

## MERN stack internship Program Plan,Topstack

### Week 1

#### Day 1: Introduction to Web Development

- Overview of web development technologies
- Frontend vs. backend
- Introduction to the MERN stack
- Setting up development environment (Node.js, npm, VSCode etc.)

#### Day 2: Introduction to HTML,CSS

- Overview of HTML Structure
- Common HTML tags and their uses
- Introduction to CSS

#### Day 3: More about CSS

- External CSS, Inline CSS and differences
- Common CSS properties
- Use of CSS Framework- Bootstrap ( just introduction , reference to documentation)
- Responsive web design

#### Day 4: Introduction to JavaScript

- Basic constructs of JavaScript
- conditionals , variables , data types , functions
- JavaScript internal working (Single Thread)

#### Day 5: More on JavaScript + Introduction to NodeJS

- Use of Async JavaScript , Async Await and Promises.
- Use of Node as a JavaScript Runtime.
- Basic programming in Node.JS , file handling with NodeJS.

#### Day 6: Introduction to MongoDB

- What is MongoDB and NoSQL
- MongoDB installation and setup
- CRUD operations in MongoDB
- Introduction to Mongoose (MongoDB ORM)

## Week 2

### Day 7: Introduction to Express.js

- What is Express.js and why use it
- Setting up a basic Express.js server
- Handling HTTP requests and responses
- Routing in Express.js

### Day 8: RESTful APIs with Express.js

- Designing RESTful APIs
- Implementing CRUD operations with Express.js
- Hands-on exercises with building APIs

### Day 9: Authorization and Authentication with Express Middleware

- Introduction to Express Middleware
- Authentication using JWT
- Authorization , Password Storing , Security

### Day 10: Introduction to React.js

- What is React.js and why use it
- Setting up a React.js project using Create React App
- JSX syntax and basic component structure
- React class-based and function-based components

### Day 11: React.js State and Lifecycle

- Understanding component state
- Managing component lifecycle
- Hands-on exercises with React.js state and lifecycle

## Week 3

### Day 12: React.js Forms and Events

- Handling form submissions in React.js
- Managing events in React.js
- Controlled vs. uncontrolled components

### Day 13: React.js Hooks

- Introduction to React hooks (useState, useEffect)
- Working with other React hooks (useContext, useCallback, etc.)
- Project Distribution.