**Project Design Phase-II**

**Technology Stack (Architecture & Stack)**

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| --- | --- |
| Date | 20-06-2025 |
| Team ID | LTVIP2025TMID46365 |
| Project Name | Book Nest |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

**Book Nest** is designed with a scalable 3-tier architecture consisting of:  
  
● **Presentation Layer (Frontend):** User-friendly interface for users and sellers to browse and purchase books.  
  
**● Business Logic Layer (Backend):** Handles user authentication, book management, cart, orders, and notifications.  
  
● **Data Storage Layer:** Secure storage of user profiles, books, reviews, orders, and transaction records.  
  
The platform integrates with third-party APIs for notifications (SMS/email), payment processing, and book recommendation engines to enhance usability.

**Table-1: Components & Technologies:**

|  |  |  |
| --- | --- | --- |
| **S.No** | **Component** | **Description Technology** |
| **1.** | User Interface | Web and mobile-friendly interface for book browsing and purchases HTML, CSS, JavaScript / React.js |
| **2.** | Application Logic-1 | Book browsing, filtering, cart management, and order placing Node.js, Express.js |
| **3.** | Application Logic-2 | Admin and Seller panels, inventory and user management React.js, Node.js |
| **4.** | Database | Stores user profiles, books, orders, and reviews MongoDB |

**Table-2: Application Characteristics:**

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| --- | --- | --- |
| **S.No** | **Characteristics** | **Description Technology** |
| **5.** | Open-Source Frameworks | Frontend frameworks React.js, Node.js, Bootstrap, Tailwind CSS |
| **6.** | Scalable Architecture | 3-tier architecture with RESTful APIs Microservices |

**References:**

[**React.js Documentation**](https://react.dev/)

[**Node js Best Practice**](https://nodejs.org/en/learn/getting-started/introduction-to-nodejs)

[**JSON Web Server Referance**](https://www.npmjs.com/package/json-server)

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

[MongoDB Docs](https://www.mongodb.com/docs/)