# Project Design Phase-II

## Solution Requirements (Functional & Non-functional)

**Date**:April 14, 2025
**Team ID**: SWTID1743607143
**Project Name**: BookEase
**Maximum Marks**: 4 Marks

## Functional Requirements

Following are the functional requirements of the proposed solution.

| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|--------|-------------------------------|-------------------------------------|
| FR-1 | User Management | Registration through Form |
| | | Login via Form |
| FR-2 | Book Management | Browse Book Catalog |
| | | View Book Details |
| | | Add Books by Sellers |
| FR-3 | Cart and Orders | Add Items to Cart |
| | | View Order History |
| | | Place Order |
| FR-4 | Admin Management | View User and Seller Lists |
| | | Delete Users or Sellers |
| | | View Books and Orders |

## Non-functional Requirements

Following are the non-functional requirements of the proposed solution.

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|-------------|
| NFR-1 | Usability | The interface must be intuitive with clear navigation, accessible help, and a responsive design using React and Tailwind CSS. |

| NFR-2 | Security | Implement JWT for authentication, bcrypt for password hashing, and SSL/TLS encryption to protect user data. |
|---|---|---|
| NFR-3 | Reliability | The system must perform consistently with MongoDB replication and regular backups to ensure data integrity. |
| NFR-4 | Performance | The application must handle 1000 requests per second with Redis caching and optimized MongoDB queries, targeting load times under 2 seconds. |
| NFR-5 | Availability | Ensure 99.9% uptime with load balancers and failover mechanisms on local servers. |
| NFR-6 | Scalability | Support increased loads with a 3-tier architecture and MongoDB sharding for horizontal scaling. |