**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

| Date | 25 March 2025 |
| --- | --- |
| Team ID | **SWTID1744137899** |
| Project Name | Book-store Quasar Books |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

The following are the functional requirements of the proposed solution.

| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| --- | --- | --- |
| FR-1 | User Authentication | - Register with email & password - Google OAuth login (future) - Password reset via email |
| FR-2 | Book Management | - Browse by categories (e.g., Fantasy, Sci-Fi) - Search by title/author - Admin can add/edit/delete books |
| FR-3 | Shopping Cart | - Add/remove books from the cart - Real-time cart updates via Redux - Persist cart for logged-in users |
| FR-4 | Order Processing | - Check out with address & payment - Track order status (Processing → Delivered) - Admin updates order status |

**Non-functional Requirements:**

The following are the non-functional requirements of the proposed solution.

| **FR No.** | **Non-Functional Requirement** | **Description** |
| --- | --- | --- |
| NFR-1 | **Usability** | Responsive UI (Tailwind). Mobile + desktop. Page load < 2 seconds. |
| NFR-2 | **Security** | JWT-based auth, Bcrypt-hashed passwords, and Role-Based Access Control (RBAC). |
| NFR-3 | **Reliability** | 99.9% uptime via Render/Netlify. MongoDB Atlas with automated backups. |
| NFR-4 | **Performance** | API latency < 500ms. Pagination for large datasets like book catalogs. |
| NFR-5 | **Availability** | Load balancing via Render (future Kubernetes). Graceful error fallback. |
| NFR-6 | **Scalability** | Stateless services. Vertical scaling for up to 10,000+ concurrent users. |