CHAPTER 1

INTRODUCTION

1.1 ABOUT THE PROJECT

The primary objective of implementing a One-Time Password (OTP) system via SMS in online transactions is to enhance the security of the purchasing process and protect sensitive customer information. By providing an additional layer of security, the platform aims to build trust with its users and establish a more secure and trustworthy relationship. The OTP system simplifies and expedites the online payment process while maintaining a high level of security, making it more efficient and convenient for customers. Additionally, the platform aims to prevent online fraud and phishing attacks by reducing the risk of sensitive information being intercepted or manipulated.

1.2 EXISTING SYSTEM

A user interface has been developed for both the admin and user modules. The admin module allows administrators to add new products and manage existing products and orders. In the user module, customers can view all available products along with their prices and descriptions. When customers wish to purchase a product, they can add it to their shopping cart. All data is stored in a Firebase database.

1.3 DRAWBACKS OF EXISTING SYSTEM

- Customer does not have awareness about agro center(online platform).
- View available products with prices and descriptions
- Does not involves any SMS notification during the online order of product.
- Register by creating a username and password.

1.4 PROPOSED SYSTEM

The total cost of a purchase is determined by adding the product cost to the shipping cost. When a customer decides to buy a product using the online payment method, they must enter their valid payment information, including their contact number. This step is crucial for processing the transaction securely.

After the customer submits their details, they will receive a One-Time Password (OTP) via SMS or email. This OTP serves as a verification tool to confirm the customer's identity and validate the order. Customers must enter the OTP within a specified time frame to proceed with the purchase.

1.5 ADVANTAGES OF THE PROPOSED SYSTEM

- Collecting minimal personal information (like a contact number) while ensuring that sensitive payment details
- Requiring valid payment information and a contact number helps to ensure that the transaction is secure and reduces the risk of fraud.
- User can identify easily about the order that they placed through sms.

SUMMARY:

The project aims to enhance online transaction security by implementing a One-Time Password (OTP) system via SMS. This system addresses existing drawbacks, such as the lack of SMS notifications and user awareness. Customers will enter valid payment information and receive an OTP for order verification. The proposed system collects minimal personal information while ensuring secure transactions. Overall, it aims to create a more efficient and trustworthy online shopping experience.

CHAPTER 2

SYSTEM ANALYSIS

2.1 IDENTIFICATION OF NEED

Digital platform applications are becoming important tools for agro center, helping them work better and connect with customers. These apps have features that make things easier, like a notification system that alerts customers about product order and order id. One key feature is the ability to track product expiration dates, so customers know how fresh their items are. The apps also offer combo products, which let agro center sell bundles of items together, providing more value to shoppers. Plus, with secure online payment options, customers can easily buy products from anywhere .By using these digital solutions, agro center can improve their operations and build better relationships with their customers. This article will explore the features and benefits of these digital applications and how they are changing the agricultural industry.

2.2 FEASIBILITY STUDY

A feasibility study found that developing a agro center website is an economical and strategic approach to changing customer needs in the retail industry. The project aims to meet the growing demand for enhanced digital experiences through web technologies and e-commerce capabilities. A cost-benefit analysis shows that the initial costs of technical infrastructure, skilled workers and design elements are justified by the expected benefits of online sales and a larger pool of customers. By implementing e-commerce capabilities, you can improve the customer experience, increase sales and build brand loyalty.

2.2.1 Technical Feasibility

The technical effectiveness of a agro center website depends on knowing how to use advanced web technologies and design principles to create an online platform. We use the latest technologies, including powerful back-end systems and front-end interfaces, to ensure efficient operation and an excellent user experience. It is important to implement responsive design methods. The goal is to ensure that your website adapts well to a variety of devices, including computers, tablets and smartphones, thereby improving accessibility for a wide range of users. In addition, the primary purpose of designing and managing the database is important to optimize navigation, improve search performance, improve product visibility, and create a partner search and purchase experience. Accommodating these technical ideas, the proposed solution is not only consistent with the project's objectives, but also demonstrates its commitment to innovation, placing the agro center at the forefront of the trends of technological advances in the marketing sector.

2.2.2 Operational Feasibility

Agro Center websites show how to operate by strategically aligning with the operational requirements of the retail industry. With the main goal of improving the customer experience, the website combines web technologies, design principles and e-commerce features. We focus on developing a user-friendly interface with an intuitive navigation framework and powerful search functions to help customers reflect their various needs when choosing products. The introduction of e-commerce capabilities for selling products online not only meets the needs of the market, but also simplifies the management process through simple inspection procedures and improves overall efficiency. In addition, the website's compatibility on multiple devices ensures a wide reach, reaching the target audience and increasing marketing. This management approach not only improves customer satisfaction, but also increases the agro store's commitment to adaptability and innovation to meet market requirements.

2.2.3 Economic Feasibility

Developing a Agro center website is affordable due to a thorough cost-benefit analysis. The initial investment in technical infrastructure, intellectual resources, design elements and e-commerce integration is expected to yield significant results. The money you can make from online sales and a larger customer base will far outweigh the costs of maintaining your website, managing content and customer support. By incorporating e-commerce capabilities, increasing brand awareness and building customer loyalty, agro center can reach a wider market and meet the growing demand for online marketing in the agro industry. In addition, implementing advanced analytics tools will allow you to learn about customer behaviour and preferences, allowing you to implement targeted marketing campaigns and improve productivity. The expected return on investment comes from increased sales and reduced marketing costs from a targeted digital strategy, as well as reduced long-term overhead costs through better work through automation. The economic viability of the project was confirmed through long-term cost savings and a positive impact on brand image and market presence, successfully meeting the growing needs of retail customers in today's digital environment.

2.3 SOFTWARE REQUIREMENT SPECIFICATION

2.3.1 Software Requirements

Operating System	: Windows 11 and above
Environment	: Chrome, Visual Studio Code
Frontend	: HTML, CSS, Bootstrap, React.JS
Scripting language	: JavaScript
Backend	: Node.JS
Database	: Firebase

2.3.2 Hardware Requirements

Processor	:	Intel Core i5
RAM	:	4 GB RAM
Hard disk	:	500 GB
Keyboard	:	Standard102 keys
Mouse	:	Optical Mouse

2.4 SOFTWARE DESCRIPTION

Front End

HTML

HTML, or Hypertext Markup Language, is the foundational structure of the World Wide Web, enabling the creation of documents that browsers can display. It consists of various elements, from simple headings (<h1> to <h6>) and paragraphs (<p>) to complex structures like tables (<table>) and multimedia content (<video>, <audio>, <img>). Each element is defined by tags that enclose content and can include attributes to specify behavior or appearance, such as the "src" and "alt" attributes in the <img> tag. HTML documents are organized hierarchically, starting with a root <html> element that contains <head> and <body> sections, where the <head> includes metadata and the <body> holds visible content. HTML5, the latest version, introduced new semantic elements and enhanced support for multimedia and interactive features, improving modern web development practices.

CSS

CSS (Cascading Style Sheets) is a vital tool for shaping the visual presentation and layout of web pages, serving as the styling language that dictates the appearance of HTML elements and enhances user experience. It enables the creation of responsive and adaptive designs through features like media queries, ensuring optimal display across various devices. CSS allows for extensive customization of colors, fonts, spacing, and other stylistic attributes, fostering a coherent design language. The use of CSS frameworks, such as Bootstrap, streamlines the styling process by providing pre-designed components, while the ability to implement animations and transitions adds dynamic effects that engage users. Adhering to CSS standards promotes consistency and functionality, while selectors enable precise targeting of HTML elements for selective styling. The modular approach of using classes and IDs enhances maintainability and scalability, facilitating efficient collaboration between designers and developers

BOOTSTRAP

Bootstrap is a powerful front-end framework that simplifies the development of responsive and visually appealing web applications. Its flexible grid system allows for seamless adaptation to various screen sizes, ensuring a consistent user experience across devices. With a rich library of pre-designed components like buttons, modals, and navigation bars, Bootstrap accelerates development while maintaining a uniform look and feel. The framework is built on standard HTML and CSS, making integration into existing projects straightforward and flexible. Additionally, Bootstrap includes JavaScript plugins that enhance interactivity with minimal configuration. Its modularity enables developers to include only the necessary components, keeping projects lightweight and efficient. The extensive documentation and large community support make it easy for developers to find resources and assistance. By leveraging Bootstrap, developers can focus on functionality and user experience rather than design, ultimately creating polished and modern web applications. Embracing Bootstrap is a strategic choice for optimizing development efficiency and achieving a user-centric design ethos.

JAVA SCRIPT

JavaScript is a versatile programming language used to enhance interactivity and functionality on web pages, evolving from a client-side scripting language to a powerful tool for both client-side and server-side development. It allows dynamic manipulation of HTML and CSS, enabling responsive web applications that react to user input in real-time. With a syntax similar to Java and C, it is relatively easy to learn and supports event handling for creating interactive user interfaces. Modern frameworks like React, Angular, and Vue.js have expanded its capabilities for building complex single-page applications (SPAs) and progressive web apps (PWAs). Additionally, Node.js enables full-stack development, making JavaScript an indispensable tool in today's web development landscape.

REACT.JS

React.js is an open-source JavaScript library developed by Facebook for building user interfaces in web applications. It utilizes a component-based architecture, allowing developers to create reusable and maintainable UI components. React employs a virtual DOM to optimize UI updates, enhancing performance by reducing direct interactions with the actual DOM. The library supports a declarative programming style, enabling developers to define the desired UI state easily.

With unidirectional data flow, React simplifies state management, and its ecosystem includes tools like React Router for routing and Redux for state management. Additionally, React supports server-side rendering (SSR) and static site generation (SSG), which improve performance and SEO. These features contribute to React's popularity in modern web development, making it a preferred choice for creating efficient and dynamic web applications.

Back End

NODE.JS

Node.js is an open-source, cross-platform JavaScript runtime environment that allows developers to execute JavaScript on the server side, built on Chrome's V8 engine. Its event-driven, non-blocking I/O model efficiently handles multiple concurrent connections, making it ideal for real-time applications like chat and streaming services. Node.js offers a rich set of built-in modules and a vast ecosystem of third-party libraries via npm, streamlining development. Its single-threaded architecture optimizes CPU resource usage for scalable, high-performance applications. Additionally, it supports frameworks like Express.js and can be used for desktop applications and IoT devices, enhancing its versatility in modern development.

FIREBASE

Firebase is a development platform by Google that provides tools for building mobile and web applications. Its Real time Database is a cloud-hosted NoSQL database that enables real-time data synchronization, ideal for chat apps and multiplayer games. With a simple JSON-based data model and built-in synchronization, it simplifies data management. Firebase also offers security features, client-side libraries, and integration with services like Authentication and Cloud Messaging. Additionally, it includes monitoring and analytics tools for insights into app performance and user behaviour.

SUMMARY:

The document proposes a digital platform for agro center to enhance operations and customer engagement through features like order notifications and secure payments, supported by a feasibility study indicating economic viability. It will utilize advanced web technologies, including HTML, CSS, Bootstrap, React.js, Node.js, and Firebase.

CHAPTER 3

SYSTEM DESIGN

3.1 MODULE DESCRIPTION

The Agro center Web Application’s Home Module serves as the central hub, providing an engaging entry point with interactive features, seamless navigation, and dynamic content areas showcasing promotions and featured products. Key sections offer quick access to popular items and introduce users to the store's background and values, fostering trust and transparency. The Product Module forms the backbone, presenting a comprehensive catalogue of products from trusted brands with detailed information and a user-friendly shopping cart system, while the Authentication Module ensures secure user interactions with seamless registration, login, and account management. Streamlining the shopping process, the Checkout Module guides users from product selection to order completion with a user-friendly interface and secure payment options. Meanwhile, the Admin Module empowers administrators with essential tools for efficient management, including product and order management, user administration, and advanced analytics, ensuring a well-organized, responsive, and secure online store environment with a focus on data-driven decision-making and user satisfaction.

3.1.1 Home Module

The Home module serves as the entry point and foundational interface of the online platform. This module encapsulates the primary components and functionalities that users encounter upon accessing the website. The key features of the Home Module include an interactive and visually appealing landing page that provides an overview of the agro center offerings. It incorporates a navigation bar to seamlessly guide users to different sections of the platform, such as Products, About Us, Account and Cart. The module also features dynamic content areas, showcasing promotional information, featured products and any ongoing sales or events. Additionally, its responsive design ensures an optimal viewing experience across various devices, contributing to a user-friendly and engaging introduction to the online platform. The Home Module also includes sections that feature key products and popular items or special promotions. This selection was designed to give users quick access to products they want or at special prices, enhancing the browsing experience and promoting in-store product discovery. The section also includes an "About Us" section, which introduces users to the store's background, mission, and values. Combining intuitive navigation, intuitive design, and informative content, the home module serves as the gateway to the agro center extensive online platform.

3.1.2 Product Module

The Product Module forms the core of the online platform, offering an extensive and organized display of the Agro center product inventory. This module encompasses a dynamic and visually appealing product catalogue, categorized for easy navigation. Each product listing includes detailed information such as product images, descriptions, prices, shows the expire date of the product and availability. Moreover, the Product Module boasts a diverse range of brand products, featuring trusted names like Round up ,barrier , biomycin, more. This variety ensures that users have access to top-quality items from renowned manufacturers, enhancing their confidence in the store's offerings. Additionally, the module integrates an intuitive shopping cart system, allowing users to add desired items for seamless online transactions.

3.1.3 Authentication Module

The Authentication Module serves as the secure gateway for user interaction with the online platform, encompassing essential functionalities to manage user identities and access. This module includes a seamless user registration process, allowing individuals to create accounts by providing necessary information. The login mechanism ensures secure access to user accounts, implementing robust authentication practices such as password hashing and encryption. Users can manage their accounts through account settings, enabling profile customization and password recovery options for a user-friendly experience. Additionally, the Authentication Module also incorporates features like multi-factor authentication and session management to enhance security further and provide users with peace of mind while using the platform.

3.1.4 Checkout Module

The Checkout Module serves as the concluding phase in the user's online shopping journey, streamlining the process from product selection to order completion. It encompasses a user-friendly interface for reviewing and confirming selected items, entering shipping details, and selecting secure payment options through integrated payment gateways. The module employs address validation and error-checking mechanisms to enhance the accuracy of user inputs and generates detailed order summaries for final confirmation. With a responsive design, the Checkout Module ensures a seamless experience across various devices, aiming to provide users with a secure, efficient, and satisfying conclusion to their transactions on the online platform.

3.1.5 Admin Module

The Admin Module serves as the nerve center for platform administrators, providing a centralized hub equipped with essential tools for efficient management of the online agro center. At its core, administrators wield functionalities to add, edit, and manage products, ensuring an up-to-date and comprehensive inventory to meet customer demands. Seamlessly integrated order management capabilities empower administrators to oversee and track orders from placement to fulfillment, with the flexibility to update order statuses and manage stock details in real-time. Furthermore, robust user management features enable administrators to maintain a clear overview of customer details. Leveraging advanced analytics and reporting tools, administrators gain valuable insights into sales trends, inventory performance, and customer behavior, empowering data-driven decision-making to optimize store operations and enhance customer satisfaction.

3.2 SYSTEM FLOW DIAGRAM

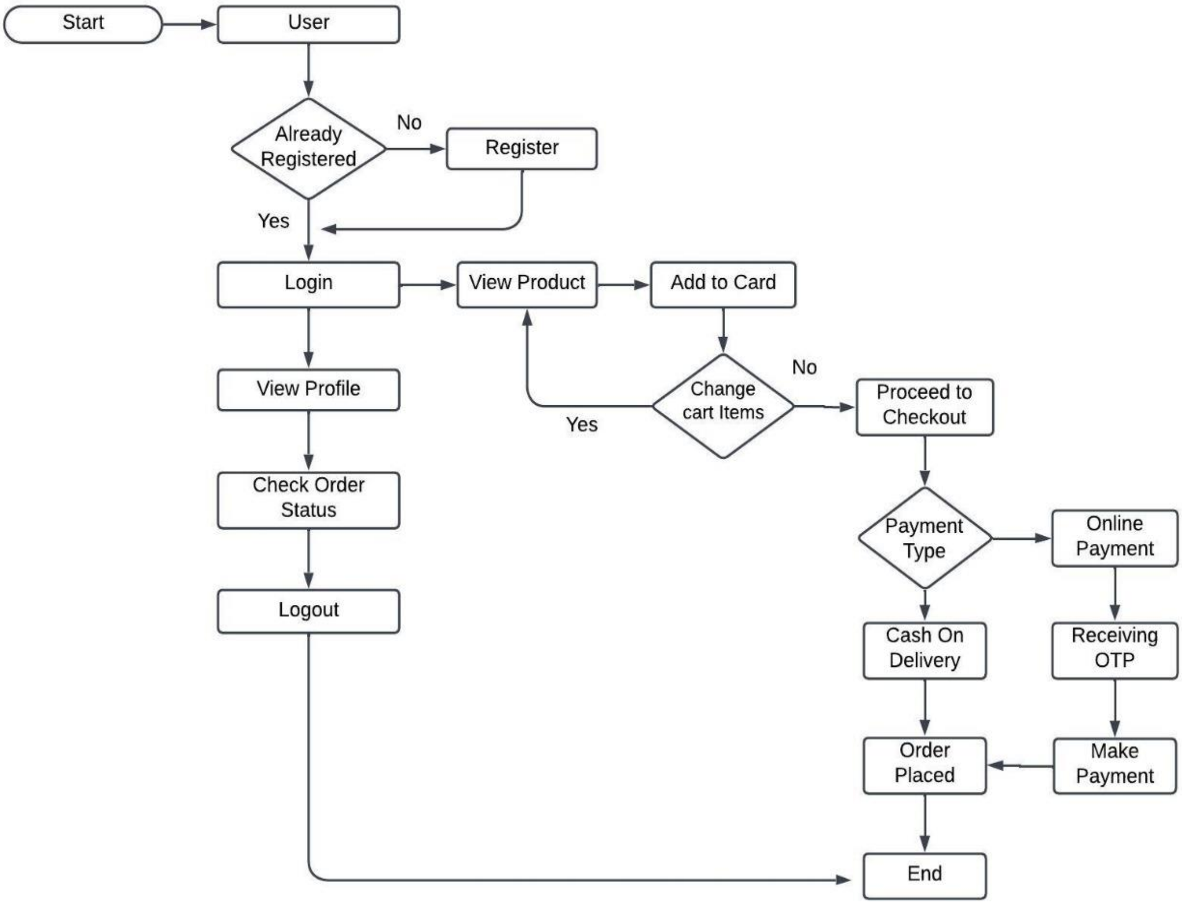


Figure 3.1 User System Flow Diagram

Description for flow diagram shapes:

The flowchart uses ovals for start and end points, rectangles for processes (e.g., Login, Register, View Product), diamonds for decisions (e.g., Already Registered?, Payment Type), and arrows to indicate the flow of steps. It visually represents a user journey in an online system.

DESCRIPTION:

1. Start : The process begins with the user entering the system.

2. User Status Check : If the user is already registered:

   - They proceed to Login.

   If not:

   - The user must Register first.

3. Post Login Activities : After logging in, the user can:

   - View Products.
   - Access their Profile.
   - Check Order Status of previous orders.

4. Adding Items to Cart : While viewing products, the user can Add Items to the Cart.

5. Modify Cart: If needed, the user can Change Cart Items:

   - If items are changed, the process loops back to modifying the cart.
   - If no changes are needed, the user proceeds to Checkout.

6. Payment Process: At checkout, the user selects a *Payment Type*:

   - Cash on Delivery: The system places the order.
   - Online Payment: The user Makes Payment, and the order is placed.

7. Logout : The user can Logout from the system at any point.

8. End : The process concludes once the order is placed.

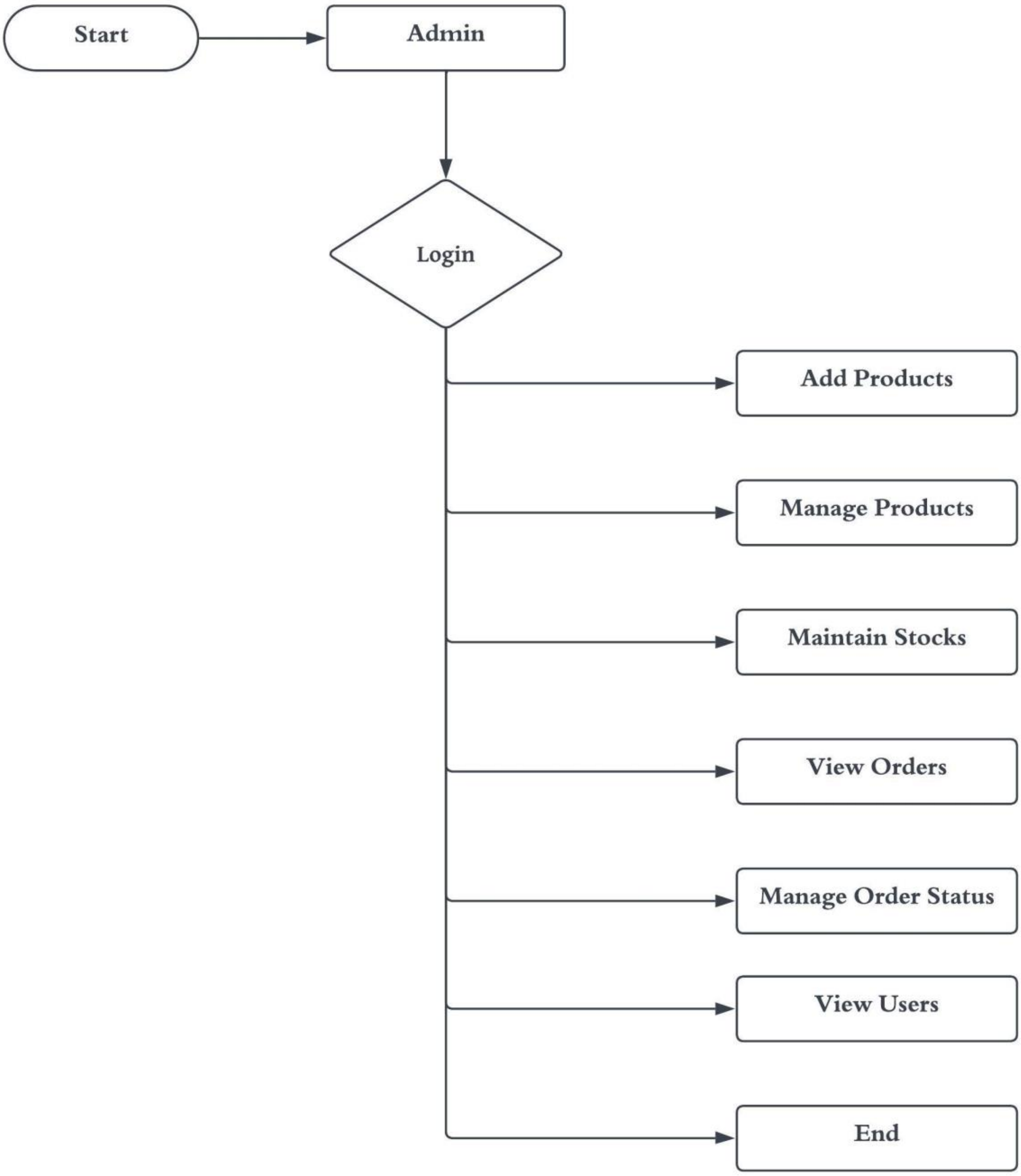


Figure 3.2 Admin System Flow Diagram

DESCRIPTION:

1. Start: The flow begins with the starting point.

2. Admin: The system identifies the user as an administrator.

3. Login: The admin is required to log in to access the functionalities.

4. After a successful login, the admin can perform the following actions:

   - Add Products: Add new products to the system.
   - Manage Products: Edit, update, or remove existing products.
   - Maintain Stocks: Keep track of inventory and stock levels.
   - View Orders: Review customer orders.
   - Manage Order Status: Update the status of orders (e.g., processing, shipped, delivered).
   - View Users: Access and manage user details.

5. End: The process terminates after the required actions are completed.

3.3 USE CASE DIAGRAM

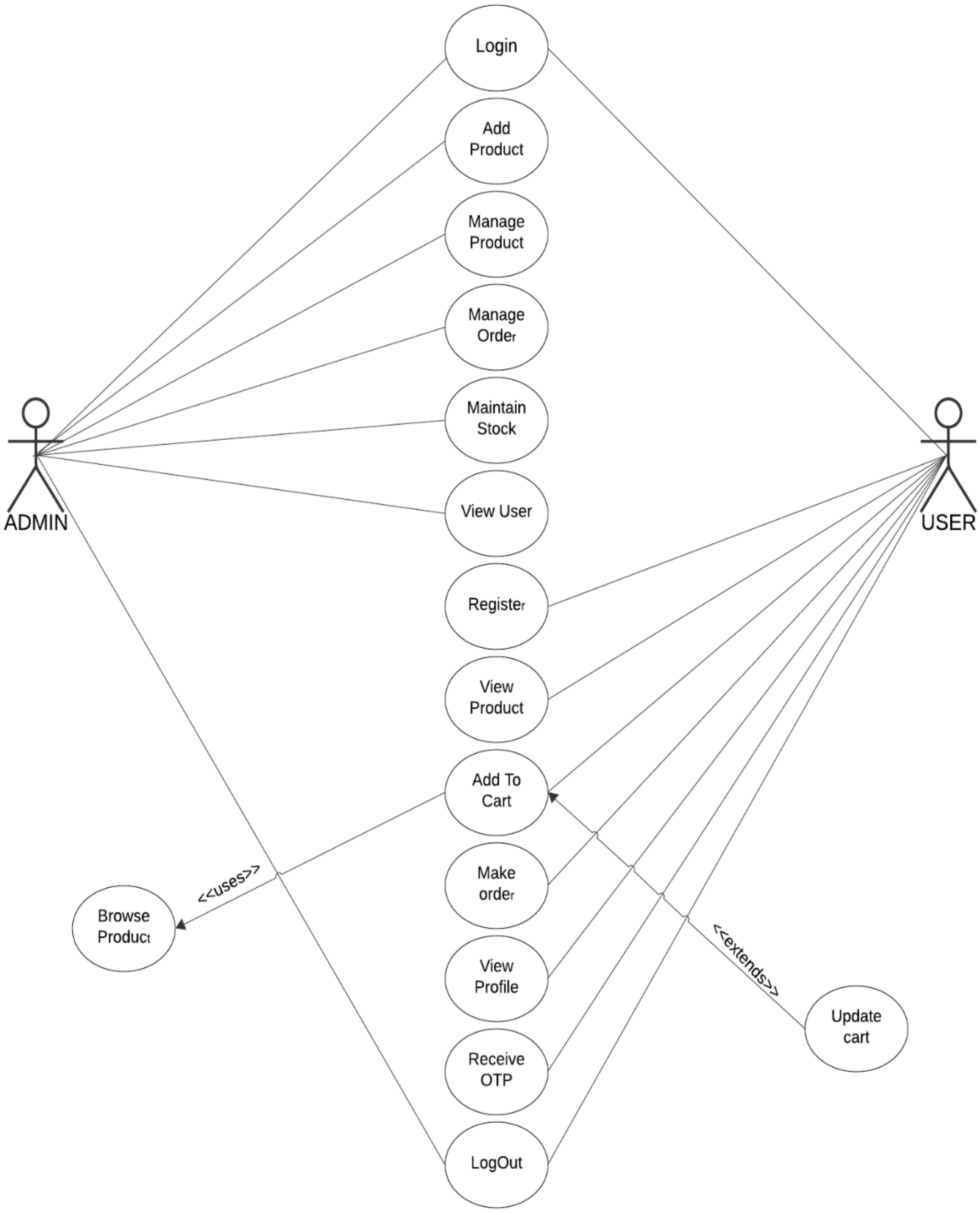


Figure 3.3 Use Case Diagram

DESCRIPTION:

Use Cases:

1. Login : For both Admin and User.
2. Register : For Users or Customers to create an account.
3. Add Products : For Admin to add items to the system.
4. Manage Products : Admin oversees products.
5. Manage Orders : Admin processes orders.
6. Maintain Stocks : Admin updates inventory levels.
7. View Users : Admin can view user profiles.
8. Browse Products : Customers or Users browse the catalog.
9. View Product : Details of a specific product.
10. Add to Cart : Customers add items to their cart.
11. Make Order : Customers place an order.
12. Update Cart : Customers modify their cart contents.
13. View Profile : Users or Customers can view their personal details.
14. Logout : Ends the session for all actors.

Relationships:

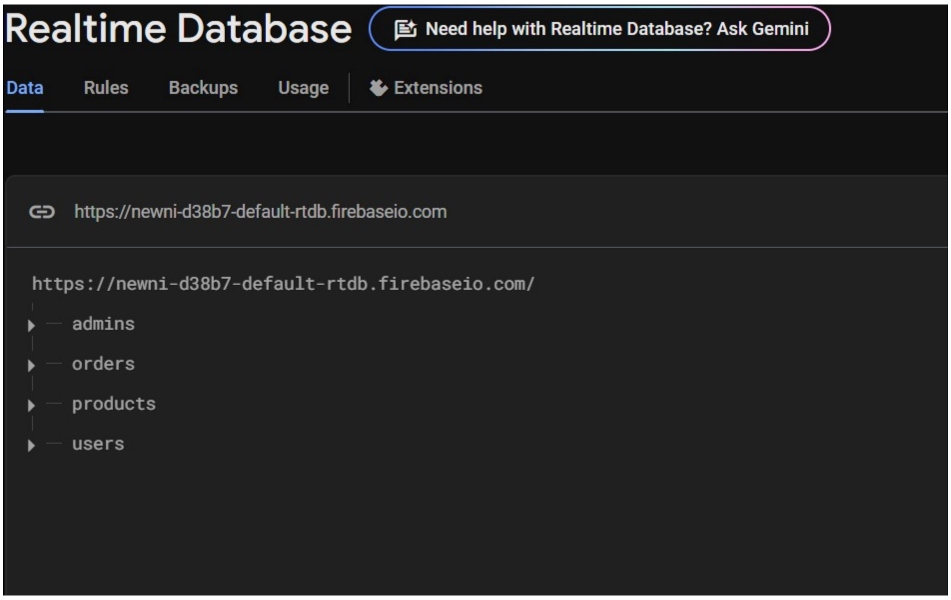
1. Lines connect the actors to the use cases they interact with.
2. Admin has more system management-related use cases.
3. Customers are mainly focused on shopping activities.

3.4 DATABASE DESIGN

Firebase provides a comprehensive cloud-based database solution designed for real-time data synchronization and offline support across mobile and web applications. Leveraging Google Cloud Platform's infrastructure, Firebase databases offer a NoSQL architecture, enabling flexible and scalable data storage without the need for complex setup or maintenance. Developers can easily integrate Firebase databases into their applications to store structured data in JSON format, with automatic synchronization ensuring that changes made by one client are immediately propagated to all connected clients in real-time. This real-time synchronization feature is particularly valuable for collaborative applications and multiplayer games, where instantaneous updates are crucial for a seamless user experience. Additionally, Firebase databases support offline data persistence, allowing applications to remain functional even when offline and automatically syncing data with the server once connectivity is restored. With Firebase databases, developers can build responsive and interactive applications with minimal effort, focusing on delivering rich user experiences while Firebase handles the complexities of data management and synchronization.

Firebase's Realtime Database is a NoSQL cloud-hosted database that stores data as JSON and synchronizes it across all connected clients in real-time. This synchronization happens instantly whenever data changes, providing a seamless and responsive user experience. Unlike traditional databases that operate on a request-response model, Firebase's Realtime Database establishes persistent connections between clients and the server, enabling data updates to be pushed to clients as soon as they occur.

One of the key features of Firebase Realtime Database is its real-time synchronization capability, which allows multiple clients to collaborate and interact with the same data concurrently. This is particularly useful for applications requiring live updates, such as messaging apps, collaborative editing tools, or real-time analytics dashboards. With Firebase, developers can build applications that reflect changes made by any user instantaneously, without the need for manual refreshes or polling mechanisms. Firebase Realtime Database offers seamless offline support, allowing applications to continue functioning even when users are offline. Data changes made by the user while offline are stored locally on the device and automatically synchronized with the server once connectivity is restored.

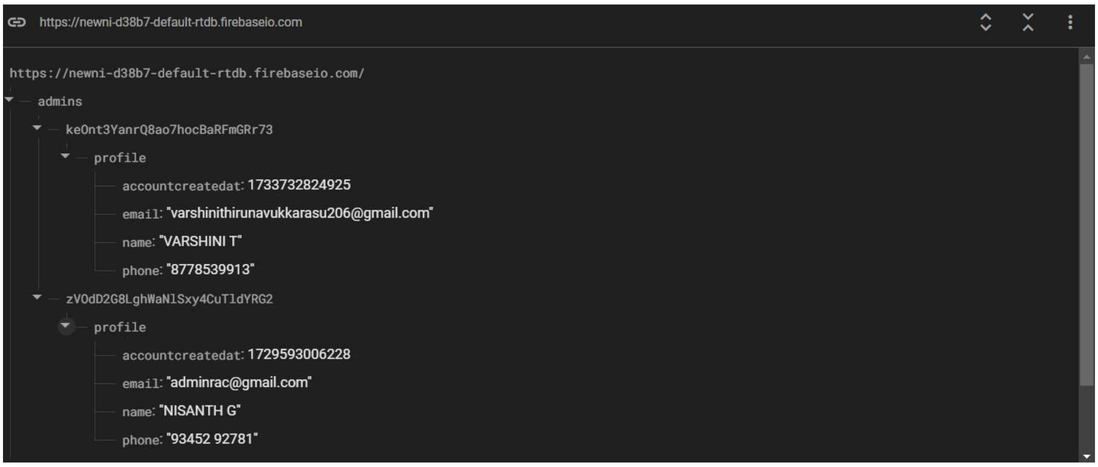


```
https://newni-d38b7-default-rtdb.firebaseio.com

https://newni-d38b7-default-rtdb.firebaseio.com/
├─ admins
├─ orders
├─ products
└─ users
```

Figure 3.4 Firebase Realtime Database Structure

This figure displays the hierarchical structure of a Firebase Realtime Database. The database contains key data categories such as admins, orders, products, and users, which are organized to facilitate efficient data storage and retrieval for the project.

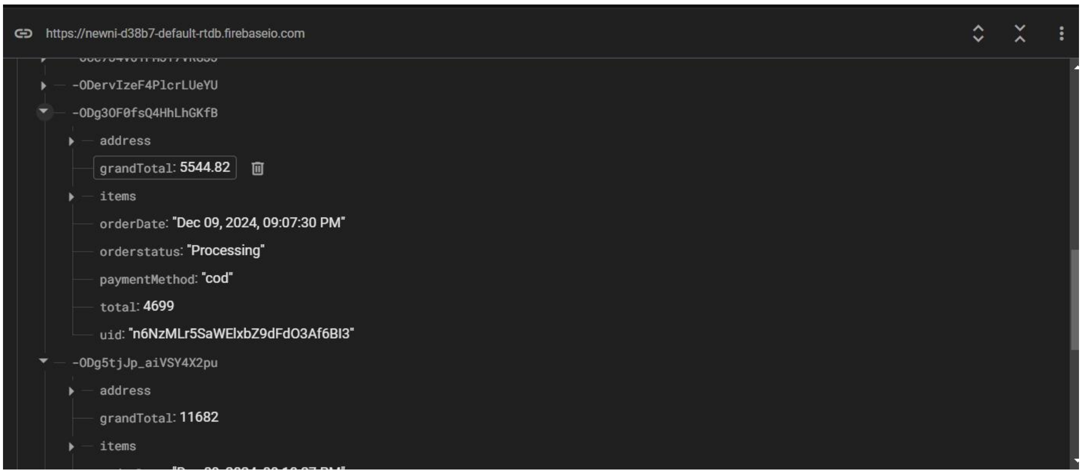


```
https://newni-d38b7-default-rtdb.firebaseio.com

https://newni-d38b7-default-rtdb.firebaseio.com/
admins
  keOnt3YanrQ8ao7hocBaRFmGRr73
    profile
      accountcreatedat: 1733732824925
      email: "varshinithirunavukkarasu206@gmail.com"
      name: "VARSHINI T"
      phone: "8778539913"
  zVOdD2G8LghWaNlSxy4CuTldYRG2
    profile
      accountcreatedat: 1729593006228
      email: "adminrac@gmail.com"
      name: "NISANTH G"
      phone: "93452 92781"
```

Figure 3.5 Admin Profiles Data

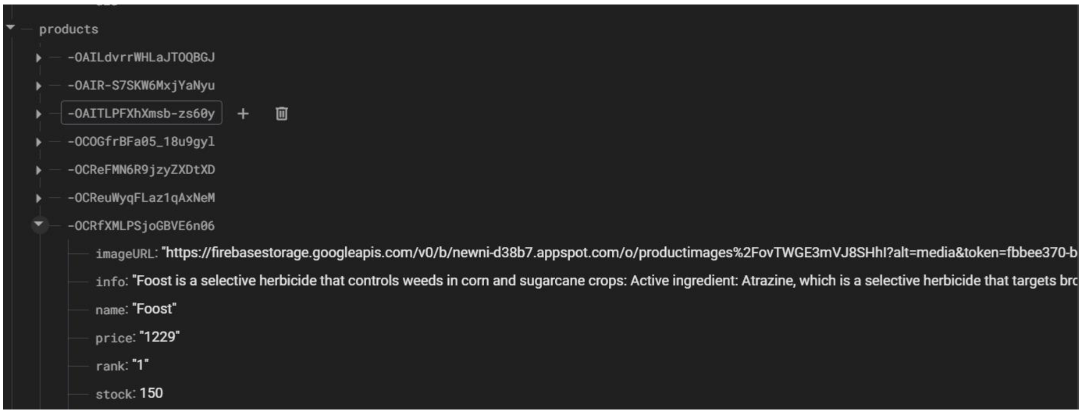
This figure shows the detailed structure of the admins node in the Firebase Realtime Database. It includes multiple profiles, each identified by a unique key, containing attributes such as account creation date, email, name, and phone number for admin users. This organized structure ensures easy access and management of administrator data.



```
https://newni-d38b7-default-rtdb.firebaseio.com
-ODervIzeF4PlcrLUeYU
-ODg30F0fsQ4HhLhGKfB
    address
    grandTotal: 5544.82
    items
    orderDate: "Dec 09, 2024, 09:07:30 PM"
    orderstatus: "Processing"
    paymentMethod: "cod"
    total: 4699
    uid: "n6NzMLr5SaWElxbZ9dFdO3Af6BI3"
-ODg5tjJp_aiVSY4X2pu
    address
    grandTotal: 11682
    items
```

Figure 3.6 Orders Data

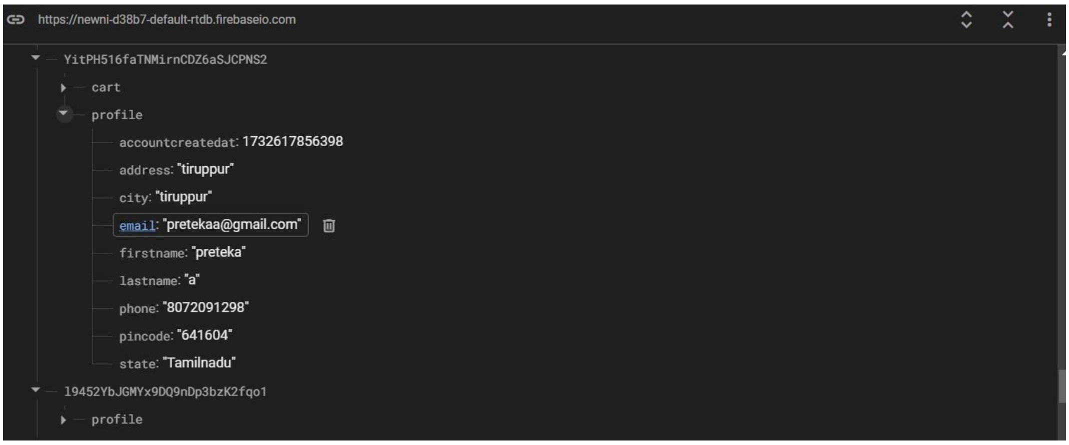
This figure illustrates the structure of the orders node in the Firebase Realtime Database. Each order is represented by a unique key and contains attributes such as grand Total, order Date, order Status, payment Method, total, and user ID (uid). This organized data structure enables efficient tracking and management of customer orders within the system.



```
products
    -OAILdvrrWHLaJTOQBGJ
    -OAIR-S7SKW6MxjYaNyu
    -OAITLPFXhXmsb-zs60y
    -OCOGfrBFa05_18u9gyl
    -OCReFMN6R9jzyZXDtXD
    -OCReuWyqFLaz1qAxNeM
    -OCRfXMLPSjoGBVE6n06
        imageURL: "https://firebasestorage.googleapis.com/v0/b/newni-d38b7.appspot.com/o/productimages%2FovTWGE3mVJ8SHhI?alt=media&token=fbbee370-b
        info: "Foost is a selective herbicide that controls weeds in corn and sugarcane crops: Active ingredient: Atrazine, which is a selective herbicide that targets brc
        name: "Foost"
        price: "1229"
        rank: "1"
        stock: 150
```

Figure 3.7 Product Database

This figure shows the hierarchical structure of a Firebase Realtime Database, focusing on the products node. Each product is stored under a unique key and contains fields such as image URL, info, name, price, rank, and stock, enabling efficient data storage and retrieval for applications like e-commerce or inventory systems.

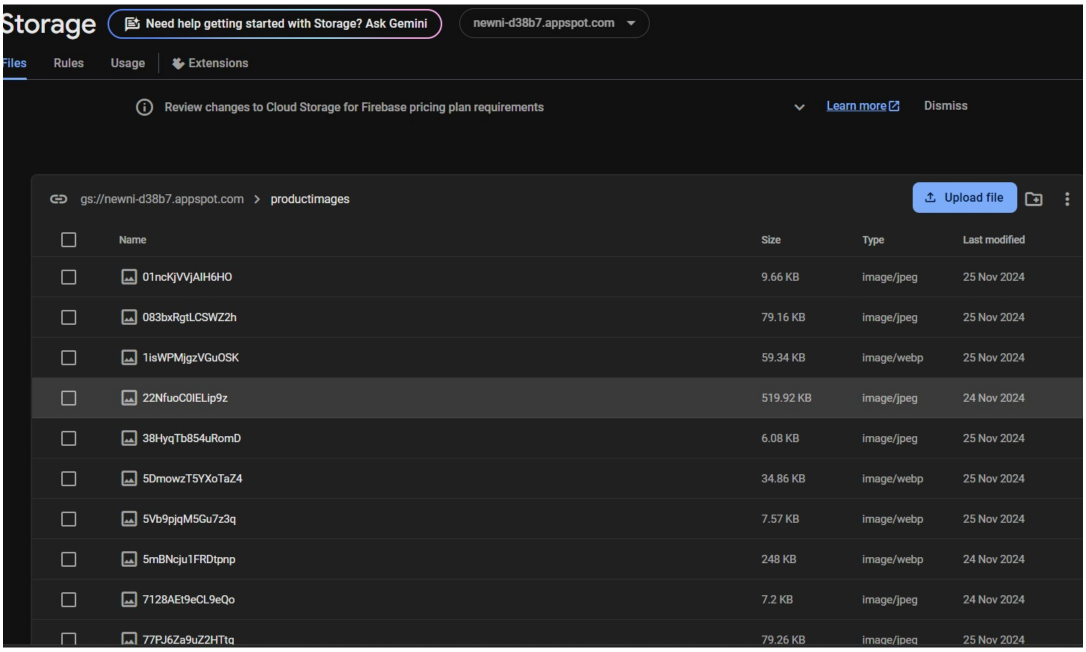


https://newni-d38b7-default-rtdb.firebaseio.com

```
YitPH516faTNMirnCDZ6aSJCPNS2
  cart
  profile
    accountcreatedat: 1732617856398
    address: "tiruppur"
    city: "tiruppur"
    email: "pretekaa@gmail.com"
    firstname: "preteka"
    lastname: "a"
    phone: "8072091298"
    pincode: "641604"
    state: "Tamilnadu"
19452YbJGMYx9DQ9nDp3bzK2fqo1
  profile
```

Figure 3.8 User Profile

This figure illustrates the profile node within a Firebase Realtime Database, storing user-specific information such as name, address, email, phone number, and account creation timestamp. This structure enables efficient management and retrieval of user data for applications like e-commerce or user authentication systems.



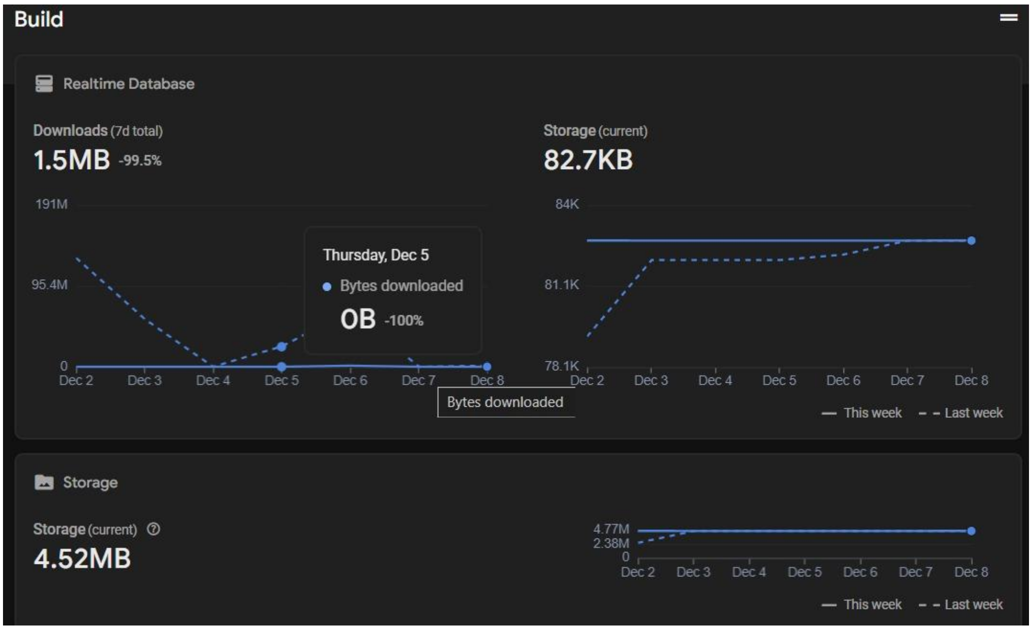
Review changes to Cloud Storage for Firebase pricing plan requirements

gs://newni-d38b7.appspot.com > productimages

	Name	Size	Type	Last modified
□	01ncKjVVjAIH6HO	9.66 KB	image/jpeg	25 Nov 2024
□	083bxRgtLCSWZ2h	79.16 KB	image/jpeg	25 Nov 2024
□	1isWPMjgzVGuOSK	59.34 KB	image/webp	25 Nov 2024
□	22NfuoC0IELip9z	519.92 KB	image/jpeg	24 Nov 2024
□	38HyqTb854uRomD	6.08 KB	image/jpeg	25 Nov 2024
□	5DmowzT5YXoTaZ4	34.86 KB	image/webp	25 Nov 2024
□	5Vb9pjqM5Gu7z3q	7.57 KB	image/webp	25 Nov 2024
□	5mBNcju1FRDtpnp	248 KB	image/webp	24 Nov 2024
□	7128AEt9eCL9eQo	7.2 KB	image/jpeg	24 Nov 2024
□	77PJ6Za9uZ2HTtq	79.26 KB	image/jpeg	25 Nov 2024

Figure 3.9 Product and Image Storage

This figure displays the product images folder in Firebase Cloud Storage, showcasing a list of image files with details like name, size, type (JPEG/WEBP), and last modified date. This setup enables efficient storage and retrieval of images for applications, such as product visuals in e-commerce platforms.



Build

Realtime Database

Downloads (7d total)
1.5MB -99.5%

Storage (current)
82.7KB

Thursday, Dec 5
● Bytes downloaded
0B -100%

Storage

Storage (current)
4.52MB

Figure 3.10 Real time Database and Storage Usage

This figure shows a summary of download activity and storage usage in a database system over a one-week period. It includes trends for "Downloads" (7-day total) and "Storage" metrics, illustrating a sharp drop in downloads while storage remains relatively constant.

3.5 INPUT DESIGN

Input design is the critical process of transforming user-originated inputs into a computer-readable format. It stands as one of the most resource-intensive phases in the operation of a computerized system and is often a focal point for system challenges. Many issues within a system can be traced back to faulty input design and methodology. Each aspect of input design should undergo meticulous analysis and construction. The design should facilitate the smooth passage of inputs across various networks in a reliable manner, particularly for installations in remote networks. The input database is subject to specific constraints, including the acquisition of all files from the disk by data, suitability for data clearance, and presentation in an understandable and correct format.

The system's functionality relies on taking inputs from users, processing them, and generating outputs. Input design serves as the bridge connecting the information system with its users and should prioritize user-friendliness to provide relevant information effectively. The decisions made during input design aim to minimize time consumption, simplifying application sensitivity. The project's implementation aims for low manpower attrition with reasonable output. Considering budget constraints, the system development adheres to financial limits, utilizing freely available technologies and only purchasing customized products. Input data for the system can originate not only as raw data captured from scratch but also as the output of another system or subsystem. Input design encompasses all phases, from creating initial data to entering it into the system, ensuring accuracy and correctness.

The input design goes beyond conventional practices, introducing innovative elements to elevate user interaction and system performance. Smart defaults and auto-population features optimize data entry efficiency, remembering frequently used information. Robust data validation algorithms ensure the integrity of inputs, while user-friendly error recovery mechanisms guide users through corrections seamlessly. Emphasis on data privacy includes end-to-end encryption and strict access controls, complying with legal standards. Intuitive feedback and progress indicators enhance user confidence, and cross-platform consistency guarantees a uniform experience.

3.6 OUTPUT DESIGN

Output design encompasses the results and information generated by the system, tailored for comprehension and usability by end-users. It plays a pivotal role in the evaluation of the application's usefulness, forming the basis upon which the system's effectiveness is assessed. The software's output serves as a critical input for remote installations, triggering immediate alerts to enhance system functionality. The effectiveness of output design is pivotal, directly impacting the user's experience and satisfaction with the system. In the context of computer output, which serves as a primary source of information for users, output design particularly focuses on form design. An efficient output design aims to enhance the user interface, ensuring that the information presented is not only clear and comprehensible but also visually appealing.

The term "output" extends to any information displayed by the information system. When analysts undertake output design, they identify specific outputs necessary to meet end-user requirements. Previewing output reports by users is of utmost importance, as users are the ultimate judges of output quality and, consequently, the success of the system. The process of designing output involves a comprehensive analysis to determine which applications, websites, or documents are allowed or blocked. Various options for allowing are explored, enhancing the adaptability of the output to user preferences. The design of the output prioritizes attractiveness, convenience, and informativeness. Each output is crafted to be visually appealing, ensuring that it not only conveys information effectively but also provides a positive and engaging user experience. In essence, output design is a strategic process that goes beyond functionality, focusing on creating outputs that are not only technically sound but also user-centric and aesthetically pleasing.

SUMMARY:

The Agro Center Web Application features several modules, including the Home, Product, Authentication, Checkout, and Admin Modules, each designed to enhance user experience and streamline operations. The Home Module serves as an engaging entry point, while the Product Module offers a comprehensive catalog of items. The Authentication Module ensures secure user interactions, and the Checkout Module facilitates a smooth transaction process. The Admin Module provides tools for efficient management and analytics. Additionally, the system utilizes Firebase for real-time data synchronization and robust database management, ensuring a responsive and user-friendly online shopping experience.

CHAPTER 4

IMPLEMENTATION

4.1 SYSTEM IMPLEMENTATION

System implementation is a crucial phase in developing an information system, focusing on creating a usable and operational solution that meets quality standards. It requires careful planning and management to avoid errors that could lead to functional issues. A coordination committee is often formed to address ideas and challenges, while the initial tasks involve planning the implementation approach and timeline to ensure stakeholder alignment. Training is essential and should occur early to equip staff with the necessary skills and confidence, helping to mitigate resistance to change.

Completing the design elements outlined in the approved systems design document, including new documents, computer screens, and databases, is critical, along with writing, testing, and documenting necessary programs. Comprehensive user manuals and training sessions are vital for familiarizing users with the system's functionalities.

Thorough user acceptance testing is necessary to confirm that the system meets requirements and expectations, identifying any issues before going live. Finally, careful planning and execution of the conversion process ensure a smooth transition from the old system to the new one, allowing organizations to enhance operational efficiency effectively.

4.2 CODING

Coding is a pivotal stage where the design specifications, formed through collaboration with the evaluation team, are meticulously translated into computer code by the programming team. This transformative process involves the implementation of algorithms and logic outlined in the design phase. The coding phase serves as the bridge between conceptualization and execution, with the programming team working to convert high-level design concepts into a functional and executable form. This intricate process demands precision, attention to detail, and adherence to coding standards to ensure the creation of robust and efficient software. Regular collaboration and communication between the evaluation and programming teams are essential to address any challenges, refine the code, and ensure alignment with the intended functionality of the software.

4.3 TESTING

The testing phase begins concurrently with the coding process, allowing for the examination of each software module as it is developed. This parallel progression promotes an iterative and collaborative approach, where coding and testing activities occur simultaneously, creating a dynamic development environment. As each module is coded, it undergoes thorough testing to identify and rectify potential issues early in the development process, which is crucial for maintaining high-quality standards. This integrated approach facilitates real-time feedback, enabling developers to address problems promptly and fostering a more efficient and streamlined development lifecycle.

By incorporating testing into the coding phase, teams can enhance software quality, reduce the risk of defects, and ultimately deliver a more reliable product to users. This method not only saves time but also improves communication among team members, ensuring that both coding and testing perspectives are aligned throughout the development process. Additionally, this collaborative effort helps build a culture of quality within the team, where everyone shares responsibility for the final product's integrity. As a result, the development cycle becomes more adaptive, allowing teams to respond quickly to changes in requirements or user feedback. This increased responsiveness contributes to overall project success and user satisfaction, making the integrated approach to coding and testing a best practice in software development. Ultimately, this strategy leads to a more robust and efficient development process, ensuring that the final product meets user needs and expectations effectively.

4.4 INSTALLATION

Installation refers to the procedure of substituting an existing device with a new one. This involves the conversion of existing data, software, documentation, and painting techniques to formats compatible with the new device. Additionally, installation encompasses the configuration of hardware components and the integration of software necessary for the seamless operation of the new device. It is a critical phase that demands meticulous attention to detail to ensure a smooth transition, minimizing disruptions in workflow.

Regular testing during the installation process is imperative to validate the compatibility of the existing data and software with the new device, and any necessary adjustments are made to optimize performance.

4.5 DOCUMENTATION

Documentation comprises individual publications that offer comprehensive information on effectively utilizing the system and navigating its workflow following the setup procedure. These materials serve as valuable resources, providing users with step-by-step instructions, guidelines, and insights into the system's functionalities. They aim to empower users with the knowledge required for seamless interaction with the system, covering aspects such as system features, troubleshooting, and best practices.

4.6 TRAINING

A training plan serves as a structured approach to rapidly educate users on the effective utilization of a new system. It is a systematic method designed to impart the necessary skills and knowledge, enabling consumers to efficiently navigate and leverage the features of the newly implemented system. The training plan outlines the curriculum, instructional methods, and resources required to facilitate a smooth learning process for end-users.

4.7 SUPPORT

The educational approach underwent a likely enhancement before the commencement of the project, signifying a proactive measure to ensure optimal preparation. This improvement might have involved refining instructional strategies, updating learning materials, and incorporating the latest pedagogical techniques. A well-prepared educational foundation is crucial for project success, fostering a conducive environment for effective learning and skill development.

SUMMARY:

System implementation involves careful planning and management to ensure usability, compliance with quality standards, and successful operation of the information system. The coding phase translates design specifications into executable code, while testing occurs concurrently to identify and resolve issues early. Installation involves configuring hardware and software for seamless operation, followed by comprehensive documentation to guide users. A structured training plan is essential for educating users on the new system, and ongoing support enhances the learning experience. Overall, these phases are critical for ensuring a smooth transition and effective utilization of the new system**.**

CHAPTER 5

TESTING AND RESULTS

5.1 TESTING

System testing is a type of software testing that evaluates the overall functionality and performance of a complete, fully integrated software solution. It checks whether the system meets the specified requirements and is suitable for delivery to end users. This type of testing is performed after integration testing and before acceptance testing. System Testing is performed on a complete integrated system to evaluate the compliance of the system with the corresponding requirements.

The purpose of this test is to evaluate the system outside of the parameters specified in the software requirements specification (SRS). In order to objectively assess the system's quality, a testing team that is separate from the development team conducts system testing. It has both functional and non-functional testing. Once the source code is complete, relevant data structures should be documented. The project must go through testing and validation, where there is a clear attempt to find flaws. Unfortunately, errors will exist and if the project developer doesn't find them, the user will discover them.

As a result, the project developer treads carefully, developing and executing tests that will indicate that the software functions rather than disclosing errors. The project developer is always in charge of testing each of the program's separate units, or modules. The developer frequently also does integration testing, which is the testing stage that precedes the creation of the entire software structure.

5.1.1 Unit Testing

The smallest bit of code that can be logically separated in a system is called a unit, and unit testing is a method of testing a unit. Testing at the procedure level is done initially.

The mistakes discovered are initially recognized and corrected. Testing at the web form level is done. The system is taken into account and separated into single units. Each user input is unit tested for a range that is determined to be acceptable. Unit testing is a type of software testing where individual components of the software are tested separately. Testing each software application unit or individual component is known as unit testing. This is the functional testing's initial stage. Validating unit components performance is the goal of unit testing. Unit testing facilitates the understanding of the code base by testers and developers, enabling them to swiftly modify code that causes defects. Testing units is beneficial for documentation. There may be fewer flaws in subsequent testing levels since unit testing corrects problems relatively early in the development process. By transferring code and test cases, it promotes code reuse.

To perform unit testing, developers write test cases or test functions that define the expected behaviour of a unit. They then use a testing framework or library to execute these test cases and compare the actual output of the unit with the expected output. In some cases, unit testing may involve using mocking or stubbing to isolate a unit from external dependencies or to control the behaviour of those dependencies during testing. This helps ensure that the unit being tested is not affected by issues with external components. It's important to note that while unit testing is crucial for ensuring code quality and maintainability, it is not the only form of software testing.

Test Case 1

Module	**:** User Authentication
Test Type	**:** Unit Testing
Input	**:** Username and Password
Expected Output	**:** Authenticate user

Sample Test

Output **:** User successfully authenticated

Analysis **:** The test ensures that the system can authenticate users based on the provided username and password. If authentication fails for valid credentials or successful authentication occurs for invalid credentials, it indicates a problem with the user authentication module.

Test Case 2

Module	**:** Checkout & Product
Test Type	**:** Unit Testing
Input	**:** Product ID, Quantity
Expected Output	**:** Add product to cart

Sample Test

Output **:** Product successfully added to the cart

Analysis **:** This test checks whether the system can add a product to the user's cart with the specified quantity. If the product addition fails or incorrect products are added, it suggests issues with the cart management functionality.

5.3 Integration Testing

Integration testing is a critical phase in the software testing lifecycle where multiple software components are combined and tested as a group, following unit testing, which verifies the functionality of individual modules. The primary objective is to ensure that the components work together seamlessly, particularly in areas such as data sharing, error handling, and concurrent processing. Various levels of integration are assessed, including pairwise integration (testing interactions between two components), group integration (testing three or more components together), and system integration (testing the entire system as a whole). This phase involves progressively complex scenarios, necessitating careful planning regarding the order of tests and the selection of test cases, as the sequence can significantly impact outcomes. Integration testing helps identify issues that may not be apparent during unit testing, such as incompatibilities between modules, data flow problems, and errors in communication. Thorough documentation and traceability are crucial for effective integration testing, ensuring that all test cases are accounted for and facilitating communication among team members. By addressing interactions between different modules, integration testing plays a vital role in ensuring that the final software product meets user requirements and functions as intended, ultimately contributing to the delivery of a reliable, robust, and high-quality software application while reducing the risk of defects in the production environment.

Test Case 1

Module **:** Authentication & Admin

Test Type **:** Integration Testing

Input **:** Admin login credentials

Expected Output **:** Access to admin dashboard

Sample Test

Output **:** Successfully accessed the admin dashboard

Analysis **:** This test validates that when admin login credentials are provided, access is granted to the admin dashboard. If access is denied or leads to an incorrect page, it suggests an issue with the integration between the authentication and admin modules.

Test Case 2

Module **:** Checkout & Product

Test Type **:** Integration Testing

Input **:** Add product to cart and proceed to checkout

Expected Output **:** Successful checkout process

Sample Test

Output : Successfully completed the checkout process

Analysis : This test ensures that when a product is added to the cart and the user proceeds to checkout, the checkout process is completed successfully.

5.1.3 Validation Testing

Validation testing is the final step in the software testing process, aimed at confirming that the software meets specified requirements. This phase assesses the system's functionality through various methods, including functional, system, integration, and user acceptance tests, often involving "Alpha and Beta testing" to identify issues that may only be apparent to end users. User satisfaction is crucial for project success, making validation testing essential. Also known as acceptance testing, this phase verifies that the software can perform real-world tasks and fulfills original project requirements. Typically conducted by a separate team of representatives from different organizational areas, this approach ensures an objective evaluation based on diverse expectations. During validation testing, the software is evaluated under various conditions, such as limited connectivity or different hardware configurations, using techniques like manual, automated, and performance testing. After testing, a validation report is provided to stakeholders, detailing executed test cases, identified issues, and overall results. If problems are found, the project team may need to consider additional testing or modifications. Ultimately, validation testing is critical for ensuring that the software system meets its intended purpose and user expectations.

Test Case 1

Module : Checkout

Test Type : Validation Testing

Input : Proceed to checkout without adding any products to the cart

Expected Output : Error message prompting to add products to the cart

Sample Test

Output : Error message displayed, prompting to add products to the cart

Analysis : This test ensures that the system validates the cart before allowing the user to proceed to checkout. If the user can proceed without adding any products, it indicates a failure in validation.

Test Case 2

Module : Authentication

Test Type : Validation Testing

Input : Attempt to register with an existing username

Expected Output : Error message indicating username is already in use

Sample Test

Output : Error message displayed, indicating username is already in use

Analysis : This test validates that the system checks for unique usernames during the registration process. If a user can register with an existing username, it indicates a failure in validation.

SUMMARY:

The content outlines essential software testing phases: System Testing evaluates the overall functionality of an integrated solution against requirements, while Unit Testing focuses on individual code components to identify early errors. Integration Testing ensures that multiple components work together seamlessly, and Validation Testing confirms that the software meets user requirements through various methods. Together, these phases are crucial for delivering high-quality, reliable software that satisfies user expectations.

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

6.1 CONCLUSION

In conclusion, the Digital Platform for Agro Center represents a significant advancement in the agricultural retail sector, addressing the growing demand for digital solutions that enhance customer experiences. By focusing on user-friendly design, robust e-commerce capabilities, and stringent security measures, this web application aims to streamline the purchasing process while fostering trust and engagement among users. The integration of educational resources and personalized features further enriches the platform, empowering customers with the knowledge and tools they need to make informed purchasing decisions. As the project evolves, it will not only meet the current needs of agricultural consumers but also adapt to future trends, ensuring a sustainable and innovative approach to online shopping in the agricultural domain.

6.2 FUTURE ENHANCEMENT

- Augmented Reality (AR): Add AR features that let customers see how products would look in their own space, like equipment in their garden.
- Improved Customer Support: Add live chat and chatbots to help customers get answers quickly.
- Loyalty Programs: Introduce rewards for repeat customers to encourage them to keep shopping.

APPENDICES

A. SAMPLE CODING

Home.jsx

```
import React from 'react';
import { Carousel } from 'react-bootstrap';
import BSIA from './Frontpage/BSIA';
import BSPA from './Frontpage/BSPA';
import BSFA from './Frontpage/BSFA';
import BSCA from './Frontpage/BSCA';
import SPIC from './Frontpage/SPIC';
import MCF from './Frontpage/MCF';
import IFFCO from './Frontpage/IFFCO';

const Home = ({ fitcomponent }) => {

  const GoToWires = () => {
    fitcomponent("Products", "Pesticides");
  };

  return (
    <div>
      <section id="home">
        <div class="container">
          <h2> <span>Welcome to Ritika Agro Centre</span> <br /> Farm smarter, not harder—
shop online at Ritika Agro Centre</h2>
          <p>Get your product delivered to your doorstep.</p>
          <button onClick={GoToWires}>Explore Now</button>
        </div>
```

```
</section>

<section id="Featured" className="my-5 pb-2">

 <div className="container text-center pt-5">
  <h3>Featured Bayer Products</h3>
  <hr className="mx-auto" />
  <h4 className='pb-2'>Best Selling Insecticides for Agriculture</h4>
  <BSIA />

  <h4>Best Selling Pesticides for Agriculture</h4>
  <hr className="mx-auto" />
  <BSPA />

  <h4>Best Selling Fungicide for Agriculture</h4>
  <hr className="mx-auto" />
  <BSFA />
 </div>

 <div className="container text-center py-2">
  <h3>Featured TATA PRODUCTS</h3>
  <hr className="mx-auto" />
  <p>Best Selling Contaf and Atrataf</p>
  <BSCA />
 </div>

 <div className="container text-center py-3">
  <h3>Featured SPIC Products</h3>
  <hr className="mx-auto" />
  <p>Best Selling Water Soluble Fertilizer</p>
```

```
    <p>Best Selling Micro Nutrients </p>
    <p>Best Selling OrganicFertilizer</p>
    <SPIC />
  </div>

  <div className="container text-center py-3">
    <h3>Featured Mangalore Chemicals and Fertilizers </h3>
    <hr className="mx-auto" />
    <p>Best Selling Plant Nutrients Products</p>
    <p>Mangala GT Booster</p>
    <MCF />
  </div>

  <div className="container text-center py-3">
    <h3>Featured IFFCO Product</h3>
    <hr className="mx-auto" />
    <p>Best Selling Primary and Secondary Nutrients</p>
    <p>Nano and Micro Nutrients</p>
    <IFFCO />
  </div>

</section>

<section id="about" className="my-5 py-5">
  <div className="container">
    <div className="row">
      <div className="col-lg-6">
    <Carousel>
         <Carousel.Item>
           <img
```

```
              className="d-block w-100 rounded same-height "
              src="https://i.ytimg.com/vi/pCUmcv4cQEs/hq720.jpg?sqp=-oaymwEhCK4FEIIDSFryq4qpAxMIARUAAAAAGAElAADIQj0AgKJD&rs=AOn4CLAlmE29U5sAGVydhwOjq2HF3IwKBw"
              alt="First slide"
            />
          </Carousel.Item>
          <Carousel.Item>
            <img
              className="d-block w-100 rounded same-height "
              src="https://t3.ftcdn.net/jpg/03/68/43/08/360_F_368430854_tYpa5RNRReSruxIWEsjxk21FbXCJ2c0l.jpg"
              alt="Second slide"
            />
          </Carousel.Item>

          <Carousel.Item>
            <img
              className="d-block w-100 rounded same-height "
              src="https://static.vecteezy.com/system/resources/thumbnails/049/684/291/small/spraying-pesticide-on-a-field-of-cabbage-photo.jpg"
              alt="Third slide"
            />
          </Carousel.Item>
          <Carousel.Item>
            <img
              className="d-block w-100 rounded same-height"
              src="https://cl.usembassy.gov/wp-content/uploads/sites/104/Agriculture.jpg"
              alt="Four slide"
            />
          </Carousel.Item>
          <Carousel.Item>
```

```
      <img
        className="d-block w-100 rounded same-height"
        src="https://t4.ftcdn.net/jpg/00/75/57/59/360_F_75575940_QY2gSuvtaqF1zX4gnZS4W6ElwzGy0AoH.jpg"
        alt="Five slide"
      />
    </Carousel.Item>
    <Carousel.Item>
      <img
        className="d-block w-100 rounded same-height"
        src="https://5.imimg.com/data5/SELLER/Default/2022/10/TZ/YA/WE/52902335/cattle-feed-supplements-third-party-manufacturing-services-500x500.jpg"
        alt="Six slide"
      />
    </Carousel.Item>
    <Carousel.Item>
      <img
        className="d-block w-100 rounded same-height"
        src="https://www.farmerp.com/wp-content/uploads/2021/05/Practicing-Agriculture-to.jpg"
        alt="Seven slide"
      />
    </Carousel.Item>
  </Carousel>
</div>
<div className="col-lg-6 d-flex align-items-center">
  <div>
    <h2 className="mb-4">About Us</h2>
    <p className="text-muted">
```

Welcome to Ritika Agro Centre, your one-stop destination for all agricultural needs! We are dedicated to empowering farmers and gardeners by providing a wide range of quality

```
products, from fertilizers to livestock feed. Our mission is to enhance your shopping experience with an easy-to-navigate platform that showcases the best in agriculture. We believe that informed choices lead to better harvests, which is why each product comes with detailed descriptions and images. Our team is passionate about agriculture and committed to supporting your journey. Whether you’re a seasoned farmer or a gardening enthusiast, we’re here to help you thrive. Join us in cultivating a greener future!
              </p>
            {/*  <p className="text-muted">
                  Our mission is to provide high-quality products at competitive prices, delivered
right to your doorstep. Whether you're a professional contractor or a DIY enthusiast, we have
everything you need to get the job done.
              </p>
              <p className="text-muted">
                Shop with confidence at Sivaraj & CO and join our growing community of
satisfied customers.
              </p>*/}
              {/* <h3 className="mt-4">Why Choose Us?</h3>
              <ul className="text-muted">
                <li>Wide selection of products</li>
                <li>Competitive prices</li>
                <li>Top-notch customer service</li>
                <li>Convenient online shopping experience</li>
                <li>Fast and reliable delivery</li>
                <li>Customer satisfaction guarantee</li>
              </ul> */}
            </div>
          </div>
        </div>
      </div>
    </section>


    <div>
      {/* <section id="Category" className="my-5 pb-5">
    <div className="container text-center mt-5">
     <h3>Shop By Categories</h3>
     <hr className="mx-auto" />

     <div className="row mt-5">
      <div className="one col-lg-3 col-md-6 col-12">
       <div className="image-container position-relative">
        <img className="img-fluid same-height" src="Images/wires1.png" alt=""
onClick={GoToWires} />
        <div className="bottom mt-2">
         <h2>Wires & Cables</h2>
        </div>
       </div>
      </div>

      <div className="one col-lg-3 col-md-6 col-12">
       <div className="image-container position-relative">
        <img className="img-fluid same-height" src="Images/pipes2.png" alt=""
onClick={GoToPipes} />
        <div className="bottom mt-2">
         <h2>Pipes</h2>
        </div>
       </div>
      </div>

      <div className="one col-lg-3 col-md-6 col-12">
       <div className="image-container position-relative">
        <img className="img-fluid same-height" src="Images/pvc-fittings.jpg" alt=""
onClick={GoToFittings} />
        <div className="bottom mt-2">
         <h2>PVC Fittings</h2>
        </div>
      </div>
    </div>

    <div className="one col-lg-3 col-md-6 col-12">
      <div className="image-container position-relative">
        <img className="img-fluid same-height" src="Images/bulbs.jpg" alt=""
onClick={GoToBulbs} />
        <div className="bottom mt-2">
          <h2>Lightings</h2>
        </div>
      </div>
    </div>
  </div>

  <div className="row mt-5">
    <div className="one col-lg-3 col-md-6 col-12">
      <div className="image-container position-relative">
        <img className="img-fluid same-height" src="Images/drill.jpg" alt=""
onClick={GoToDrillMachine} />
        <div className="bottom mt-2">
          <h2>Drill Machine</h2>
        </div>
      </div>
    </div>

    <div className="one col-lg-3 col-md-6 col-12">
      <div className="image-container position-relative">
        <img className="img-fluid same-height w-150" src="Images/bosch2.webp"
alt="" onClick={GoToBoschDrillMachine} />
        <div className="bottom mt-2">
```

```
          <h2>Drill Machine</h2>
        </div>
      </div>
    </div>

    <div className="one col-lg-3 col-md-6 col-12">
      <div className="image-container position-relative">
        <img className="img-fluid same-height w-80" src="Images/heatgun.jpg" alt=""
onClick={GoToHeat} />
        <div className="bottom mt-2">
          <h2>Heat Gun And Air Bowlers</h2>
        </div>
      </div>
    </div>

    <div className="one col-lg-3 col-md-6 col-12">
      <div className="image-container position-relative">
        <img className="img-fluid same-height" src="Images/belts.webp" alt=""
onClick={GoToBelts} />
        <div className="bottom mt-2">
          <h2>Belts</h2>
        </div>
      </div>
    </div>

    <div className="one col-lg-3 col-md-6 col-12">
      <div className="image-container position-relative">
        <img className="img-fluid same-height" src="Images/chains.jpg" alt=""
onClick={GoToChains} />
        <div className="bottom mt-2">
          <h2>Chains</h2>
        </div>
       </div>
      </div>

      <div className="one col-lg-3 col-md-6 col-12">
       <div className="image-container position-relative">
        <img className="img-fluid same-height" src="Images/bearing.webp" alt=""
onClick={GoToBearing} />
        <div className="bottom mt-2">
         <h2>Bearings</h2>
        </div>
       </div>
      </div>
     </div>
    </div>
   </section> */}
   </div>
  </div>
 )
}

export default Home
```

Dashboard.jsx

```
import React, { useEffect, useState } from 'react';

import { BsFillArchiveFill, BsFillGrid3X3GapFill, BsPeopleFill, BsCartFill } from 'react-icons/bs'

import { db } from '../firebase';

import { get, ref, limitToLast, orderByChild } from 'firebase/database';

import DataTable from 'react-data-table-component';


const Dashboard = () => {


  const [productCount, setProductCount] = useState(0);

  const [categoryCount, setCategoryCount] = useState(0);

  const [customerCount, setCustomerCount] = useState(0);

  const [orderCount, setOrderCount] = useState(0);

  const [recentOrders, setRecentOrders] = useState([]);


  useEffect(() => {

    fetchDashboardData();

    fetchRecentOrders();

  }, []);


  const fetchDashboardData = () => {

    const productRef = ref(db, '/products');
```

```
get(productRef)
  .then((snapshot) => {
    if (snapshot.exists()) {
      const products = snapshot.val();
      const productKeys = Object.keys(products);
      setProductCount(Object.keys(products).length);

      const categories = new Set();
      productKeys.forEach((key) => {
        categories.add(products[key].type);
      });
      setCategoryCount(categories.size);
    }
  })
  .catch((error) => {
    console.error('Error fetching dashboard data:', error);
  });

const orderRef = ref(db, '/orders');
get(orderRef)
  .then((snapshot) => {
    if (snapshot.exists()) {
      const dataObject = snapshot.val();
      setOrderCount(Object.keys(dataObject).length);
```

```
            }
        })
        .catch((error) => {
            console.error('Error fetching data:', error);
        });

    const userRef = ref(db, '/users');
    get(userRef)
        .then((snapshot) => {
            if (snapshot.exists()) {
                const dataObject = snapshot.val();
                const dataKeys = Object.keys(dataObject);
                setCustomerCount(Object.keys(dataObject).length);
            }
        })
        .catch((error) => {
            console.error('Error fetching data:', error);
        });
};

const fetchRecentOrders = () => {
    const orderRef = ref(db, '/orders');
    get(orderRef)
        .then((snapshot) => {
```

```
      if (snapshot.exists()) {
        const dataObject = snapshot.val();
        const dataKeys = Object.keys(dataObject);
        const dataEntries = dataKeys.map((key) => ({
          key,
          ...dataObject[key],
        }));
        dataEntries.sort((a, b) => new Date(b.orderDate) - new Date(a.orderDate));
        setRecentOrders(dataEntries.slice(0, 10));
      }
    })
    .catch((error) => {
      console.error('Error fetching recent orders:', error);
    });
};


const columns = [
  {
    name: 'Order Date',
    selector: 'orderDate',
    sortable: true,
  },
  {
    name: 'User ID',
    selector: 'uid',
  },
  {
    name: 'Total Amount',
    selector: 'grandTotal',
    sortable: true,
  },
  {
    name: 'Payment Method',
    selector: 'paymentMethod',
  },
  {
    name: 'Order Status',
    selector: 'orderstatus',
  },
];
return (
  <div className="main-container">
    <div className='main-title'>
      <h3>Dashboard</h3>
    </div>

    <div className='main-cards'>
      <div className='card'>
<div className='card-inner'>
  <h3>PRODUCTS</h3>
  <BsFillArchiveFill className='card_icon' />
</div>
<h1>{productCount}</h1>
</div>
<div className='card'>
<div className='card-inner'>
  <h3>CATEGORIES</h3>
  <BsFillGrid3X3GapFill className='card_icon' />
</div>
<h1>{categoryCount}</h1>
</div>
<div className='card'>
<div className='card-inner'>
  <h3>CUSTOMERS</h3>
  <BsPeopleFill className='card_icon' />
</div>
<h1>{customerCount}</h1>
</div>
<div className='card'>
<div className='card-inner'>
  <h3>ORDERS</h3>
  <BsCartFill className='card_icon' />
```

```
          </div>
          <h1>{orderCount}</h1>
        </div>
      </div>

      <div className='pt-3'>
        <h3>Recent Orders</h3>
        <div style={{ overflowX: 'auto', height: "70vh" }}>
          <DataTable
            className="table table-bordered table-striped "
            columns={columns}
            data={recentOrders}
            highlightOnHover
            pointerOnHover
            striped

          />
        </div>
      </div>
    </div>
  );
};
```

B.SCREENSHOTS

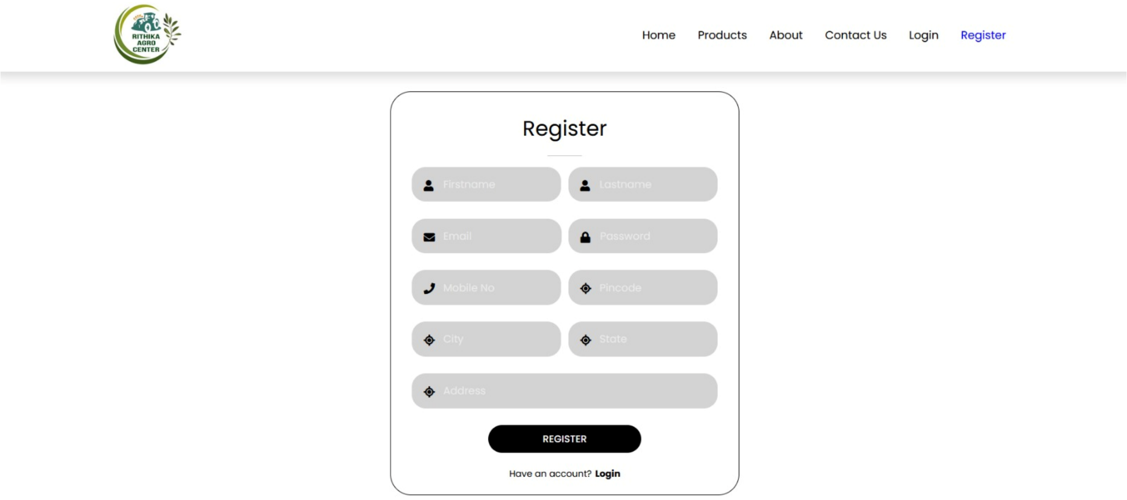


Figure B.1 User Registration Page

This figure depicts a user registration form. It includes input fields for user details such as first name, last name, email, password, mobile number, pincode, city, state, and address. Theirs is a "Register" button and an option to navigate to the login page for existing users.

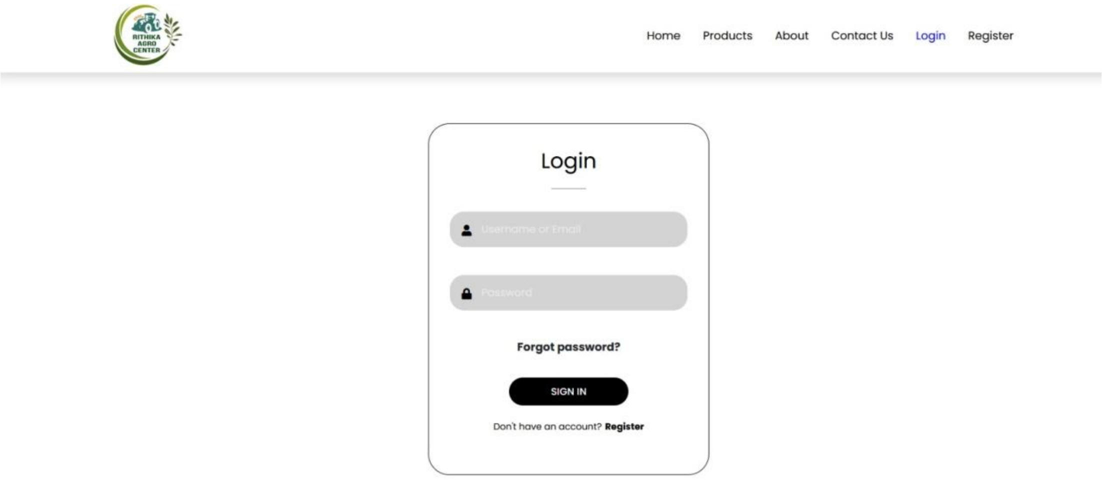
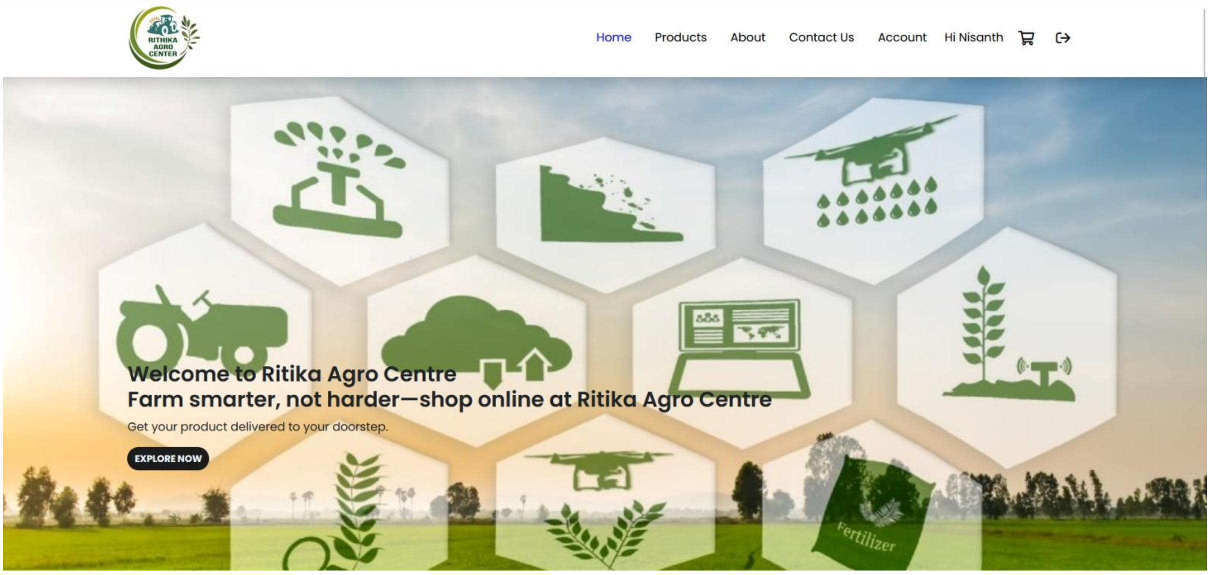


Figure B.2 User Login Page

User Login PageThis figure showcases a login form with fields for "Username or Email" and "Password." It includes a "Forgot password?" link for recovery and a prominent "Sign In" button. Users without an account are directed to a "Register" link for account creation.



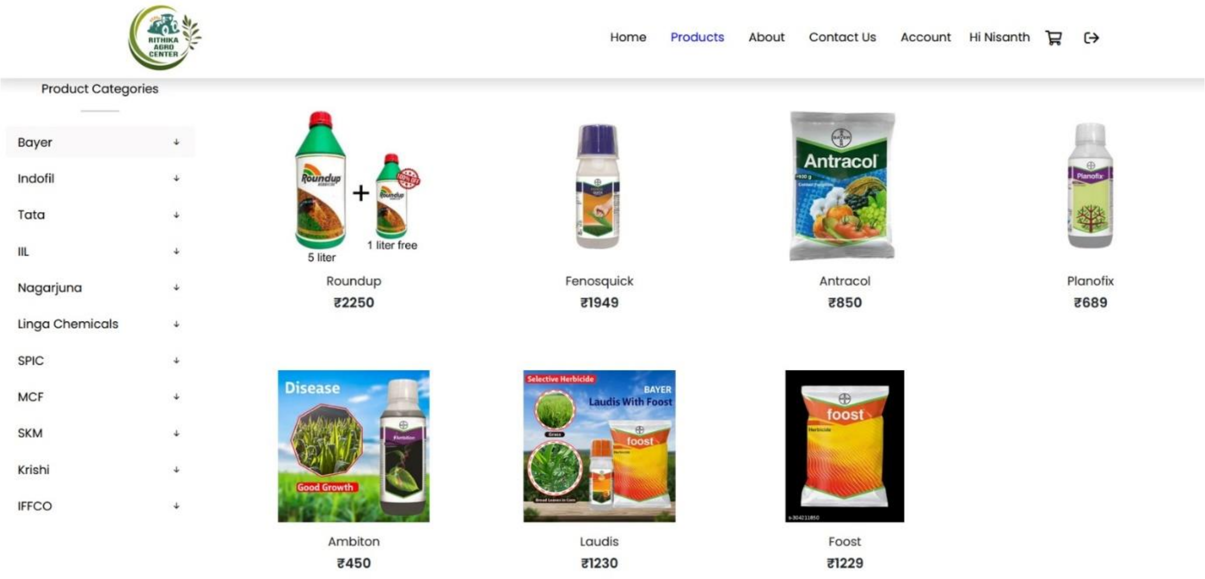
Welcome to Ritika Agro Centre

Farm smarter, not harder—shop online at Ritika Agro Centre

Get your product delivered to your doorstep.

Figure B.3 Home Page

Home page of the agro center ,consists of navigation menu where the user name is shown at top right and all access can done through home page.



Roundup
₹2250

Fenosquick
₹1949

Antracol
₹850

Planofix
₹689

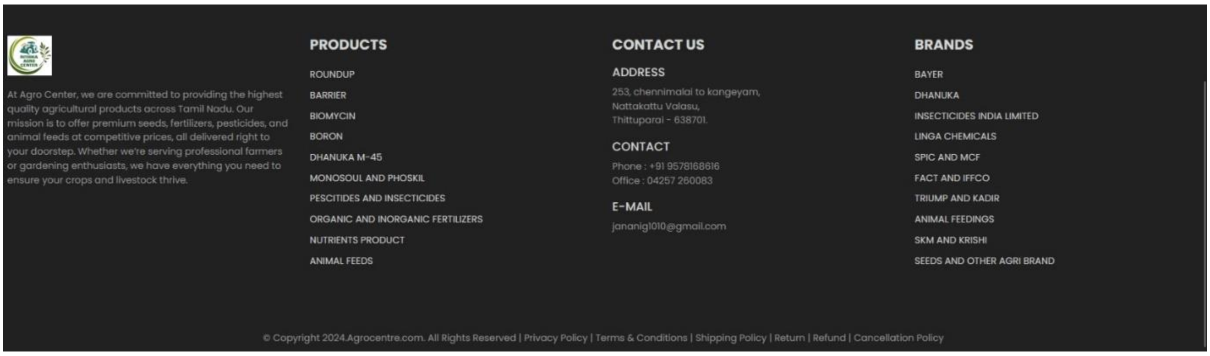
Ambiton
₹450

Laudis
₹1230

Foost
₹1229

Figure B.4 Product Page

Product page, contains all the product brand are shown at sidebar. And all other product shown at the page.



At Agro Center, we are committed to providing the highest quality agricultural products across Tamil Nadu. Our mission is to offer premium seeds, fertilizers, pesticides, and animal feeds at competitive prices, all delivered right to your doorstep. Whether we're serving professional farmers or gardening enthusiasts, we have everything you need to ensure your crops and livestock thrive.

PRODUCTS

ROUNDUP
BARRIER
BIOMYCIN
BORON
DHANUKA M-45
MONOSOUL AND PHOSKIL
PESCITIDES AND INSECTICIDES
ORGANIC AND INORGANIC FERTILIZERS
NUTRIENTS PRODUCT
ANIMAL FEEDS

CONTACT US

ADDRESS

253, chennimalai to kangeyam,
Nattakattu Valasu,
Thittuparai - 638701.

CONTACT

Phone : +91 9578168616
Office : 04257 260083

E-MAIL

jananig1010@gmail.com

BRANDS

BAYER
DHANUKA
INSECTICIDES INDIA LIMITED
LINGA CHEMICALS
SPIC AND MCF
FACT AND IFFCO
TRIUMP AND KADIR
ANIMAL FEEDINGS
SKM AND KRISHI
SEEDS AND OTHER AGRI BRAND

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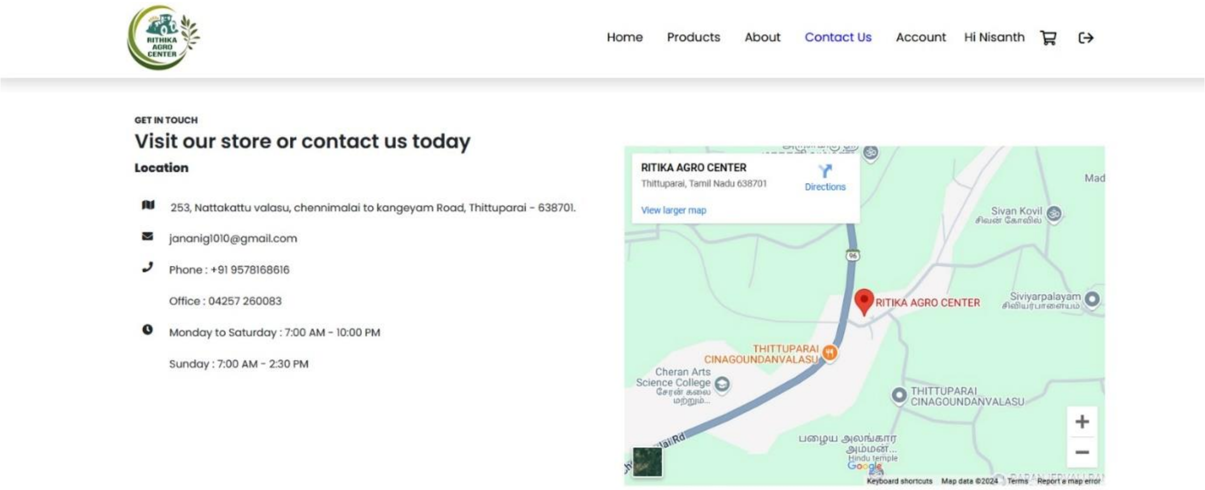
Figure B.5 About Page

About page, all the details about the website like Product name, Brand name, About Seller and their description.



GET IN TOUCH

Visit our store or contact us today

Location

253, Nattakattu valasu, chennimalai to kangeyam Road, Thittuparai - 638701.

jananig1010@gmail.com

Phone : +91 9578168616

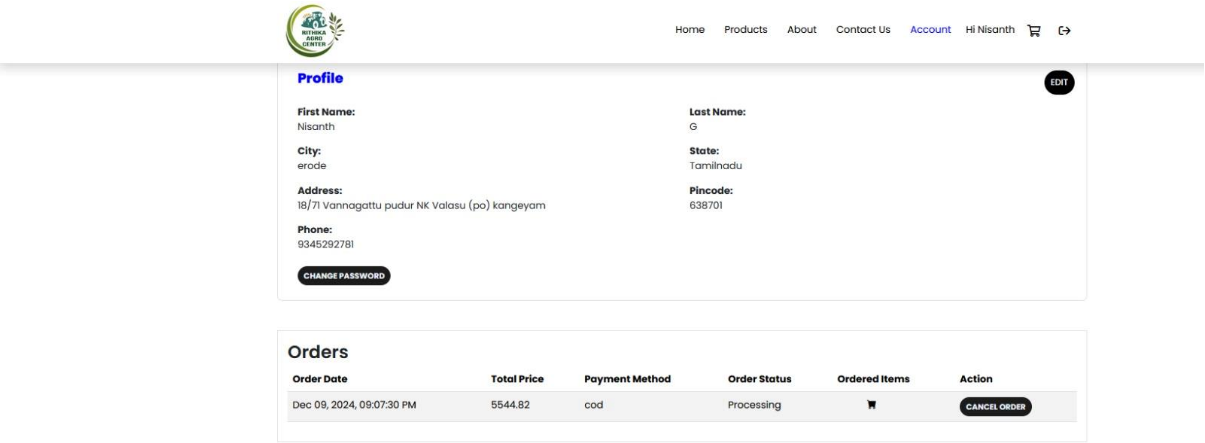
Office : 04257 260083

Monday to Saturday : 7:00 AM - 10:00 PM

Sunday : 7:00 AM - 2:30 PM

Figure B.6 Contact Page

Contact page, Location of the store and basic details like Phone number, Address and Timing of the store are shown.



Profile

First Name: Nisanth

Last Name: G

City: erode

State: Tamilnadu

Address: 18/71 Vannagattu pudur NK Valasu (po) kangeyam

Pincode: 638701

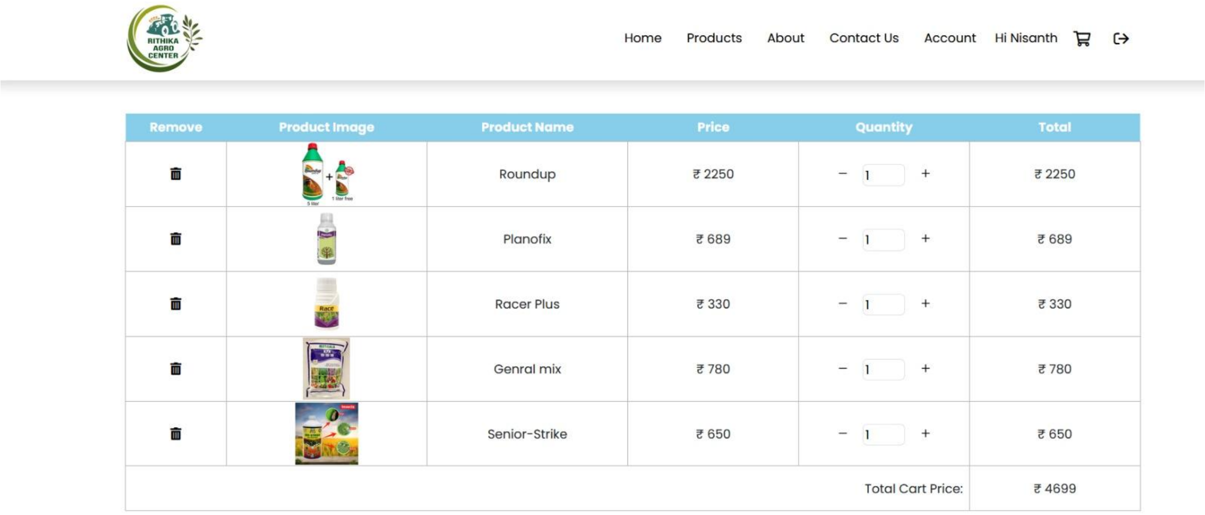
Phone: 9345292781

Orders

Order Date	Total Price	Payment Method	Order Status	Ordered Items	Action
Dec 09, 2024, 09:07:30 PM	5544.82	cod	Processing	🛒	CANCEL ORDER

Figure B.7 User Profile

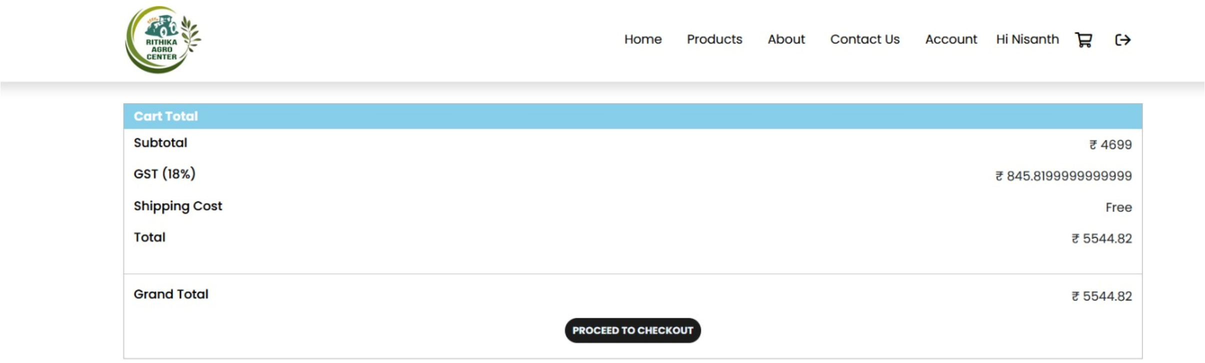
User Account, all the details given by user is shown in the profile page and all the order done bye them is shown at bottom of the page.



Remove	Product Image	Product Name	Price	Quantity	Total
🗑		Roundup	₹ 2250	− 1 +	₹ 2250
🗑		Planofix	₹ 689	− 1 +	₹ 689
🗑		Racer Plus	₹ 330	− 1 +	₹ 330
🗑		Genral mix	₹ 780	− 1 +	₹ 780
🗑		Senior-Strike	₹ 650	− 1 +	₹ 650
				Total Cart Price:	₹ 4699

Figure B.8 Cart Page

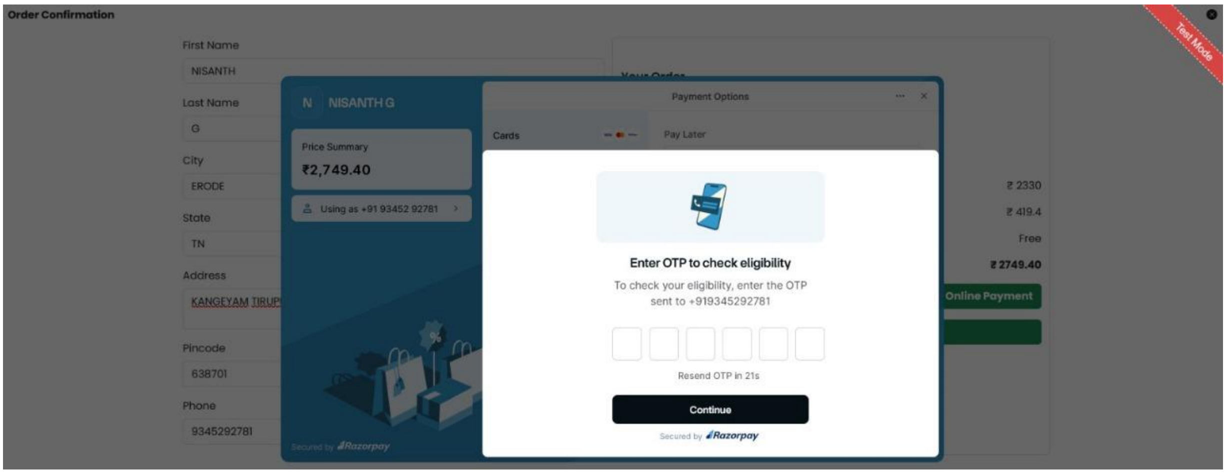
Cart Page, user can add their product to cart and all the cart product is shown with product image, product name, price and Quantity.



Cart Total	
Subtotal	₹ 4699
GST (18%)	₹ 845.8199999999999
Shipping Cost	Free
Total	₹ 5544.82
Grand Total	₹ 5544.82

Figure B.9 Order Page

The image shows a detailed cart summary from Ritika Agro Centre, with a subtotal of ₹4699, GST (18%) of ₹845.82, and free shipping, leading to a grand total of ₹5544.82. A "Proceed to Checkout" button is displayed for finalizing the purchase.



Order Confirmation

First Name
NISANTH

Last Name
G

City
ERODE

State
TN

Address
KANGEYAM TIRUP

Pincode
638701

Phone
9345292781

NISANTH G

Price Summary
₹2,749.40

Using as +91 93452 92781

₹ 2330
₹ 419.4
Free
₹ 2749.40

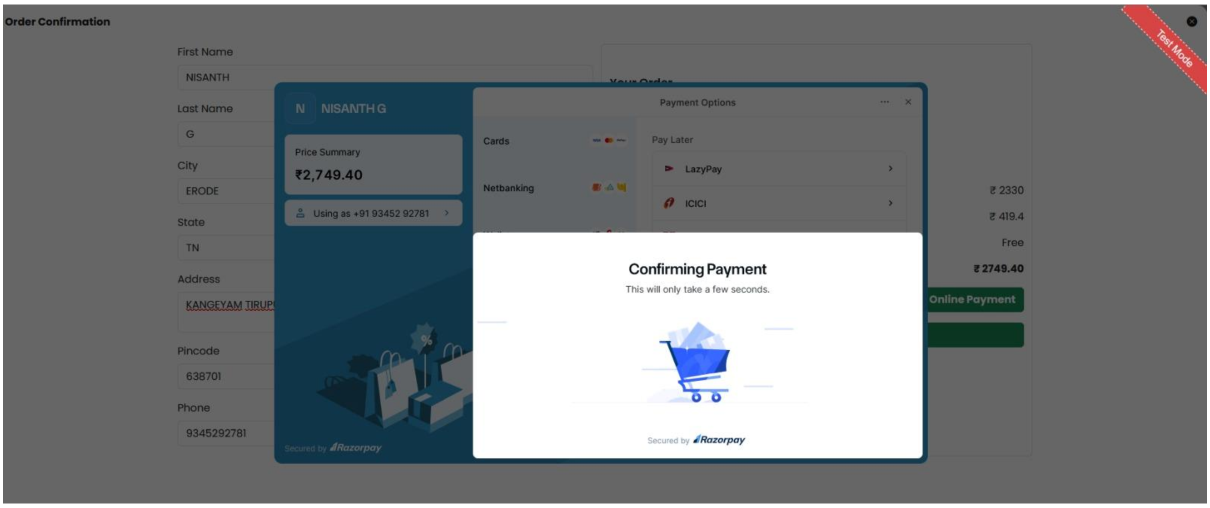
Enter OTP to check eligibility

To check your eligibility, enter the OTP sent to +919345292781

Resend OTP in 21s

Figure B.10 OTP Verification Page

A modal window titled "Enter OTP to check eligibility" .Six input boxes for entering the OTP. Secured by Razorpay (a payment gateway).



Order Confirmation

First Name: NISANTH

Last Name: G

City: ERODE

State: TN

Address: KANGEYAM TIRUP

Pincode: 638701

Phone: 9345292781

N NISANTH G

Price Summary ₹2,749.40

Using as +91 93452 92781

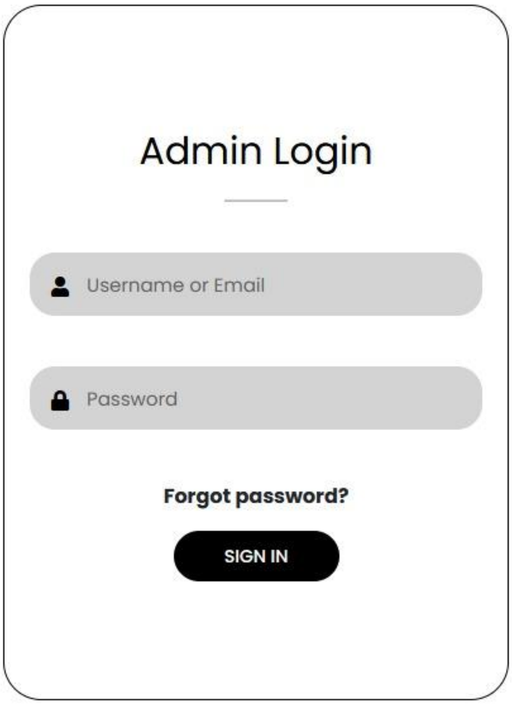
Confirming Payment

This will only take a few seconds.

Secured by Razorpay

Figure B.11 Payment Confirmation Page

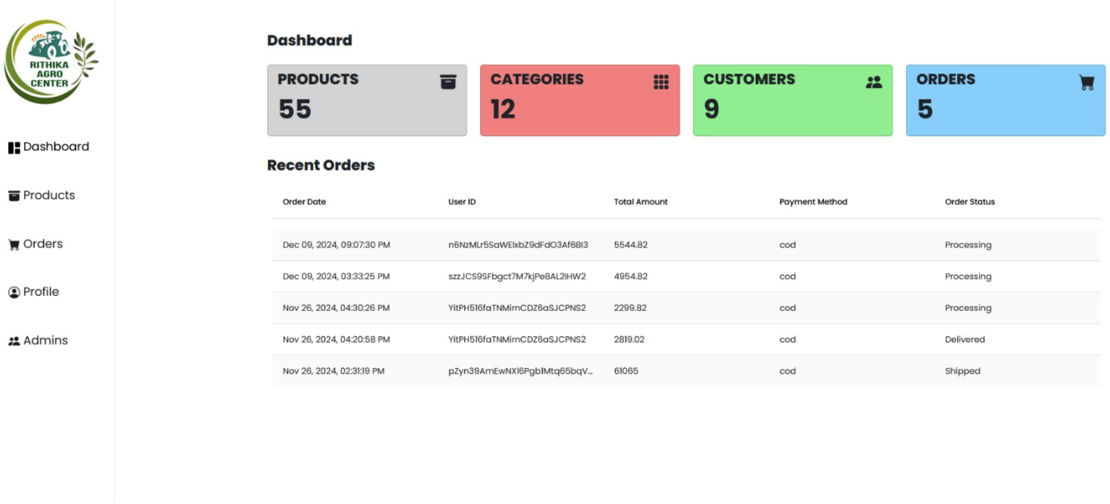
The image shows a payment confirmation page secured by Razorpay during an online transaction. The order total is ₹2749.40, with a breakdown of product cost and tax. The message "Confirming Payment" indicates that the process will take a few seconds.



Admin Login

Figure B.12 Admin Login Page

Admin login, admin can login with the valid details like Username and Password.



Dashboard

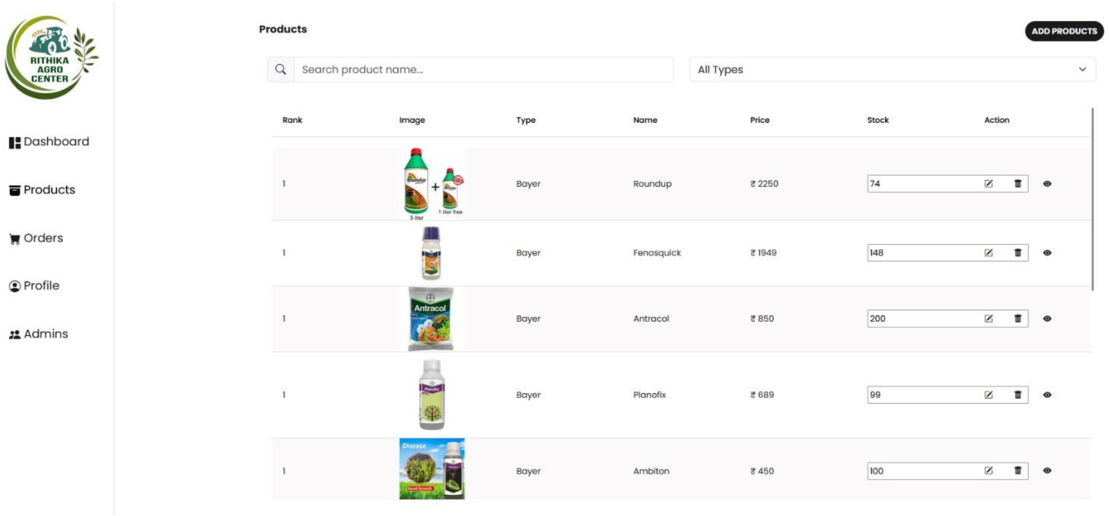
PRODUCTS	CATEGORIES	CUSTOMERS	ORDERS
55	12	9	5

Recent Orders

Order Date	User ID	Total Amount	Payment Method	Order Status
Dec 09, 2024, 09:07:30 PM	n6NzMLr5SaWElxbZ9dFdO3Af6BI3	5544.82	cod	Processing
Dec 09, 2024, 03:33:25 PM	szzJCS9SFbgct7M7kjPe8AL2IHW2	4954.82	cod	Processing
Nov 26, 2024, 04:30:26 PM	YitPH516faTNMirnCDZ6aSJCPNS2	2299.82	cod	Processing
Nov 26, 2024, 04:20:58 PM	YitPH516faTNMirnCDZ6aSJCPNS2	2819.02	cod	Delivered
Nov 26, 2024, 02:31:19 PM	pZyn39AmEwNXl6PgbIMtq65bqV...	61065	cod	Shipped

Figure B.13 Dashboard Page

Dashboard page, Admin can view number of Product, categories, Customers and Orders in the top and all other order details are shown.

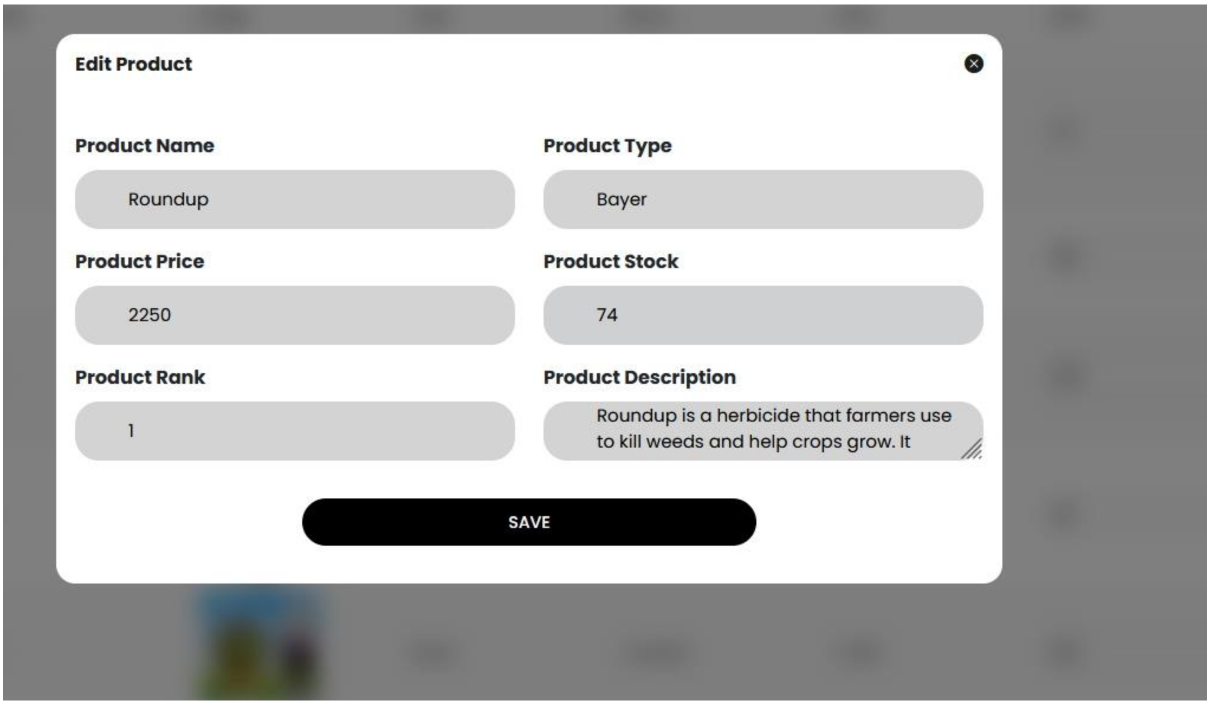


Products

Rank	Image	Type	Name	Price	Stock	Action
1		Bayer	Roundup	₹ 2250	74	
1		Bayer	Fenosquick	₹ 1949	148	
1		Bayer	Antracol	₹ 850	200	
1		Bayer	Planofix	₹ 689	99	
1		Bayer	Ambiton	₹ 450	100	

Figure B.14 Admin Product page,

Admin Product page, add can Add, Update or delete their product and all the changes also done in user product page.



Edit Product

Product Name: Roundup

Product Type: Bayer

Product Price: 2250

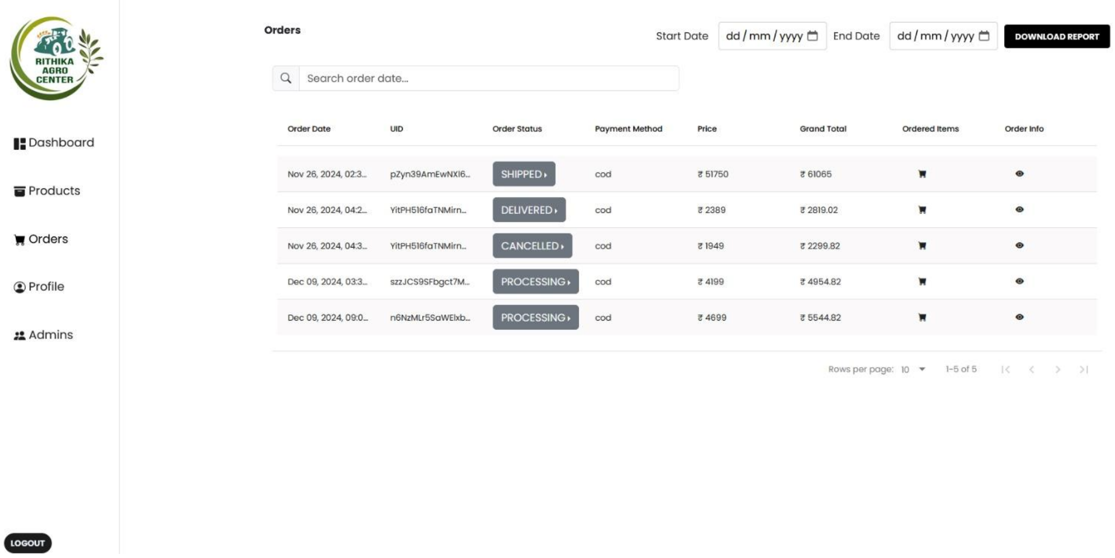
Product Stock: 74

Product Rank: 1

Product Description: Roundup is a herbicide that farmers use to kill weeds and help crops grow. It

Figure B.15 Adding product in Admin Module

Process of Updating or Adding the new product with the product details.



Orders

Start Date dd / mm / yyyy End Date dd / mm / yyyy

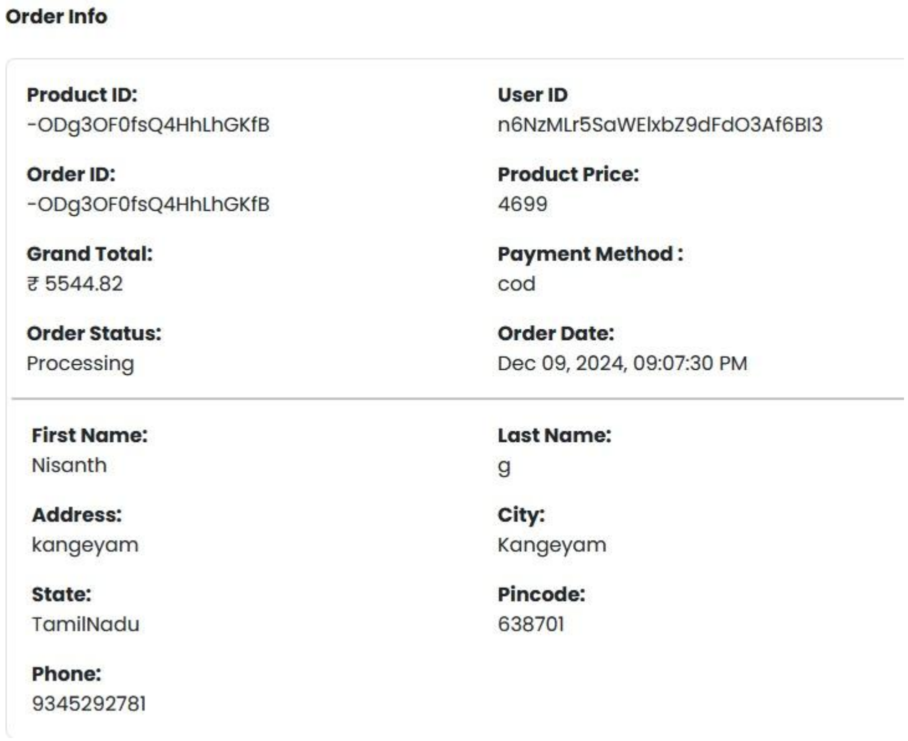
Search order date...

Order Date	UID	Order Status	Payment Method	Price	Grand Total	Ordered Items	Order Info
Nov 26, 2024, 02:3...	pZyn39AmEwNXI6...	SHIPPED ▸	cod	₹ 51750	₹ 61065	🛒	👁
Nov 26, 2024, 04:2...	YitPH516faTNMirn...	DELIVERED ▸	cod	₹ 2389	₹ 2819.02	🛒	👁
Nov 26, 2024, 04:3...	YitPH516faTNMirn...	CANCELLED ▸	cod	₹ 1949	₹ 2299.82	🛒	👁
Dec 09, 2024, 03:3...	szzJCS9SFbgct7M...	PROCESSING ▸	cod	₹ 4199	₹ 4954.82	🛒	👁
Dec 09, 2024, 09:0...	n6NzMLr5SaWElxb...	PROCESSING ▸	cod	₹ 4699	₹ 5544.82	🛒	👁

Rows per page: 10 ▾ 1-5 of 5

Figure B.16 Order Details Page

Admin order page, Admin can view all the orders with the order status and can filter with the date like start and end date.



Order Info

Product ID:
-ODg3OF0fsQ4HhLhGKfB

User ID
n6NzMLr5SaWElxbZ9dFdO3Af6BI3

Order ID:
-ODg3OF0fsQ4HhLhGKfB

Product Price:
4699

Grand Total:
₹ 5544.82

Payment Method :
cod

Order Status:
Processing

Order Date:
Dec 09, 2024, 09:07:30 PM

First Name:
Nisanth

Last Name:
g

Address:
kangeyam

City:
Kangeyam

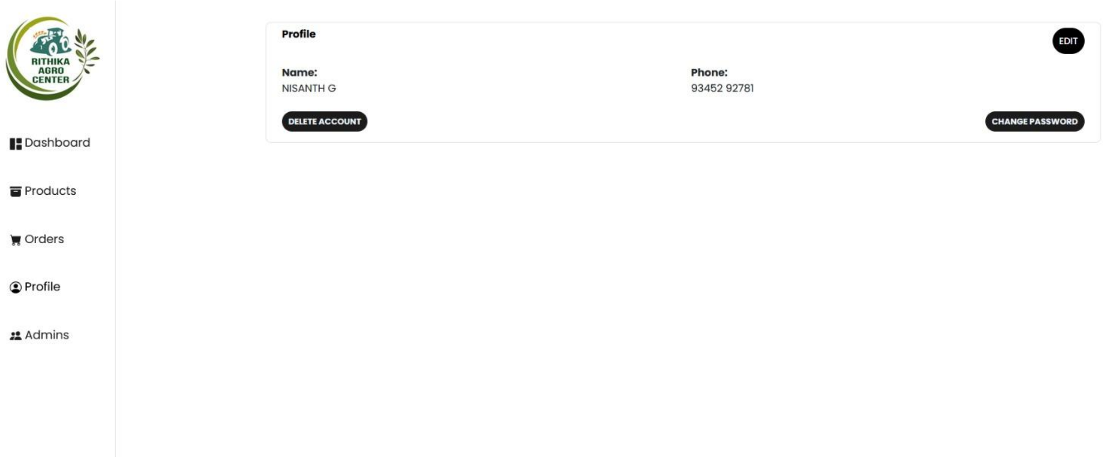
State:
TamilNadu

Pincode:
638701

Phone:
9345292781

Figure B.17 Order Item Page

Order info page, all the details of order item like Product Id, name, User name, Id and their address are shown..



Profile

Name:
NISANTH G

Phone:
93452 92781

Figure B.18 Admin Profile Page

Admin Profile page, the basic details of admin like name and phone number are shown and new admins can also be added.

REFERENCES

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[6] www.geeksforgeeks.org, “Learn about Node.js and React.js”.

[7] www.getbootstrap.com, “Learn about Bootstrap”.

[8] www.javatpoint.com, “Learn about JavaScript”.

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[10] www.w3schools.com, “Learn about HTML, CSS and React.js”.