

Smart Agro Mart Management System

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Abstract. The Smart Agro Mart Management System is a web-based platform developed to improve the management, accessibility, and purchasing of agricultural products and services. The system provides farmers and customers with convenient access to agricultural products, allowing them to browse product information, check product availability, place orders, and purchase farming supplies online. It also provides agricultural advice to support users in making informed farming decisions. In addition, the system includes online payment, delivery management, order tracking, and invoice generation features to provide a convenient and efficient purchasing experience. For administrators, the system supports the management of products, categories, stock, customer orders, delivery information, payments, and sales records, helping to reduce manual work, minimize errors, and improve overall management efficiency. By applying modern web technologies, the system provides a simple, organized, and user-friendly platform for agricultural commerce. This project demonstrates the effective application of information technology in the agricultural sector to promote digital commerce, improve service delivery, simplify agricultural product management, and provide a more convenient and efficient way for farmers and customers to access agricultural products and services.

Keywords: bakery management, point of sale, order management, product catalog, sales reporting, customer relationship management, stock management, payment gateway integration.

INTRODUCTION

Agriculture plays a vital role in food production, rural livelihoods, and economic development. However, farmers often face difficulties in accessing agricultural products, obtaining reliable farming information, and completing purchasing processes efficiently. They may need to spend considerable time and effort visiting agricultural stores to find suitable products and receive necessary information. In addition, traditional methods of managing products, stock, orders, and customer information can be time-consuming and may lead to management difficulties. To address these challenges, the Smart Agro Mart Management System was developed as a web-based platform that provides convenient access to agricultural products, detailed product information, agricultural advice, and secure online payment services. The system allows farmers and customers to browse available products, check product information, place orders, manage purchases, and receive essential farming support through a single platform. It also assists administrators in managing products, categories, stock, orders, delivery information, payments, and sales records more efficiently. By integrating these functions into one system, the platform helps reduce time and effort, improve the efficiency of

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agricultural product management, enhance the purchasing experience, and support better decision-making. Therefore, the Smart Agro Mart Management System contributes to the digital transformation of the agricultural sector by providing a more convenient, efficient, and organized approach to agricultural product and service management.

PROBLEM

Traditional methods of purchasing agricultural products require farmers to travel to physical agricultural stores, which can consume considerable time, effort, and transportation costs. Farmers may also face difficulties in finding suitable products and obtaining sufficient and reliable product information, particularly during busy farming periods. The lack of an organized online platform can make it difficult for farmers to compare products, check availability, place orders conveniently, and receive timely agricultural support. Furthermore, manual management of products, stock, orders, delivery information, and sales records can reduce operational efficiency and increase the possibility of errors. Therefore, a web-based system is needed to provide convenient access to agricultural products and information while supporting online purchasing, secure payment, delivery management, and agricultural advice. Such a system can improve the efficiency, transparency, and reliability of the agricultural supply process and provide a simple and user-friendly experience for both customers and administrators.

APPROACH

As shown in Figure 1, the user flow illustrates the main activities performed by users in the Smart Agro Mart Management System. The process begins at the home page, where users can access the About, Categories, Products, and Contact sections to obtain general information about the system and available agricultural products. Users can either register for a new account or log in using their registered email and password. After successful login, users can manage their profiles, provide feedback, request agricultural advice, browse available products, and place orders. When placing an order, users can review their selected products and proceed to payment using the available QR payment method. After completing their required activities, users can log out of the system, and the user flow is completed.

As shown in Figure 2, the admin flow illustrates the main functions and activities performed by the administrator in the Smart Agro Mart Management System. The process begins with the admin login, where the system requires the administrator to enter a valid email address and password. The system then verifies the login information, and access to the admin dashboard is granted only when the entered credentials are correct. After successful login, the administrator can view the dashboard and monitor the overall system activities. The administrator can manage users and feedback, manage agricultural products and categories, manage stock, provide and manage agricultural advice and services, manage customer orders, and manage delivery information. In addition, the administrator can generate customer invoices, send invoices to customers via email, and print invoices for record-keeping. These functions enable the administrator to efficiently control and monitor the main operations of the system. After completing the required management activities, the administrator can log out of the system, and the admin flow process is completed.

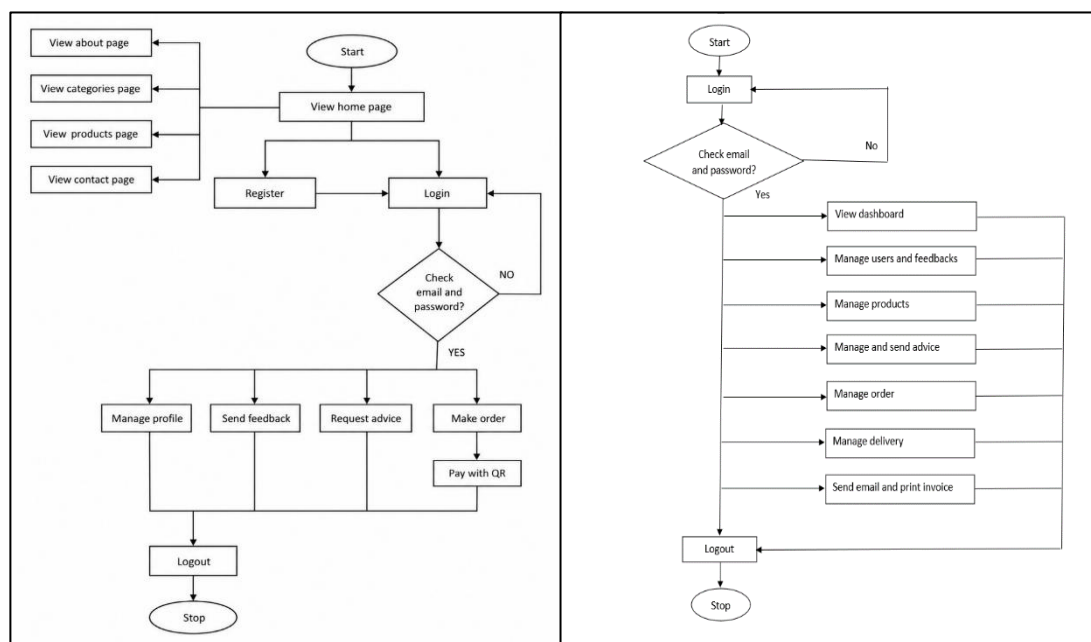
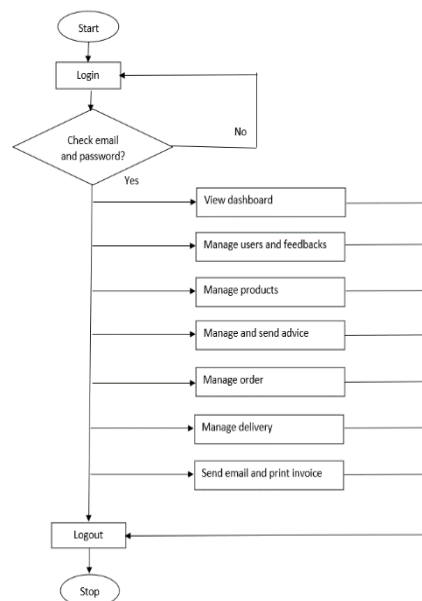
**Figure 1: System flow diagram for user****Figure 2: System flow diagram for admin**

Figure 3 presents the Entity Relationship Diagram (ERD) of the Smart Agro Mart Management System, illustrating the overall database structure and the relationships among the main entities involved in the system. The ERD provides a clear representation of how data is organized, stored, and interconnected through different database tables. Each entity contains specific attributes required to support the functions of the system, while primary keys are used to uniquely identify records and foreign keys are used to establish relationships between related tables. These relationships help maintain data consistency, reduce data redundancy, and ensure the integrity of the database. The ERD includes important entities such as users, categories, products, stock, orders, order items, delivery information, feedback, and agricultural advice. The relationships among these entities enable the system to efficiently store, retrieve, update, and manage information throughout the ordering and management processes. Overall, the ERD serves as an important foundation for designing and implementing a structured, reliable, and efficient database for the Smart Agro Mart Management System. The database consists of nine main tables:

- users – stores user and admin information.
- categories – stores product categories.
- products – stores product details.
- stocks – manages product stock.
- orders – stores customer orders.
- order_items – stores ordered product details.
- delivery_fees – manages delivery fees.
- feedbacks – stores user feedback.
- advice – stores advice requests and admin replies.

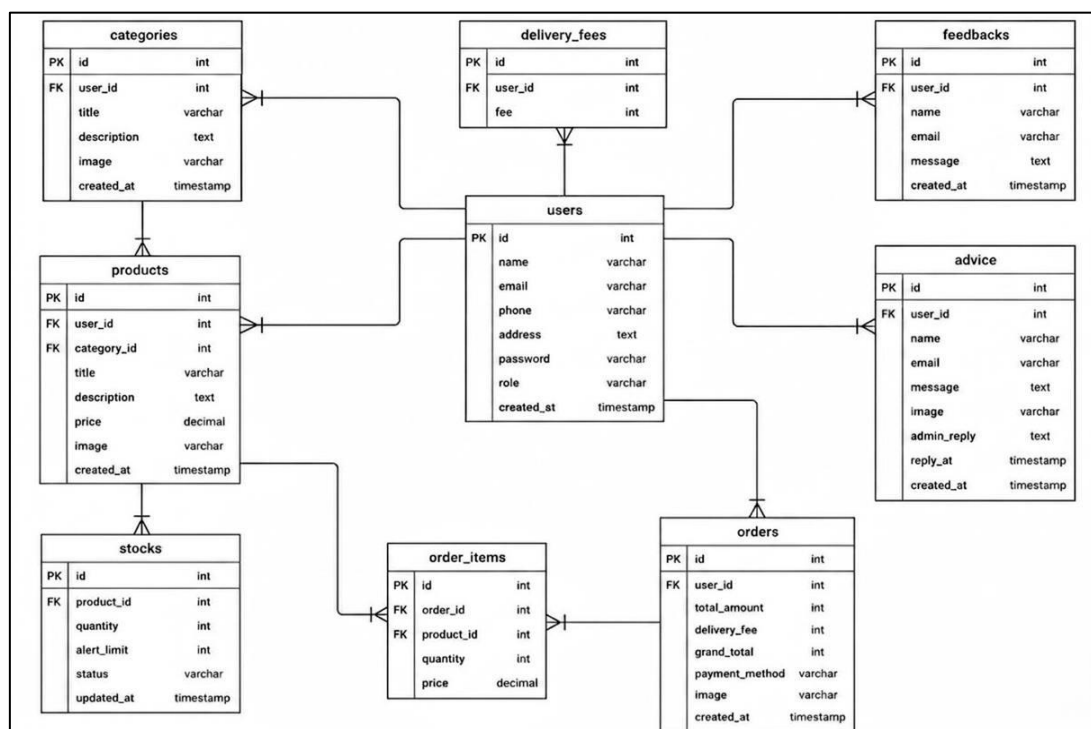


Figure 3: Database Architecture

RESULTS

The Smart Agro Mart Management System was successfully developed as a centralized web-based platform for managing agricultural products, customer orders, and related services. The system provides farmers and customers with convenient access to agricultural products by allowing them to browse different product categories, view detailed product information, check product availability, place orders, and complete purchases through secure online payment methods. Users can also manage their profiles, submit feedback, request agricultural advice, and receive purchase invoices, making the overall purchasing process more convenient and organized. For administrators, the system provides an administrative dashboard that supports the efficient management of users, products, categories, stock, customer orders, delivery information, feedback, agricultural advice, payments, and invoices. The system was implemented using PHP, MySQL, HTML, CSS, Bootstrap, and JavaScript to provide a user-friendly interface, effective data management, and reliable system functionality. The developed system helps reduce the time, effort, and transportation costs associated with traditional purchasing methods while providing users with easier access to agricultural products and useful farming information. It also reduces manual work for administrators, improves the management of stock and orders, and supports accurate organization of sales and customer records. In addition, the integration of agricultural advice and feedback features improves communication between users and the agricultural store. Overall, the results demonstrate that the Smart Agro Mart Management System provides a convenient, efficient, and organized solution for agricultural product purchasing and management. The system contributes to improving service delivery, enhancing the customer purchasing experience, and supporting the adoption of digital technology and online commerce in the agricultural sector.

Figure 4 shows the Admin Dashboard, which provides a summary of total users, products, advice, and orders. It also uses bar and pie charts to present system information clearly. The admin can efficiently manage users, products, advice, and orders through the dashboard.

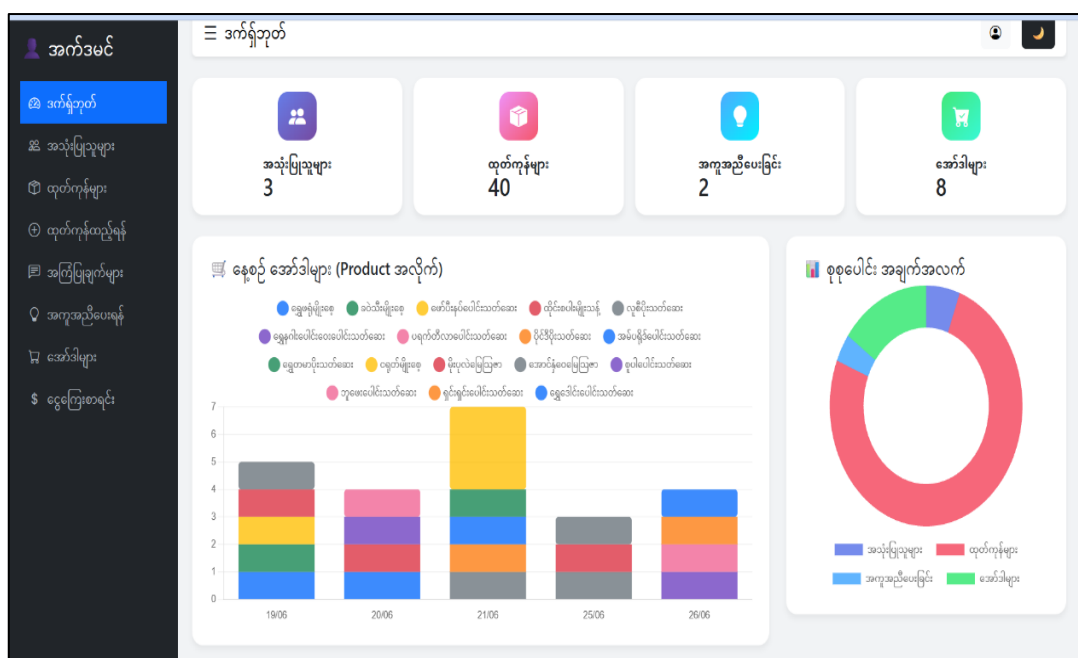


Figure 4: Admin Dashboard

Figure 5 shows the Sales Report page, which provides a clear summary of completed sales within the selected period. It displays order date, product name, price, quantity, and total amount, while automatically calculating the total quantity sold and overall sales amount. This helps administrators easily monitor sales performance and maintain accurate records.

The Sales Report Form displays a table of sales data. The table has the following columns: ရက်စွဲ (Date), ပစ္စည်းအမည် (Product Name), ဈေးနှုန်း (Price), Qty (Quantity), and Amount. The data is for the period of 01 Aug 2026.

ရက်စွဲ	ပစ္စည်းအမည်	ဈေးနှုန်း	Qty	Amount
01 Aug 2026	သစ်သီးနှံများ	7,800 MMK	2 အိတ်	15,600 MMK
01 Aug 2026	ပရက်တီလာပေါင်းသတ်ဆေး	25,000 MMK	2 အိတ်	50,000 MMK
01 Aug 2026	ပြောင်းဖူးများ	7,700 MMK	1 အိတ်	7,700 MMK
01 Aug 2026	ဆင်တံဆိပ်မြက်သတ်ဆေး	20,000 MMK	1 အိတ်	20,000 MMK
01 Aug 2026	Diamond ကြက်သတ်ဆေး	7,000 MMK	1 အိတ်	7,000 MMK
01 Aug 2026	သစ်သီးနှံများ	7,800 MMK	2 အိတ်	15,600 MMK
01 Aug 2026	ပရက်တီလာပေါင်းသတ်ဆေး	25,000 MMK	2 အိတ်	50,000 MMK
01 Aug 2026	ပြောင်းဖူးများ	7,700 MMK	1 အိတ်	7,700 MMK
01 Aug 2026	ဆင်တံဆိပ်မြက်သတ်ဆေး	20,000 MMK	1 အိတ်	20,000 MMK
01 Aug 2026	Diamond ကြက်သတ်ဆေး	7,000 MMK	1 အိတ်	7,000 MMK

Page navigation: 1 2 3 4 5 6 7 8 9 ရှေ့သို့

Figure 5: Sale Report Form

Figure 6 shows the Products page, where users can browse agricultural products in an organized layout. It also provides a search function to help users quickly find the products they need.

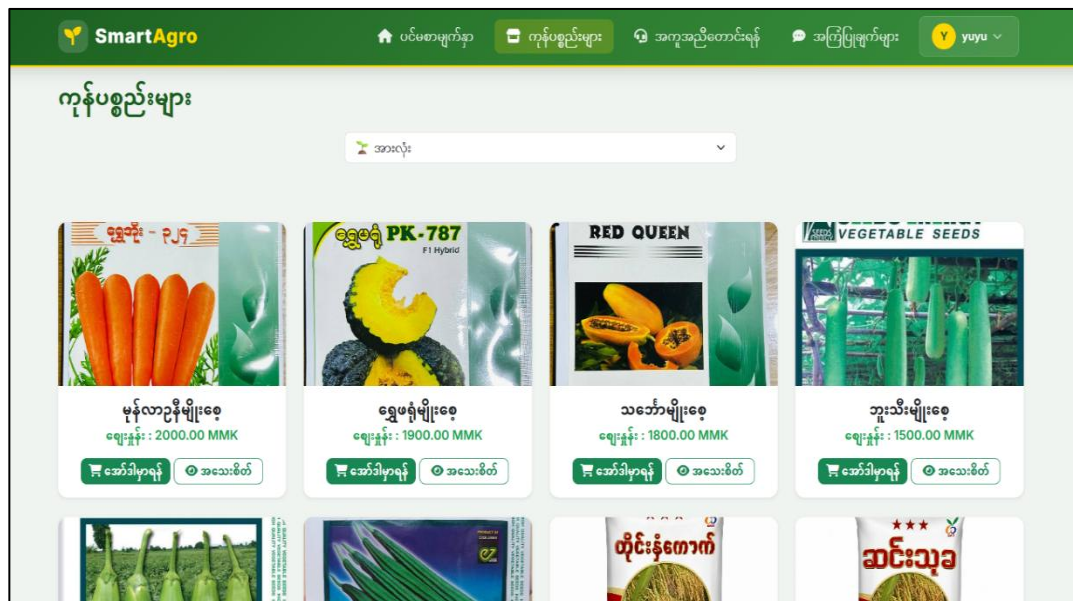


Figure 6: Products Interface for Login Customer

Figure 7 shows the Invoice page, which generates customer invoices and manages transaction details efficiently. It allows administrators to print invoices as images and send them directly to customers via email for easy record-keeping

ထုတ်ကုန်အမည်	အရေအတွက်	ဈေးနှုန်း	စုစုပေါင်း
ရွှေမရုံမျိုးစေ့	1 ထုပ်	7,900 ကျပ်	7,900 ကျပ်
မိုးပုလဲမြေခြံဇာ	1 အိတ်	99,500 ကျပ်	99,500 ကျပ်
ရွှေတမာပိုးသတ်ဆေး	1 ဘူး	29,000 ကျပ်	29,000 ကျပ်
ကုန်ပစ္စည်းစုစုပေါင်း:			136,400 ကျပ်

Figure 7: Sale Invoice Form

Conclusion

The Smart Agro Mart Management System provides an effective digital solution for modernizing agricultural trading and management processes by replacing traditional and manual procedures with a centralized web-based platform. The system enables users to browse agricultural products, view product information, place orders, make online payments, track orders, provide feedback, and request agricultural advice, while administrators can efficiently manage products, categories, users, orders, deliveries, inventory, feedback, and advice requests. By storing and managing information in a centralized database, the system helps reduce manual record-keeping, minimize human errors, improve data accuracy, and provide faster access to important information. It also supports better inventory and order management and provides useful business information that can assist administrators in monitoring and managing daily operations. Although challenges such as limited internet access, lack of digital knowledge, and difficulties in using online services may exist in some rural areas, these challenges can be reduced through user training, simple interface design, technical support, and continuous system improvement. In the future, the system can be enhanced with additional features such as mobile applications, real-time delivery tracking, online agricultural consultation, advanced reporting, and notification services. Overall, the Smart Agro Mart Management System demonstrates the potential of information technology to improve agricultural business management by providing a convenient, efficient, accurate, and reliable platform for managing agricultural products and services, and it can contribute to the digital transformation and future development of agricultural businesses.

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