CSS
- Internal CSS
- external stylesheets
- Overriding CSS Styles
- Common CSS Properties
- CSS units
- The CSS Box Model
- More CSS Properties
- CSS Pseudo-classes
- Styling Tables
- Elements Positioning, Working with Layouts
- Multi-Column Layouts with CSS3
- Dealing with Cross Browser Layouts
- Media Queries, Print CSS3

Note :All topics are delivered as Hands-On sessions.

Bootstrap

Learning Objective

- ❖ Learning Bootstrap for adding style to web pages.

Topics Covered

- What is Bootstrap?
- Bootstrap Setup
- Bootstrap CSS
- Bootstrap Layout Components
- Bootstrap JavaScript Plugins
- Bootstrap grids
- Bootstrap buttons, forms, navigation bars

Note: All topics are delivered as Hands-On sessions.

JavaScript

Learning Objective

- ❖ Learning JavaScript to develop dynamic web pages.

Topics Covered

- Java Script Operators
- JS Control Flow
- JS While Loops
- JS For Loops
- Java Script Functions
- Function Exercises

- ❑ JS Three Arrays
- ❑ JS Array
- ❑ JS Objects Text preprocessing using Bag of words technique
- ❑ Document Object Model Introduction
- ❑ Document Object Model- Events
- ❑ JQuery Advanced

Django

Learning Objective

- ❖ To gain familiarity with Django for web development.

Topics Covered

- ❑ Django Setup
- ❑ Django Basics
- ❑ Django Project
- ❑ Application
- ❑ Django - URL
- ❑ Mappings
- ❑ Django - Templates
- ❑ Django Templates
- ❑ Django Templates
- ❑ Django Static Files
- ❑ Django Models Overview
- ❑ Creating Models
- ❑ Population Scripts
- ❑ Models-Templates-Views Paradigm
- ❑ Django Project Exercise
- ❑ Django Forms
- ❑ Form Basics Code Along
- ❑ Form Validation
- ❑ Model Forms
- ❑ Model Forms Exercise

- Relative URLs with Templates
- URL Template Inheritance
- Quick Note on Custom Template Filters
- Template Filters and Custom Filters
- Django Passwords
- User Models
- Quick note about forms!
- Coding User Models and Forms
- Registration
- Template Views with CBV
- Detail View and List View
- CRUD Views
- Debug Toolbar
- Introduction to Admin
- Admin Templates
- Ordering Fields
- Adding Search
- Adding Filters
- Adding Fields
- Editable List View

Note: All topics are delivered as Hands-On sessions.

Project Deployment

Learning Objective

- ◆ Deploying project i using AWS, GitHub

Topics Covered

- AWS Deployment
- Git Deployment

Note: All topics are delivered as Hands-On sessions.

Capstone Project.