Final Report: ShopSmart - Digital Grocery Store Web App

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1. INTRODUCTION

1.1 Project Overview

ShopSmart is a full-stack MERN (MongoDB, Express.js, React.js, Node.js) web application designed to simplify and digitalize the grocery shopping experience. The platform offers user-friendly interfaces and separate roles for customers, sellers, and administrators.

1.2 Purpose

The project aims to automate the grocery shopping process and bridge the gap between local grocery sellers and buyers through an online interface.

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2. IDEATION PHASE

2.1 Problem Statement

Traditional grocery shopping lacks convenience and digital integration. There is a need for an online solution that connects buyers with sellers and allows for easy product management and purchasing.

2.2 Empathy Map Canvas

- **Users:** Grocery customers, Sellers, Admins
- **Pain Points:** Inconvenient shopping experience, limited store access, manual order tracking
- **Needs:** Easy ordering, secure payments, seller management dashboard

2.3 Brainstorming

- Online product catalog
- Secure authentication
- Admin panel for seller and order control
- Responsive UI with role-specific dashboards

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3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

1. Register/Login
2. Browse products
3. Add items to cart
4. Place order

5. Receive confirmation

3.2 Solution Requirement

- Role-based login
- Product upload and management (Seller)
- Order placement and tracking (Customer)
- Admin control over users and orders

3.3 Data Flow Diagram

[To be attached if required – includes modules: User Auth, Product, Cart, Order]

3.4 Technology Stack

- **Frontend:** React.js
- **Backend:** Node.js, Express.js
- **Database:** MongoDB (Atlas)
- **Auth:** JWT

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4. PROJECT DESIGN

4.1 Problem-Solution Fit

A centralized online grocery store enables quick shopping, inventory management, and role-specific control panels.

4.2 Proposed Solution

A scalable and responsive MERN stack solution with complete CRUD functionality for users, products, and orders.

4.3 Solution Architecture

- React.js frontend consuming REST APIs
- Node.js/Express.js backend with routing and JWT auth
- MongoDB for persistent data storage

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5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

- Week 1: Requirement Gathering, UI Design
- Week 2–3: Frontend & Backend Development
- Week 4: Integration and Testing
- Week 5: Documentation and Final Deployment

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

- Manual API testing via Postman
- Tested for CRUD operations
- Role-based access verified with JWT sessions

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7. RESULTS

7.1 Output Screenshots

- Login and Signup Page
- Product Display for Customers
- Seller Product Upload Panel
- Admin Dashboard Overview

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8. ADVANTAGES & DISADVANTAGES

Advantages:

- Seamless online grocery shopping experience
- Scalable and secure backend
- Role-based accessibility

Disadvantages:

- Lacks real-time order updates
- No integrated payment gateway (currently)

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9. CONCLUSION

ShopSmart proves to be a complete digital grocery solution offering convenience to users and control to administrators. It solves the gap in local grocery shopping with a modern tech approach.

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10. FUTURE SCOPE

- Add payment gateway (Razorpay/Stripe)
- Implement email order notifications
- Add product search and filtering
- Real-time order updates using sockets

11. APPENDIX

Source Code: [GitHub Repo Link \:https\://github.com/laharimutyala/Shopsmart.git

Dataset Link: Not applicable (data handled manually)

GitHub & Project Demo Link: [Demo URL:https://youtu.be/5n5gHlaumRI]