Hyper Text Mark-up Language (HTML5)

Module Objectives:

- Building Strong expertise to develop front end application using HTML5
- Implement MVC and responsive design to scale well across PC, tablet and Mobile Phone

Overview:

This course provides you hands-on experience and exposure to developing HTML5 based single page application for browsers. This course builds strong foundation on HTML5 which will help developer to use HTML5 concepts for building responsive web application.

Platform:

- Linux (Fedora / Mandriva / Ubuntu) or Windows Host system
- Firefox, Chrome

Prerequisites:

Academic level web application knowledge

Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

Detailed Course Contents:

- Introduction HTML
- HTML Basics
- HTML Elements
- HTML5 Semantic
- HTML Attributes
- HTML Headings
- HTML Paragraph
- HTML Styles
- HTML Formatting
- HTML Quotations
- HTML Computer Code
- HTML Comments & Colours
- HTML CSS, Links and Images
- HTML Lists
- HTML Blocks
- HTML Classes
- HTML Layout
- HTML Responsive
- HTML iframes
- HTML JavaScript
- HTML Head
- HTML Entities and URI Code
- HTML Symbols and XHTML
- HTML Charset and Forms

Cascading Style Sheets (CSS3)

Module Objectives:

- Building Strong expertise to develop front end application using CSS3
- Implement MVC and responsive design to scale well across PC, tablet and Mobile Phone

Overview:

This course provides you hands-on experience and exposure to developing CSS3 based web application. This course builds strong foundation on CSS3 which will help developer to use CSS3 concepts for building responsive web application.

Platform:

- Linux (Fedora / Mandriva / Ubuntu) or Windows Host system
- Firefox, Chrome

Prerequisites:

Academic level web application knowledge

Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

Detailed course contents:

- Introduction CSS3
- CSS3 Syntax
- CSS3 How To
- CSS3 Colours
- CSS3 Backgrounds
- CSS3 Boarders
- CSS Padding
- CSS Height/Width
- CSS3 Gradients
- CSS3 Shadows
- CSS3 Text
- CSS3 Fonts
- CSS3 2D Transforms
- CSS3 3D Transforms
- CSS Links
- CSS Lists
- CSS Tables
- CSS Box Model
- CSS Outline
- CSS Display
- CSS Max-width
- CSS Position
- CSS Float
- CSS Inline-block
- CSS Align
- CSS Combinators
- CSS Pseudo-class
- CSS Pseudo-element
- CSS Navigation Bar
- CSS Dropdowns
- CSS Tooltips
- CSS3 Images
- CSS Attr Selectors
- CSS Forms
- CSS Counters
- CSS3 Animations
- CSS3 Buttons
- CSS3 Pagination
- CSS3 Multiple Columns
- CSS3 User Interface
- CSS3 Box Sizing
- CSS3 Filters
- CSS3 Media Queries
- CSS3 Responsive

JavaScript

Module Objectives:

- Understand core features of JavaScript
- Build interactive and user-friendly frontend applications using HTML, CSS and JavaScript
- Apply OOP concepts by learning JavaScript
- Debug frontend applications using Google Chrome debugger.

Overview:

This course provides you hands-on experience and exposure to develop frontend application using JavaScript. Starting with introduction, this course deep dives into core features like Event handling, Form handling and Regular expressions. Specific focus is given for Document Object Model (DOM) and manipulating HTML using various DOM APIs. Along with building JavaScript features this course builds sound foundations in Algorithms, Problem solving and Debugging techniques which is critical for a web application developer.

Platform:

- Linux (Fedora / Mandriva / Ubuntu) or Windows Host system
- VSCode editor with Live server
- Google Chrome Debugger

Prerequisites:

- HTML and CSS
- Basic understanding of OOPS

Delivery method:

Instructor lead, hands-on exercises backed with assignments and mini project

Detailed course contents:

Algorithms and Problem solving

- Problem solving - what?
- Introduction to SDLC
- Polya's rules
- Algorithm design methods
- Pseudo code creation
- Flowcharts

Introduction to JavaScript

- History of JavaScript
- Advantages
- Limitations
- Script element
- Creating your first JavaScript program
- Coding convention
- Setting up development environment (with VSCode)

Types and Statements

- Keywords in JavaScript
- Overview of Data types
- Primitive Data types
- Non-primitive Data types
- Conditional statements
- I/O in JavaScript
- Loops

Operators

- Introduction to operators
- Operator precedence and associativity
- Deep dive into operators
- Arithmetic
- Comparison
- Ternary
- Logical
- Language
- Bitwise

Functions - Level I

- Introduction to functions
- Function definition
- Passing values
- Returning values
- Robust parameter handling
- Local and global variables
- Functions as objects
- Function constructor

Functions - Level II

- Function invocation patterns
- Recursion functions
- Generator functions
- Arrow functions
- Variadic functions
- JavaScript scopes
- Function closures

Arrays and Strings

- Introduction to Arrays
- Array declaration
- Array access methods
- Multi-dimensional arrays
- String properties
- String access methods

Regular Expressions

- Introduction to RegExp
- Regular expression usage
- Modifiers
- RegExp patterns
- RegExp methods
- String methods for RegExp
- Type conversion in JavaScript

Objects in JavaScript

- Introduction to objects
- Type of objects in JavaScript
- Creating objects

- Object methods
- Constructor function
- Prototype in JavaScript
- Inheritance using prototype chain

Event handling

- JavaScript events
- Event handler
- Event flow
- Event bubbling and capturing
- Event listeners
- Event types

Document Object Model (DOM)

- Introduction to DOM
- Types of DOM
- DOM standards and methods
- Manipulating documents using DOM
- Handling images
- Table manipulation
- Animation
- Node and Node-list handling

Browser Object Model (BOM)

- Introduction to BOM
- DOM vs BOM differences
- Window object and methods
- BOM navigator
- BOM history
- BOM location
- BOM timer
- Introduction to Cookies
- Session and persistent cookies

Form Handling

- Introduction to forms
- Form processing
- Forms object
- Accessing data from forms
- Form validation
- Additional features in forms
- Validation APIs

Debugging Techniques

- JavaScript Errors
- Error handling mechanisms
- Introduction to Google Chrome debugger
- Deep dive into debugger window
- Introduction to Breakpoints
- Changing variable values in runtime
- Avoiding mistakes