

System Design Phase

This phase defines the system architecture and technical structure of the project. It explains how different components work together.

Design Components

- Frontend – React.js
 1. Developed using React.js for dynamic and responsive user interface.
 2. Implements role-based dashboards and API communication using Axios.
- Backend – Node.js / Express.js
 1. Built using Node.js and Express.js to create RESTful APIs.
 2. Uses middleware and JWT authentication for secure route protection.
- Database – MongoDB
 1. Stores users, books, orders, cart, wishlist, and feedback data.
 2. Uses Mongoose schemas for structured and efficient data management.
- UI Wireframes
 1. Designed layouts for Home, Login, Signup, and Dashboards.
 2. Ensures clean navigation and responsive design for all roles.
- API Design
 1. Follows REST principles using GET, POST, PUT, DELETE methods.
 2. Provides separate APIs for User, Seller, and Admin functionalities.

Architecture

1. Follows 3-tier MERN architecture (Frontend, Backend, Database).
2. Ensures scalability, maintainability, and secure system design.