



UI FULLSTACK (MERN STACK)

MODULE - 1: HTML

- Understanding Full Stack Web Development
- Web Application
- Roles of Full Stack Engineer / Full Stack Developer
- Types of Applications
- High Level Architecture of Web Application
 - Frontend Development
 - Backend Development
 - Database
- Understanding MERN Stack
- Installation of VS Code & Extensions
- Introduction to HTML
- Purpose of HTML
- Elements & Tags in HTML
- Structure of the Tag / Representation of the Tag
- HTML Elements
 - Media Elements
 - Symantec Elements
 - Heading Elements
 - Image Elements
 - List Elements
 - Div elements
 - Table elements
 - Anchor Elements
- Attributes in HTML
- Attributes of List element
- Attributes of Image Element
- Forms Development & Validations
- Interview Questions



Module - 2: CSS

- Introduction to CSS
- Format of Properties
- Approaches in CSS
- CSS Selectors
 - ☐ Universal Selectors
 - ☐ Group Selector
 - ☐ Id Selector
 - ☐ Class Selector
 - ☐ Tag/Element Selector
 - ☐ Descendant Selector
 - ☐ Child Selector
 - ☐ Examples and Exercises
- Box Model
 - ☐ Margin
 - ☐ Padding
 - ☐ Border
 - ☐ Outline
- Flex Concept
- Grid Concept
- Position in CSS
 - ☐ Static
 - ☐ Relative
 - ☐ Absolute
 - ☐ Fixed & Sticky
- Media Queries
- CSS Backgrounds
- CSS Colors
- CSS Transform
- CSS Transition
- Interview Questions



Module - 3: Bootstrap

- Introduction to Bootstrap and its features
- Grid System
- Components
- Basic Typography
- Colors
- Backgrounds
- Buttons
- Cards
- Forms
- Pagination
- Carousel
- Modal & Dialogue
- Table
- Nav Bars
- Flex
- Interview Questions

Module - 4: JavaScript

- Introduction to JavaScript
- Environment Setup
- Variables & Data Types
- Let vs var vs const
- Functions
- Objects
- Arrays & Array Methods
- Selection Statement and Loops
- Spread Operator
- Rest Parameters
- Destructuring
- Closures & Promises



- DOM and DOM Manipulation
- Asynchronous Programming
- This keyword
- Fetch API & API Calls
- Module System in Java Script
 - ES6 Module Pattern
 - Common JS Module Pattern
- Java Script Interview Questions

Module 5: React JS

- Introduction to React JS
- React Elements
- React DOM
- JSX
- React Components
- Props
- Vite Tool
- Functional Components
- Introduction to Hooks
- State and setState
- Rendering the List using Map()
- Axios
- Interaction between Components
- Context API
- React Routing
- useRef() hook
- useEffect() hook (Recording will be Provided)
- useReducer() hook
- useSelector & useDispatch & useParams..
- Lazy Loading



- Redux with Functional Component
 - What is Redux
 - Why Redux
 - How redux will help in state management
 - Installing and Configuring redux
 - Store
 - Dispatch
 - Reducer
 - How to combine Multiple reducers
 - Configuring Reducers with Redux Store
 - Action
 - Action Creator
 - Action Types
 - Redux Pattern
 - useSelector() hook
 - useDispatch() hook
 - Implementing Redux in React Application

Module 5: Backend Development

- Introduction to Node JS
- Module System using Common JS Module Pattern
- Callback & Callback hell
- Difference between callback hell and Promises
- Node Module System
 - File
 - Path
 -
- Web Server
- Overview on How the Web Works
- Responses
- Introduction to Express JS



- Understanding of Web API
 - What is a Web API?
 - Definition and Role in Web Development
- Components of a Web API
- REST Principles
- Building REST APIs with Express
- Sending Responses
- Organizing Code
- Hands-On Exercise
- Understanding of Middleware
- Routing in Express
 - What is Routing?
 - Definition and Purpose
 - Routing as URL Mapping
 - Setting Up Routes in Express
 - `app.get`, `app.post`, `app.put`, `app.delete`
 - Route Parameters (`req.params`)
 - Query Strings (`req.query`)
 - Dynamic Routing
 - Capturing Parameters in Routes
 - Router Instances
 - Creating and Using `express.Router()`
 - Modularizing Routes into Separate Files
 - Combining Multiple Routers
- Middleware in Routing
 - Applying Middleware to Specific Routes
 - Grouping Middleware with Routers
- Environment Variables
- Introduction to MongoDB
 - What is MongoDB?
 - Why Choose MongoDB?
- Installation of MongoDB



- Installation of Mongo Shell
 - What is Mongo Shell?
 - Installing Mongo Shell
- Connecting Mongo Shell with MongoDB Server
 - Starting the MongoDB Server
 - Connecting to the Server via Mongo Shell
- Creating the Database
 - Overview of MongoDB Databases
 - Creating a Database
- Collection
- BSON Format
- CRUD Operations
- Relations in MongoDB
 - Types of Relations
 - Modeling Relationships
 - Examples of Each Relation Type
- Operators in MongoDB
 - Query Operators
 - Update Operators
 - Logical Operators
 - Array Operator
 - Hands-On Exercises
- Mongoose
 - Introduction to Mongoose
 - Defining Schemas
 - Working with Models



Module 6 : Project Development

- Node with Mongo DB Integration
- Authentication and Authorization using JWT
- Integration of Node.js, Express, and MongoDB
 - Building an Express Server
 - Creating Routes for CRUD Operations
 - Middleware for Parsing JSON and Handling Errors
 - Connecting with MongoDB
 - Defining and Using Mongoose Models in Routes
 - Handling Query Results (e.g., **find**, **save**, **update**)
 - Using Try-Catch for Route Handlers
 - Postman for API Testing
- Integration of React , NodeJS, Express Js and Mongodb
- Final Project Development
- Interview Questions
- Resume Preparation
- Mock Interviews