MERN Stack Development

Introduction to Web Development:

- What is Web Design?
- What is Web Development?
- What is the difference between Web Design and Web Development?
- Technologies used for Web Development.
- Tools used for Web Design.
- Text editors.

HTML5:

Introduction:

- History and Importance of HTML
- Basic HTML syntax
- The current state of HTML
- HTML resources
- Choosing a code editor

Basic Page Structure:

- Exploring an HTML document
- DOCTYPE declarations
- Document head
- Document body
- Understanding content models

Formatting Page Content:

- Formatting content with HTML
- Headings
- Paragraphs
- Emphasizing text
- Displaying special characters
- Whitespaces

- Images

Creating Lists:

- Unordered lists
- Ordered lists
- Definition lists

Structuring Content:

- Value of structure
- Document outlines
- Nav element
- Article element
- Section element
- Aside element
- Div element
- Other semantic elements
- WAI-ARIA roles (Optional)

Creating Links:

- Anchor element
- Page internal linking
- Linking to external pages
- Linking to downloadable
- Linking to page regions

Controlling styling:

- HTML and CSS
- Creating inline styles
- Style element
- Controlling typography
- Adding color
- Externalizing styles

Basic Scripting:

- HTML and JavaScript
- The script element

- Writing a function
- Using the DOM
- Listening for an event
- Responding to events
- Externalizing JavaScript

CSS3:

Getting started:

- HTML overview
- Default browser styles
- Browser support and inconsistencies
- Inline, internal and external CSS
- Naming conventions

CSS Core:

- Syntax, terminology, and naming conventions
- Type, class, and id selectors
- Combinator selectors
- Selectors: Best practices

Typography:

- Web-safe fonts and the font-family property
- Web fonts and Google fonts
- The font-size property
- Practicing with web fonts and font-size
- The font-style and font-weight properties
- The color, line-height, and text properties
- Adjusting the font-weight property

Layouts:

- Block vs. inline display
- The box model

- Margin and page layouts
- Practicing layouts
- Practicing with padding and spacing
- Floats
- Practicing with floats
- The box model fix
- Practicing with columns
- Box model review
- Float and display review
- Horizontal navbar with the display property
- Horizontal navbar with the float property
- Practicing with the nav element
- Positioning
- Practicing with fixed navigation
- Practicing with positioning elements
- Float, display, and position
- Layers and the z-index property

Advanced layout:

- Design with a grid
- Intro to CSS Grid
- CSS Grid example
- Intro to flexbox
- CSS Flexbox

JavaScript:

Introduction:

- What is JavaScript?
- How does JavaScript relate to Java?
- History of JavaScript
- Navigating the JavaScript landscape

Basics:

- Tools for JavaScript development
- Introducing the browser console

- Add inline JavaScript to an HTML document
- Add JavaScript in an external file

Writing JavaScript:

- Basic syntax & comments
- Declarations
- Arithmetic operators and math
- Working with strings and numbers
- Variable scope
- Variable hoisting
- Data structures and types
- Literals

Control flow:

- Conditional statements and logic
- Advanced conditions and logic
- if..else
- Switch

Arrays:

- Arrays
- Typed arrays

Loops and iteration:

- for
- while
- do..while
- break/continue
- for..in
- for..of

Functions:

- Defining functions
- Calling functions
- Function scope

- Closures
- Arguments & parameters
- Arrow functions

Essential JavaScript Built-in methods:

- Number Methods
- Boolean Methods
- String Methods
- Array Methods
- Math Methods
- RegExp Methods

Writing JavaScript-Advanced:

- Text formatting - String literals
- String object
- Template literals
- Regular expressions

Objects:

- Creating objects
- Objects and properties
- Defining methods

Keyed collections:

- Map
- WeakMap
- Set
- WeakSet

JavaScript modules:

- Exporting
- Importing
- Default exports
- Renaming features
- Aggregating modules

- Dynamic module loading

JavaScript and the DOM:

- Intro to DOM
- Target elements in the DOM with querySelector methods
- Access and change elements
- Access and change classes
- Access and change attributes
- Add DOM elements
- Apply inline CSS to an element
- DOM events
- Typical DOM events

ReactJS:

- Introduction to JSX & Babel
- Difference between JSX & JavaScript
- Overview of ReactJs
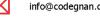- Scope of ReactJs
- Props & Cons of ReactJs

ReactJs Setup:

- Introduction to JSX & Babel
- Regarding Nodejs
- Npm and Setting Environment for ReactJS projects.

ReactJs Components

- Types of Components Functional
- Class Components & difference between those two components.

ReactJs State

- What is a state
- How to use state
- What's the role of the state in ReactJs projects?

ReactJs props

- What are props
- Props validation
- Passing data to multiple components

ReactJs Component LifeCycle

- Types of lifecycle methods in ReactJs.

ReactJs Forms, Events

- Form validation
- Preventing data submission while page refresh also.

ReactJs Refs, Fragments

- Using refs concept for pausing and playing videos in ReactJs.

ReactJs Lists, Keys, maps

- How to store data in one order
- How to pass data in a loop using ES6 concepts.

ReactJs Router

- Connecting from one page to other pages to react without using a tag.

ReactJs Flux

- Using Flux and the difference between the flux and normal MVC.

ReactJs Redux

- How to use Redux in ReactJs.using of react-redux package.

NodeJS

- Introduction to NodeJs, Installation
- NodeJs modules like path, fs, HTTP, URL, Non-Blocking I/O
- Applications of NodeJs
- How to do Request operations in NodeJs
- How to do Response operations in NodeJs
- HTTP response status codes
- How to use the fetch, Axios packages in NodeJs
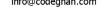- Difference between Node and Express

ExpressJS

- Introduction to ExpressJs, Installation
- ExpressJs Request & Response
- ExpressJs CRUD operations and routing
- ExpressJs Middleware, modules
- Nodemon in ExpressJs

MongoDB

- Introduction to MongoDB
- How to connect MongoDB with ReactJs
- How to create a database in MongoDB

ReactJs with DataBase

- MySql
- Firebase
- MongoDB

Projects with Live Deployment:

- **Building a MERN chatbox project in which we are going to perform CRUD operations.**

  In this, we are going to build a React application along with MongoDB, we can store our data and display that information at front-side as well as we can see that data in MongoDB Atlas

- **Creating a SPA (Single Page Application) React to the application using Redux.**

  In this, we are going to build a shopping cart type of application in which we can add products to the cart and display the name, price, of the products in the cart.