A SMART WEB-BASED PLATFORM FOR DIRECT ORGANIC PRODUCE DISTRIBUTION BETWEEN FARMERS AND CONSUMERS

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ABSTRACT

Organic Eats is a user-friendly web platform created to connect local farmers with people who are looking for fresh, organic food. It allows farmers to list their homegrown products directly, while customers can easily browse and place orders to get organic produce delivered right to their doorstep. By simplifying this process, our platform encourages healthy eating habits, supports small-scale agriculture, and contributes to the growth of local rural economies. This project also focuses on promoting sustainability and helping farmers strengthen their digital presence in an increasingly online world.

Keywords: Organic Food, E-Commerce, Farmer-Customer Portal.

1. INTRODUCTION

Organic food is gaining popularity as more people look for healthier, eco-friendly options that are free from harmful chemicals. To support this shift, our project offers a web-based platform that connects farmers directly with consumers, making the process simple and efficient. The portal includes useful features like real-time cart pricing, easy bill generation with UPI payment options, and separate login systems for both farmers and customers. The interface is designed to be clean and user-friendly. Overall, this initiative aims to empower local farmers, encourage sustainable farming practices, and help consumers make healthier food choices. This project is very helpful for the innovative purpose of Smart India

2. METHODOLOGY

Our system is built around three main modules: user authentication, product management, and cart-to-bill integration. Farmers can sign in and upload their products along with quantity and price details. On the other side, customers can explore categorized sections like vegetables and fruits, choose quantities between 0.5 kg and 2 kg, and see real-time price updates as they shop. JavaScript powers these interactive features, including live cart updates and pricing based on quantity. A sliding cart interface gives users an instant view of their selected items. At checkout, a detailed PDF bill is generated using the jsPDF library. This bill includes product names, quantities, individual prices, and a UPI QR code for payment (which is stored in the static folder to improve performance). Data management is handled through Flask routes and local storage. The entire platform has been tested under various scenarios to ensure smooth functionality, responsive design, and ease of use

3. MODELING AND ANALYSIS

This project is a full-stack web application built using HTML, Tailwind CSS, JavaScript, and Flask. It includes dedicated features for both farmers and customers, making interactions straightforward on both ends. The interface is designed to be simple, responsive, and easy to navigate. The application follows a modular and scalable structure, where each function, such as login, registration, cart management, and bill generation, is handled through separate routes and templates. On the frontend, a component-based layout is used, featuring reusable cards to display fruits and vegetables. Each card includes a dynamic dropdown menu for selecting quantities between 0.5 KG and 2 KG, with prices updating in real-time using JavaScript. The cart appears as a sliding sidebar that stores selected items temporarily and calculates the total amount on the fly. When a purchase is made, the system generates a PDF bill using the jsPDF library. This bill includes product details, a pricing summary, and a QR code for UPI payments. On the backend, Flask manages user sessions, product uploads, and cart operations efficiently. The entire system is designed with a clear separation of responsibilities, offering a seamless and responsive user experience. It also lays the groundwork for future upgrades, such as integrating payment gateways and delivery tracking features.

4. RESULTS AND DISCUSSION

The developed organic food web platform successfully achieves its goal of connecting farmers directly with consumers through a smooth and user-friendly digital system. After thorough testing and real-time use, the platform proved to be reliable in handling key operations such as user login, product uploads, cart updates, and bill generation. The admin dashboard also worked well for monitoring users and tracking orders. The site was tested across various devices and screen sizes to ensure responsiveness and ease of use, all of which returned positive feedback. With the core functionalities now in place, there is strong potential to expand the system further by adding features like order tracking, delivery status updates, and AI-based product recommendations.

5. CONCLUSION

The web application developed to connect farmers with consumers has proven to be an effective way to promote the direct sale of organic produce. It simplifies the overall user experience by offering intuitive features like quantity-based dynamic pricing, real-time cart updates, and a professional billing system with built-in digital payment options. These features help create a transparent, user-friendly platform that is accessible to both farmers and customers, especially those in rural and semi-urban areas. By removing the need for middlemen and digitizing the traditional farm-to-consumer process, the platform empowers local farmers while encouraging the consumption of fresh, organic food. The inclusion of convenience fees and seamless payment integration also adds a modern, professional touch in line with current e-commerce standards. Looking ahead, the platform can be enhanced with features like multilingual support, better mobile responsiveness, and real-time order tracking to improve its reach and usability. Overall, this project demonstrates how practical, tech-driven solutions can support sustainable agriculture and play a role in improving rural economies.

6. REFERENCES

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