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

Date	1 Feb 2026
Team ID	LTVIP2026TMIDS77456
Project Name	BookNest: Where Stories Nestle
Maximum Marks	4 Marks

Technical Architecture:

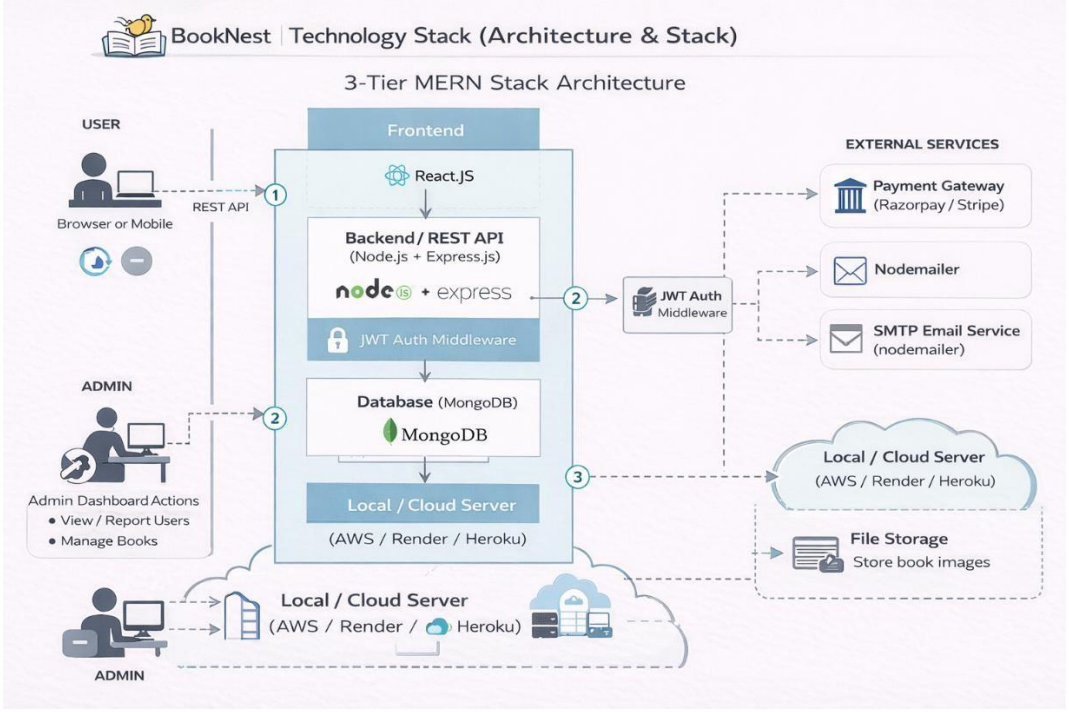

Table-1: Components & Technologies

S.NO	Component	Description	Technology
1	User Interface	How users (Customer, Seller, Admin) interact with the application through Web UI	React.js, HTML5, CSS3, Bootstrap
2	Application Logic-1	Backend logic for authentication, book management, orders	Node.js
3	Application Logic-2	Routing, middleware handling, API request processing	Express.js
4	Database	Stores users, books, orders, cart, reviews data	MongoDB
5	File Storage	Storage of book images and assets	Local File System / Cloud Storage
6	Authentication Service	Secure login & role-based access	JWT (JSON Web Token), bcrypt

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	List of open-source frameworks used in application	MERN Stack (MongoDB, Express.js, React.js, Node.js)
2	Security Implementations	Password encryption, JWT authentication, protected routes, CORS configuration	bcrypt, JWT, Express Middleware
3	Scalable Architecture	3-Tier architecture separating frontend, backend, and database	MERN Stack Architecture
4	Availability	Cloud deployment ensures 24/7 availability	AWS / Render / Heroku
5	Performance	Optimized API calls, MongoDB indexing, asynchronous processing	Node.js Event Loop, MongoDB Indexing
6	Reliability	Error handling middleware and proper validation mechanisms	Express Error Middleware