

Project Design Phase-II Technology Stack (Architecture & Stack)

Date	25 March 2025
Team ID	SWTID1743347281
Project Name	Book Store
Maximum Marks	4 Marks

Technical Architecture:

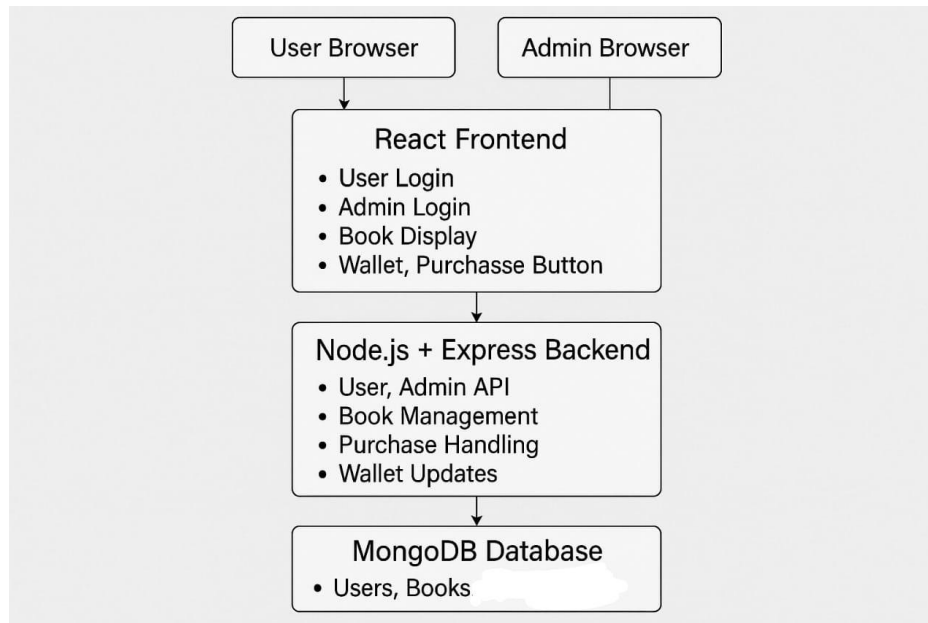


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1	User Interface	Web UI for user and admin interaction	HTML, Tailwind CSS, JavaScript, React.js
2	Application Logic-1	Backend logic for user registration, login, and book operations	Node.js, Express.js
3	Application Logic-2	Not applicable	—
4	Application Logic-3	Not applicable	—
5	Database	Stores user data, book data, and transactions	MongoDB (NoSQL)
6	Cloud Database	Cloud-hosted database solution	MongoDB Atlas
7	File Storage	Stores book images and related files	Local FileSystem
8	External API-1	Used for validating user emails or book metadata (if any)	Google Books API (optional)
9	External API-2	Not applicable	—

Table-2: Application Characteristics:

able-2: Application Characteristics

S.No	Characteristics	Description / Technology
1	Open-Source Frameworks	MERN Stack: React.js, Node.js, Express.js, MongoDB
2	Security Implementations	cors, dotenv, mongoose, nodemon, bcrypt password hashing, role-based access (, bcrypt, Helmet.js)
3	Scalable Architecture	3-tier architecture: UI, API server, database (MERN Stack, REST APIs)
4	Availability	Frontend on Vite (auto-scaling), backend on Node.js + Express.js
5	Performance	Optimized queries, search with debounce, pagination, MongoDB indexing, React lazy loading, CDN