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

Date	20 June 2025
Team ID	LTVIP2025TMID55634
Project Name	Booknest: Where Stroies Nestle
Maximum Marks	4 Marks

Technical Architecture:

This deliverable should feature a comprehensive architectural diagram, along with supporting information as detailed in Table 1 and Table 2.

Example: Booknest is built using a 3-tier architecture

Three-Tier Technical Architecture – BookNest

Frontend (Presentation Layer)

- React.js (UI)

- Tailwind CSS (Styling)

- React Router (Navigation)

Backend (Application Layer)

- Node.js + Express js

- JWT Auth

- Multer (Image Upload

Database (Data Layer)

- MongoDB Atlas

- Mongoose ODM

- User/Book/Order Collections

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1	User Interface	Web UI for user interaction	HTML, CSS, JavaScript, React.js, TailwindCSS
2	Application Logic-1	Authentication & Routing Logic	Node.js, Express.js
3	Application Logic-2	Wishlist, Cart, and Admin logic	Express.js Controllers
4	Application Logic-3	Book CRUD and filtering system	Express.js Controllers
5	Database	Document-oriented storage	MongoDB
6	Cloud Database	Hosted MongoDB database service	MongoDB Atlas
7	File Storage	Book image upload	Multer, Cloudinary / Local FS
8	External API-1	Image storage or metadata (if used)	Cloudinary API
9	External API-2	Not used	—
10	Machine Learning Model	Not used	—
11	Infrastructure	Cloud/Local Deployment	Local Server (Node), MongoDB Atlas (Cloud)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Open-source tools used in development	React.js, Node.js, Express.js, MongoDB
2	Security Implementations	Access control, token-based auth	JWT, Bcrypt.js, Helmet.js, CORS
3	Scalable Architecture	3-tier scalable design with modular services	MERN Stack
4	Availability	Hosted backend, database in cloud (MongoDB Atlas), supports 24/7 uptime	Cloud-hosted MongoDB Atlas, Node Server
5	Performance	Optimized queries, component-based frontend, fast API responses	React Virtual DOM, REST API, MongoDB Indexes