

ULAVAN PEANUT PRODUCT: A Web Based E-Commerce System

B. KALAIVANI¹, B. VAIDEHI², A.M.NEHASRIEE³, M. RAJAVALLI⁴

^{1,2} Assistant Professor, Dept. of Computer Science, Sri S.Ramasamy Naidu Memorial College (Affiliation of Madurai Kamaraj University), Sattur-626 203, Tamilnadu, India

^{3,4} UG Student, Dept. of Computer Science, Sri S.Ramasamy Naidu Memorial College (Affiliation of Madurai Kamaraj University), Sattur-626 203, Tamilnadu, India

Abstract - The Ulavan Peanut Product Website is developed to create a web-based platform for selling natural peanut products online. The main objective of this system is to provide customers with healthy and chemical-free food products while enabling producers to sell their products directly without the involvement of middlemen. This approach helps improve product accessibility and ensures fair pricing for both producers and customers. The website provides a simple and user-friendly interface where users can view different peanut products and access important details such as product name, image, price and description. Customers can easily browse available products and place orders through the online platform and making the purchasing process more convenient. The system is developed using HTML, CSS and Bootstrap 5 for designing the frontend interface. Python Flask is used for backend development to manage system operations, and MySQL through XAMPP is used for database management to store product information, user details, and order data securely. Overall, the proposed website provides an efficient platform for selling peanut products and improving customer access to natural and healthy food items.

Key Words: E-commerce website, Peanut products, Python Flask, MySQL, Web development, Online food platform

1. INTRODUCTION

The rapid growth of internet technology has significantly changed the way businesses operate and how customers purchase products [1]. Online platforms have become an important medium for businesses to promote and sell their products efficiently. E-commerce websites allow customers to browse products, compare prices, and make purchases from anywhere at any time. These platforms improve accessibility and convenience for customers while helping producers expand their market reach. Peanut products are widely consumed because they provide important nutritional benefits [2]. Peanuts contain proteins, vitamins, minerals, and healthy fats that are essential for maintaining a balanced diet. Many consumers prefer natural and chemical-free peanut products for better health. However, traditional selling methods often involve intermediaries or middlemen, which can increase product prices and reduce profits for producers [3]. The Ulavan Peanut Product Website is developed to provide a digital platform where natural peanut products can be sold directly to customers. The system allows producers to display their products online and enables customers to easily view product details such as name, image, price, and description. This direct connection between producers and customers helps improve product availability and ensures fair pricing. The website is designed with a simple and user-friendly interface so that customers can easily browse available products and place orders online. The system also manages product information, customer details and order records through a secure database system. The platform provides an efficient and reliable solution for promoting and selling natural peanut products online by using modern web technologies. Overall, the Ulavan Peanut Product Website aims to improve access to healthy food products while supporting producers in expanding their business through digital technology.

1.1 Need for Study

The increasing demand for natural and healthy food products has created the need for an efficient platform where customers can easily access such products. Many consumers prefer chemical-free and naturally processed food items, but they often face difficulties in finding reliable sources to purchase them. Traditional selling methods mainly depend on local markets and intermediaries, which may increase product prices and reduce accessibility for customers. Producers of peanut products also face several challenges in marketing and selling their products. In many cases, farmers and small-scale producers depend on middlemen to distribute their products which reduces their profit and limits their market reach. As a result, producers may not receive fair prices for their products despite the quality and effort involved in production. The development of an online platform can help overcome these problems by directly connecting producers with customers. A web-based system allows producers to display their products online and reach a larger audience. At the same time, customers can conveniently browse available products, compare prices, and place orders from their homes. Therefore, the Ulavan Peanut Product Website is developed to provide a digital platform for selling natural peanut products. The system helps improve product accessibility, supports producers in expanding their business, and promotes the use of healthy and natural food products. The study focuses on developing a simple and efficient web application that benefits both producers and customers.

1.2 Theoretical framework

The theoretical framework of the study explains the structure and functioning of the Ulavan Peanut Product Website. The system is based on the concept of an e-commerce platform that enables producers to sell their products directly to customers through an online interface. The framework of the system consists of three main components: the user interface, the application server, and the database management system.

The user interface is developed using HTML, CSS, and Bootstrap 5, which provides a responsive and user-friendly environment for customers to browse available peanut products [4]. Through this interface, users can view product details such as product name, image, price and description. The interface is designed to improve usability and allow customers to easily navigate through the website.

The backend of the system is developed using Python Flask, which acts as the server-side framework. Flask manages the communication between the user interface and the database by processing user requests such as viewing products, placing orders, and managing user information. This ensures the proper functioning of the web application.

The database component is implemented using MySQL through XAMPP. The database stores all the required information including product details, user registration data, and order records. This structured storage allows efficient management and retrieval of information whenever required.

The integration of these technologies provides a reliable and efficient system for promoting and selling natural peanut products online. The framework supports smooth interaction between users and the system while ensuring proper data management and system functionality.

2. SYSTEM SPECIFICATION

2.1 Hardware Requirements:

Processor	: Intel Core 2 Duo Processor
RAM	: 2 GB
Hard disk	: 320 GB
Monitor	: 19" Flat Monitor
Keyboard	: 107 Keys Mechanical PS/2 KBD
Mouse	: 3 Button Scroll Optical USB Mouse

2.2 Software Requirements:

OPERATING SYSTEM	: Windows 10
FRONT END	: HTML, CSS, JavaScript
FRAMEWORK	: Bootstrap
DATABASE	: MYSQL

3. EXISTING SYSTEM

In the existing system, the sale of peanut products is primarily conducted through traditional methods such as local markets and intermediaries. Producers depend heavily on middlemen to distribute their products which often leads to reduced profit margins and lack of direct communication with customers.

Customers face difficulties in accessing product information, comparing prices and purchasing items conveniently. The absence of an online platform limits the reach of producers and restricts customers to local availability. Additionally, manual processes are time-consuming and prone to errors.

There is no centralized system to manage product details, customer information or order records. This leads to inefficiencies in data handling and poor customer experience.

2.1 Disadvantages of Existing System

The drawbacks of the existing system include:

- Dependence on middlemen reduces profit for producers.
- Lack of direct communication between producers and customers.
- Limited product availability and accessibility.
- No online platform for browsing or purchasing products.
- Manual processes are time-consuming and error prone.
- No proper system for managing customer data and orders.
- Lack of transparency in pricing and product details.

3. THE PROPOSED SYSTEM

The limitations identified in the existing system are effectively addressed through the development of the Ulavan Peanut Product Website which is a modern web-based e-commerce application. This system establishes a direct connection between peanut producers and customers, thereby eliminating intermediaries and ensuring fair pricing and better product accessibility.

The application is designed as a user-friendly platform where customers can conveniently browse various peanut products along with detailed information such as product name, image, price and description. The system enables users to add items to a shopping cart and place orders from any location at any time.

The front end of the application is developed using HTML, CSS, and Bootstrap 5, ensuring an attractive and responsive user interface. The backend is implemented using Python Flask, which handles application logic and user interactions efficiently. A MySQL database is used to securely store user data, product details, and order information [5, 6].

This system provides a reliable and efficient platform for promoting natural and healthy peanut products while enhancing customer convenience and satisfaction.

3.1 Advantages of Proposed System

The benefits of the proposed system are as follows:

- Fully automated system with no requirement for manual or paper-based processes.
- Provides direct interaction between producers and customers, eliminating middlemen.
- Ensures fair pricing and better availability of products.
- User-friendly interface for easy navigation and product selection [7].
- Secure user registration and login authentication.
- Efficient cart management system for handling multiple products.
- Flexible ordering options (single product or multiple products from cart).
- Centralized database enables access to data anytime and from anywhere.
- Feedback system helps in improving product quality and customer service [8].

4. IMPLEMENTATION AND RESULTS

The Ulavan Peanut Product Website consists of several functional modules that collectively ensure smooth operation and user interaction. Fig 1 – Fig 8 display the modules implementation page

1 Modules in the Proposed System The **User Registration module** allows new users to create an account by providing necessary details such as email and password which are securely stored in the database.

The **User Login module** authenticates registered users by verifying their credentials and ensuring secure access to the system.

The **Product Viewing module** enables users to browse a variety of peanut products along with detailed information such as product name, image, price and description.

The **Add to Cart module** allows users to select desired products and temporarily store them for purchase.

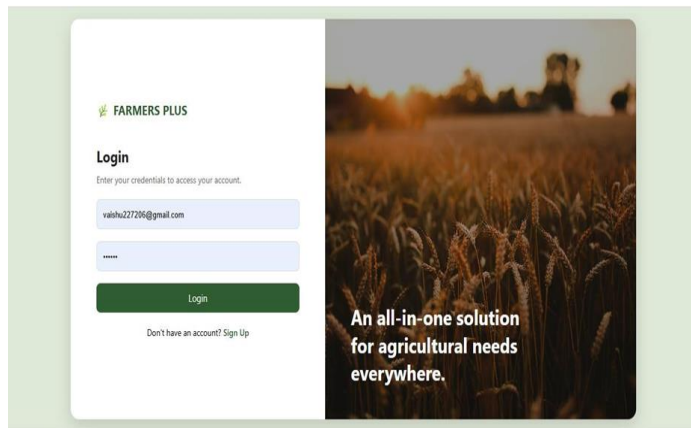


Fig -1: LOGIN PAGE

The **Order Placement module** facilitates the purchasing process and enabling users to place orders either for a single product or multiple items from the cart.

Finally, the **Feedback System module** allows users to provide feedback regarding products and services that improves overall system quality and customer satisfaction.

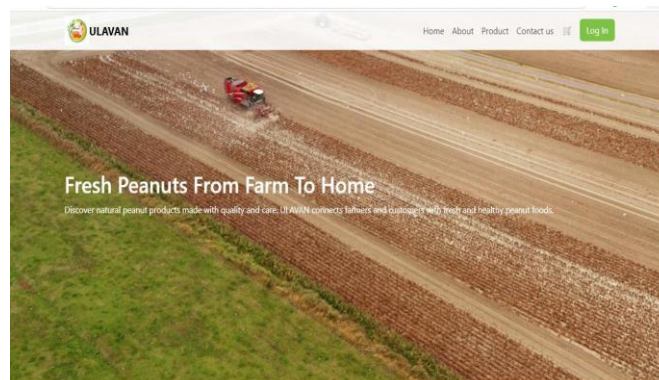


Fig -2: HOME PAGE

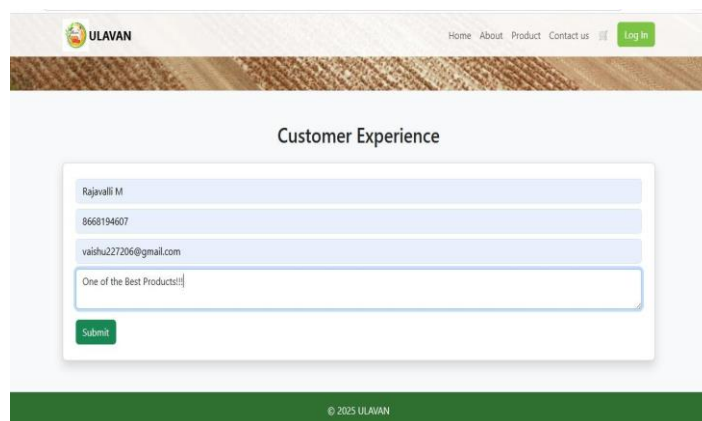


Fig -3: CUSTOMER EXPERIENCE FORM

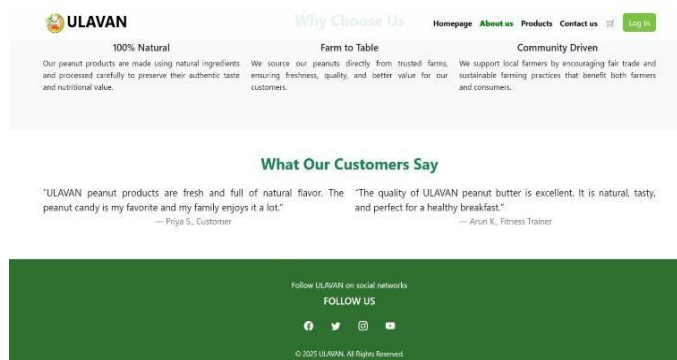


Fig -4: ABOUT US PAGE

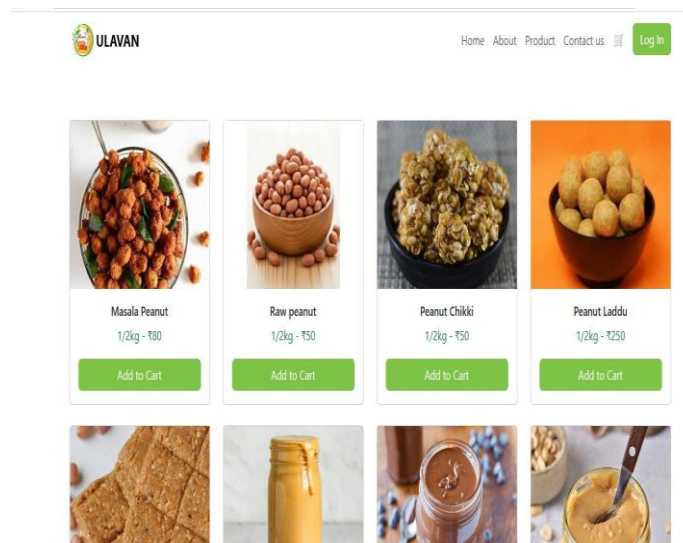


Fig -5: PRODUCT PAGE

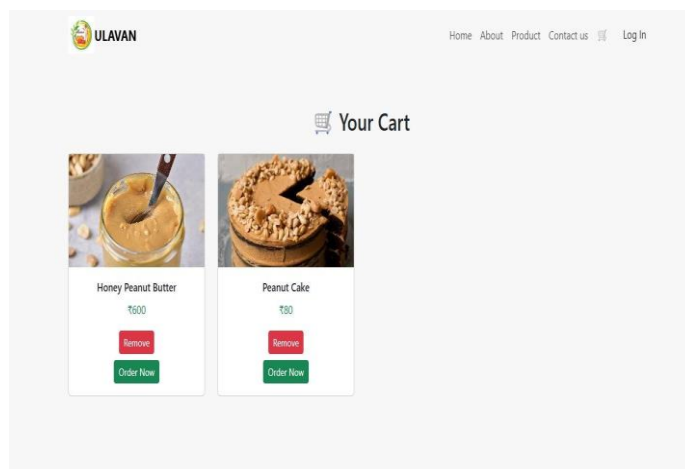


Fig -6: CART FORM

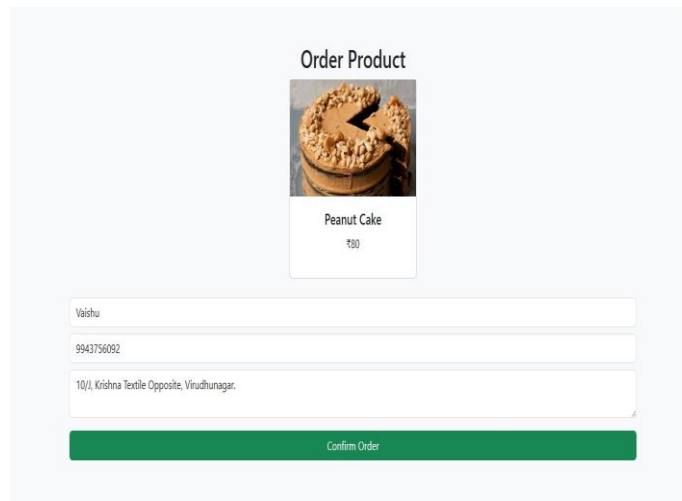


Fig -7: ORDER PAGE

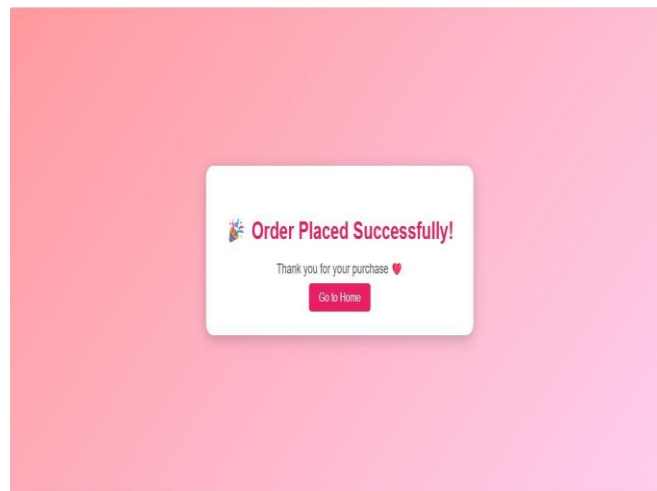


Fig -8: ORDER CONFIRM PAGE

4.2 Sources of Data

For this study secondary data has been collected. From various online resources and existing e-commerce websites the information related to product management, online selling systems, and website development technologies is obtained [9]. The collected data includes information about product display methods, online ordering systems, and user interface design used in web applications.

The data required for the system includes product details such as product name, price, description, and product images. In addition, user information and order records are also stored for managing the website operations. The collected data is used for developing and testing the Ulavan Peanut Product Website.

The database is implemented using MySQL through XAMPP to store and manage the data efficiently. The data collected helps in designing the system structure and ensures smooth functioning of the web-based platform for selling natural peanut products.

4.2.1 Database Overview

The ULAVAN project uses a MySQL database to store and manage application data. The database is used to store user information, cart details, Order details and customer feedback. Fig 9 – Fig 11 displays the database table. The database helps in maintaining structured data and ensures efficient data retrieval and management.

4.2.2 Tables in the Database

USERS TABLE

User table stores the details of registered users. Fields used in this Table 1:

Table 1: Details of Registered Users

Field	Description
Id	Unique ID of the User (Primary Key)
Email	Email address of the User
Password	Password used for Login

Fig-9: USER TABLE

CART TABLE

Cart table stores the products added by the user to the cart. Fields used in this Table 2:

Table 2: Details of the Product added to the Cart

Field	Description
Id	Unique Cart Id (Primary Key)s
User_Id	Id of the user who added the product (Foreign key)
Email	Email of the User
ProductName	Name of the Product
Price	Price of the Product
Image	Product Image

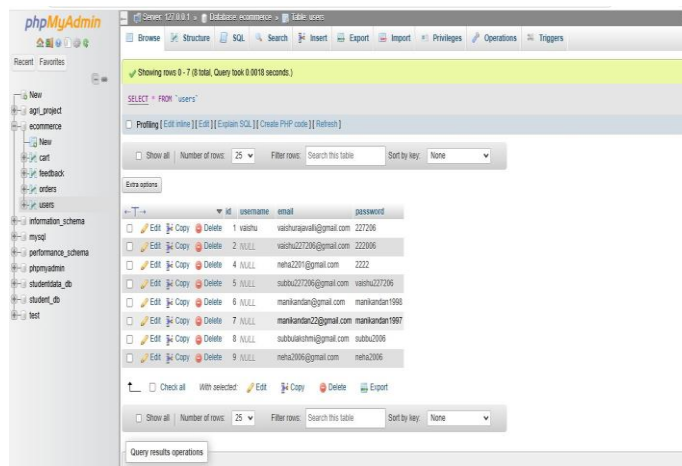


Fig-10: CART TABLE

ORDER TABLE

Order table stores the products added by the user to the order to the product. Fields used in this Table 3:

Table 3: Details of the Product added to the Order

Field	Description
Id	Unique Order Id (Primary Key)
User_Id	Id of the user who added the product (Foreign key)
Email	Email of the User
Product_Name	Name of the Product
Price	Price of the Product

Image	Product Image
Name	Customer Name
Address	Customer Address

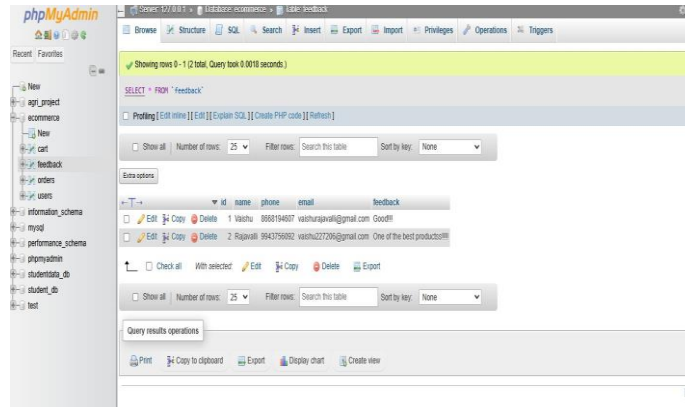


Fig-11: ORDER TABLE

FEEDBACK TABLE

Feedback table stores the customer feedback. Fields used in this Table 4:

Table 4: Customer Feedback

Field	Description
Id	Unique Feedback Id
Name	Customer Name
Phone	Customer Phone Number
Email	Customer Email
Feedback	Customer Feedback Message

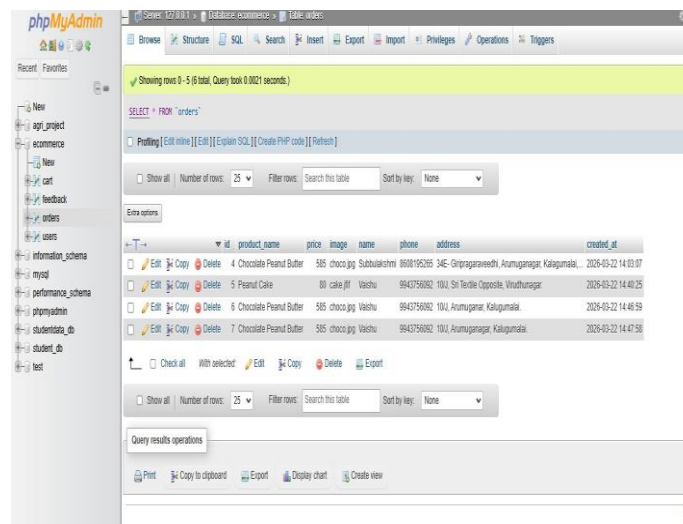


Fig-12: FEEDBACK TABLE

5. CONCLUSIONS

The Ulavan Peanut Product Website has been successfully developed as a web-based e-commerce platform for promoting and selling natural peanut products. The system eliminates the dependence on middlemen and ensuring fair pricing and direct interaction between producers and customers. The platform incorporates essential functionalities such as user registration, login authentication, product browsing, cart management and order placement. These features collectively improve user

convenience and operational efficiency. Overall, the system contributes to the digital transformation of agricultural product sales and enhances accessibility for customers.

6. FUTURE ENHANCEMENT

The system can be further improved by incorporating additional features and functionalities. Future enhancements may include the integration of online payment options such as UPI, debit cards and net banking to facilitate secure transactions. A product rating and review system can be implemented to provide valuable insights for customers.

Additionally, a recommendation system can be developed to suggest products based on user preferences. The inclusion of an admin dashboard would enable efficient management of products, users and orders. Developing a mobile application version of the system can further improve accessibility. Enhanced security features can also be incorporated to ensure better protection of user data and transactions.

REFERENCES

- [1] A. Kumar and S. Gupta, "E-commerce systems and their impact on business growth," *International Journal of Engineering and Technology (IJET)*, vol. 7, no. 3, pp. 45–50, 2020.
- [2] R. Singh and P. Sharma, "Nutritional benefits of peanuts and their role in human health," *Journal of Food Science and Nutrition*, vol. 5, no. 2, pp. 120–126, 2019.
- [3] [M. Verma, "Challenges in traditional agricultural marketing systems," *International Journal of Agricultural Economics*, vol. 6, no. 1, pp. 33–39, 2018.
- [4] K. Patel and L. Mehta, "Web development technologies for e-commerce applications," *International Journal of Computer Applications*, vol. 180, no. 25, pp. 15–22, 2021.
- [5] S. Rajasekaran and P. Arun, "Design and development of online shopping systems using Flask framework," *International Journal of Advanced Research in Computer Science*, vol. 10, no. 4, pp. 200–205, 2019.
- [6] D. Mishra and R. Jain, "Database management systems for web applications," *International Journal of Computer Science and Information Technologies (IJCSIT)*, vol. 8, no. 2, pp. 150–155, 2017.
- [7] T. Nguyen and H. Tran, "User interface design for e-commerce websites," *Journal of Web Engineering*, vol. 15, no. 1, pp. 25–40, 2018.
- [8] P. Karthik and S. Devi, "Role of digital platforms in agricultural product marketing," *International Journal of Innovative Research in Science and Engineering*, vol. 9, no. 6, pp. 300–305, 2020.
- [9] Smith and L. Brown, "Secure authentication methods in web applications," *International Journal of Cyber Security and Digital Forensics*, vol. 6, no. 3, pp. 90–98, 2019.