

Mart Minder

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Abstract — In today's fast-paced lifestyle, grocery shopping and household inventory management have become increasingly inefficient, often leading to time loss, over-purchasing, and significant food wastage. Mart Minder is a smart grocery ordering and zero-waste tracking application designed to simplify grocery shopping while promoting responsible consumption. The system enables users to locate nearby supermarkets using GPS, pre-order groceries online, and choose between home delivery or packed store pickup, thereby reducing in-store time and waiting queues. Beyond shopping convenience, Mart Minder introduces an integrated Zero Waste dashboard that automatically tracks purchased items, monitors expiry dates, and provides timely reminders to prevent spoilage. The application analyzes user purchase and usage patterns to generate visual reports on consumption and wastage, helping users make informed buying decisions. By combining e-commerce functionality with intelligent product lifecycle monitoring, Mart Minder addresses both convenience and sustainability. The platform is built using a modern full-stack architecture with secure authentication, real-time data handling, and responsive user interfaces. Overall, Mart Minder enhances user experience, reduces food waste, and supports eco-friendly living while also empowering local supermarkets with a digital ordering system. The system also provides scalability for future enhancements such as AI-based usage prediction, smart reorder recommendations, and personalized insights. By leveraging data analytics and automation, Mart Minder bridges the gap between digital grocery shopping and sustainable household management.

Auto Commit Mate: Boosting developer productivity through automated GitHub commits

I. INTRODUCTION

In today's fast-paced urban lifestyle, grocery shopping and household food management have become increasingly challenging. With busy schedules, large supermarkets, and frequent bulk purchases, consumers often face issues such as time-consuming shopping experiences, forgotten expiry dates, and unnecessary food wastage. Despite the availability of online grocery platforms, most existing

solutions focus primarily on order delivery and convenience, while overlooking post-purchase usage tracking and waste prevention.

Mart Minder is a smart grocery ordering and zero-waste management application designed to address these challenges by combining local grocery e-commerce with intelligent product usage monitoring. The platform enables users to locate nearby supermarkets using location-based services, browse available products, and place orders in advance. Users can choose between home delivery or packed store pickup, allowing them to avoid long queues and reduce in-store time, thereby making grocery shopping more efficient and user-friendly.

Beyond simplifying the purchasing process, Mart Minder introduces an integrated Zero Waste dashboard that focuses on responsible consumption. Once an order is placed, purchased items are automatically tracked within the system, where expiry dates, quantities, and usage patterns are monitored. The application provides timely reminders before products expire and presents visual analytics that highlight consumption trends and potential wastage. This helps users develop better purchasing habits and minimize unnecessary food loss.

II. LITERATURE REVIEW

2.1 "Diogo Davidson Albuquerque; Ganga Bhavani; Bhawna Gaur; Shruthi Kuttipravan; "A Smart Mobile Application to Boost Grocery Shoppers Experiential Marketing", 2021 INTERNATIONAL CONFERENCE ON COMPUTATIONAL INTELLIGENCE ..., 2021."

It is researched that people deal with many issues when they go for shopping for food and grocery. The outcomes of this study proposes that individuals have faced various states of foods grown from the ground that are not appropriately organized and inconsistency in costs of the items, etc. We have applications that overcomes any barrier among clients (TripAdvisor, Zomato, Trivago, and so on).

2.2 “Mohammad Fahrizal Ardiyansyah; Arief Senja Fitriani; "Sales Management System in Grocery Store Mobile Phone Based", PROCEDIA OF ENGINEERING AND LIFE SCIENCE, 2021”

A grocery store is a small shop that is easily accessible to the public and is located on a busy street, gas station, train station or in a densely populated urban or residential area. Most of these types of shops are traditional in nature, where buyers cannot freely pick up their own goods, usually there is a dividing screen in the form of a window or shelf. If you pay attention, actually the goods sold in grocery stores are almost similar to those sold in supermarkets such as Alfamart or Indomart

2.3 “Elistia Elistia; Resty Emerellia Septiani; "Determinants of Repurchase Intention on E-Grocery Alfagift", INTERNATIONAL JOURNAL OF MANAGEMENT SCIENCE AND INFORMATION ..., 2023.”

The rapid development of technology affects people's online shopping activities through e-grocery applications, which are widely used because they provide convenience for customers. Repurchase intention is one of the most important things because it will show repurchase if the customer is satisfied with the product and service received. This study analyses the influence of customer trust, customer satisfaction, engagement, and repurchase intention.

2.4 “Glisina Dwinoor Rembulan; Pas Mahyu Akhrianto; Dedit Priyono; Dendy K. Pramudito; Dedy Irwan; "Evaluation and Improvement of E-Grocery Mobile Application User Interface Design Using Usability Testing and Human Centered Design Approach", JURNAL SISTIM INFORMASI DAN TEKNOLOGI, 2023.”

This study aims to determine the usability value of the e-grocery application interface design before and after repairs are carried out and provide recommendations for interface improvement designs using the Human-Centered Design (HCD) approach. The usability testing method and the system usability scale questionnaire are used to evaluate usability. The usability evaluation and design improvements to the e-grocery application have increased the effectiveness value of lower than 20% and an efficiency

value of lower than 30%, with the task processing time needed by respondents being faster and improved by more than 900 seconds.

2.5 “Abeer Hakeem, Layan Fakhurji, Raneem Alshareef, Elaf Aloufi, Manar Altairy, Afraa Attiah, Linda Mohaisen, “GROCAFAST: Revolutionizing Grocery Shopping for Seamless Convenience and Enhanced User Experience”, International Journal of Advanced Computer Science and Applications, Vol.15 No.4, 2024.”

This paper presents the Smart Grocery Shopping system (GROCAFAST), a system for optimizing the grocery shopping experience and improving efficiency for shoppers. The GROCAFAST system consists of a mobile app and a server component. The mobile app allows shoppers to create, manage, and update grocery lists while providing store navigation assistance.

2.6 “M Mkansi, “Mobile application e-grocery retail adoption challenges and ...”, PMC (NIH), 2023 — Study on adoption issues in e-grocery apps.”

This paper explores how small and medium-sized e-grocery mobile application retailers evolving within the geographical context of South Africa and operating in the urban, township, and rural areas respond to theoretically and emerging field-based e-business and e-grocery adoption challenges, respectively. The study used semi-structured qualitative interviews to explore the coping strategies of e-grocery mobile application retailers to mitigate technological, organizational, and environmental (TOE) adoption challenges.

2.7 “R Wolniak, “Digital Transformation of Grocery In-Store Shopping – Scanners and Smart Technology”, 2024 — Review on tech reshaping grocery retail.”

This paper reviews the digital transformation of grocery shopping, focusing on the technological innovations that have redefined consumer experiences over the past decades. By analyzing both academic literature and up-to-date information from websites, the study provides a review of the evolution of grocery shopping from traditional methods to modern, technology-driven approaches.

2.8 “R Faro, “A Mobile App for Food Purchase Decision and Waste Minimization”, SCITEPRESS, 2025 — Mobile app and waste reduction study.”

Chatbots and conversational systems are increasingly emerging as technologies to support decision-making systems and to improve human-machine interaction. Our paper aims to demonstrate how social media and chatbots can improve the decisions of a consumer of food products and reduce food waste, whereas simplified conversational systems are taken into account to facilitate the interaction between users and application.

2.9 “Pratyaksh Dixit, Ashwani Kumar, Rohan Pal, “AI-Driven Smart Grocery Ordering System”, IOSR Journal of Engineering, Vol.15 Issue 5, May 2025 — AI in grocery orders and analytics.”

The rapid advancement of artificial intelligence (AI) has opened new avenues for innovation in retail, particularly in the domain of grocery management. This paper presents a Smart Grocery Ordering System that utilizes AI-driven predictive analytics and personalized health recommendations to optimize the shopping experience. The proposed system analyzes individual consumption behavior using machine learning techniques to forecast future grocery needs, automate routine ordering, and provide nutritional guidance tailored to specific medical conditions

2.10 “K Stecula, “Technology Development in Online Grocery Shopping: Trends and Innovations”, MDPI Foods, 2024 — Review of online grocery tech.”

This paper presents a review of the technologies and services associated with online grocery shopping. The progress in the field of online grocery shopping has been very rapid in recent years. Hence, there was a need to systematize knowledge about the latest various solutions used in this topic. The authors searched the internet, focusing on websites of different supermarkets, shops, and other services that offer online shopping, as well as reviewed scientific papers.

III. EXSISTING SYSTEM

In the current grocery shopping ecosystem, consumers rely either on traditional in-store shopping or basic online grocery delivery platforms. Traditional grocery shopping

requires users to physically visit supermarkets, browse through large aisles, select products manually, and wait in long billing queues. This process is time-consuming, tiring, and inefficient, especially for working professionals, elderly individuals, and people with busy schedules.

Although online grocery applications provide ordering and home delivery options, most existing systems focus solely on the purchasing process. They do not track how groceries are used after purchase, nor do they provide any insights into expiry dates, consumption patterns, or food wastage. Users must manually remember expiry dates or monitor items themselves, which often leads to spoiled food and unnecessary waste.

DRAWBACKS:

- ✓ Time-Consuming Shopping Process
- ✓ No Post-Purchase Tracking
- ✓ High Food Wastage
- ✓ Separate Platforms for Related Tasks
- ✓ Lack of Usage Analytics
- ✓ No Smart Purchase Guidance

IV. PROPOSED SYSTEM

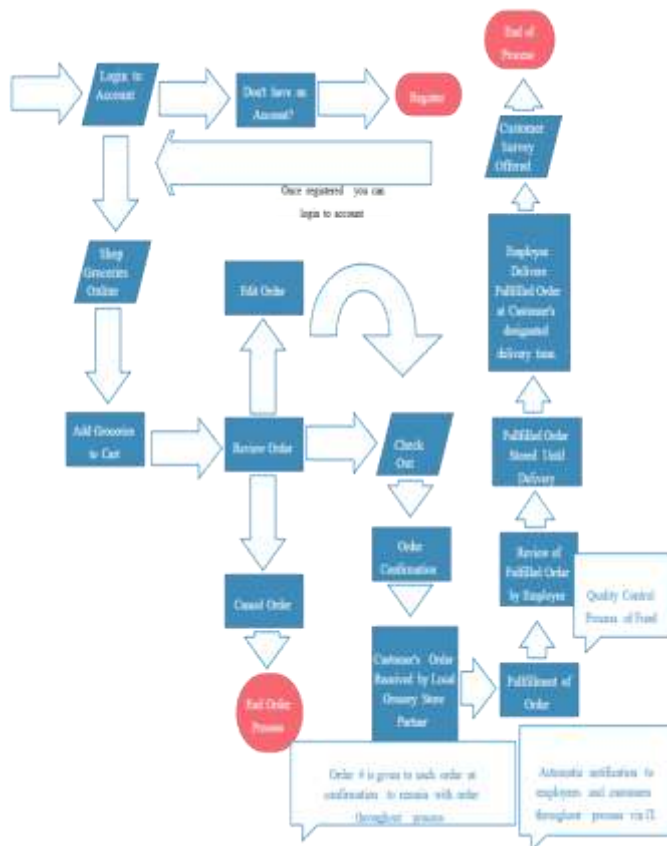
The proposed system, Mart Minder, is a smart grocery ordering and zero-waste management platform designed to simplify grocery shopping while promoting sustainable consumption. The system allows users to securely log in using Google OAuth and select their location to discover nearby supermarkets. Users can browse products based on categories available in the selected supermarket, add items with required quantities to a cart, and place orders by choosing either home delivery or packed store pickup. This approach reduces the time spent in supermarkets and eliminates long billing queues. Once an order is confirmed, the purchased items are automatically synchronized with the Zero Waste Dashboard.

ADVANTAGES:

- ✓ Time-Saving Grocery Shopping
- ✓ Reduced Food Wastage
- ✓ Automatic Usage Tracking
- ✓ Data-Driven Consumption Insights
- ✓ Flexible Delivery Options
- ✓ Support for Local Supermarkets

V. METHODOLOGY

The design approach of Mart Minder focuses on integrating online grocery ordering with intelligent post-purchase tracking to reduce food waste and improve shopping efficiency. The system flow begins when a user logs into the application using Google OAuth authentication. After successful login, the user selects their location either automatically using GPS or manually. Based on the selected location, the system retrieves and displays nearby supermarkets. Once a supermarket is selected, the application dynamically fetches available product categories derived from that supermarket's product listings. Users can browse products, add items with required quantities to the cart, and proceed to checkout.



VI. SIMULATED RESULT

5.2.1 TEST CASE 1:



FIGURE 5.1 AUTHENTICATION PAGE

5.2.2 TEST CASE 2:



FIGURE 5.2 LANDING PAGE

5.2.3 TEST CASE 3:



FIGURE 5.3 PRODUCT PAGE

5.2.4 TEST CASE 4:

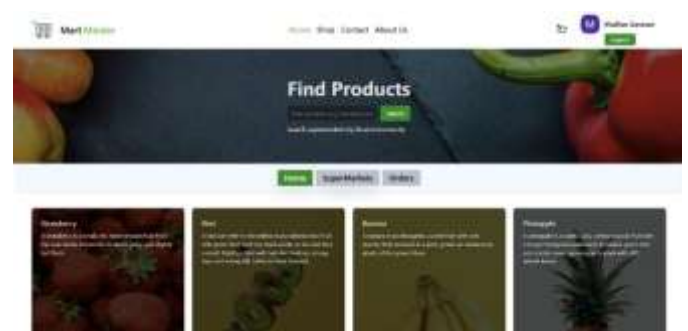


FIGURE 5.4 SUPERMARKET SEARCH PAGE

5.2.5 TEST CASE 5:

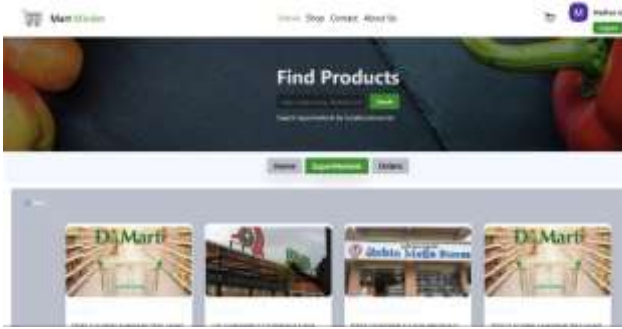


FIGURE 5.5 SUPERMARKET PAGE

5.2.6 TEST CASE 6:

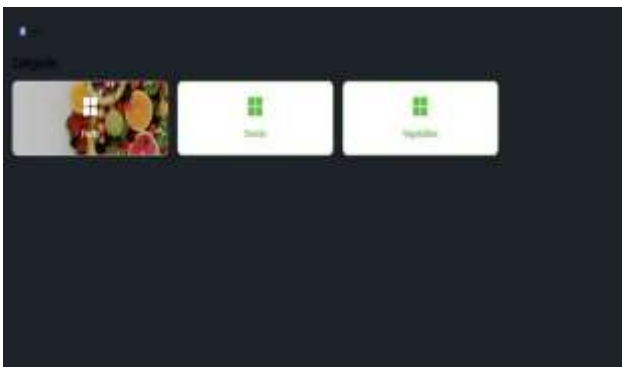


FIGURE 5.6 PRODUCT CATEGORY PAGE

5.2.7 TEST CASE 7:

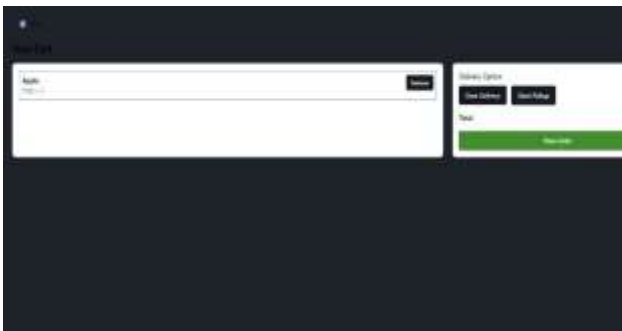


FIGURE 5.7 ADD TO CART PAGE

5.2.8 TEST CASE 8:



FIGURE 5.8 ORDER PAGE

5.2.9 TEST CASE 9:



FIGURE 5.9 ZERO WASTE DASHBOARD

VII. CONCLUSION

Mart Minder successfully delivers a smart and integrated solution for modern grocery shopping and zero-waste management. By combining online grocery ordering with intelligent post-purchase tracking, the system significantly reduces the time and effort involved in traditional shopping while promoting responsible consumption. The application enables users to locate nearby supermarkets, pre-order groceries, and choose flexible delivery or pickup options, ensuring convenience and efficiency. The integrated ZeroWaste Dashboard effectively tracks expiry dates, monitors usage, and provides visual analytics that help users reduce food wastage and make informed purchasing decisions. Secure authentication, responsive design, and automated data synchronization enhance system reliability and user experience. Overall, Mart Minder demonstrates how technology can be applied to address real-world challenges related to time management, sustainability, and resource optimization, making it a practical and impactful solution.

VIII. FUTURE WORKS

Future versions of Mart Minder can incorporate machine learning models to analyze historical consumption patterns and predict when groceries are likely to run out. This will enable proactive alerts and smart reorder recommendations. By leveraging AI, the system can suggest optimal purchase quantities and automatically recommend reordering frequently used items, helping users avoid both shortages and over-purchasing. Advanced analytics can be implemented to identify recurring wastage patterns and provide personalized suggestions to minimize waste, such as recommending smaller pack sizes or alternative products. Integrating a voice-

enabled assistant can allow users to add items to the cart, check expiry status, or receive reminders using voice commands, improving accessibility and ease of use. AI-based route optimization can be introduced for delivery services to minimize delivery time and fuel consumption, supporting both efficiency and environmental sustainability. Future enhancements can support family or household profiles, allowing multiple users to update product usage and view shared dashboards collaboratively.

IX. RESULT

The Mart Minder application successfully delivers an integrated solution for smart grocery ordering and zero-waste management. The system enables users to conveniently locate nearby supermarkets, pre-order groceries, and choose between home delivery or packed store pickup, significantly reducing shopping time and effort. By automating the synchronization of purchased items with the Zero Waste Dashboard, the application ensures accurate and effortless tracking of grocery usage without requiring manual input from users. The expiry tracking and reminder functionality effectively alerts users before products expire, helping to minimize food spoilage and household waste.

X. REFERENCES

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