# MERN Stack Project Setup Instructions – FinalYearProjectsHub

## Introduction

This guide explains how to set up and run any MERN Stack project downloaded from FinalYearProjectsHub.   
It applies to all full-stack web applications that use MongoDB, Express.js, React.js, and Node.js, including admin dashboards, e-commerce systems, and management apps.  
  
Note: All projects are provided strictly for educational purposes only.   
Commercial use or resale is not allowed.

## Step 1: Prerequisites

Before starting, make sure the following are installed on your system:  
  
- Node.js (version 14 or above) and npm (Node Package Manager)  
- MongoDB (local installation or MongoDB Atlas account)  
- Code Editor (VS Code, WebStorm, Sublime Text)  
- Web Browser (Chrome, Firefox, Edge, Safari)  
- Basic understanding of JavaScript, React.js, Node.js, and MongoDB  
  
Optional Tools:  
- Postman – for testing APIs  
- MongoDB Compass – for managing your MongoDB database visually  
- VS Code Extensions: Live Server, Prettier, ES7+ React Snippets

## Step 2: Download and Extract the Project

1. Download the project ZIP file from FinalYearProjectsHub.  
2. Extract it to a desired folder, e.g. C:\MERN\_Projects\YourProjectName.  
3. Open the project folder in your code editor.

## Step 3: Project Structure

Most MERN projects have the following folder layout:  
  
YourProjectName/  
│  
├── backend/ → Node.js + Express.js API code  
│ ├── models/ → MongoDB data models  
│ ├── routes/ → API routes  
│ ├── controllers/→ Business logic  
│ ├── server.js → Entry point for backend  
│  
├── frontend/ → React.js app  
│ ├── src/ → React components and pages  
│ ├── public/ → index.html and static files  
│ ├── package.json → Frontend dependencies  
│  
├── package.json → Root configuration (if using concurrently)  
└── README.md → Project description and instructions

## Step 4: Install Dependencies

1. Backend Setup  
 Open a terminal inside the backend folder:  
 npm install  
  
2. Frontend Setup  
 Open a new terminal for the frontend folder:  
 npm install  
  
This installs all required Node modules for both client and server.

## Step 5: Configure Environment Variables

In the backend folder, create a .env file (if not provided) and add the following example variables:  
  
PORT=5000  
MONGO\_URI=mongodb://localhost:27017/yourdbname  
JWT\_SECRET=your\_jwt\_secret  
  
If using MongoDB Atlas, replace MONGO\_URI with your connection string.

## Step 6: Run the Project

Option 1: Run Frontend and Backend Separately  
Backend:  
cd backend  
npm start  
  
Frontend:  
cd frontend  
npm start  
  
The frontend usually runs at http://localhost:3000 and the backend API runs at http://localhost:5000  
  
Option 2: Run Both Together (if configured with concurrently)  
From the root folder:  
npm run dev

## Step 7: Verify Setup

1. Open your browser at http://localhost:3000 to view the React app.  
2. Use Postman to test backend routes like:  
 GET http://localhost:5000/api/users  
3. Check the MongoDB Compass or Atlas dashboard to confirm database connectivity.

## Step 8: Optional Deployment

You can deploy your MERN app using any of the following platforms:  
  
- Render.com – Easy full-stack hosting  
- Vercel – Frontend hosting  
- Netlify – Static React hosting  
- MongoDB Atlas – Cloud database  
- Railway, AWS, or Firebase Hosting – Alternative full-stack options

## Additional Tips

- Always check console and terminal logs for errors (F12 → Developer Tools).  
- Keep your API routes, models, and controllers modular.  
- Use React Developer Tools and MongoDB Compass for debugging.  
- Regularly update dependencies to avoid compatibility issues.  
- Use Git for version control and backups.

## Footer Note

All MERN Stack projects provided by FinalYearProjectsHub are meant purely for academic learning and research.   
Students are encouraged to study, customize, and enhance these projects but must not use or resell them commercially.