

# Project Planning Phase

Date	20 Feb 2026
Team ID	LTVIP2026TMIDS79402
Project Name	Booknest : Where stories nestle
Maximum Marks	

## 1. Project Description

BookNest is a full-stack online bookstore web application developed using the MERN stack. The platform enables users to browse, search, and purchase books online while providing administrators with tools to manage books, users, and orders efficiently.

The system supports secure authentication, cart functionality, order placement, and role-based access control. It is designed to be scalable, responsive, and suitable for real-world deployment.

## 2. Project Objectives

- Develop a fully functional MERN stack web application.
- Implement secure user authentication using JWT.
- Enable users to browse, search, and purchase books online.
- Create an admin dashboard for managing books and orders.
- Design a responsive UI for both desktop and mobile users.
- Deploy the application locally and optionally on cloud platforms.

## 3. Technology Stack

Layer	Tools / Frameworks Used
Frontend	React.js, HTML5, CSS3, Bootstrap / Tailwind CSS
Backend	Node.js, Express.js
Database	MongoDB (Local / MongoDB Atlas)
Authentication	JWT (JSON Web Token), bcrypt
State Management	React Hooks / Context API

API Testing	Postman
Version Control	Git, GitHub
Hosting (Optional)	Render (Backend), Vercel / Netlify (Frontend)
Development IDE	Visual Studio Code

## 4. Resources Required

Resource Type	Description
Hardware	Local PC/Laptop with minimum 8GB RAM
Software	Node.js, MongoDB, VS Code, Web Browser
Database	MongoDB Local or MongoDB Atlas (Cloud)
Libraries & Packages	Express, Mongoose, bcrypt, jsonwebtoken, cors, dotenv
Frontend Packages	React Router, Axios
Collaboration Tools	GitHub, Google Drive, Documentation tools

## 5. Risk Analysis & Mitigation

Risk	Mitigation Strategy
Authentication vulnerabilities	Use JWT securely and hash passwords with bcrypt
Database connection errors	Validate .env configuration and test locally
Slow performance with many users	Optimize queries and use indexing in MongoDB
Cart or order logic bugs	Thorough testing of API endpoints using Postman
Deployment issues	Test locally before deploying to cloud

Data inconsistency	Use proper schema validation in Mongoose
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## 6. Success Criteria

- Fully functional user registration and login system.
- Users can browse, search, and add books to cart.
- Successful order placement and order history tracking.
- Admin can manage books and orders via dashboard.
- Responsive UI across devices.
- Clean, well-documented GitHub repository.
- Successful local deployment and optional cloud hosting.