

The Authentic Homemade Product Retail And Discovery Platform

Soundarya M*, Shanmugapriya S**, Buvana M***

*(Information Technology, Sri Shakthi Institute of Engineering and Technology, and Coimbatore
Email: soundarya797m@gmail.com@gmail.com)

** (Information Technology, Sri Shakthi Institute of Engineering and Technology, and Coimbatore
Email: shanmugapriya3066@gmail.com)

*** (Information Technology, Sri Shakthi Institute of Engineering and Technology, and Coimbatore
Email: buvanamit@siet.ac.in)

Abstract:

Local business owners and home-based food producers now have more ways to reach a larger audience because to the explosive expansion of internet markets. Many, however, do not have access to a genuine and reasonably priced online platform that guarantees product visibility, trust, and transaction simplicity. By matching consumers with vetted vendors of traditional foods and homemade snacks, the Authentic Homemade Food Retail and Discovery Platform aim to close this gap. The platform, which was developed with the MERN stack (MongoDB, Express.js, React, and Node.js), offers a smooth ordering, product discovery, and review experience. In order to maintain openness and confidence between buyers and sellers, the system includes modules for user identification, product management, rating and review analysis, and safe online ordering. By providing a digital marketplace for them to sell their goods, it also empowers housewives and small-scale food producers, encouraging self-employment and local entrepreneurship. User happiness and engagement are increased by sophisticated features including feedback-based product ranking, real-time order tracking, and personalized suggestions. By maintaining the classic quality of home-cooked meals in the digital age, the suggested platform not only promotes the expansion of small businesses but also fortifies community-based trade.

Keywords — Homemade food, MERN stack, online marketplace, local entrepreneurship, digital platform, food authenticity, women empowerment.

I. INTRODUCTION

This In today's digital era, the demand for authentic, homemade food products has grown significantly as consumers seek healthier, more personalized alternatives to mass-produced goods. However, many talented home-based food producers and small business owners struggle to access reliable online platforms that offer fair visibility and trust among customers. The Authentic

Homemade Food Retail and Discovery Platform is designed to bridge this gap by connecting consumers with verified sellers of traditional snacks and homemade delicacies through a secure, user-friendly digital marketplace. Developed using the MERN stack (MongoDB, Express.js, React, and Node.js), the platform enables easy product discovery, online ordering, reviews, and ratings. Beyond enhancing convenience for buyers, it also empowers housewives and small-scale

entrepreneurs by providing them with a sustainable online space to showcase and sell their creations, thereby promoting self-employment, economic growth, and community-based trade.

II. METHODOLOGY

The development of The Authentic Homemade Food Retail and Discovery Platform follows a systematic methodology that ensures efficiency, scalability, and user satisfaction. The process is divided into several key phases:

A. Requirement Analysis:

The first stage involves identifying and analyzing the requirements of all stakeholders—home-based food producers, customers, and administrators. Surveys and interviews were conducted to understand the challenges faced by local sellers in marketing their products online and the expectations of customers regarding authenticity, hygiene, and easy ordering. Functional requirements such as product listing, order management, and user authentication were documented along with non-functional aspects like scalability, usability, and data security. This phase ensured a clear understanding of what the system needed to achieve.

B. System Design:

In this phase, the architecture of the platform was designed based on the MERN stack — MongoDB (database), Express.js (backend framework), React (frontend framework), and Node.js (server environment). The architecture follows a Model-View-Controller (MVC) design pattern to separate the business logic from the presentation layer. MongoDB was chosen for its flexibility in handling unstructured data like product images, reviews, and order histories.

C. Module Development:

The system is divided into several interconnected modules to ensure modularity and efficient development. The User Authentication Module manages user registration, login, and authorization securely using JWT (JSON Web Tokens). The Product Management Module enables sellers to

upload and manage product details, including images, descriptions, prices, and availability. The Review and Rating Module allows buyers to share feedback and ratings, fostering transparency and trust among users. The Order Management Module handles essential functions such as cart operations, order placement, and real-time delivery tracking. Meanwhile, the Payment Module integrates secure payment gateways like Stripe to enable smooth, safe online transactions. Each of these modules is developed, tested, and integrated systematically to ensure seamless interaction, high performance, and a user-friendly experience across the platform.

D. Implementation:

Following module development, the entire system is put into use and incorporated into a functional prototype. React.js was used to construct the frontend, allowing for dynamic page updates without requiring a refresh. The backend, which was created using Node.js and Express.js, controls database communication, business logic, and API requests. For flexibility and scalability, data is stored in a document-oriented fashion using MongoDB. The platform is protected by encryption, input validation, and HTTPS. APIs are designed to facilitate smooth client-server data exchange. Data security and privacy are guaranteed by authentication features including role-based access and password hashing.

E. Testing and Validation:

Validation and testing are essential to guaranteeing the platform's accurate, safe, and effective operation. A variety of testing techniques are used to preserve the dependability and quality of the system. While integration testing makes sure that all modules work together and communicate properly, unit testing checks the functioning of each individual module. System testing checks that all functionalities operate as intended by assessing the platform's overall functioning. Real users, including buyers and sellers, participate in User Acceptance Testing to verify the system's functionality, usability, and general user experience. To evaluate the system's responsiveness and stability under high user traffic, load and stress tests are also carried out. Every bug or performance

problem found is meticulously recorded, examined, and fixed. This comprehensive testing process guarantees that the platform is reliable, secure, and provides a seamless experience across all devices and browsers.

F. Deployment and Maintenance:

After successful testing, the platform is deployed on a cloud-based hosting environment for public access. Deployment scripts automate version control and continuous integration for future updates. The maintenance phase involves continuous monitoring of platform performance, database optimization, and bug fixes. Regular updates are rolled out to enhance functionality, improve UI design, and strengthen security protocols. User feedback is actively collected and analyzed to prioritize new features — such as AI-based product recommendations, chatbot integration, and multilingual support — ensuring long-term user satisfaction and growth.

III. LITERATURE SURVEY

The food industry's digital revolution has drawn a lot of attention lately, particularly with the growth of food delivery services and e-commerce. Online ordering platforms, home-based food companies, and local entrepreneurship have all been the subject of numerous research and projects. By connecting buyers and sellers via web and mobile applications, online food marketplaces have transformed consumers' access to a variety of cuisines. However, these platforms tend to overlook small-scale or home-based food providers in favour of large-scale eateries. The significance of digital inclusion for local entrepreneurs was underlined by Sharma and Gupta (2020), who proposed that reliable and reasonably priced digital platforms can greatly increase the visibility and revenue of small businesses.

IV. EXISTING METHOD

Instead of serving local or home-based food producers, the current online food delivery and retail platforms, including Swiggy, Zomato, and Uber Eats, mostly serve restaurants and huge food chains. These technologies guarantee speed and convenience by enabling customers to explore

menus, place orders, and pay online. Nevertheless, they sometimes charge vendors exorbitant commissions and offer few chances for regional business owners or home cooks to display their goods. Furthermore, people cannot be sure that the meal is indeed cooked or prepared in a hygienic manner, thus authenticity and trust are still big problems. Although some small-scale apps, such as Homely and Homemade Food Delivery, aim to assist home-based vendors, they frequently fall short in key areas including real-time order tracking, personalized suggestions, secure authentication, and review-based trust mechanisms.

V. DISADVANTAGES

The existing methods used in online food delivery and retail platforms face several limitations that hinder their effectiveness for local and home-based food producers. Most commercial platforms charge high commission fees, significantly reducing the profit margins for small-scale sellers. Moreover, there is often no proper verification mechanism to ensure that the food items are genuinely homemade, which leads to trust issues among customers. These systems are primarily designed for large restaurants, offering minimal support or visibility for individual cooks and household entrepreneurs. Additionally, the absence of personalized recommendations limits user engagement and satisfaction. Dependence on third-party payment and delivery services further increases operational costs and reduces control over quality and customer experience. As a result, local sellers struggle to gain visibility and recognition among a sea of established commercial vendors.

VI. PROPOSED METHOD

The proposed solution, The Authentic Homemade Food Retail and Discovery Platform, aims to create a dedicated digital space for genuine homemade food producers and local entrepreneurs to reach a wider audience without the barriers of high costs or limited visibility. Built using the MERN stack (MongoDB, Express.js, React, and Node.js), the platform provides a seamless experience for both buyers and sellers. It ensures secure user authentication through JWT, allowing

verified sellers to manage their products efficiently. Buyers can explore a wide range of authentic homemade items with the help of personalized recommendations and feedback-based ranking systems that enhance trust and transparency. Integrated order management and payment modules ensure smooth transactions and real-time order tracking. By supporting home-based cooks, small vendors, and local artisans, the system promotes self-employment, women empowerment, and community-driven business growth while ensuring customers enjoy safe, authentic, and high-quality homemade products delivered conveniently to their doorstep.

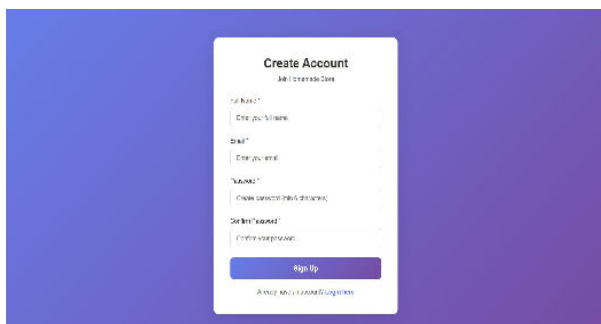


Fig. 1 Sign up Page

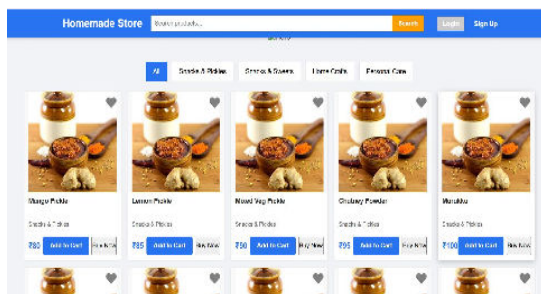


Fig. 2 Home Page

VII. CONCLUSION

To sum up, The Authentic handmade Food Retail and Discovery Platform offer a productive, safe, and easy-to-use online marketplace that connects producers of handmade foods with buyers looking for genuine, premium goods. The system guarantees effective speed, scalability, and an engaging user experience by utilizing the MERN stack. Modules for product management, orders, payments, reviews, and authentication are included to guarantee seamless operation and the

development of buyer-seller confidence. In addition to technology, the platform supports local economic development and empowers home-based business owners. It is a sustainable strategy that maintains ethnic culinary diversity in the digital age while also improving accessibility to traditional handcrafted cuisine.

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REFERENCES

- [1] S. M. Metev and Sharma, R., & Patel, M. (2023). Development of Online Platforms for Local and Homemade Products. *International Journal of Innovative Computer Science*, 11(2), 45–52.
- [2] Gupta, A., & Nair, P. (2022). E-commerce Solutions for Small Businesses Using MERN Stack Technology. *Journal of Web and Mobile Development*, 9(4), 88–96.
- [3] Singh, K., & Verma, R. (2021). Promoting Homemade Food and Craft Businesses Through Digital Marketplaces. *International Journal of Emerging Technologies*, 15(3), 27–33.
- [4] Priya, L., & Thomas, J. (2023). Secure Payment Systems and Data Protection in E-Commerce Platforms. *International Research Journal of Computer Applications*, 12(5), 102–109.
- [5] Johnson, D., & Kumar, S. (2024). User Experience Design in Online Retail Platforms. *Journal of Software Engineering and Applications*, 17(1), 64–70.
- [6] Mehta, V., & Rao, A. (2022). Artificial Intelligence in Product Recommendation and Customer Engagement. *Journal of Computer Science and Intelligent Systems*, 10(6), 55–61.