# MERN Stack Development

# MERN STACK DEVELOPMENT

## 01 ▶ HTML

- Training Overview ,Installation Setup and System Configuaration Developer Tool, OS basics, HTML basics, History
- Boiler Plate, Skeleton, First Web Page Project, heading , Paragrapgh tag, pre tag.
- HTML Elements, Path, Image tag, Anchor tag
- Lists tag, Marquee tag,nested list, Nested marquee
- Table tag, Nested Table, Table data merging colspan ,rowspan.
- Float Property, Clear Property, Div tag, Nested Div And Eg Iframe tag and Forms Part 1
- Forms Advanced
- Semantic Elements and Non -Semantic Elements, Audio, Video, Progress, Embed, Additional Tag
- Media Tags: Audio, Video, Progress, Embed, Additional Tags

## 02 ▶ CSS

- CSS Introduction and Writing Methods
- CSS Selectors
- Box Model: Margin, Padding, Border, Outline, Border-radius
- Box-sizing, Colors, Background Properties
- Min/Max Height & Width
- Font and Text Properties, Units & Dimensions
- CSS Positioning, z-index
- Shadows: Text Shadow, Box Shadow
- Overflow, Visibility Property
- CSS Transitions and Transforms
- Flexbox Layout
- Media Queries
- Pseudo Elements: :link, :hover, :active, :visited

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## 03 Bootstrap

- Introduction, Setup via CDN & Local
- Bootstrap Text & Background Classes
- Buttons, Button Groups, Alerts, Spinners
- Spacing Utilities: Margin, Padding, Typography
- Components: Card, Image, Progress Bar
- Collapse, Accordion, Dropdowns, Modal
- Navbar, Carousel/Slider, Tables
- Grid System for Responsive Design
- Latest Version Comparison (V4 vs V5)

## 04 JavaScript

- History, Features, Output Methods
- Variables: const, let, var
- Data Types, JS Operators (Part 1 & ES6)
- Control Statements: If-Else, Nested, Switch
- Loops: While, Do-While, For Loop
- Functions: Declaration, Return, Parameters, Rest Parameters
- Callback, Nested, Self-Invoked Functions
- Objects: Methods, Nested Objects
- Arrays: Creation, Nested Arrays, Loops (for in, for of)
- Array Methods (Part 1 & 2)
- Strings: Advanced Usage & Methods
- Events: Keyboard, Form, Window Events
- addEventListener Method
- DOM: Properties, Methods, querySelector, querySelectorAll
- BOM: Dialog Boxes (Alert, Confirm, Prompt), History, Location
- Date & Math Objects, SetInterval, SetTimeout
- Modern JS: Promises, Async/Await, Spread Operator, Destructuring

# MERN STACK DEVELOPMENT

## 05 ❯ React.js

- Introduction, Features, History
- Project Setup (Local, CDN), Environment Setup
- NPM, Babel, Webpack, Execution Flow
- Angular vs React, Virtual DOM
- JSX Syntax, CSS & JS Integration
- Component Types (Functional, Class)
- State & Props, JSON Handling
- API Integration: Postman, Axios, HTTP Methods
- Forms: React Forms, Formik, Validation
- Axios CRUD Operations (Part 1 & 2)
- Redux & Redux Toolkit State Management
- Events Handling, E-Commerce App (Data Hide/Show)
- React Lifecycle Methods: Mounting, Updating, Unmounting
- React Router DOM: Setup and Configuration
- Hooks: useState, useEffect, useRef, useMemo, useContext, useCallback, useReducer, Custom Hooks

## 06 ❯ Vue.js

- Introduction to Vue.js – History, Features, Real-World Use Cases
- Environment Setup – Node.js, Vue CLI, Vite, Project Creation
- Babel, Webpack Basics in Vue, vue.config.js
- Project Folder Structure + Intro to main.js & App.vue
- Virtual DOM, Template Syntax, Interpolation
- Vue Directives (v-bind, v-model, v-if, v-for, etc.)
- Vue Components – SFC, Props, Emits
- Reusability – Slots, Dynamic Components
- Conditional Rendering (v-if, v-show, Ternary Logic)

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- Vue Router – Installation, Basic & Nested Routing
- Route Params, Navigation Guards, Redirects
- Composition API vs Options API, setup(), ref, reactive
- Computed, Watch, Lifecycle Hooks
- JSON, REST API Concepts, Intro to Axios
- API Integration Using Axios, async/await, try/catch
- Form Handling with v-model, Input Validation Basics
- CRUD App (Create, Read) Using Vue + Axios
- CRUD App (Update, Delete), Error Handling
- Vuex – State, Mutations, Actions, Getters
- Vuex Project Integration + Final Overview & Interview Q&A
- Teleport & Fragments

## 07  MongoDB

- MongoDB vs SQL
- Environment Setup
- JSON Basics: vs XML, Data Types, Parsing, Arrays
- Model & Schema, ODM & ORM
- MongoDB Queries
- MongoDB Atlas Cloud (DBaaS)

## 08  Express.js

- Introduction to Express.js
- Express App Setup, package.json
- Middleware: express.json()
- Mount Events, req.cookies, res.cookies()

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- router.all() Function
- HTTP Server, Web Server Basics
- express-jwt for Web Authentication Tokens

## 09 ▶ Node.js

- NPM vs NPX vs YARN
- Node HTTP Module, NPM
- Event Loop, Built-in Modules
- Node Server Setup
- RESTful API vs SOAP
- Promises, Async/Await
- CORS and Error Handling in Authentication

## 10 ▶ SPM

- Version Control: Git vs BitBucket
- Project Tracking: Asana vs Jira
- Wireframing Tools: Adobe XD, Figma
- Workflow Tools: Miro, Canvas
- Resume Building: ResumeKraft

## 11 ▶ TypeScript

- Static Typing
- Type Annotations
- Type Interface
- Functions, Interface and Type Aliases
- Classes, Union Types and Generics
- Modules, Tooling and Compilation.

# MERN STACK DEVELOPMENT

## CARRIER OPPORTUNITIES AFTER STUDYING **MERN STACK DEVELOPMENT**

**01** React.js Developer

**02** Full Stack Developer

**03** Mobile App Developer

**04** Frontend Developer

**05** Web App Architect

**06** MERN Stack Developer

**07** Software Developer

**08** Back End Developer

## Popular brands that use **ReactJS**