E-Commerce Web Application for Organic Products

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Abstract: E-commerce platform tailored for organic food products serves as a digital haven for farmers and small-scale producers committed to sustainable agriculture, offering a global marketplace for their farm-fresh offerings. Through intuitive product listings, secure payment gateways, and marketing support, artisans can transcend geographical boundaries and connect with conscientious consumers. These platforms also serve as educational hubs, featuring blogs, forums, and resources on sustainable farming practices and hosting events like virtual farmers' markets, fostering community and knowledge-sharing. By bridging traditional farming with modern technology, e-commerce for organic food promotes sustainability, ethical consumption, and the flourishing of organic products in a vibrant marketplace. This holistic approach celebrates the farm-to-table journey, fostering a deeper connection between producers and consumers while championing environmental stewardship and wholesome culinary practices.

Keywords: Web application , E-commerce, Organic products, Ecommerce organic food, online shopping website

I. INTRODUCTION

Organic products are things like food and grains that are made without using chemicals. They're grown or made in ways that are kinder to the Earth. Organic online stores sell a bunch of these products, from healthy foods to staples like wheat, millet, and dalia.

Shopping online has become a big deal. It's not just about buying things anymore—it's about making choices that help our planet. Imagine a website where you can buy stuff that's good for you and the environment. That's what we're talking about: organic online stores.

With all the problems our planet is facing, it's super important to think about what we buy. Organic online stores are part of the solution. They let us make eco-friendly choices right from our computers or phones.

Organic products are not just better for our health; they're also better for the environment. By choosing organic, we support farming methods that protect soil, water, and wildlife. In this paper, we're going to dive into these special online stores. We'll look at how people shop on them, what kinds of things they sell, and how they're making a difference. We want to understand the good things they're doing for the environment and how they can get even better. So, let's explore how these green online stores are helping us make the world a better place one organic product at a time.

Let's shop green and make a positive impact on our planet!

II. LITERATURE SURVEY

Kadir Özdemir et al.[1] conducted a comprehensive analysis of the literature on e-commerce websites published between 2010 and 2020. The Web of Science (WOS) database's index of scholarly works on e-commerce was analyzed and debated, with particular attention paid to journals, publishing years, nations, sample size, primary goals, theories, variables, and key findings. Seventy research articles were chosen for the study, and the content analysis approach was used to evaluate them. The primary goals of the study were to determine the elements influencing consumers' e-commerce purchase intention, look into how different e-commerce website features affect consumers' perceptions and purchase intention, and assess the elements influencing consumers' perceived loyalty, trust, and satisfaction in e-commerce. The conclusions of the chosen papers offered insightful information for e-commerce study in the future.

Dr.A.V.Senthil Kumar et al.[2] investigated the creation and use of the GREEN e-commerce website for organic products. The

goal of the paper was to address the difficulties that buyers and sellers in the organic food market encountered and to offer a user-friendly platform that addressed these problems. In order to create a successful and advantageous platform for all parties concerned, the presentation also covered the project's prospective components as well as GREEN's value proposition and business model canvases.

J.Solomon Thangadurai et al.[3] looked into how consumers behaved when making online purchases of organic products. It examined elements impacting purchase decisions, including barriers, advantages, and awareness. Understanding consumer awareness, evaluating the advantages, identifying the obstacles, and investigating their effects were among the goals. The intention was to give producers of organic food and e-commerce marketers useful information to improve the online organic food buying experience.

Sujay S. Kadam et al.[4] study paper goal was to enhance the rural economy and agricultural sector in India through the creation of an e-commerce portal for agricultural items. It covered the conceptual design, the drawbacks of conventional purchasing and selling, and the suggested work's process. The benefits and drawbacks of online purchasing and selling were also covered in the study, along with the requirement for technical administration and assistance. It also included citations to earlier research and publications on e-commerce in agriculture.

Anamika Chaturvedi et al.[5] examined the factors that have led to this change in consumer perceptions of organic food, this study sought to address those changes. Furthermore, the study aimed to ascertain the principal variables impacting consumers' attitudes and purchase intentions about organic food, as well as the aspects that were disregarded but had a favorable influence on consumer attitudes. By achieving these goals, the study hopes to close current research gaps and support the larger objective of encouraging consumer use of organic food, which will ultimately lead to an increase in its acceptance and appeal.

III.   PROBLEM STATEMENT

To develop an exclusive e-commerce platform for sellers to sell their products, the demand forecast of the items required, automatic quality checks on the items as well as Sentiment analysis with next recommendation actions for the seller shall be added as a future scope.

IV.   OBJECTIVE

Our goal is to establish a dynamic online marketplace that champions the accessibility and benefits of organic

products. Through intuitive navigation and visually appealing design, we aim to cultivate trust and loyalty among our clientele, fostering a community dedicated to holistic wellness and environmental stewardship. By prioritizing transparency in sourcing and product information, we seek to empower consumers to make informed choices that align with their values and contribute to a greener future.

● Enhance user experience through intuitive website design and seamless navigation, facilitating effortless exploration and purchase of organic products.

● Promote sustainability by showcasing eco-friendly packaging options, carbon-neutral shipping practices, and partnerships with ethical suppliers.

● Cultivate customer trust and loyalty through transparent communication of product origins, certifications, and environmental impact, fostering a community committed to healthy living and environmental responsibility.

V.   METHODOLOGY

The methodology employed in this research involves a comprehensive analysis of the e-commerce website specializing in organic products. Firstly, a detailed examination of the website's design, layout, and user interface will be conducted to evaluate its usability and functionality. This analysis will entail assessing the navigation structure, search features, and product categorization to gauge user-friendliness. Usability testing methods, such as task-based testing and heuristic evaluation, will be utilized to identify any usability issues and areas requiring improvement. Subsequently, the user experience (UX) will be evaluated through qualitative research methods, including surveys and interviews, to gather feedback on user satisfaction, perceptions, and preferences related to browsing, product selection, checkout process, and customer support. User behavior data, such as clickstream analysis and heatmaps, will also be analyzed to uncover patterns and pain points in the user journey. Additionally, the effectiveness of digital marketing strategies, including SEO, social media marketing, and email marketing, will be assessed through key performance indicators (KPIs) such as website traffic, conversion rates, and engagement metrics. Competitive analysis will be conducted to benchmark the website's performance and identify opportunities for differentiation. Furthermore, an evaluation of the supply chain and product sourcing practices will be undertaken to ensure product authenticity and ethical standards.
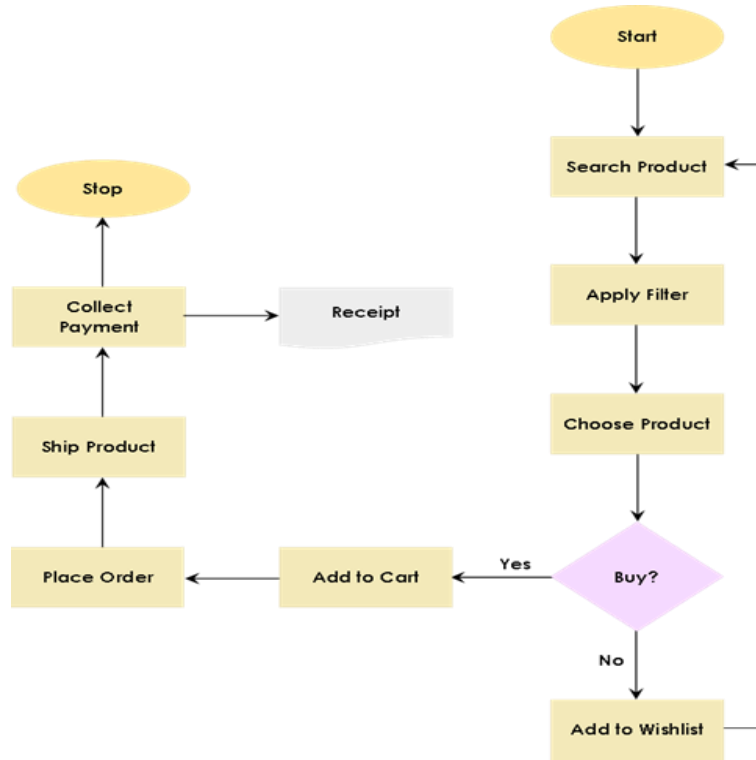
Fig.1 Flow of the Application

VI. SOFTWAREIMPLEMENTATION

The plat form was developed using the MERN stack which includes MongoDB as a database, Express as a Node.js framework, React.js as a client-side JavaScript framework, and Node.js as a JavaScript server platform, as it's one of the most popular, easy to use technology stack along with plenty of community support. For the frontend of the website, we used React.js as a client-side JavaScript framework as it is extremely flexible and provides great performance. The User interface design was built using Material Design principles and components which provide clean, ready-to-use UI components. As for the backend MongoDB, a document-oriented database management system that allows you to store data in JSON format was implemented. It is far more flexible than a SQL- based database management system, and it is incredibly scalable, making it perfect for applications that require real-time scalability. The REST API, which oversees the whole flow of data in the application, was built with Node.js and Express .The key advantage of Express is that it allows us to utilize JavaScript in both the front-end and back-end, which saves time. Node.js, a JavaScript runtime environment, is incredibly important because it utilizes a single- threaded event loop with non-blocking I/O, allowing it to fully exploit all CPU cores. It also has the bonus of being cross-platform, giving it considerable flexibility. One of the most difficult challenges was to develop a frictionless and secure payment gateway. This was accomplished with the help of Razor Pay checkout, which offers a sleek, prebuilt user interface as well as top-of-the-line security features. The necessity of user authorization and authentication for any type of website cannot be taken for granted. This was realized using JWT tokens, which are secure, unique private keys that can be encoded with some data and are used to identify a user based on this key. All sensitive information, such as passwords, was only stored after it was hashed with the Crypt hashing function.

A. Static decomposition and Dependency Description

This section contains the system DFD diagram for the E- commerce application for Sellers and also has a detailed explanation for each use case in the system. The system's use case shows the user a detailed view of the system and how the actors would interact with each other and with the system. The explanation for each use case is then provided below. The system use case for the administrator and the user helping the user to understand who the actors are as well as giving the description for each use case along with its pretend post-conditions that should be satisfied once the use case is implemented in the software. The use case of an administrator shows where he or she has access to the application. The administrator can access the home page, select a category, or add/delete items from the cart demonstrating the use case for users where they have access to the online shopping cart application. They can access the homepage, select a category, add/delete items to/from the cart, view the shopping cart, and decide to either continue shopping or check out. They are required to go through the user authentication form (login) which would only allow them to place an order for the items they selected.
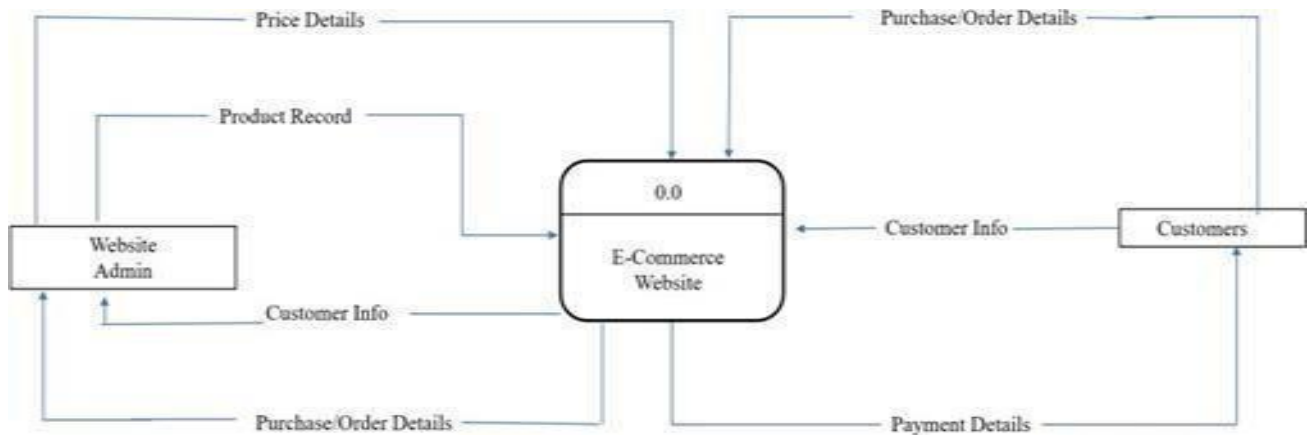
Fig.2

B.   User Panel

There are two panels in this paper i.e., Admin Panel, and Customer Panel. All are having their own level of privileges.

i)   Admin:

• They show all products, update, delete and add new products.

• They can also provide privileges to customers as well as other admins. They can delete the account.

•Admin can also add product to home screen list and can also track the data about the items bought or sold, consumer visited count.

ii)   Customer:

•Customers can view all products.

• They can add it to Cart and Wishlist for future purchase.

• They can delete and update it from Wishlist or Cart.

• Transactions will be done by customers including all taxes and shipping charges.

•Customers can give stars and feedback to products and vendors in feedback form.

Fig.3 Home Page

Fig.4 Login Form

Fig.5 Registration Form
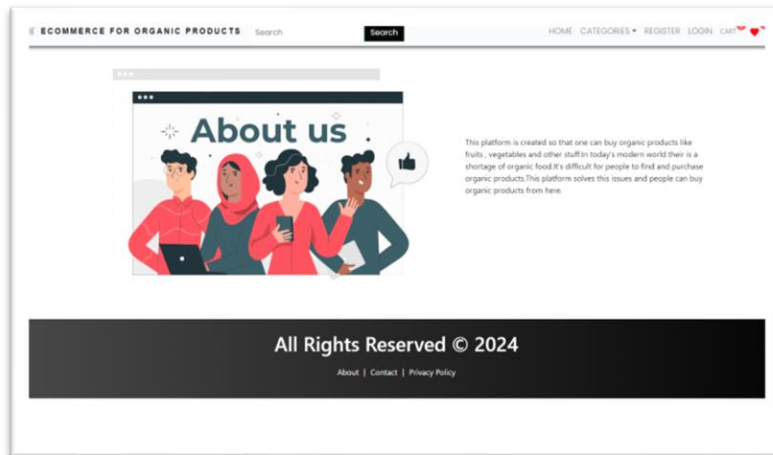

Fig.6 Products Page

Fig.7 Contact Us
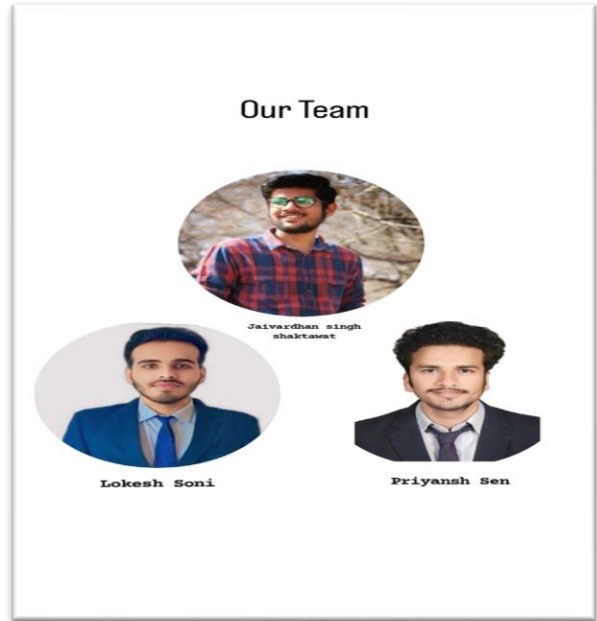
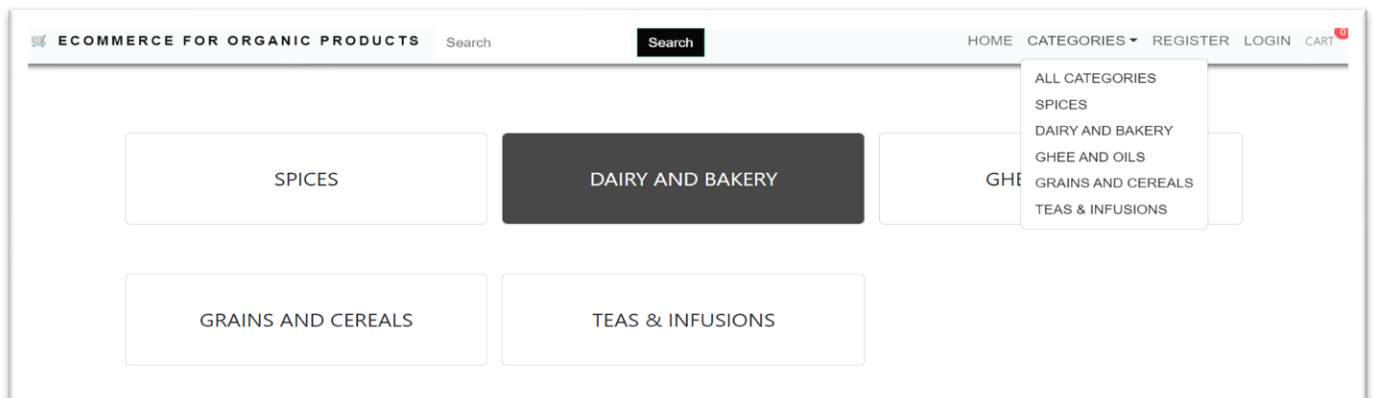Fig.8 Our Team

Fig.9 About Us

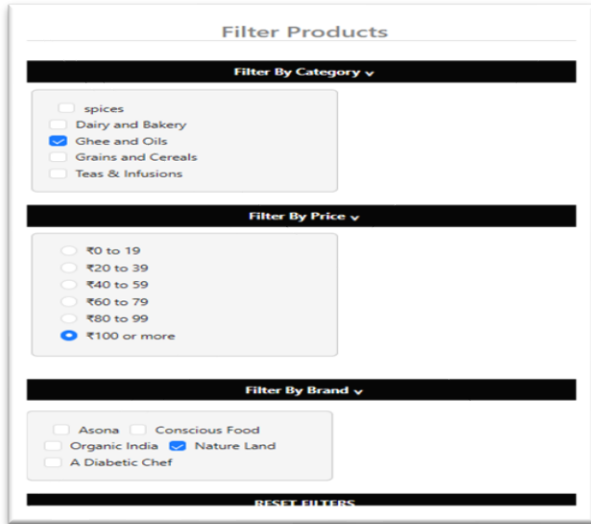Fig.10 Products Categories

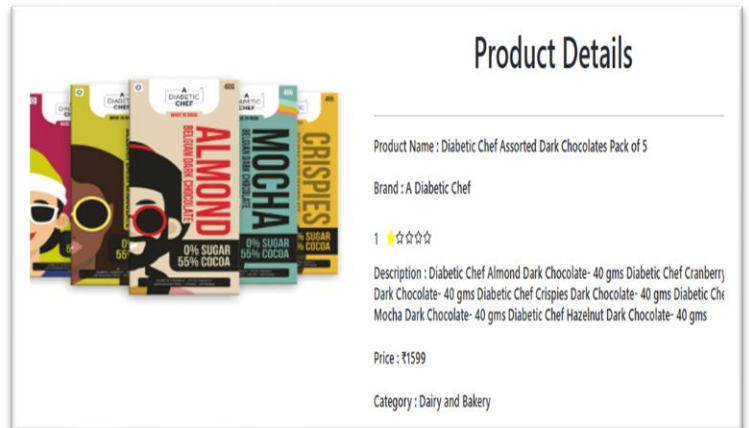Fig.11 Product Filters

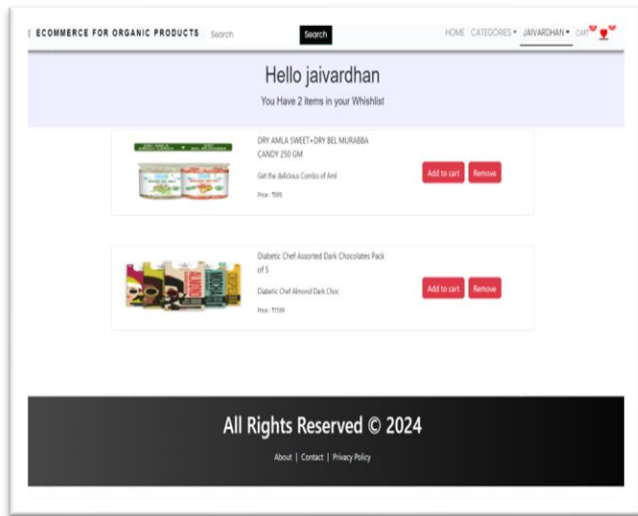Fig.12 Product Description
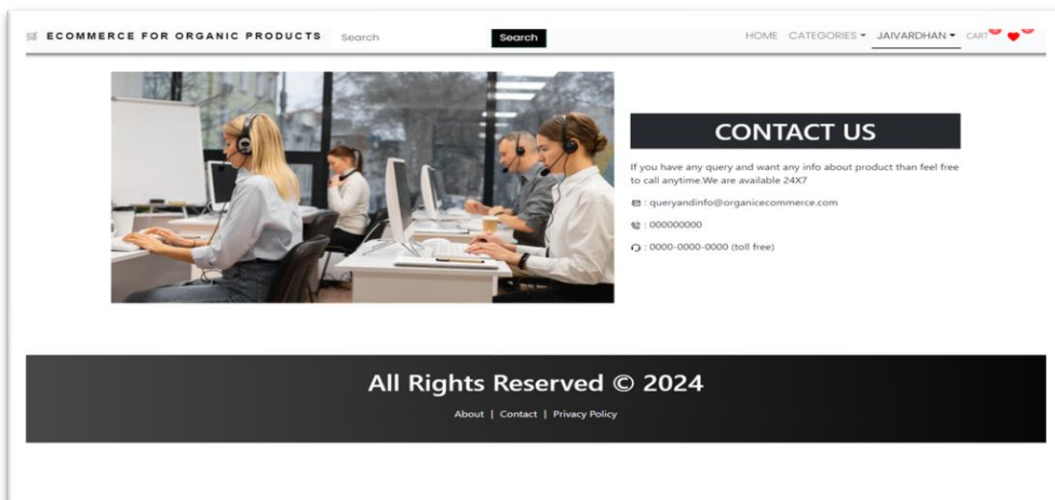

Fig.13 Wishlisted Items

Fig.14 Rating and Reviews

Fig.15 Enquiry Form Page

Fig.16 Cart Summary

Fig.17 PaymentGateway

Fig.18 All Orders

VII.   CONCLUSION AND FUTURE SCOPE OF WORK

The In the bustling realm of e-commerce, our platform for organic products emerges as a beacon of sustainability and wellness, offering a seamless journey from digital shelf to conscientious consumer. Rooted in the principles of ethical sourcing and environmental stewardship, we curate a diverse array of high-quality organic goods, each embodying a commitment to purity and authenticity. Through our user-friendly interface, customers embark on a voyage of discovery, exploring an abundance of nourishing options tailored to their individual needs and values. From farm-fresh produce to eco-friendly household essentials, every purchase on our platform signifies a conscious choice towards healthier living and a greener future. With a steadfast dedication to transparency and integrity, we forge meaningful connections between producers and consumers, fostering trust and empowerment within our community. As we navigate the ever-evolving landscape of sustainable commerce, our vision remains unwavering: to inspire positive change, one organic transaction at a time, and to cultivate a world where the harmony between humanity and nature thrives.

The salient features of this website are:
•   Users will choose which courier service they want.
•   The simplicity and suitability of this website.
•   User-friendly website.
•   Quick display of products based on price range.
So, following things can be done in future:
1.   The current system can be further extended which will allow the users to save products into their wishlist.
2.   Subscription can also be added where the users could get the newsletter letters especially when the price for a product drop from the original price.
3.   Post Requirements: In this, customers will be updated on their contact number as well as e-mail id.
4.   More products such as fitness and health will be added and collaborated with more brands.

ACKNOWLEDGEMENT

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