

ShopSmart - Final Project Report

Project Report Format

1. INTRODUCTION

1.1 Project Overview

ShopSmart is an intelligent shopping assistant platform designed to enhance the customer shopping experience through personalized recommendations, efficient product searches, and a seamless interface for both users and retailers.

1.2 Purpose

The project aims to streamline the online shopping process by integrating AI-driven recommendations, real-time inventory tracking, and smart filters, thus improving user satisfaction and increasing sales for vendors.

2. IDEATION PHASE

2.1 Problem Statement

Online shoppers often face challenges in finding the right products efficiently. Overwhelming choices, poor search results, and lack of personalization lead to poor user experience and high cart abandonment rates.

2.2 Empathy Map Canvas

(Include user persona-based observations: Thinks, Feels, Says, Does)

2.3 Brainstorming

Ideas included:

- AI-based recommendations
- Inventory alerts
- Voice-assisted search
- Budget filters

3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

(Start from landing page to successful purchase)

3.2 Solution Requirement

- User authentication
- Search and filter functionality

- Product recommendation engine
- Order tracking system

3.3 Data Flow Diagram

(Include Level 0 & Level 1 DFDs)

3.4 Technology Stack

- Frontend: React.js
- Backend: Node.js + Express
- Database: MongoDB
- AI: Python (for recommendation engine)

4. PROJECT DESIGN

4.1 Problem-Solution Fit

The platform matches the need for smarter and quicker shopping experiences with AI and clean UI/UX.

4.2 Proposed Solution

A web platform integrating personalized recommendations and a smart search engine for better shopping outcomes.

4.3 Solution Architecture

(Include system architecture diagram showing frontend, backend, DB, AI layer)

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Gantt chart with timelines for:

- Requirement Gathering
- Development
- Testing
- Deployment

6. FUNCTIONAL AND PERFORMANCE TESTING

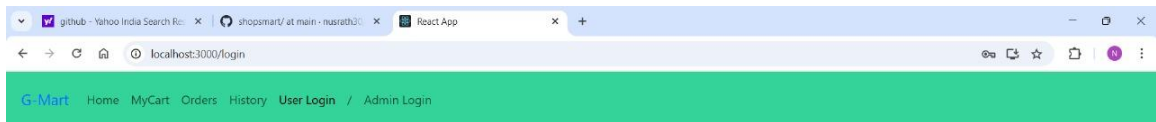
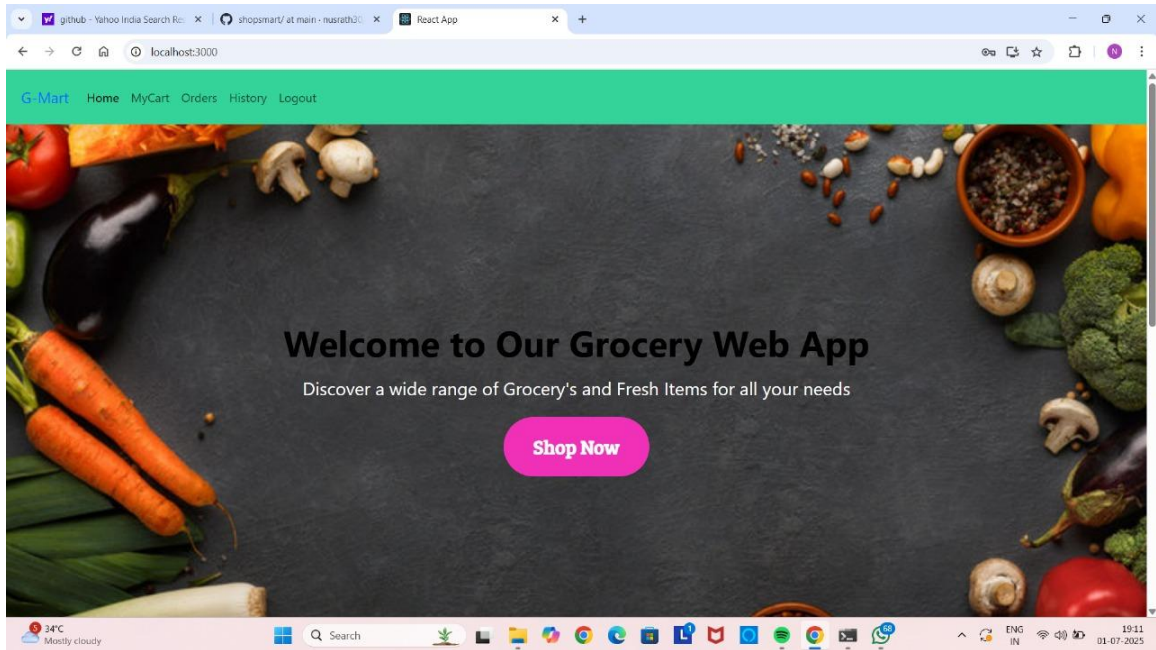
6.1 Performance Testing

- Load testing for 1000 users
- API response time < 500ms
- Search query response under 1 sec

7. RESULTS

7.1 Output Screenshots

- Homepage
- Product listing with filters
- AI recommendation section
- Checkout and order summary



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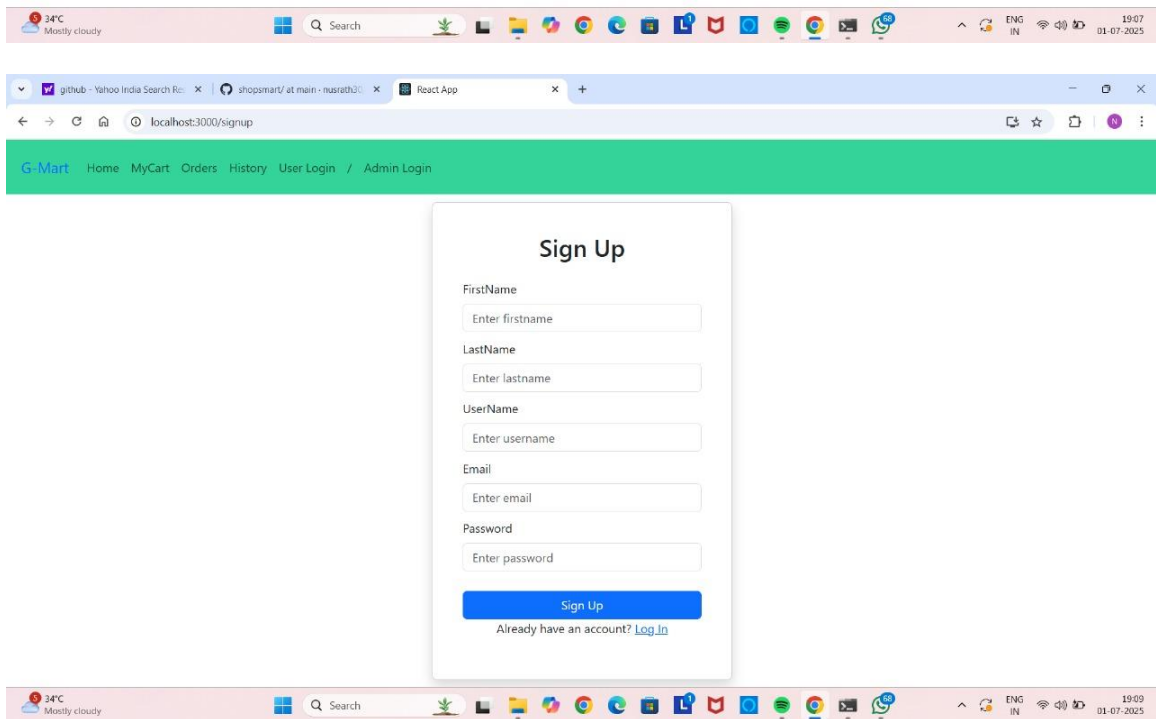
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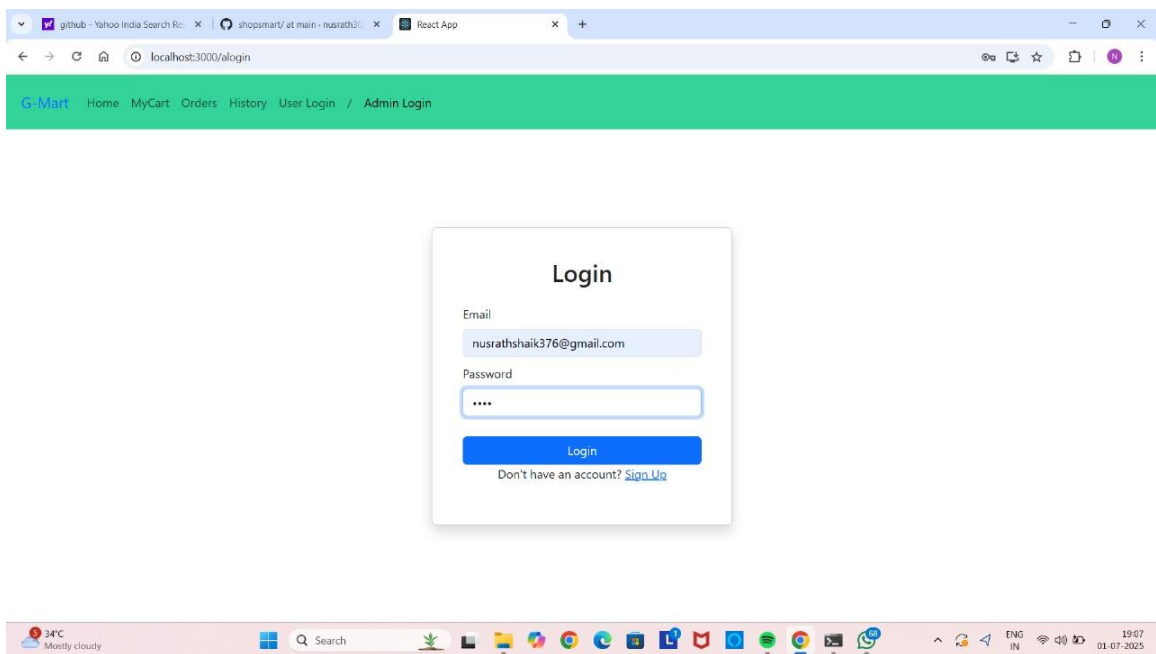
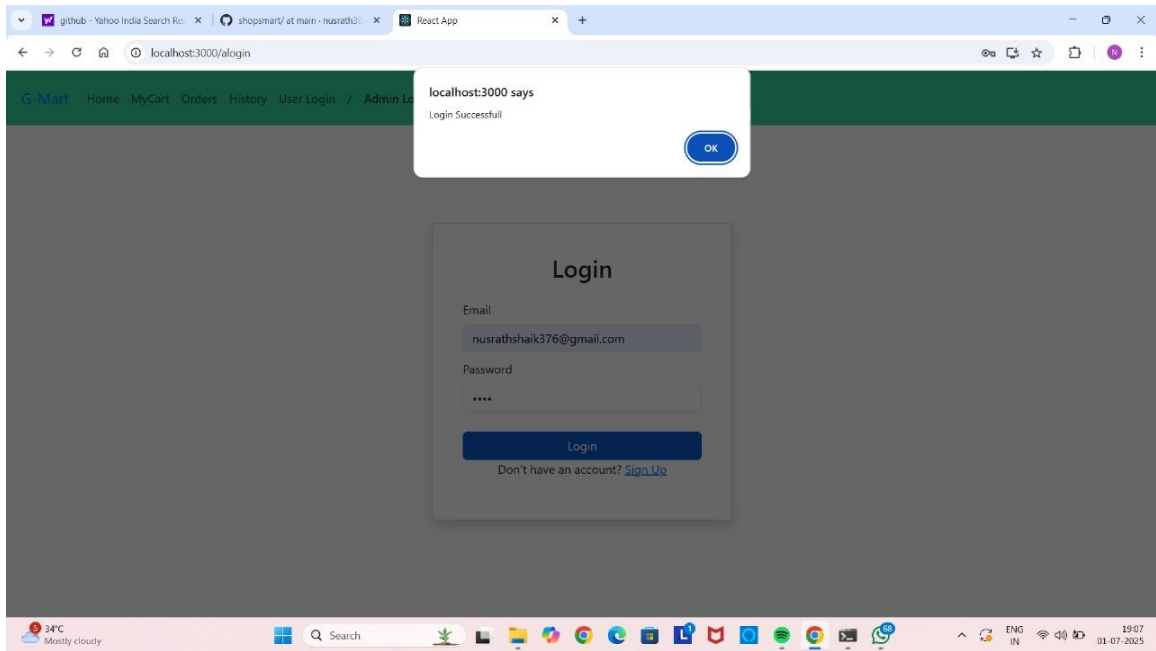
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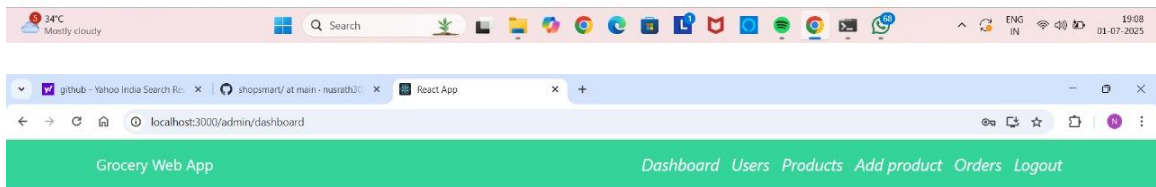
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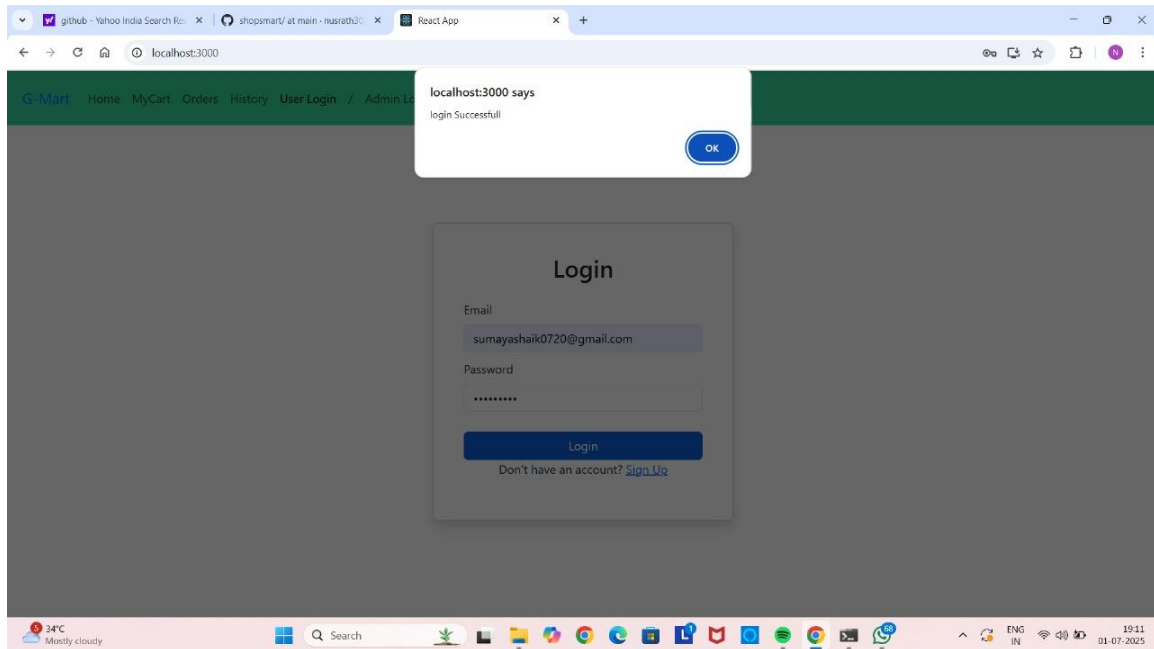
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8. ADVANTAGES & DISADVANTAGES

Advantages:

- Personalized user experience
- Time-saving search and suggestions
- Scalable and modular design

Disadvantages:

- Initial setup cost
- Dependency on user data for recommendations

9. CONCLUSION

ShopSmart successfully bridges the gap between overwhelming product choices and personalized shopping, providing users with a tailored, efficient, and enjoyable shopping journey.

10. FUTURE SCOPE

- Mobile app integration
- Voice-based shopping assistant
- Integration with AR for virtual try-ons

11. APPENDIX

- Source Code : <https://github.com/nusrath30/shopsmart/tree/main>
- Project demo video : <https://github.com/nusrath30/shopsmart/tree/main/Video%20Demo>