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Review ECFT

E-Commerce Platform for Agricultural Products

D.R. Cholke[1], Chandgude Sartha[2,*], Bombe Tanuja[3], Budruk Payal[4], Adhav Sakshi[5]

Abstract

The e-commerce platform for agricultural products reported here is designed to solve the problems faced by shop owners, such as managing data, billing, and selling products. In many rural areas, awareness of technology is still low. By introducing this project, rural shopkeepers can learn to use new technologies, making their work easier, faster, and more efficient. Our platform specifically targets village shopkeepers, aiming to help them improve profits. It includes a product list, shop and product details, a secure payment gateway, and a user-friendly interface for both shop owners and buyers. Buyers can also leave feedback and ratings. The system simplifies billing, reducing manual work and paperwork. This not only saves time but also contributes to environmental conservation by reducing paper use. The website focuses on selling agricultural products like fertilizers, insecticides, and pesticides, providing detailed product information. Customers can easily register, log in, select products, and confirm their orders. A major benefit of this project is that it connects sellers and customers directly, saving customers' time and helping shopkeepers increase sales. It also creates new job opportunities and boosts the rural economy. The platform remains accessible anytime, allowing customers to shop even if the physical store is closed. With a simple and easy-to-use design, it helps overcome many of the challenges faced in the offline market. Overall, the project plays a significant role in promoting technological adoption and economic growth in rural areas.

Keywords: E-commerce, awareness, agriculture, time saved, payment gateway, technology, trees, registration, efficient, user friendly, job, rural areas, challenges, purchase, paperwork, impact

INTRODUCTION

The e-commerce platform for agricultural products aims to solve the problems faced by shop owners regarding data management**,** billing, selling products, etc. By implementing this project, rural area shopkeepers will learn about new technologies and with the help of this technologies their work will get easier, faster, and more efficient. Basically, our project is dedicated to all village shopkeepers to help them generate good profit [1].

This project will reduce manual work and efforts by implementation of new technologies. Platform helps to develop business rapidly and widely. Currently available websites which are based on agricultural products of shops just display the product and some information about products require for farming [2]. Project is a website for the shop of agriculture products such as insecticides, pesticides, and fertilizers. Products also have their detailed information along with placing purchase order.

As the business will grow, there will be need of the employees in the shop, as a result job opportunities will be available for the youths [3]. The interface of the website is totally user-friendly, which means a farmer also can easily access the website, search for the products, etc. In this project, data is handled easily in updated software, there is no need to

***Author for Correspondence**
Chandgude Sartha
Email: sarthachandgude@gmail.comv

[1]Lecturer, Department of Computer Technology, Sanjivani KBP Polytechnic, Sanjivani Road, Kopargaon, A. Nagar, Maharashtra, India
[2-5]Research Scholar, Department of Computer Technology, Sanjivani KBP Polytechnic, Sanjivani Road, Kopargaon, A. Nagar, Maharashtra, India

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maintain the diaries for stocks maintenance. The website has images along with the prices of the products, which is helpful to look for the products [3–6].

As the website is user friendly for the user same way it is easy to use for shopkeeper. It offers easy registration, quick browsing, and automated bill generation, making transactions more efficient. By the implementation of this project customers get connected directly to the shopkeeper reducing the intermediaries. This project will have positive impact on agricultural sector in rural areas. We use this technology to drive the shopkeepers into a profitable way [7].

Our main aim is to develop shopkeepers by this new technology and make their business more efficient and also it is use to speed up their marketing process [3]. This research outlines the development of an e-commerce platform specifically design to empower Indian farmers by enabling direct purchases from shops without intermediary intervention [8]. It is helpful to expand the reach of local farmers and small agribusinesses to a broader audience. As the system goes online, there is reduce in use of paper, which saves the trees [9, 10].

METHODOLOGY

The diagrams provided explain the overall workflow of the system (Figure 1). The block diagram illustrates the user's journey from registration to order placement and the admin's role in managing stock, billing, and handling customer feedback. The use case diagram details user actions such as registration, login, searching products, managing orders, and profile updates (Figure 2).

Basically, Figure 1explains the flow of our project. As the above diagram shows the user and admin controls, the users can direct to home page of the website (Figure 3), then they can edit their profiles (username and password).

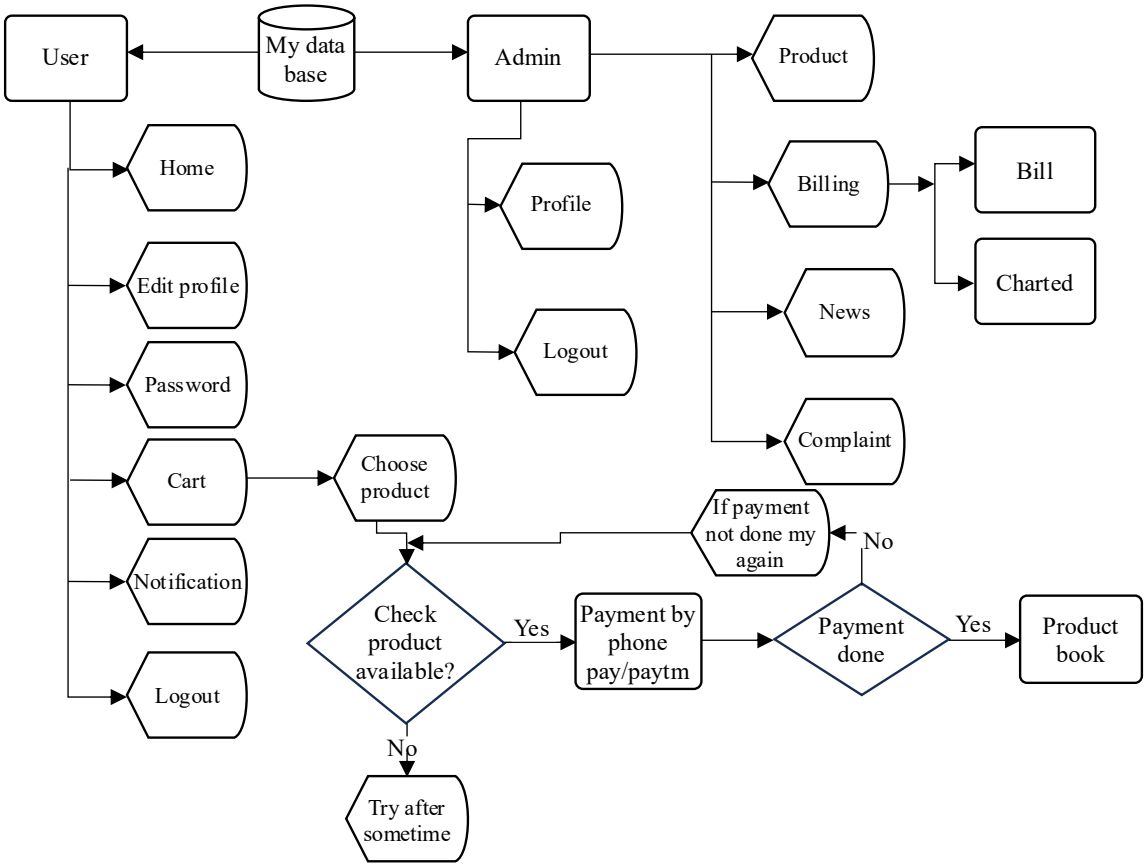

Figure 1. Block diagram.

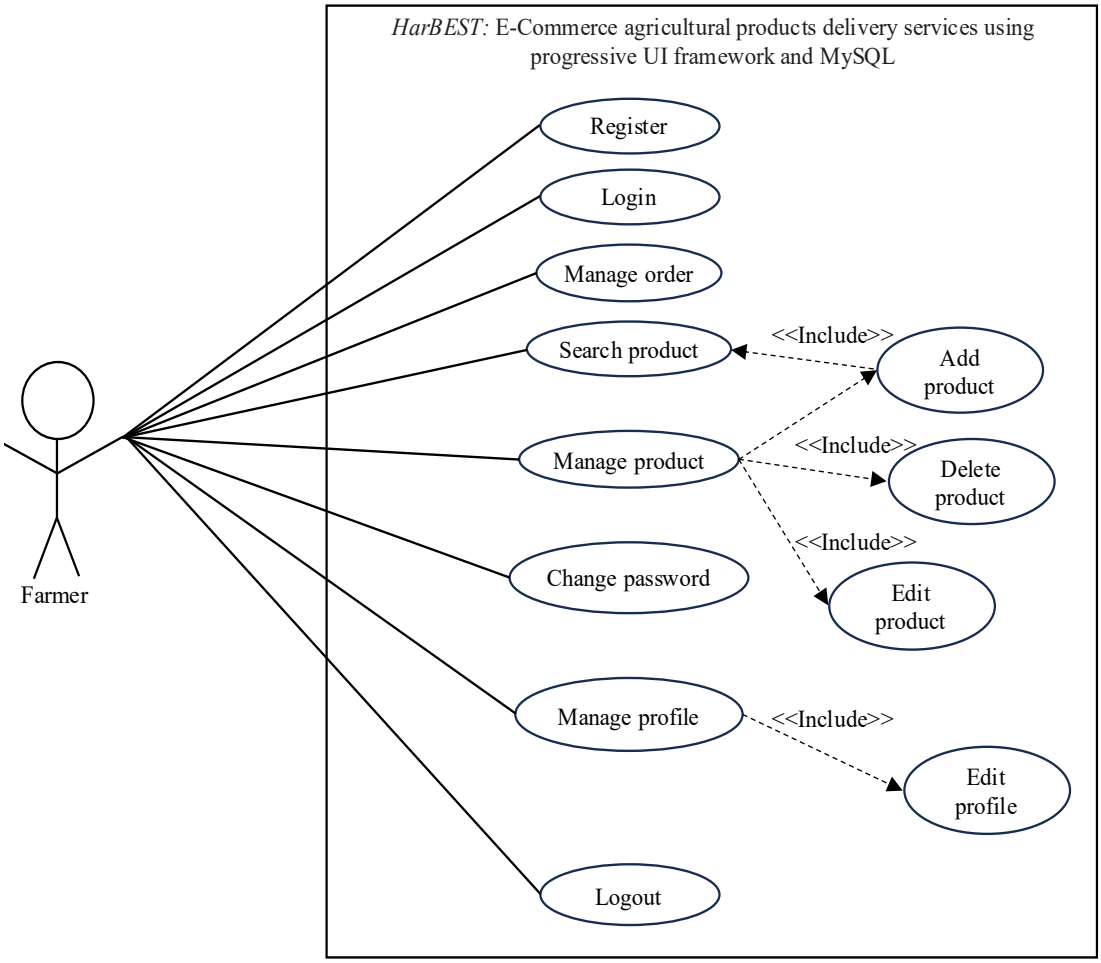

Figure 2. Use case diagram.

In the cart, they can choose products which they want to buy, if product is available then payment should be done, if payment is failed then page is directed back to choose product option, and if payment is done then product is booked. And if product is not available then try after sometime message is displayed. Users will also get the notifications after the order. Users can also logout from the website.

Admin who is the owner of the shop has his or her profile and can logout. Regarding product admin can manage billing, stock, and can receive complaints from customers (Figure 2).

- *Register:* Includes registration of customer by name, address, contact number. If registration is successful then customer can log in. The login will be successful only if the details entered are valid else the login will be unsuccessful.
- *Login:* Here customer has to enter valid details such as name, email, password, contact number, address. If the details are valid then customer is logged in.
- *Manage order:* The order placed by the customer is notified to the shopkeeper(admin). As the shopkeeper is notified, he or she performs the next procedure of sending product to the user.
- *Search product:* Customer can search for the product which he/she wants to buy, also price and basic details are mentioned of the product.
- *Add product:* Customers can add product which they want to buy, by hitting "Add" button, if the product is available then it will direct to payment page and else if the product is not available then the message will be displayed that "Try after sometime".
- *Manage product:* Manage product provides the operations to add, delete and edit products to customer in product list as the stock is available in the shop.

- *Delete product:* Customers can delete product which they want to buy, by hitting "Delete" button from the cart.
- *Edit product:* Customers can edit product which they want to buy, by hitting "Edit" button from the cart.
- *Change password:* Customers can change password by receiving OTP (one-time password) on the number entered while logging in.
- *Manage profile:* Customers can edit the details in the profile.
- *Log out:* Customers can log out by clicking on "log out" button

RESULTS AND DISCUSSION

The implementation of the e-commerce platform has shown promising outcomes in simplifying the purchasing and selling process for agricultural products, especially in rural areas (Figures 3 and 4).

Expanded Reach

With the platform online, farmers and customers from different locations can now access a wide range of agricultural products without visiting physical stores. This has helped shopkeepers extend their customer base beyond their immediate local areas.

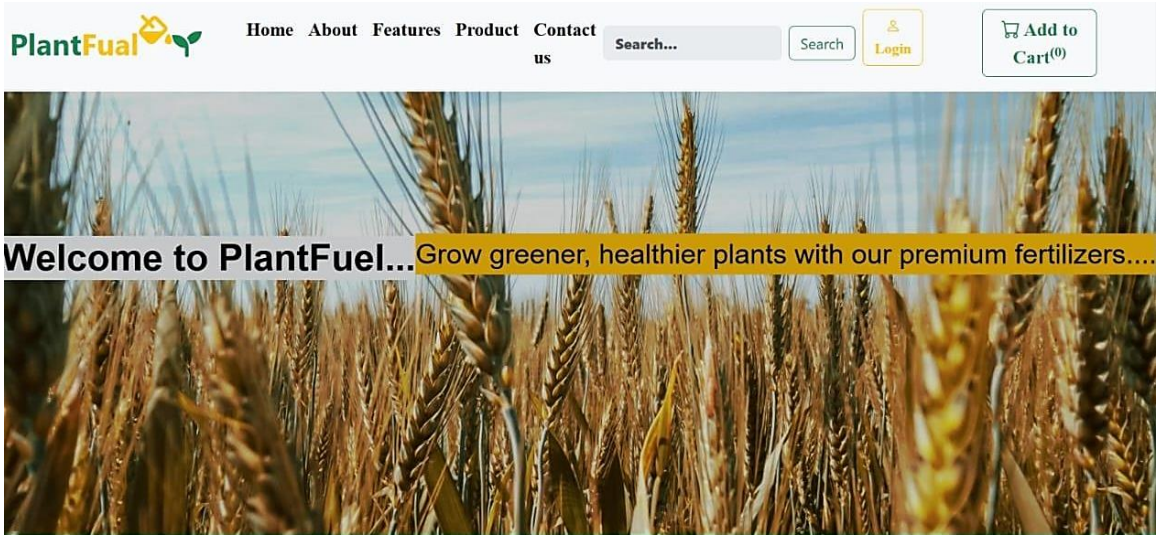

Figure 3. Home page.

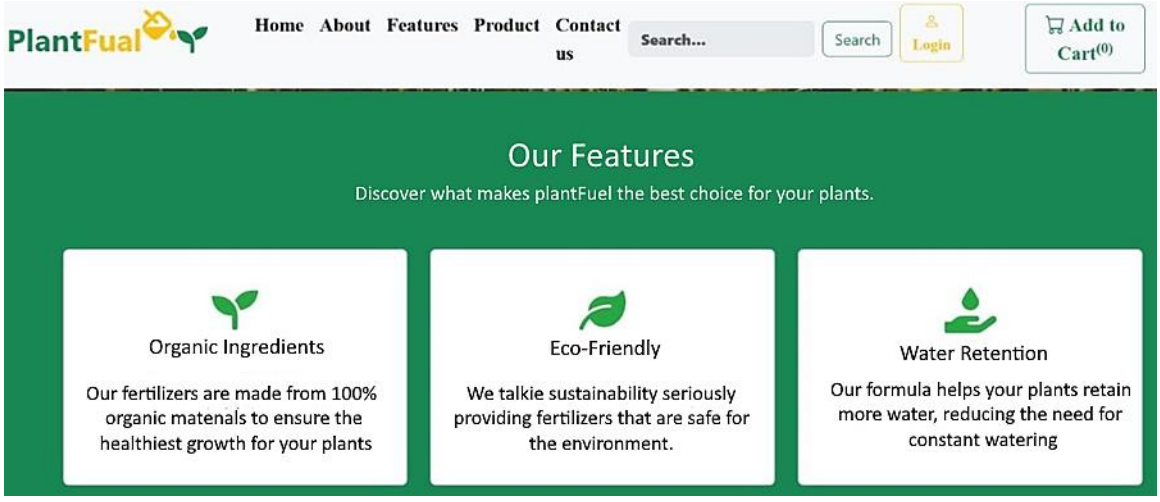

Figure 4. Features tab.

Ease of Accessing Shops

Traditionally, customers had to physically visit shops, often facing challenges like unexpected closures. Now, with the platform, customers can browse and place orders at any time, ensuring better convenience and saving valuable time (Figures 5 and 6).

Customer Benefits

Customers benefit from the ability to search, compare, and order products quickly from the comfort of their homes. The platform provides detailed information about each product, including images and pricing, enabling smarter purchasing decisions.

Owner Benefits

Shop owners experience increased visibility and a broader customer base, which directly boosts their sales and profit margins. The streamlined process of order management and billing reduces manual workload and operational errors.

Environmental Impact

The platform reduces the need for paper-based records by digitizing transactions, contributing to environmental conservation by saving trees.

Job Opportunities

As the businesses grow due to the platform, shop owners are likely to require additional human resources to manage increased operations, thus creating job opportunities for local youth.

Continuous Availability

Even when physical shops are closed, the online platform remains accessible. This 24/7 availability is crucial for customers needing urgent supplies, providing flexibility and reliability.

Overall, the project has significantly improved operational efficiency for shopkeepers and buying convenience for customers, supporting rural economic growth and digital awareness.

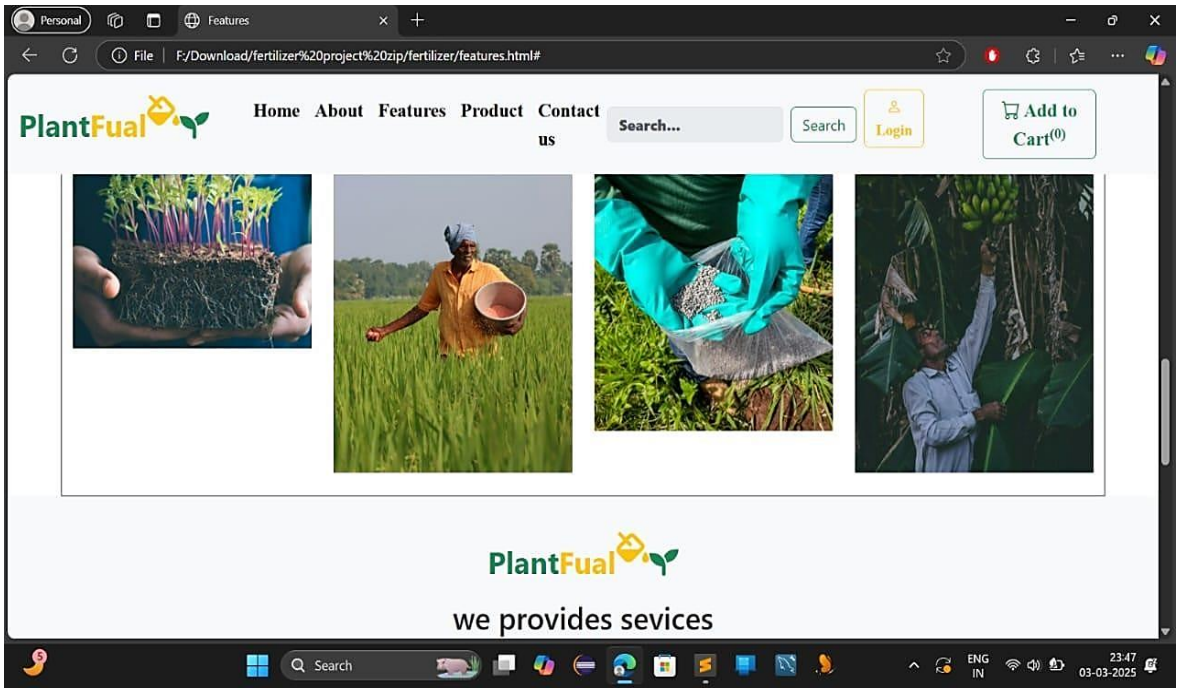

Figure 5. About tab.

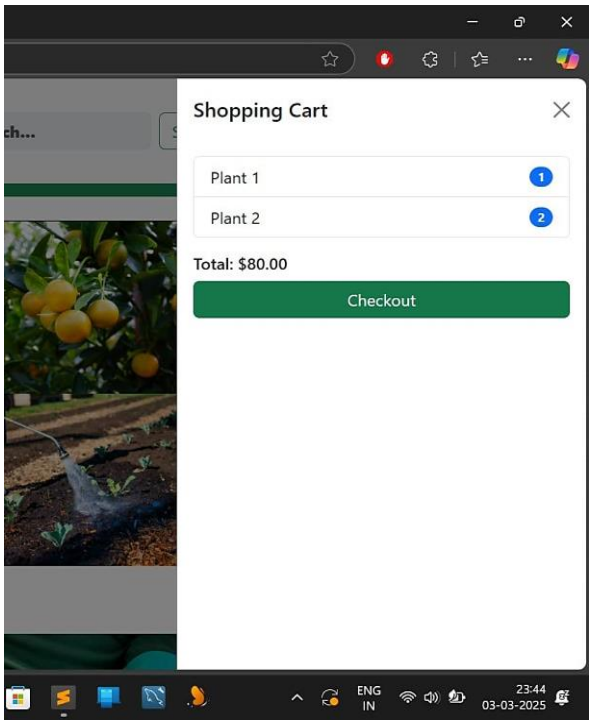

Figure 6. Cart.

DISCUSSION

- *Expanded Reach:* Farmers can now purchase farming products from wider range of shopkeepers. Farmers can have direct access to the shops in wider area.
- *Ease in accessing the shops:* In existing systems, a customer needs to go physically and see the shop whether it is opened or closed, which takes more time. The benefit after implementation of this project will be that the customer can place order at any time as well as the time will also be saved.
- *Customer Benefit:* Customers can now easily search, compare products/prices and order agricultural products from home, saving efforts.
- *Owner Benefit:* The website is accessible to wide range of customers which will increase the profit percentage, grow business rapidly.

CONCLUSION

The E-Commerce Platform for Agricultural Products has successfully introduced a simple, efficient, and user-friendly system for buying and selling agricultural goods. By connecting customers directly with shopkeepers, the platform eliminates the need for middlemen, ensuring better profits for sellers and convenience for buyers.

It offers easy registration, fast browsing, automated billing, and detailed product information with images and pricing, making the entire purchasing process smooth and transparent. The platform significantly reduces manual work for shopkeepers and helps customers save time by allowing them to place orders anytime from anywhere.

In addition, the project encourages rural shopkeepers to adopt digital technologies, making their businesses more efficient and helping them expand their customer reach. As the platform reduces the use of paperwork, it also supports environmental conservation efforts by minimizing paper waste.

The system is highly flexible and can be updated or customized based on the shopkeeper's future needs, making it a scalable solution for other agricultural businesses as well. By improving access to

agricultural products and creating new job opportunities, the project contributes positively to the economic growth of rural areas. Overall, the platform stands as a step forward in promoting digital literacy, business growth, and environmental responsibility among rural communities.

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