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

**Date:** 26-06-2025  
**Team ID:** LTVIP2025TMID42803  
**Project Name:** Booknest  
**Maximum Marks:** 4 Marks

### **Technical Architecture:**

Booknest is designed with a robust and scalable 3-tier architecture that ensures smooth management of book listings, user interactions, and order processing.

* **Presentation Layer (Frontend):** Provides a clean, user-friendly interface for users to search, browse, and order books.
* **Business Logic Layer (Backend):** Handles book inventory management, user authentication, cart operations, and order processing.
* **Data Storage Layer:** Stores user data, book listings, orders, and reviews securely in a NoSQL database.

The platform may optionally integrate with third-party APIs for services like email notifications, payment gateways, and analytics to enhance usability.

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

| S.No | Component | Description | Technology |
| --- | --- | --- | --- |
| 1. | User Interface | Web interface for users to browse and order books | HTML, CSS, JavaScript, React.js |
| 2. | Application Logic-1 | Handles login, registration, cart, and checkout flow | Spring Boot, Java |
| 3. | Application Logic-2 | Admin panel, book management, and reporting | Java, Spring MVC |
| 4. | Database | Stores user profiles, book inventory, and transaction details | MongoDB |

### **Table-2: Application Characteristics**

| S.No | Characteristics | Description | Technology |
| --- | --- | --- | --- |
| 1. | Open-Source Frameworks | Use of modern, flexible frontend and backend frameworks | React.js, Spring Boot, Tailwind |
| 2. | Availability | High uptime and quick response with cloud-based deployment | Deployed on Heroku/AWS |
| 3. | Scalable Architecture | Modular 3-tier structure and REST APIs allow future expansion | Microservices Architecture |

### **References:**

* React.js Official Documentation
* Spring Boot Reference Guide
* MongoDB Best Practices
* https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d