



E-COMMERCE FOR DIRECT MARKETING OF FRESH FOOD FROM FARMERS TO BULK ORDERING BUYERS AND LOCAL BUYERS

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Abstract: The main goal of the proposed system is to establish an online platform that will allow farmers from Indian cities to sell their products directly to clients without the use of intermediaries or agents. For better and more transparent sales, a computerized system is used. There are numerous product variations, and users may browse all of the different product types along with their prices. The supply and demand are both coming via the smartphone app, and in the middle, we have very advanced technology that helps us match the supply and demand and complete the entire end-to-end transaction. The three basic values are Empowering farmers (Bringing market on farmers mobile devices), Transparency (Offering transparent pricing to farmers and customers) and Accountability (For best prices, best quality and timely delivery). This system helps farmers to ensure maximum profitability by using direct relationship between farmer to customer. It allows better communication or relationship between farmers and customers.

Index Terms - Web application, Agriculture marketing, Farmers Profit, Direct marketing.

I. INTRODUCTION

Most people think of going to the store to get a needed fruit or vegetable. However, this appears risky given that we rarely get organic fruits and vegetables in cities due to market workers' excessive use of pesticides to keep their produce fresh for extended periods of time. Nowadays, every hotel manager or owner who wants to buy a vegetable goes to the store. As a result, they buy vegetables at retail prices and have no idea if they are fresh or not. Due to mediators, farmers did not receive the maximum benefit. The poor farmer might offer the wholesaler very low prices for the vegetables. Additionally, farmers do not receive timely information about crops.

With the help of this scenario, we will create a web application that links the consumer to farmer directly which will avoid mediators and cut off mediators charge as well as save farmers' time. Since the farmer also sells vegetables to the buyer at an affordable price, hence both parties will get benefit. Customers can contact customer support with any questions, concerns, or problems. Farmers can contact farmer support with questions on pertinent agricultural information, industry trends, and best practices, which will help them increase their yield and income. We will also include a blog section for farmers so that he can talk about his farming techniques and methodology. This will promote farmer interaction with the suggested model while also increasing IT literacy.

II. LITERATURE SURVEY

We all know that farmers are not very aware of the current market trends and food processing industry. Pranav Shiram et al [1] proposed a mobile application which ensures a stable market as well as the better return to the farmers and also it can handle the basic issues of farmer. The Study examines the need of eliminating the mediators so that farmer can get maximum profit. The [2] paper proposes the term Digital Market for the farmers which states to make the marketing process of farmers digital. This will automatically lead to elimination of intermediaries. Sureshkumar et al [4] shows the IT literacy of farmers and their profitability through online sales of fresh organic fruits and vegetables during COVID-19 pandemic. As in COVID-19 pandemic the farmers had faced great loss as they were not able to sell their product by going to market and was not aware of knowledge to use the apps and technologies. So, after COVID-19 pandemic farmers have decided to digitize their market and this paper have given us a positive light that after COVID-19 the IT literacy rate among farmers is very high now. So, launching our proposed system will be beneficial for them.

The paper [5] proposed a website for farmer dealing with digital marketing of farming products with transportation. The study states that transportation of product can be done in two ways either customer can pick up or farmer can deliver the product at customers' location. After being clear with all our idea, the question arised was “is customer satisfied with such concept of direct marketing?”. So [6] paper shows us the customer satisfaction survey on various parameters. By which come to know that customers are satisfied with such concept and ideas.

III. PROPOSED MODEL

The proposed system provides direct marketing between farmers and customers. Farmers can add a description to the goods, chooses the quantity, and then delivers the commodity to the customer after receiving payment. The farmer can post a blog in the blog section and offer advice to other farmers.

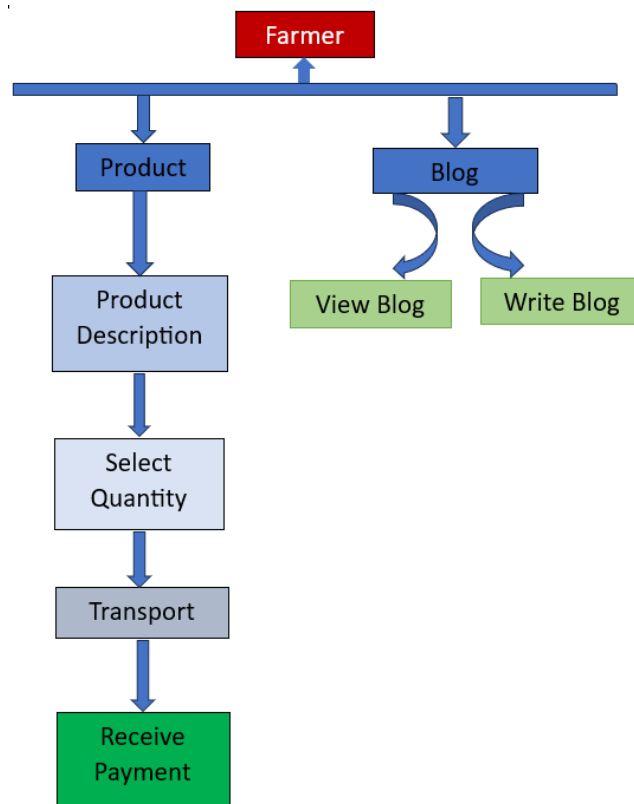


Fig.1 Farmer side

Customers can view information about the product and the farmer. The buyer can go where the farmer goes. Items are included on wish lists created by customers. After making a successful payment, the buyer places their order by providing their shopping information, choosing their mode of transportation, and picking the item they wish to purchase.

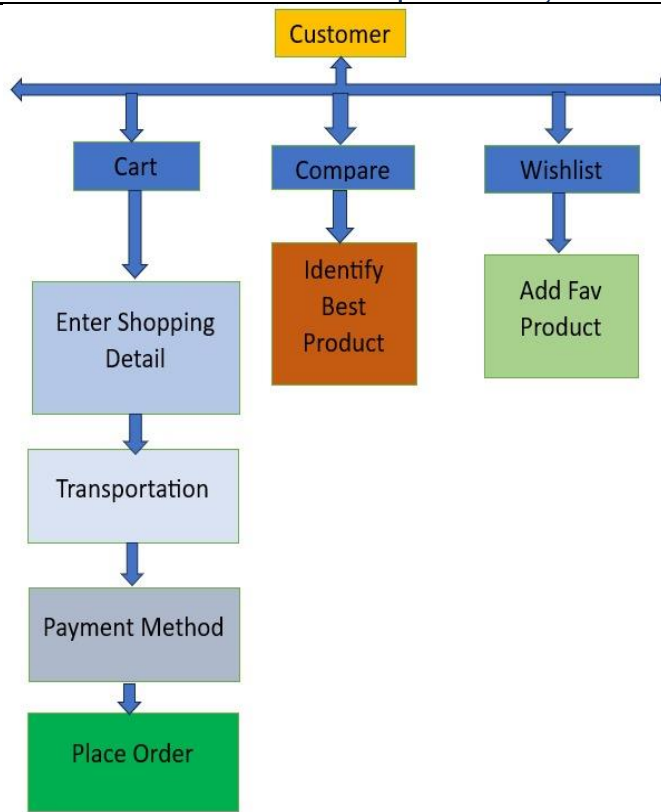
Fig.2 Customer Side

The system administrator will keep an eye on every usage and transactions. Information on farmers and customers will be managed.

IV. IMPLEMENTATION SCHEME

The implementation of the web application for Project Management System using the MERN (MongoDB, Express.js, React.js, and Node.js) stack involves several key components and steps. This section outlines the implementation scheme

employed in the development of the application, providing an overview of the processes and technologies involved.:



A) Requirements Analysis:

Identify the functional and non-functional requirements of the Project Management System web application. Determine the key features and functionalities to be incorporated, such as user registration, team formation, task assignment, data visualization, and performance analysis.

B) Technology Selection:

Choose the MERN stack as the development framework for the web application. Select MongoDB as the database to store user data, task information, guide information, and performance metrics. Utilize Express.js as the server-side framework for creating RESTful APIs and handling user requests. Employ React.js for building dynamic and interactive user interfaces. Use Node.js as the server runtime environment for high scalability and performance.

C) Frontend & Backend Development:

Create the user interface using React.js. Design and implement components for user registration, login, group formation, task allocation, guide allocation, and data visualization. Incorporate responsive design principles for optimal user experience across different devices. Implement client-side form validation and error handling. Implement the server-side logic using Express.js and Node.js. Develop APIs for user registration, authentication, activity logging, goal setting, and data retrieval. Implement data validation and error handling mechanisms.

D) Database Design:

Design the database schema for storing user profiles, project details, task details, and guide details. Define the relationships between different entities, ensuring efficient data retrieval and storage.

E) User Feedback and Iterative Development:

Collect user feedback through surveys, interviews, or usability testing sessions. Analyze the feedback to identify areas for improvement and refinement. Iteratively enhance the application based on user input, addressing usability issues and adding new features.

F) Deployment:

Prepare the application for deployment on a hosting platform or cloud server. Configure the necessary infrastructure, including web server setup, database deployment, and domain management. Ensure proper security measures, such as SSL certificates and authentication mechanisms. Monitor and optimize the application's performance in the production environment.

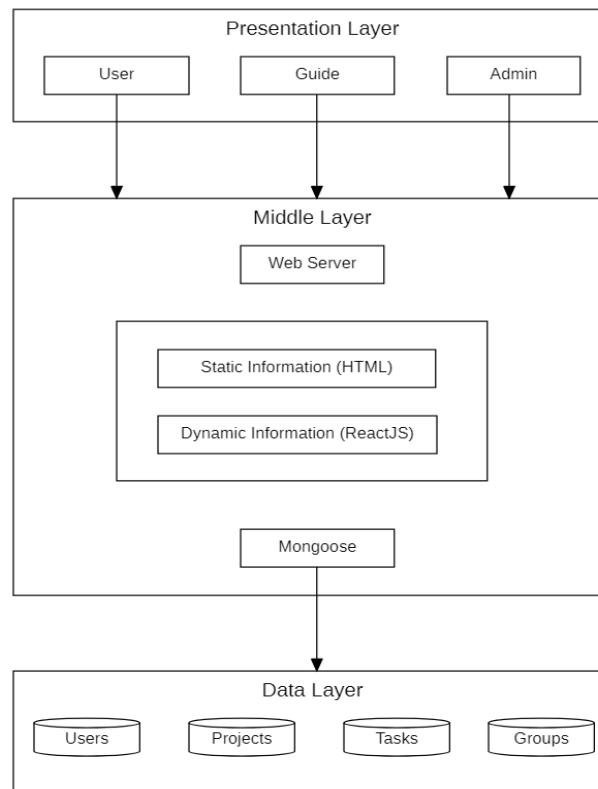


Fig.1 Architecture of MERN Web Application

V. RESULT & DISCUSSION

The characteristics of the digishivar website are gathered from research articles and problems that farmers have because of mediators. As a result, the website has a blogging system where farmers publish blogs about veggies.

Notification alerts, often referred to as alert messages, are vital notifications that users get when significant events, updates, or actions occur inside a system or application. These notifications, which offer pertinent and timely information, significantly improve the user experience.

FRONT-END:

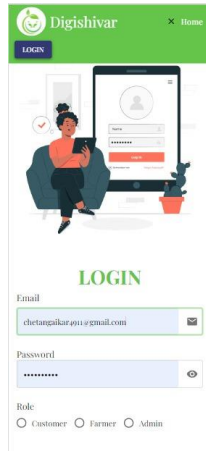


Fig.1 Login Page



Fig.2 Register Page

Fig.1 shows the login page where farmer, customer and admin can login to the system. Fig.2 shows the registration page for farmer, customer and admin.

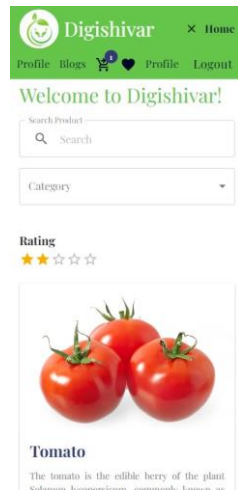


Fig.3 Dashbaord for customer

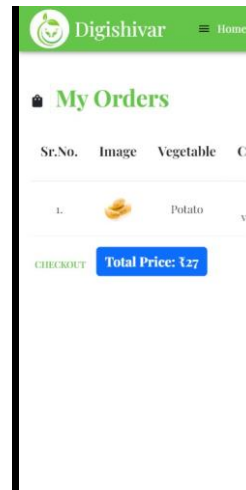


Fig.4 Order list for customer

Fig.3 shows the customer dashboard, customer dashboard in an e-commerce web application allows users to manage account details, view order histories, receive sales alerts, save favorites, create wish lists, rate products, access support resources, and receive personalized recommendations, enhancing the shopping experience and customer satisfaction. Fig.4 shows the online store's product order list that provides a concise overview of purchased products, including product name, quantity, price, and image. It facilitates tracking, visual identification, and pricing transparency, promoting a seamless shopping experience and simplifying order administration.



Fig.5 Blogging Page

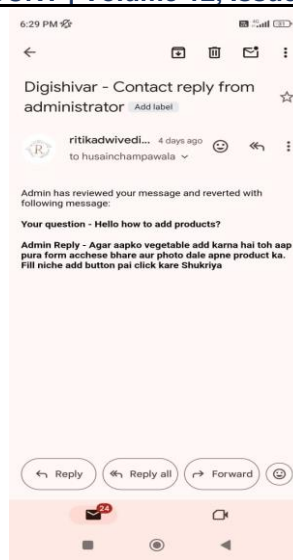


Fig.6 Notification Page

Fig.5 states that both farmers and consumers can benefit from using the blogging feature of the e-commerce web application to exchange knowledge, anecdotes, recipes, and updates on fresh food, farming methods, and other pertinent subjects. Farmers can share their knowledge and perspectives about sustainable agriculture, fresh, locally sourced food, and farming techniques through blogging. Consumers have access to information about the food's origins and the labor-intensive production process.

Customer decision-making can be facilitated by blog articles that provide information on seasonal crop availability. To promote transparency and confidence, farmers can also provide updates on crop yields, meteorological conditions, and any difficulties they may be having. Fig.6 shows notification alerts that used in our project to notify users of important actions they do within the application, such resetting their passwords or confirming orders. For example: Users receive an invoice and an email verifying their order after making a transaction. To help with the reset process, users who request a reset after forgetting their password will get an email with a one-time password (OTP).

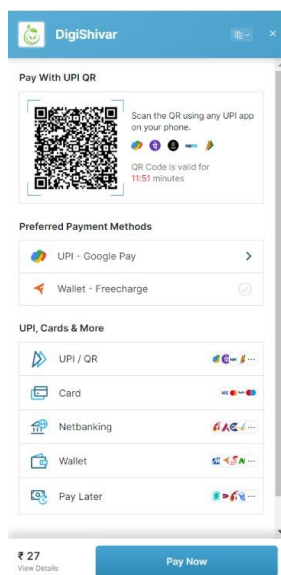


Fig.7 Payment Gateway

Fig.7. states the Razor Pay dashboard that streamlines customers' checkout experience by providing a secure payment gateway for secure transactions. Users can enter payment information, use digital wallets or UPI, and track their transactions using tools like transaction history and order summary. This enhances the effectiveness and security of online transactions.

BACK-END:

Models: Here we define the structure of the data that should be in the database. By using some models which help to store the data in the database like mongoose, it is one of the famous libraries in NodeJS. Creating the schemas by mongoose with can mention the names and type of the data.

Routers: All the work related to the routing of the pages was done here. ExpressJS is a popular library for routing. CRUD operations and routing-related code are saved in this folder.

Controllers: In controllers, the definitions of the functions which are declared in the routing will be stored and also the codes of the middleware are stored in this folder. In the controller phase, the function definitions of the function which are declared in the Routers will be done. We are having some middleware also defined here.

DATABASE:

Data that is entered by the users will be stored in the database. There are so many databases that have been used nowadays. In this project, MongoDB Atlas is used as a database. Here, a Cluster is created to store the number of collections. Using the mongoose library, we can connect to MongoDB. There are so many methods in this library to create schema and also to save the data in the database.

VI. CONCLUSION

In a landscape where many farmers struggle with the complexities of online platforms and digital tools, a proposed solution aims to empower them with a straightforward method to sell their produce directly to consumers. This approach bypasses intermediaries, ensuring farmers receive fair prices and customers access fresh products swiftly. By leveraging this system, farmers can benefit from pricing insights and market-based selling support, while simultaneously reducing food waste by streamlining the supply chain and addressing transportation concerns. Through easy-to-use interfaces and tailored support, both farmers and consumers stand to gain, with farmers gaining insight into their profitability and consumers accessing detailed farm and product information based on location.

Moreover, the proposed model not only promises to elevate food quality but also aims to enhance farmer earnings through a direct marketing strategy. By bridging the gap between farmers and consumers, the initiative seeks to foster a community-driven approach to agriculture while facilitating access to crucial information on agricultural programs, medications, and fertilizers beneficial to crop yields.

In conclusion, this model has the potential to grow and benefit more farmers and consumers on a larger scale, improving food distribution and profitability. However, there are some areas we need to work on. We currently lack information on farmers' support programs and fertilizers, which are important for crop success. Integrating these features in the future could make the platform even more helpful. Also, setting up a system to address farmers' concerns would ensure its long-term success. Overall, there's exciting potential for this model to make a big impact in agriculture.

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