

## Requirement Analysis

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

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Team ID	LTVIP2025TMID48994
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:**

<b>FR No.</b>	<b>Functional Requirement (Epic)</b>	<b>Sub Requirement (Story / Sub-Task)</b>
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