Shopsmart: Your Digital Grocery– Final Project Report

1. INTRODUCTION

1.1 Project Overview

ShopSmart is a MERN-stack based digital grocery shopping platform that connects customers, grocery sellers, and administrators. Users can browse categories, add products to their cart, and place orders. Sellers can manage inventory and orders through a seller dashboard, while admins manage product promotions and platform governance.

1.2 Purpose

To build a real-time, responsive online grocery store with role-based access for customers, sellers, and admins, delivering seamless UI/UX, secure transactions, and efficient backend operations.

2. IDEATION PHASE

2.1 Problem Statement

Local grocery stores and customers often face challenges in digitizing their shopping experience. How might we streamline the grocery shopping process through a simple, accessible, and real-time web platform?

2.2 Empathy Map Canvas

Who are we empathizing with? Customers and local grocery shop owners
What do they see/hear/do/feel?

- See: Disorganized item availability

- Hear: Stock issues, late deliveries

- Do: Visit stores physically or make calls

- Feel: Anxious about freshness, unplanned shopping

2.3 Brainstorming

Grouped Ideas:

- **Customer Experience:** Intuitive UI, categorized items, real-time cart

- **Seller Experience:** Inventory updates, order management

- **Admin Tools collaborative brainstorming.:** Manage sellers, promote products
  Used sticky notes and Miro for

3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

1. Visit Homepage →

2. Browse Grocery Categories →

3. Add Products to Cart →

4. Login/Signup →

5. Checkout and Place Order →

6. Track Order →

7. Provide Feedback

3.2 Solution Requirement

Functional:

- Role-based login

- Product search, cart management, order placement

- Seller dashboard for stock & orders

- Admin dashboard for promotions

Non-functional:

- Responsive design

- Token-based authentication

- Scalable backend with RESTful APIs

3.3 Data Flow Diagram

Level-0 DFD includes:

- **Actors:** Users, Sellers, Admins

- **Processes**: Auth, Cart, Orders, Product Management, Promotions

- **Stores**: MongoDB collections for users, sellers, products, orders, and carts

3.4 Technology Stack

- **Frontend:** React.js

- **Backend:** Node.js, Express.js

- **Database:** MongoDB

- **Security:** JWT authentication

- **Architecture:** 3-tier MERN-based system

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4. PROJECT DESIGN

4.1 Problem Solution Fit

Bridging local grocery stores and customers via a digital, responsive shopping experience with role-specific tools.

4.2 Proposed Solution

Key Features:

- Role-based login (Customer / Seller / Admin)

- Categorized grocery browsing

- Cart and order system

- Seller panel for inventory management

- Admin dashboard for promotions

4.3 Solution Architecture

User Interface (React.js)

   ↓ API Calls

Application Logic (Node.js + Express)

   ↓ MongoDB Database

Supports real-time operations, modular structure, and scalability.

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5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

- Project divided into 4 Sprints

- Each sprint delivers core functionality

- Used story points, burndown charts, and velocity tracking to manage progress
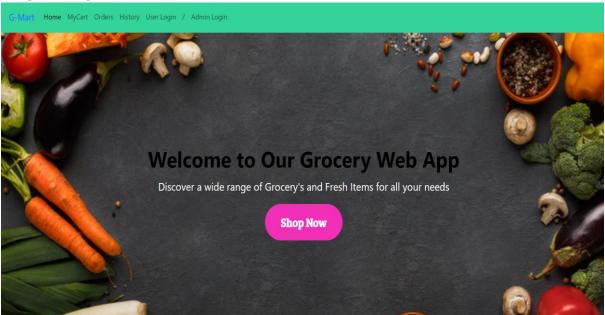
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6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing (UAT)

- Secure registration/login for customers, sellers, admins

- Product cart and checkout tested

- Inventory updates from seller side

- Role access verification
  ☑ All core features tested and validated

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7. RESULTS

7.1 Output Screenshots

Home Page with flight search

Login form

Items Page:

My Cart:-

My Orders Page:-

Order ID: 6614b085c30b51d3c700f20a
Name: syed arshad
Phone: 9505221870
Date: 2024-04-09T03:05:41.563Z
Price: 400
Status: Pending
Payment Method: credit

My History Page:-

My History

Order ID: 6614a8ddc30b51d3c700f1b4
Name: syed arshad
Phone: 9505221870
Date: 2024-04-09T02:36:47.498Z
Price: 400
Status: Delivered
Payment Method: debit

Place Order Page:-

Order Details

First Name:
Enter your first name

Last Name:
Enter your last name

Phone:
Enter your phone number

Quantity:
Enter the quantity

Address:
Enter your address

Payment Method:
Cash on Delivery (COD)

Submit

localhost:3000/login

Users Page:-

Users

sl/no	UserId	User name	Email	Operation
1	6614a859c30b51d3c700f1a0	syed	syed@gmail.com	view

Add Product page:-

Add Product

Product Name	Rating	Price
Enter product name	Enter product rating	Enter product price

Image URL	Category	Count in Stock
Enter image URL	Select Category	Enter count in stock

Description

Enter product description

Add Product

Admin Orders Page:-

Orders

Order ID: 6614a8ddc30b51d3c700f1b4
Fullname: syed arshad
Phone: 9505221870
Product ID: 660e84641c659d0b2b10e135
Quantity: 2
Total price: 400
Payment Method: debit
Address: hyderabad
Created At: 2024-04-09T02:36:47.498Z

Status: Delivered   Delivered

Order ID: 6614b085c30b51d3c700f20a
Fullname: syed arshad
Phone: 9505221870
Product ID: 660e84641c659d0b2b10e135
Quantity: 2
Total price: 400

8. ADVANTAGES & DISADVANTAGES

✅ Advantages

- Real-time grocery ordering

- Role-specific dashboards

- Responsive UI on all devices

- Secure authentication using JWT

- Admin control over featured products

✖ Disadvantages

- No native mobile app yet

- Payment gateway integration pending (demo phase)

9. CONCLUSION

ShopSmart successfully simulates a full-featured online grocery platform using MERN technologies. It incorporates secure login, live cart management, seller dashboards, and an admin panel for governance.

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10. FUTURE SCOPE

- Integrate real payment gateways (e.g., Razorpay, Stripe)

- Develop a delivery tracking system

- Create a mobile version using React Native

- Enable customer reviews and ratings

- Add sales analytics for admin/seller dashboards

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11. APPENDIX

- **Source Code:** https://github.com/Leelamanohar123/ShopSmart-Your-Digital-Grocery-Store-Experience