# Project Design Phase

**Solution Architecture**

|  |  |
| --- | --- |
| **Date** | 24 June 2025 |
| **Team ID** | LTVIP2025TMID53966 |
| **Project Name** | BookNest: Where Stories Nestle |
| **Mentor Name** | Dr Shaik Salma Begam |
| **Maximum Marks** | 4 Marks |

**Solution Architecture**

The **solution architecture for BookNest** bridges the gap between bibliophile needs (a seamless, interactive, and personalized online book browsing and purchasing experience) and modern technology solutions powered by the **MERN stack** (MongoDB, Express.js, React.js, Node.js). It ensures BookNest is scalable, responsive, and rich in user experience.

**Find the best tech solution to solve existing business problems:**

#### 1. **Solve Real User Challenges**

BookNest is designed to address the needs of readers like Sarah, who wish to browse, explore, and buy books without the limitations of traditional bookstores. The MERN stack provides the perfect foundation for delivering a responsive, interactive, and efficient book store platform.

#### 2. **Describe System Structure for Stakeholders**

The architecture clearly outlines how the frontend, backend, database, and key services (authentication, inventory, orders) communicate with each other. This ensures that all team members and stakeholders understand data flow and component interactions.

#### **Define Features and Development Phases**

· User registration & login

· Book browsing and filtering

· Cart management and checkout

· Order tracking

· Admin book/inventory control

#### 4. **Provide Specifications for Delivery and Scalability**

The architecture includes:

· RESTful API specifications for secure, modular development

· Database schema to manage books, users, orders, reviews

· Deployment plan supporting scalability and high availability

· Frontend structure using React components and responsive design

**Example - Solution Architecture Diagram:**

