# MERN Stack Development 6 -Days Training Program (Proposal)

Duration: 6 Days (36 Hours)

Mode: Instructor-Led + Hands-On Coding

Goal: Help learners understand how web applications work and guide them to build a simple but complete MERN project step by step.

## Training Highlights

- Learn by doing every topic includes practice Daily
-  mini tasks to build confidence
- Final 2 days fully dedicated to building a working project
- Trainer-guided environment setup and issue fixing
- Suitable for students with minimal coding experience

# 6 - Day MERN Training Plan

## Day 1 Understanding Web Applications and MongoDB Setup (6 Hours)

- How the web works (client, server, database)
- What MERN stands for and how the technologies fit together Creating a MongoDB Atlas account
- Exploring MongoDB Atlas dashboard Creating databases & collections Adding, viewing, and editing documents
- Using MongoDB Compass for visual data operations Introduction to simple data planning for your app
- Setting up React with Vite
- Installing tools: Node.js, VS Code, extensions Simple <Hello Worldî React and Node.js check

## Day 2 Getting Started with React (6 Hours)

- Understanding components
- JSX and how it connects JavaScript + UI Working with props and state Handling button clicks & form inputs Styling components with CSS/Tailwind
- Using useEffect for data fetching Reusable components
- Page navigation using React Router Simple state sharing using useContext Folder structuring for real projects

## Day 3 Starting with Node.js, Express and GIT (6 Hours)

- Understanding server-side logic Setting up an Express server Creating simple routes
- Connecting Express with MongoDB Atlas Sending sample responses
- Testing APIs using Postman
- Why Git is important Creating GitHub repos
- Making commits, pushing code Testing API workflows in Postman Fixing common errors in React & Node
- Console logs, breakpoints, troubleshooting techniques

## Day 4 Connecting Frontend to Backend (6 Hours)

- What APIs are and how the frontend uses them Sending GET/POST requests using Axios or Fetch
- Displaying data from your own API in React Simple form submission from UI ³ API ³
- Database Basic error messages and loading indicators
- Planning the final MERN Project
- Login/signup planning
- Improving UI appearanceMini Task: Set up separate repos for frontend & backend

## Day 5 Project Development (Phase 1) (6 Hours)

- Implementing user interface screens Creating backend routes
- Adding CRUD features Integrating UI with APIs Testing each flow step-by-step Fixing bugs together with trainer
- Testing data flow from UI—API—DB

## Day 6 Project Development (Phase 2) Deployment (6 Hours)

- Adding login/signup
- Form validations and messages Final improvements in UI Deploying frontend (Vercel/Netlify)
- Deploying backend (Render/other free hosting) Final testing & walkthrough

Q&A + Feedback Session Sharing next steps for learning

# Requirements Setup Checklist

## Trainer Requirements:

- Projector/Smart Display
- Stable high-speed Wi-Fi
- Power backup
- Access to install tools on machines
- Comfortable classroom/lab seating
- Whiteboard & marker (optional but helpful)

## Participant Requirements:

- Laptop with internet access
- Node.js installed
- VS Code installed MongoDB Compass installed
- GitHub account
- Google account for Vercel/Netlify deployment

Everything else will be covered during training.

## Final Deliverables:

- A completed MERN project (deployed online)
- GitHub repos (frontend + backend)
- API documentation in Postman
- Deployment URL for portfolio
- Training materials and reference notes