

# MERN Stack

## Module -1(JS basics)

- Introduction to web
- Browser Wars
- DOM tree, CSSOM tree.
- Browser internals - HTML parser , CSS parser , JS engine
- Layout engine or rendering engine JavaScript
- V8 engine internals
- IP – MAC address – Ports & Evolution of HTTP
- How the Server looks at the URL
- Request & Response cycle
- HTML Browser view - Debugger, Inspect, Responsive View
- Browser js vs Node js
- Data types
- Copy by value and Copy by reference
- Window & document object
- Array and JSON iteration
- XMLHttpRequest
- Hoisting & scope
- function & return keyword
- types of function
- MRF - array method
- error handling
- ES5 vs ES6 -
  - OOP, this, rest & spread operator
  - Array & object destructuring
  - Arrow functions

## Module -2 (HTML, CSS, Bootstrap)

- HTML
  - What is HTML?
  - Basic tags in HTML?
  - Inline vs block element
  - div vs section vs article
  - HTML forms & Form input element with its attributes and HTML form submit

- **CSS**
  - What is CSS?
  - property vs value
  - Selector:- tag vs class vs id
  - Intro to pseudo-classes (link,visited,hover,active)
  - parent inherit
  - Box model - margin, padding, border
  - Flex - display, direction, wrap, flex-flow, justify-content, align-content
  - Position property - static, relative, absolute, fixed, sticky
  - overflow property - hidden, visible, scroll, auto
  - box-shadow property
  - Media query
  - Use of Font & icons
- **Bootstrap**
  - What is Bootstrap?
  - Layout, Container, grid system, gutters
  - Responsive web design

### **Module -3 (DOM)**

- **DOM Manipulation**
- Document object and Window object
- Method in document object
  - createElement()
  - setAttribute()
  - innerHTML vs innerText
  - append() vs appendChild()
  - getElementById() vs querySelector() vs querySelectorAll()
- Method in Window object
  - prompt() vs alert() vs confirm()
  - setTimeout() vs setInterval()
- Events - Change CSS through JavaScript
- Cookies & session, local storage

### **Module -4 (Advance JS)**

- Callback - Event loop
- Promise
  - What are the states in the promise?
  - Promise chaining
  - Fetch API
- Async/Await

**Mock Interview-1****Hackathon -1****Module -5 (Reactjs)**

- ReactJS introduction
- Components, states, props, lifecycle
- Conditionals, hooks, router, Axios
- Redux

**Module -6 (Database & Nodejs)**

- MySQL & MongoDB
- NodeJS - Connecting DB with MongoDB
- Routes, Authentication - Middleware - JWT
- Custom middleware
- The student should do a complete backend application

**Hackathon - 2****Mock interview - 2****Fullstack project demonstration****Module -7**

- Data Structure & Algorithms

**Module -8**

- System Design
- AWS

Placement preparation & capstone project development (**1 to 2 weeks**)

In between add-on sessions like alumni meet, cracking interviews, personality development, webinars

**Final Mock interview - 3 & Capstone project review****PLACEMENT READY / HANDOVER**