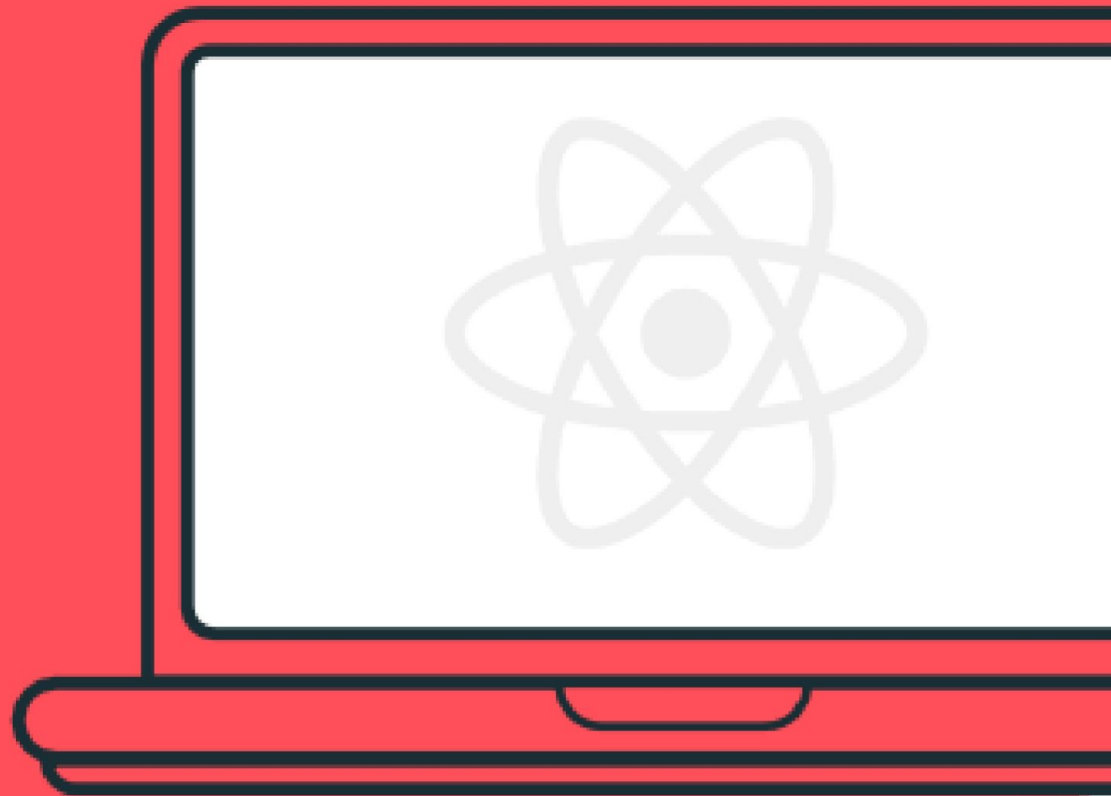# FULL STACK DEVELOPMENT WITH REACT & NODE JS

CONTENTS

Week 1

Session 1: Introduction to HTML & CSS
- Understanding the basics of web development
- Introduction to HTML tags and attributes
- Styling HTML pages with CSS

Session 2: GIT & Responsive Design
- Introduction to GIT and Version Control
- Setting up a GIT repository and committing changes
- Creating responsive web pages with media queries
- Introduction to CSS frameworks like Bootstrap

Week 2

Session 3: Advanced CSS Techniques & Best Practices
- Advanced CSS techniques like flexbox and grid
- Best practices for HTML and CSS development
- Overview of JavaScript language and its features

Session 4: JavaScript & ES6 Essentials (Part 1)
- Variables, data types, and operators
- Control flow statements (if-else, for, while, switch)
- Closures, Promises, Callbacks & Event loops

Week 3

Session 5: JavaScript & ES6 Essentials (Part 2)
- Introduction to ES6 features like let, const, and arrow functions
- Working with functions, objects, and arrays
- Variable types, scoping, and error handling

Session 6: JavaScript DOM Manipulation & React Basics
- Manipulating the DOM with JavaScript
- Handling events and user interactions with JavaScript
- Debugging and troubleshooting JavaScript code

CONTENTS

Week 4

Session 7: Introduction to React & JSX

- Introduction to React and its features
- Setting up a React development environment
- JSX syntax and its benefits
- Creating React components

Session 8: React Components, Props & Conditional Rendering

- Creating reusable React components
- Using props to pass data between components
- Creating conditional rendering and handling events in React
- Best practices for React component development

Week 5

Session 9: React States & Hooks

- Introduction to React Hooks
- Understanding state and its importance in React
- Understanding useState and useEffect Hook
- Implementing custom hooks in React

Session 10: React Routing and Types of Routers

- Understanding React Routing
- Understanding client-side routing & server-side routing
- Introduction to different types of React routers

Week 6

Session 11: Class-Based Components, React Lifecycle & Context

- Introduction to class-based components
- Understanding React Lifecycle and its phases
- Introduction to React context
- Use of lazy and suspense

CONTENTS

Session 12: Introduction to Node.js

- Introduction to Node.js and its features
- Understanding the basics of web servers and HTTP requests
- Node Modules - HTTP, File Systems, etc.
- Understanding the Node.js event loop and asynchronous programming

Week 7

Session 13: Node.js Advanced Concepts

- Using callbacks, promises, and async/await in Node.js
- Handling errors and debugging Node.js applications
- Implementing security best practices in Node.js

Session 14: Building RESTful APIs with Node & Express.js

- Understanding the principles of RESTful APIs
- Setting up an Express.js development environment
- Building a simple Express.js server
- Building CRUD operations with Express.js
- Implementing middleware in Express.js
- Best practices for building scalable and maintainable APIs

Week 8

Session 15: Introduction to MongoDB & Mongoose

- Understanding NoSQL databases and MongoDB
- Setting up a MongoDB development environment
- Building MongoDB schema and models with Mongoose
- Using Mongoose to perform CRUD operations in MongoDB

Session 16: MongoDB Indexing, Aggregation & Security

- Understanding MongoDB indexing and aggregation
- Implementing authentication and authorization with MongoDB
- Best practices for securing MongoDB applications
- Implementing data migrations and backups in MongoDB

CONTENTS

Week 9

Session 17: State Management with Redux
- Introduction to state management with Redux
- Setting up Redux in a React application
- Creating Redux actions and reducers
- Integrating Redux with React Components

Session 18: RESTful API Development with Express.js
- Advanced RESTful API concepts
- Implementing authentication and authorization in Express.js
- Handling file uploads and other advanced features
- Testing and documenting RESTful APIs

Week 10

Session 19: Major Project - Developing an E-Commerce Website
- Applying the knowledge gained throughout the course
- Building an E-Commerce Website with MERN stack
- Developing features, integrating APIs, and implementing user authentication
- Project development, testing, and debugging

Session 20: Deployment and Hosting
- Introduction to CI & CD pipelines
- Deploying React applications using hosting services
- Deploying Node.js applications with server configurations