

Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	31 January 2025
Team ID	LTVIP2026TMIDS79179
Project Name	ShopSmart – A Full-Stack Digital Grocery Store Web Application
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 Registration	Registration through Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User login	<ul style="list-style-type: none">• Login using registered email & password• Credential validation• JWT token-based authentication• Redirect to dashboard after login
FR-4	Product Management	<ul style="list-style-type: none">• Display all products with images• Category-based filtering• Search functionality• Add new product (Admin)• Edit/Delete product (Admin)• Stock quantity management
FR-5	Category Management	<ul style="list-style-type: none">• Add category• Edit/Delete category• Activate/Deactivate category• Assign products to categories
FR-6	Shopping Cart	<ul style="list-style-type: none">• Add items to cart• Update product quantity• Remove items from cart• Real-time total price calculation• Persist cart data in database

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	<ul style="list-style-type: none">• User-friendly and intuitive interface• Responsive design for desktop, tablet, and mobile• Easy navigation and search functionality
NFR-2	Security	<ul style="list-style-type: none">• Password encryption using bcrypt• JWT-based authentication• Protected API endpoints• Role-based access control• CORS configuration• Input validation to prevent injection attacks
NFR-3	Reliability	<ul style="list-style-type: none">• Proper error handling and validation• Consistent database connectivity• Secure cloud hosting with MongoDB Atlas• Data integrity and backup support
NFR-4	Performance	<ul style="list-style-type: none">• Page load time less than 3 seconds• API response time less than 500ms• Optimized database queries• Efficient image upload handling
NFR-5	Availability	<ul style="list-style-type: none">• Cloud-based deployment for 24/7 access• Accessible from any device with internet• High uptime server configuration

NFR-6	Scalability	<ul style="list-style-type: none">• Cloud database supports future growth• Modular architecture for feature expansion• RESTful API design for integration with mobile apps• Easy addition of new products and categories