Project Design Phase

Solution Architecture

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| Date | 29 JUNE 2025 |
| Team ID | LTVIP2025TMID54832 |
| Project Name | BOOKNEST: Where stories nestle |
| Maximum Marks | 4 Marks |

**Solution Architecture for BookNest**

The **solution architecture** of BookNest outlines the structural design of the system, showing how different components interact to deliver a seamless online book shopping experience. It ensures scalability, security, and usability by dividing the system into multiple layers—frontend, backend, database, and external services.

**Key Components of BookNest Solution Architecture:**

1. **Frontend (Client-Side)**
   * Built using HTML, CSS, JavaScript (React or Angular)
   * Provides user interfaces for browsing, searching, account management, and checkout
   * Responsive design for mobile and desktop
2. **Backend (Server-Side)**
   * Developed using Node.js / Django / Spring Boot
   * Handles business logic, API requests, authentication, and user sessions
3. **Database Layer**
   * Uses MySQL / MongoDB / PostgreSQL
   * Stores user data, book details, orders, and inventory information
4. **API Layer**
   * RESTful APIs to connect frontend with backend
   * Enables secure data transfer and integration with external services (e.g., payment gateways)
5. **Authentication & Security**
   * JWT (JSON Web Token) or OAuth 2.0 for user authentication
   * SSL encryption and input validation to prevent security threats
6. **Payment Gateway Integration**
   * Integration with Razorpay, Stripe, or PayPal for secure online transactions
7. **Admin Dashboard**
   * Web portal for managing books, users, orders, and reports