Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	28 June 2025
Team ID	LTVIP2025TMID42539
Project Name	Booknest
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Technical Architecural Architecture:

The Deliverable shall include the architectural DiagakNest.
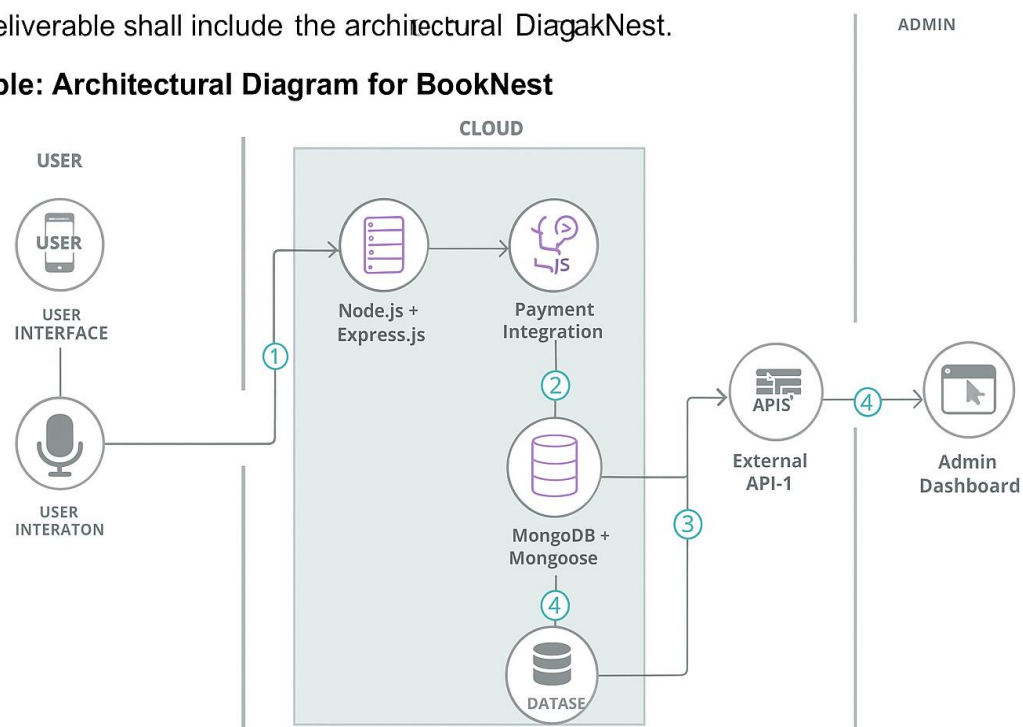
Example: Architectural Diagram for BookNest

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Logic for user authentication and book search	Node.js, Express.js
3.	Application Logic-2	Logic for shopping cart, checkout, and order placement	Node.js, Express.js
4.	Application Logic-3	Admin logic for managing books, users, and orders	Node.js, Express.js
5.	Database	Manages book records, user data, order history	MongoDB, Mongoose
6.	Cloud Database	Cloud-hosted version of the DB	MongoDB Atlas, Firebase Firestore
7.	File Storage	Stores book cover images or user-uploaded files	Cloudinary, AWS S3
8.	External API-1	Payment integration	Razorpay API, Stripe API
9.	External API-2	Book info or reviews (if integrated)	Google Books API
10.	Machine Learning Model	Optional: Recommend books based on user behavior	TensorFlow / scikit-learn (Recommendation Engine)
11.	Infrastructure (Server / Cloud)	Local and cloud deployment	Vercel (Frontend), Render / Heroku / AWS (Backend)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Frameworks used in development	ReactJS, Node.js, Express, MongoDB
2.	Security Implementations	Access control, data encryption, secure payment	bcrypt, JWT, HTTPS, CORS, SHA-256
3.	Scalable Architecture	Supports microservices or	3-tier architecture, Docker +

S.No	Characteristics	Description	Technology
		multi-tier deployment	Kubernetes
4.	Availability	Ensures system is accessible 24x7	Load Balancer, Distributed Servers
5.	Performance	Optimized for speed and handling multiple users	CDN (Cloudflare), Caching, Indexing in DB