

MERN Stack

Day wise Syllabus

Day 1: Git, GitHub, MERN Stack Basics, and JavaScript Introduction

- What is Full Stack?
 - Introduction to MERN:
 - Components of MERN: MongoDB, Express, React, Node.js
 - Role of each component in full-stack development
 - Git & GitHub:
 - Version control overview
 - Account creation and setup
 - Basic Git commands
 - Publishing repositories on GitHub
 - JavaScript Introduction:
 - Variables (var, let, const)
 - Primitive data types
 - Basic operators: Arithmetic, Comparison, Logical
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Day 2: JavaScript Core Concepts and Advanced JavaScript (ES6)

- Core JavaScript:
 - Control flow: Conditional statements (if, else, switch)
 - Loops: for, while
 - Functions and Arrow Functions
 - ES6 Concepts:
 - Spread and Destructuring Operators
 - Ternary Operators
 - Callbacks, Promises, and Async/Await
 - DOM Manipulation Basics
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Day 3: React Basics

- Introduction to React.js:
 - JSX and its standards
 - Setting up a React environment
 - React components: Functional vs Class-based
- HTML Basics Embedded:
 - Structure of HTML documents
 - Forms, Lists, and Semantic Tags
- CSS Basics Embedded:
 - Introduction to CSS styling
 - Selectors, Box Model, and Flexbox

Day 4: React Core Concepts

- State Management:
 - Props and State
 - State vs Props
 - Event Handling:
 - Handling events in React
 - Passing data between components
 - React Router Basics
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Day 5: Advanced React Concepts

- React Hooks:
 - useState, useEffect, useRef
 - useContext for managing global state
 - Introduction to useMemo for performance optimization
 - Responsive Design:
 - CSS Media Queries for responsiveness
 - Embedding CSS into React components
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Day 6: Node.js and Backend Development

- Node.js Basics:
 - Overview and ecosystem
 - HTTP Module and NPM
 - Express.js Basics:
 - Server creation and routing
 - Static File Serving
 - Database Introduction:
 - Overview of MongoDB and NoSQL advantages
 - CRUD operations with MongoDB
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Day 7: Full-Stack Integration - Part 1

- Connecting Express.js with MongoDB
- Building APIs for CRUD operations
- Introduction to Authentication and Authorization
- Connecting Frontend and Backend:
 - Fetching and posting data from React to MongoDB

Day 8: Full-Stack Integration - Part 2

- Advanced API handling in Express.js
 - Event handling for data manipulation
 - Securing the application:
 - JWT Authentication and Authorization
 - Real-time updates with React and Backend
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Day 9: Building the MERN Stack Project

- Planning and structuring a MERN project
 - Building React components for the frontend
 - Integrating APIs and handling backend data
 - Styling the application for a polished UI/UX
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Day 10: Hosting and Deployment

- Hosting the MERN stack project:
 - Deploying the backend on platforms like Render/Heroku
 - Deploying the frontend on Netlify or Vercel
- Connecting the hosted frontend and backend

Note:

1. All the above mentioned topics will be Live coded by the trainer during the session.
2. Any changes or modifications to this content/curriculum can only be made by an authorized representative of RAMPeX Technologies.