WEB DEVELOPER

COURSE CONTENT

HTML4:

1. Basic HTML structure
2. HTML elements and attributes
3. Document type declaration (DTD)
4. Headings
5. Paragraphs, and
6. Text formatting
7. Lists ordered,
8. List unordered
9. Anchors
10. Images
11. Tables
12. Forms
13. Frames and iframes
14. Layout and styling with HTML tables and inline styles

HTML5:

1. Basic HTML5 structure
2. Semantic HTML5 elements
   a. Header,
   b. Footer,
   c. Section,
   d. Article,
   e. nav etc.
3. Improved forms with new input types and attributes
4. Audio and video elements
5. Canvas element for creating graphics and animations
6. SVG (Scalable Vector Graphics) for creating vector graphics

CSS2:

1. Introduction
2. Syntax
3. Selectors
4. Comments
5. Colors
6. Backgrounds
7. Borders
8. Margins

9. Padding
10. Height/Width
11. Box Model
12. Outline
13. Text
14. Fonts
15. Icons
16. Links
17. Lists
18. Tables
19. Display
20. Max-width
21. Position
22. Z-index
23. Overflow
24. Float
25. Inline-block
26. Align
27. Combinators
28. Pseudo-class
29. Pseudo-element
30. Opacity
31. Website Layout
32. Specificity
33. !important
34. Math Functions

CSS 3

1. Rounded Corners
2. Backgrounds
3. Colors
4. Gradients
5. Shadows
6. Text Effects
7. Web Fonts
8. Transitions
9. Animations
10. Tooltips
11. Variables
12. Box Sizing

RWD

1. CSS Media Queries.
2. Fixed, Fluid and Responsive Layout.
3. Viewports
4. CSS Flexbox
5. Responsive images

Bootstrap:

1. What is Bootstrap Framework?
2. Difference between mobile first approach and desktop first approach
3. Installation options
4. Installing bootstrap with CDNs
5. Installing bootstrap manually
6. Getting started with Bootstrap grid
7. Types of bootstrap containers
8. Working with rows and columns
9. Working with multiple columns
10. Resetting columns using clearfix
11. Offsetting columns
12. Nesting columns
13. Changing the column order with push and pull
14. Understanding XS, SM, MD, and lg Classes
15. Text styling using bootstrap classes
16. Heading classes
17. Working with buttons, images and other bootstrap classes
18. Button classes
19. Table styles
20. Image classes
21. Bootstrap helper classes
22. Responsive utility classes
23. Working with form elements in bootstrap
24. Basic form classes
25. Radio and checkbox classes
26. Inline and horizontal forms
27. Form validation styles
28. Using input groups
29. Adding icons to form elements
30. Bootstrap Components
31. Dropdown
32. Button groups

33. Images
34. Jumbotron
35. Progress Bars
36. Pager
37. Collapse
38. Navbar
39. Forms
40. Inputs
41. Media Object
42. List Group
43. Popover
44. Customize your Bootstrap Plugin

JavaScript:

- Introduction
    - What is JavaScript?
    - What is the need of Javascript?
    - Javascript history?
    - What is ECMAscript?
- Attaching Javascript with HTML page
    - Inline-scripting
    - External-scripting
    - Importance of position script tag in HTML page
- JavaScript variables and Datatypes
    - What is a variable?
    - How to create a variable in Javascript?
    - How do variables in Javascript differ with variables in other languages?
    - What is a Data Type?
    - Types of datatypes in Javascript
    - What actually NaN is?
    - Why aren't two NaN's are not equal?
    - What is actually undefined?
    - Why is null an object?
- Javascript Operators
    - Assignment Operators
    - Arithmetic operators
    - Comparison or relational operators
    - Logical operators
    - Logical bitwise operators
    - Shift operators

    - String operators
    - Dot operators
    - Comma operators
    - Ternary operator
- Control transfer statements
    - If
    - If-else
    - If-else-if
    - Nested if
    - Nested if-else
    - Switch
- Browser Console debugging
- Breakpoints in Console debugging
- Looping Statements
    - While loop
    - Do-While loop
    - For loop
    - For-in loop
    - For 0f Loop
    - Improved Native for loop
    - Watch variables in Console debugging
    - Evaluation of selected code in console
- Functions
    - What is a function?
    - Function declaration in Javascript?
    - Types of function declaration in Javascript
    - Types of function invoking in Javascript
    - Call by value
    - Call by reference
    - Call stack in console
    - Pre-defined functions in Javascript
    - Javascript pop-up boxes
    - Console functions in Javascript
    - What is the scope of a variable?
    - Local scope and global scope
    - How to create block scope using ECMAscript6
    - Function hoisting and its issues
    - Use of strict
    - IFI – immediately invoking function
    - Problem of using global variables
    - Anonymous functions
    - Self invoking functions

  - Call-back functions and their importance
  - Inner functions
  - What is a closure?
  - What is Lexical scope?
  - How to convert minified JS code into uncompressed format in debugger
- Objects
  - What is an Object?
  - Thinking everything in Object oriented
  - Difference between classical and prototypal object oriented programming
  - Different ways of creating Objects in Javascript

    - Object Literal method
    - Constructor function method
    - Using Object object
    - Using simple function method

  - Altering the properties of Objects
  - Constructor property
  - InstanceOf operator
  - This keyword
  - Problem with this keyword
  - Comparing Objects
- Inheritance
  - What is inheritance?
  - How to achieve inheritance in Javascript?
  - Prototype property
  - __proto__
  - Implementing different types of inheritance
  - Single inheritance
  - Multi-level inheritance
  - Multiple inheritances
  - hasOwnProperty() method
  - propertyIsEnumerated() method
  - isPrototypeOf() method
- Polymorphism and method overriding
  - What is polymorphism?
  - What is method overriding?
  - Implementing polymorphism in Javascript
  - Implementing method overriding in Javascript
  - Calling parent method in child object using method overriding (super in java)
- Built in Objects
  - Data wrappers Objects

        - Object, function, Number, Boolean, String, Array
    - Utility Objects
        - Date Object, Math Object, RegExp Object
    - Error Objects
        - Error – (try/catch)
- Browser Object Model (BOM)
    - What is a BOM?
    - Window Object
    - Window.innerWidth and Window.innerHeight Properties
    - Window.navigator object
    - Example: Find your location using window.navigator.geolocation
    - Window.history Object
        - Page navigation using window.history object methods
        - Window.history.go()
        - Window.history.back()
        - Window.history.forward()
        - Window.history.length
        - Window.history.pushState()
    - Window.screen
    - Window.open()/close() methods
    - Window.moveTo() method
    - Window.moveBy() method
    - Window.resizeTo() method
- Document Object Model (DOM)
    - What is a DOM?
    - How to access HTML elements in Javascript using DOM methods
    - Accessing Child nodes and traversing along the DOM
    - Difference between XML and HTML child nodes methods in DOM
    - Accessing attributes of your HTML elements
    - HTML content modifiers
    - Text content modifiers
    - Creating, Deleting and appending HTML nodes
- Event Handling
    - What is an Event?
    - Types of Events in Javascript
    - How to Handling Events in Javascript
    - Event Propagation
    - Event Capturing and Bubbling
    - Stopping Event Propagation
    - How to remove default behaviors of browser
    - Analyzing Event Properties
        - Event basic information

        - Target information
        - Coordinate information
        - Key/mouse information
- Introduction to HTML5 APIs
- Implementation of HTML5 APIs (drag and drop, canvas)
- Ajax
    - What is XMLHttpRequest Object?
    - Implementation Synchronous and Asynchronous of XMLHttpRequest object
    - Importance of Asynchronous of XMLHttpRequest for non-blocking IO applications
    - Why do we need Ajax?
    - Implementing Ajax using Javascript and XMLHttpRequest
- JSON
    - What is JSON?
    - Importance of JSON format of data that XML
    - Creating and understanding JSON data
    - JSON.parse() method
    - JSON.stringify() method
- Design Patterns
    - What are Design Patterns?
    - Types of Design Patterns
        - Object Literal Pattern
        - Singleton pattern
        - Factory method implementation in JavaScript

II. **ES6 (Essentials)**

1. Let vs Var vs Const
2. Arrow Functions
3. Enhanced Object Literals
4. Destructuring
5. Template Literals
6. Rest & Spread
7. ES6 Classes & Modules

I. **Introduction**

1. Introduction to React JS and its popularity
2. Introduction to Single Page Application
3. Introduction to React Key features
4. Declarative vs Imperative
5. Component Architecture
6. One Way data flow
7. Virtual DOM

8. Component Reusability
9. Functional Programming (Immutability)
10. JavaScript vs jQuery
11. jQuery is not preferred in React
12. Introduction to JSX Syntax

III. **Installation**

1. Node installation
2. NPM vs YARN
3. Create React App installation
4. Package.json file importance in the project
5. React and React DOM

IV. **React Components**

1. Class Components
2. Functional Components
3. Expression Evaluation (Dynamic content) in JSX
4. Importance of array methods (Ex: map) in react components
5. Importance of Key attribute in iterated elements
6. Introduction to state
7. Event Handling in React

V**. Rendering Styles**

1. Inline Styling
2. Global Styling
3. Module Styling
4. Styled Components

VI. **Debugging**

1. Error Messages in React JS
2. React Developer Tools

VII. **Communication between Components**

1. Ways to achieve communication between components
2. Props
3. Parent to Child communication
4. Child to Parent communication

VIII. **Component State**

1. Introduction to State
2. Setting state and re-render component
3. setState method

4. will the child component be updated when the parent is re-rendered ?

IX. **Fetching content from Server**

1. Using fetch in JavaScript
    a. Get Request
    b. Post Request
2. Using Axios Library
    a. Get Request
    b. Post Request

X. **Component Life Cycle in React**

1. Introduction to Component Life Cycle
2. Stateless vs Stateful Components
3. Component life Cycle phases
    a. Mounting
    b. Updation
    c. Unmounting
4. Life Cycle methods in Class Component
    1. ComponentWillMount (Deprecated)
    2. ComponentDidMount
    3. ComponentWillReceiveProps (Deprecated)
    4. ShouldComponentUpdate
    5. ComponentDidUpdate
    6. ComponentWillUnMount
    7. Constructor

XI. **React Hooks**

1. Life Cycle methods Vs Hooks
2. React Hooks in v16
    a. useState
    b. useEffect
    c. useRef
    d. useCallback
    e. useMemo

XII. **Routes**

1. What is routing ?
2. Routing Library:
3. Installing React-Router-DOM
4. Browser Router Component
5. Hash Router Component
6. How to create routes
7. Route Component

    a. <Link> Component
    b. <NavLink> Component
8. Route params
    a. history
    b. match
    c. location
    d. State
9. Context API
    a. createContext()
    b. provider
    c. useContext()

XIII. **Unit Testing**

1. Introduction
2. Creating Components
3. Running the Application
4. Running the Placeholder Unit Test
5. Testing a Component Using Shallow Rendering
6. Testing a Component with Full Rendering
7. Testing with Props, State, Methods, and Events

XIV. **Introduction to Redux**

1. Three Core Redux Principles
2. Redux Flow
3. Introduction to react-redux
4. Map props to state
5. Map dispatch to props
6. Connect method
7. Introduction to redux-thunk

XV. **Projects**

1. Portfolio Site Application Development
2. Jira Software [How to use in real time]
3. GitHub [How to use in real time]