# Solution Requirements for ShopSmart

**Project Name: ShopSmart – Your Digital Grocery Store Experience**

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# Functional Requirements

These describe what the system should do:

## User Management

* + Users should be able to register and log in.
  + JWT-based authentication and session management.
  + Separate roles for **Admin** and **Customer**.

## Product Management

* + Users can view all products by category.
  + Search and filter functionality by name, brand, and price.
  + Admin can add, edit, and delete products.

## Cart and Checkout

* + Users can add items to the cart and update quantities.
  + View cart summary with total amount.
  + Checkout page to place orders.

## Order Management

* + Orders are stored with user details, items, total price, and date.
  + Users can view order history and track status.
  + Admin can view all orders and update delivery status.

# Non-Functional Requirements

These define the quality and performance standards:

## Security

* + User passwords encrypted with bcrypt.
  + JWT used for secure authentication.
  + Route protection for both admin and users.

## Performance

* + API responses optimized for minimal latency.
  + Lazy loading on the frontend to improve performance.

## Scalability

* + Modular architecture for easy expansion (e.g., coupons, payment gateways).
  + Can scale horizontally with additional services if required.

## User Interface

* + Clean, modern UI using React and Bootstrap.
  + Mobile-responsive design for accessibility on different devices.

## Database Requirements

* + MongoDB to store user, product, order, and cart data.
  + Well-structured schema relationships using Mongoose.

# System Requirements

## Frontend:

* + React.js (with Hooks and functional components)
  + Bootstrap/CSS for styling

## Backend:

* + Node.js with Express.js framework
  + JWT & bcrypt for auth & security

## Database:

* + MongoDB (hosted via MongoDB Atlas or locally)

## Tools:

* + Postman (for API testing)
  + VS Code (development)
  + Git & GitHub (version control)