

Requirement Analysis

Solution Requirements (Functional & Non-functional)

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Team ID	LTVIP2025TMID48554
Project Name	ShopSmart: Your Digital Grocery Store Experience

Functional and Non-Functional Requirements:

To ensure the successful design and implementation of the ShopSmart platform, both functional and non-functional requirements were carefully analyzed and defined. These requirements serve as the foundation for the system's features, behavior, and overall performance.

Functional Requirements

Functional Requirements describe the core features and actions the system must perform to satisfy the end-users' needs. These include user registration, product browsing, order placement, role-based dashboards, and more. Each functional requirement is further divided into epics and user stories/sub-tasks to represent the expected behavior and user interactions with the system.

Non- Functional Requirements

Non-Functional Requirements define the quality attributes and operational capabilities of the system, such as security, usability, performance, scalability, and reliability. These characteristics are crucial to ensure a smooth, efficient, and secure user experience across various usage scenarios and growing user bases.

The following tables outline both the functional and non-functional requirements for the ShopSmart platform.

Functional Requirements:

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	Product Browsing & Search	Filter by Category (Fruits, Vegetables, Dairy, etc.)
		Sort by Price, Name, Rating
		Keyword-based Search
FR-4	Cart Management	Add to Cart
		Update Quantity
		Remove from Cart
FR-5	Order Placement	Address Input
		Choose Payment Method (COD)
		Place Order
FR-6	Order Tracking	View Order Status
		Estimated Delivery Time
FR-7	User Account Management	View Past Orders
		Edit Profile Information
		Change Password

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-8	Seller Product Management	Add New Product
		Update/Delete Product
		View Sales & Orders
FR-9	Admin Management	Approve Seller Requests
		Add/Remove Product Listings
		Manage Users and Sellers
FR-10	Authentication & Authorization	JWT-based Secure Login
		Role-Based Access Control (Customer/Seller/Admin)

Non-Functional Requirements:

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Intuitive UI with user-friendly navigation for all user roles
NFR-2	Security	Data protection using JWT, password hashing, and HTTPS protocols
NFR-3	Reliability	Ensures reliable operation even during high traffic or partial server failure
NFR-4	Performance	Fast API responses; optimized images and data for low-latency browsing
NFR-5	Availability	24/7 access to services with minimal downtime and failover support
NFR-6	Scalability	Easily scalable architecture (MERN) to handle future growth and feature load