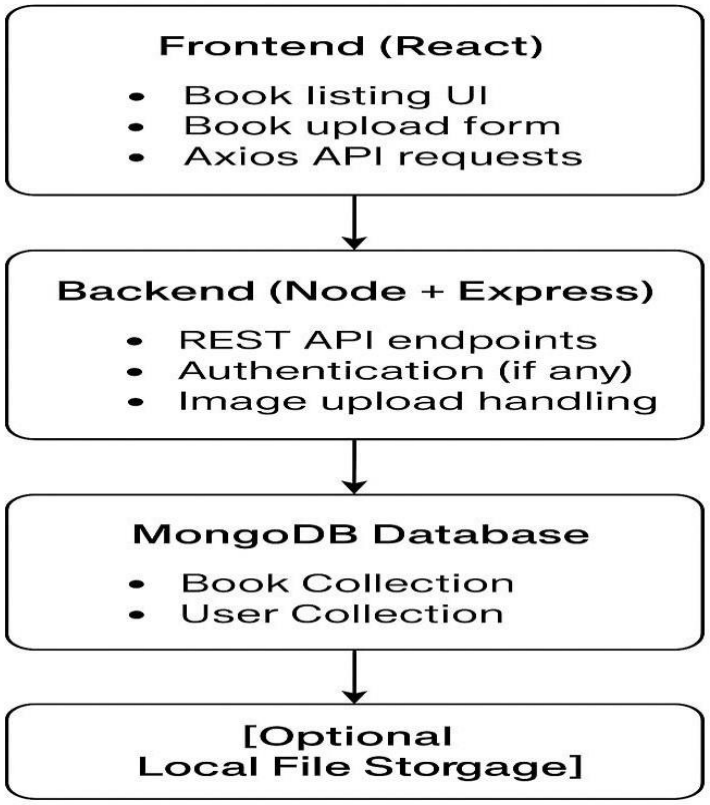
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	27 June 2025
Team ID	LTVIP2025TMID59395
Project Name	BookNest: Where Stories Nestle
Maximum Marks	4 Marks

Architecture:



Architecture Overview:

The BookNest project follows a typical 3-tier architecture consisting of:

1. Frontend Layer (Client-Side): Built with React.js, it allows users to browse, add, and view books.

2. Backend Layer (Server-Side): Node.js with Express handles API requests, business logic, and routes.

3. Database Layer: MongoDB stores all book records and user-related data.

4. Local File Storage: Used for storing book images and other uploads.

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	Web UI for browsing, adding books	React.js, CSS, HTML, Vite
2	Application Logic-1	Handles backend logic and API routing	Node.js, Express.js
3	Database	Stores books and user data	MongoDB, Mongoose
4	File Storage	Stores book images and media files	Local Filesystem ("uploads" folder)
5	Infrastructure	Localhost setup for development	Node.js Server

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Uses widely adopted open-source tools for development	React.js, Node.js Express
2	Security Implernentations	CORS policy setup, request validation, basic access control mechanisms	'cors', express'
3	Scalable Architecture	Modular backend and frontend; easily deployable on cloud with MongoDB Atlas	Express.js MongoDB
4	Availability	Designed for local dev; scalable to cloud; REST APIs enable redundancy	Node.js, RESTful APIs
5	Performance	Uses 'nodemon' for fast reloding; optimized with React/Vite front-	Vite (frontend) Nodemon (backend)

📎 References (with Titles & Links)

1. **C4 Model for Visualising Software Architecture**

📎 https://c4model.com/

2. **AI-powered backend system for order processing during pandemics**

📎 https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

3. **IBM Cloud Architecture Center**

📎 https://www.ibm.com/cloud/architecture

4. **AWS Architecture Center**

📎 https://aws.amazon.com/architecture

5. **How to draw useful technical architecture diagrams – Medium Article**

📎 **https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d**