BLOOM SHOPPING STORE: AN E-COMMERCE WEB APPLICATION

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

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APPROVAL

This Project titled **"BLOOM Shopping Store: An E-commerce Web Application"**, submitted by Md. Muktar Ali and Md. Shaddan Hossen Sijan to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 01/02/2023

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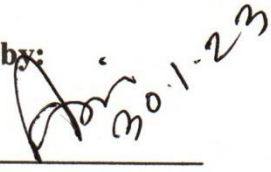

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ABSTRACT

E-commerce basically is a commercial internet-based transaction which is happened through the internet. E-commerce basically means electronic commerce. It mainly mixed up buying & selling of different types of products or goods throughout the internet or over an electronic network. It might be a worldview move impacting both sellers and clients. E-commerce can boost existing commerce practices and be a driving force to alter conventional ways of doing commerce. Because a massive internet-based entrance has added to the growth of E-commerce and more specifically start-ups have been increasingly using this option as a differentiating business model. Also, most guiding structures in today's world have been replaced by automated technology. So with this in mind, we have made an effort to make a multi-vendor e-commerce web application that will be crucial in the field of finding any product search in our platform. Our web-based program has a large capacity for searching for any product effectively in the shortest amount of time. With the help of our web application platform, an unauthenticated user can only browse our website. On the other hand, an authenticated user can browse the website, view all products offered., do a search, and also can purchase products as well as can give a review and ratings. In our platform, an authenticated user can send a message to the admin and the admin can contact a user.

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CHAPTER 1
INTRODUCTION

Introduction

Electronic commerce or E-commerce is a wide range of goods and service-related online-based economic operations. E-commerce is mostly used for online product purchasing, selling, and exchanging different types of goods. Basically, in 1969 the first E-commerce company is established by Dr. John R. Goltz and Jeffrey Wilkins. By utilizing a dial-up connection. But, in Bangladesh e-Commerce mainly begin in late 1999 with some non-resident Bangladeshis that were also based in the United States of America(USA). Today, in Bangladesh the popularity of internet-based businesses is growing day by day selling different types of goods and things online nowadays a massive number of young entrepreneurs have launched self-employed internet-based businesses and they use different types of websites for selling their products. This type of website is named e-Commerce or multi-vendor e-commerce platform. This type of website provides organizations with a wide range of options, ranging from online marketing to exploring product line-ups and increasing sales. And with a proper and optimized and well-developed website, users or customers can't only achieve these goals but can also offer their clients a convenient service that may help easily boost their business.

Motivation

Today, we are living in a technology-based modern society, and in this modern society we are getting busy day by day and it is hard to go to the market for shopping or to buy something daily drivers. In this Technology based modern society, modern e-commerce is about much more than just selling products online. On the other hand, the growing availability of the internet on a variety of devices has made it easier than before for people to browse and conduct business online and it is easy to buy something and receive products and by this process, we can save valuable time. If government provides appropriate policies then it might be a beneficial marketplace in Bangladesh.

Objectives

1. To promote a service or product online.
2. To Sale a service or product.
3. Entering the global marketplace.
4. To Establish brand awareness and corporate identity.
5. Reduce Management Costs.
6. To Provide a unique customer experience.
7. To Increase the number of loyal customers.
8. Increasing Sales.

Expected Outcome

The fundamental purpose of modern e-commerce is to reach as many people as possible at the right time in order to boost sales and profitability. Modern e-commerce encompasses the buying and selling of items as well as the transmission of payment and data through the internet.

1. To store and product listing creation.
2. For faster and easy to buy and sell process.
3. To reduce cost.
4. Unlimited access to customers.
5. Better facilities and flexibility for customers.
6. Faster delivery and faster response to buyer/market demands

CHAPTER 2

BACKGROUND STUDY

Background of the project

In modern society a multi-vendor website or an online store, as the name implies, is a platform for third-party suppliers to offer in one area. We simply said e-commerce is a large-scale store that has a number of tiny stores maintained by different vendors.

Consider e-commerce as a store or a mall that distributes to people's homes to make it more attractive and relatable. Our mall, as the term suggests, has a lot of small stores. The main duty for running each business remains with the shop owner, but we have the greater burden of keeping things, delivering them to people's homes or houses, and collecting money.

Suppose this mall is an internet-based online shopping mall and the store or mall transforms into a marketplace with different types of small businesses serving as seller's stores and owners in charge of order processing, shipping, and payments. This is a real-life example of an attractive and proper multi-vendor e-commerce website store and marketplace.

Related works

Today the conventional advertising and management of the online-based e-commerce platform are experiencing a transition as a result of the advent of e-commerce. As we know, the birth of e-commerce enterprises has been qualified to utilize the web to save charges associated with the purchasing of products, optimizing, logistics and stocks, gaining a strategic advantage, and effectively executing business engineering.

Businessmen may use e-commerce for their business to strengthen supply chain impart and business solutions, allowing them to stand out from the crowd.

In modern society, e-commerce is one of the time-saving for us and most users want to buy their daily necessary products and other necessary goods without going to shopping malls and stores. Because it kills their valuable time and that's why they prefer different types of online platforms.

Challenges

In modern society, the economy has acquired new changes on the internet in todays as a result of globalization. Economic activity is more efficient and lucrative when it is implemented using the most up-to-date information technology. Today the internet-based electronic market is not as powerful as the conventional market and its potential is not fulfilled for various reasons.

1. To build an attractive and easier web application that will appeal to the buyer and seller.
2. Maintaining the application security of the database is also a critical and crucial part of this project.
3. To make sure the customer registration process is working properly.
4. Ensure original and good-quality products.
5. Timely delivery of products is also a challenge.
6. Showed all products to every customer.

Futures

Key Features:

- Multi-Vendor Facilities
- Payments (PayPal)
- Real-time Live Chat
- Google Map
- Order Confirmation email

- Admin Dashboard/Panel
- Product Searching
- Rating & Reviews
- Analytics & Summaries

Primary Features:

- Product and Stock Management
- Order (Online) Manager
- Stock Manage
- Purchase Manage
- Add Product/Remove Product/Update Product Manage
- Today Deal
- Payments
- Manage Customer/Seller
- Fast Searching
- Shipment/Deliveries Management
- Shopping Confirmation
- Top Seller Slider Manage
- Seller Mall and Seller Page
- Customer/Seller Profile Update Manage
- Report
    - Daily Sales Report
    - Monthly Sales Report
    - Analytics & Summaries

For Customers/Users Viewpoint:

- Registration/Signup
- Login/Signing
- Manage Profile (Exp: Update Profile)
- Browser Site, Buy Product, Search Product etc.

- Give product Rating & Reviews
- Chat with admin and give feedback/Info etc.

For Seller Viewpoint:

- Add Product
- Update Product
- Delete Product
- Manage his/her shop orders
- NB: Seller can do all the activities of Customer/User

For Admin Panel/Viewpoint:

- Manage Product & Stock
- Manage Orders
- Manage Customers & Sellers
- Manage all the activities of application
- Generate Report
- NB: Admin can do all the activities of Customer/User & Sellers

Business Model

B2C:

When a corporation conducts a business-to-consumer (B2C) transaction, it offers its goods or services directly to the customers who will ultimately utilize them. Everyday transactions frequently involve B2C sales. For instance, whether you buy a new phone or set of clothes, eat out, or shell out cash for petrol.

The main force behind the B2C marketplaces is consumer behavior. B2C businesses must establish positive relationships with repeat consumers. They need to be aware of what their clients desire and how to encourage them to make a purchase. This effort is what gave rise to the B2C market. But because B2C businesses must keep up with the latest in customer-friendly goods and services, it is also one of their biggest problems.

The B2C industry was created via this effort. Being current with the right goods and services for their clients, however, is one of the biggest problems for B2C businesses. Client understanding will boost customer loyalty and lower any costs incurred when they switch to competitive firms.

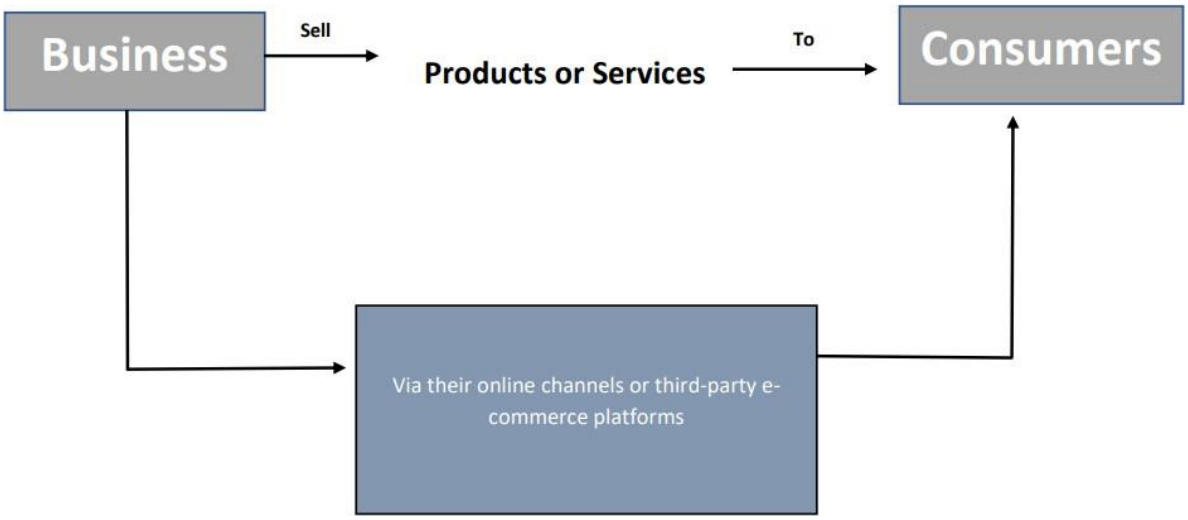

Fig 2.5: B2C Diagram

CHAPTER 3:

DESIGN & REQUIRED SPECIFICATION

Agile Methodology:

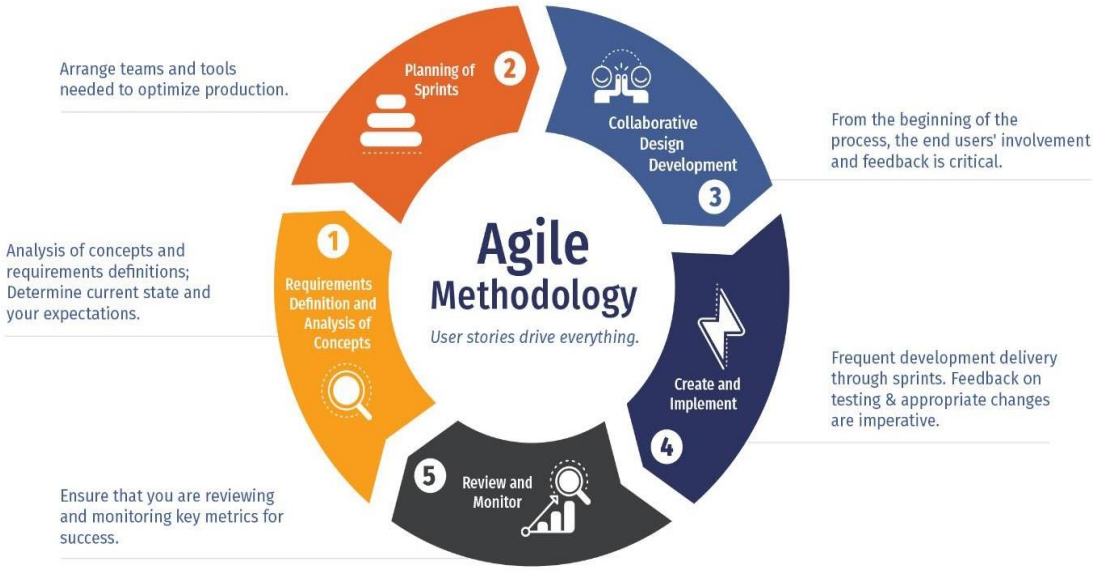

Fig 3.1.1: B2C Diagram

Software Requirement

Tools and technologies:

Frontend:

- React JS
    - Language: JavaScript
- HTML5
- CSS3
- Bootstrap

Backend:

- Node JS
    - Language: JavaScript
- Express JS
    - Language: JavaScript

Database:

- MongoDB
    - MongoDB: Mongoose

Tools:

- Git
- Visual Studio Code
- Node JS

HTML5:

The markup language HTML5 is used to arrange the content of websites. The fifth iteration of HTML, which debuted in 1990, is the most current. By adding support for the newest multimedia while keeping its usability for both people and machines, HTML5 aimed to improve the language.

Web pages and other information that can be seen in a web browser are often created using HTML, or Hyper Text Markup Language. The A form of HTML elements, which are composed of tags encircled by angle brackets, is used to represent HTML in the text of web pages (such as). HTML tags are frequently seen in pairs, like "h1" and "/h1," while some, like "img," stand alone and are not paired.

Bootstrap:

Using a collection of pre-defined CSS and JavaScript components, the Bootstrap framework is intended to make it simpler to develop flexible and mobile-first websites.

A variety of UI components are available in Bootstrap, such as:

- Navigation bars
- Buttons
- Forms
- Tables
- Grid system for layout
- Alerts and Modals
- Typography
- Icons
- And many more

Additionally, it has a few JavaScript plugins that may be used to provide web pages extra features like modals, carousels, and tooltips.

Bootstrap's responsive design, which makes use of a grid system to automatically alter a web page's layout to match the screen size of the device being used to view it, is one of its key characteristics. This eliminates the need to develop unique designs for all screen sizes and enables a consistent experience across various devices and screen sizes.

CSS:

Cascading Style Sheets (CSS), a style sheet language, is used to specify how markup language-written documents look and are formatted. Any type of XML document, including plain XML, SVG, and XUL, may be produced using the language. However, HTML and XHTML web pages and interfaces are those that use it the most commonly. Since CSS is a crucial online specification, almost all web pages use CSS style sheets to describe their display. In order to differentiate between a page's presentation and its content, which includes features like layout, colors, and fonts, CSS is mostly used.

JavaScript:

JavaScript is a dynamic computer programming language (JS). It is most widely utilized as a part of web browsers, whose implementations allow user-facing scripts to interact with the browser, administer it, and modify the visible record content. Additionally, it is utilized in the creation of computer and mobile app packages, server-aspect programming, and game development. JavaScript is a prototype-based programming

language with dynamic typing and first-class functions. Its syntax was influenced by C. A lot of Java names and naming conventions are borrowed from JavaScript, despite the fact that the two languages are completely unrelated and have wholly different meanings. The author is the primary source of design inspiration for JavaScript.

React JS:

A JavaScript package called React is used to create user interfaces. It was created by Facebook, and Facebook, together with a community of independent developers and businesses, are currently maintaining it. React enables developers to create reusable UI components and effectively manage the state of their apps. Because less direct manipulation of the actual DOM is required, efficiency is improved by using a virtual DOM (Document Object Model). React is a popular choice for creating sophisticated online and mobile applications because it makes it simple to integrate with other libraries or frameworks.

Node JS:

A JavaScript runtime called Node.js was created using the JavaScript engine from Chrome V8. This server-side JavaScript execution environment is open-source and cross-platform. JavaScript may be used to build server-side apps since Node.js enables developers to run JavaScript on the server side, outside of a web browser.

Because Node.js allows JavaScript to be used in the same way as other scripting languages, developers may leverage their current JavaScript expertise to create scripts. This allows developers to construct command-line tools and scripts.

Overall, Node.js is a strong and adaptable platform that enables programmers to utilize JavaScript for both client-side and server-side programming. This creates a single language for web development and streamlines the process of creating online applications.

Express JS:

Express.js is a Node.js web framework that makes it easier to create and manage online applications. It is based on Node.js and offers a straightforward, efficient method for handling HTTP requests and answers and organizing server-side functionality.

For both online and mobile apps, Express.js offers a comprehensive range of functionalities, including:

- Routing: Express.js makes it simple to handle various request types in various ways by allowing you to specify routes for different HTTP methods (GET, POST, PUT, DELETE, etc.) and URLs.
- Middleware: Express.js enables you to create middleware methods that can be easily reused across many components of your website to perform common tasks like authentication, processing request data, and managing errors.
- Templating: Express.js can easily create dynamic HTML pages from data using a number of template engines. Serve static files: Express.js provides an easy method to serve static files like images, CSS, JS etc.

Overall, Express.js offers a straightforward and adaptable method for building Node.js web apps and APIs, enabling programmers to arrange their server-side code and manage HTTP requests and answers with ease. It is an excellent option for developers who want to build web apps and APIs quickly and effectively because of its tiny, non-opinionated, and speedy nature.

MongoDB:

A well-liked, open-source, multi-platform NoSQL document-oriented database is MongoDB. It is renowned for its speed, usability, and scalability. Data is saved in the BSON (Binary JSON) format, which is comparable to JSON, in MongoDB's document data architecture. Unstructured data may be easily stored and managed because of this data model's flexible and dynamic schema capabilities.

For both online and mobile apps, MongoDB has a lot of characteristics that make it a strong and effective database, including:

- Document-oriented data model: Semi-structured and unstructured data are simple to work with and query since MongoDB stores data as documents.
- Indexing: Rich query language support and indexes are provided by MongoDB, which boost the efficiency of data retrieval operations.
- Scalability: MongoDB is highly suited for big and expanding datasets since it is made to scale horizontally utilizing shading, which enables you to disperse data over different servers.
- High availability: Your data will always be accessible and recoverable in the case of a server loss thanks to MongoDB replica set's automated failover and integrated replication.
- Aggregation: With its integrated Aggregation Framework, MongoDB offers a variety of data processing options and facilitates complicated data analysis.
- Flexibility: Because MongoDB supports so many different programming languages, like JavaScript, C#, Python, and others, developers may choose the finest tools and technologies for their individual use cases.

All things considered, MongoDB is a strong and effective database system that offers a document-oriented data architecture that is suitable for storing and querying unstructured data, is simple to scale, and is straightforward to maintain for online and mobile applications. Because of its adaptability, scalability, and comprehensive feature set, it is being rapidly embraced by developer communities.

CHAPTER 4

SYSTEM DESIGN

Functional Requirements

1. Should have a product searches option and users must be to do product searches.
2. Customers or Users ought to be allowed to see product details.
3. Customers must be required to validate their e-mail.
4. In registration, users must be requested to confirm their email address and phone number.
5. Users ought to be allowed to add and remove products from their shopping carts.
6. Authenticate users should be able to provide product feedback.
7. Authenticate users should be allowed to modify their name, email, and password.
8. Authenticate users should have the ability to view transaction history.
9. Authenticate sellers must have the ability to add and remove product items.
10. Sellers should have the ability to modify their products.

Non-Functional Requirements

1. Should have e-mail and password verification.
2. Should have server-side validation.
3. Proper navigation or routing.
4. Ease-of-use
5. Payment validation
6. Stock validation
7. Payment Validation.

Data Flow Diagram

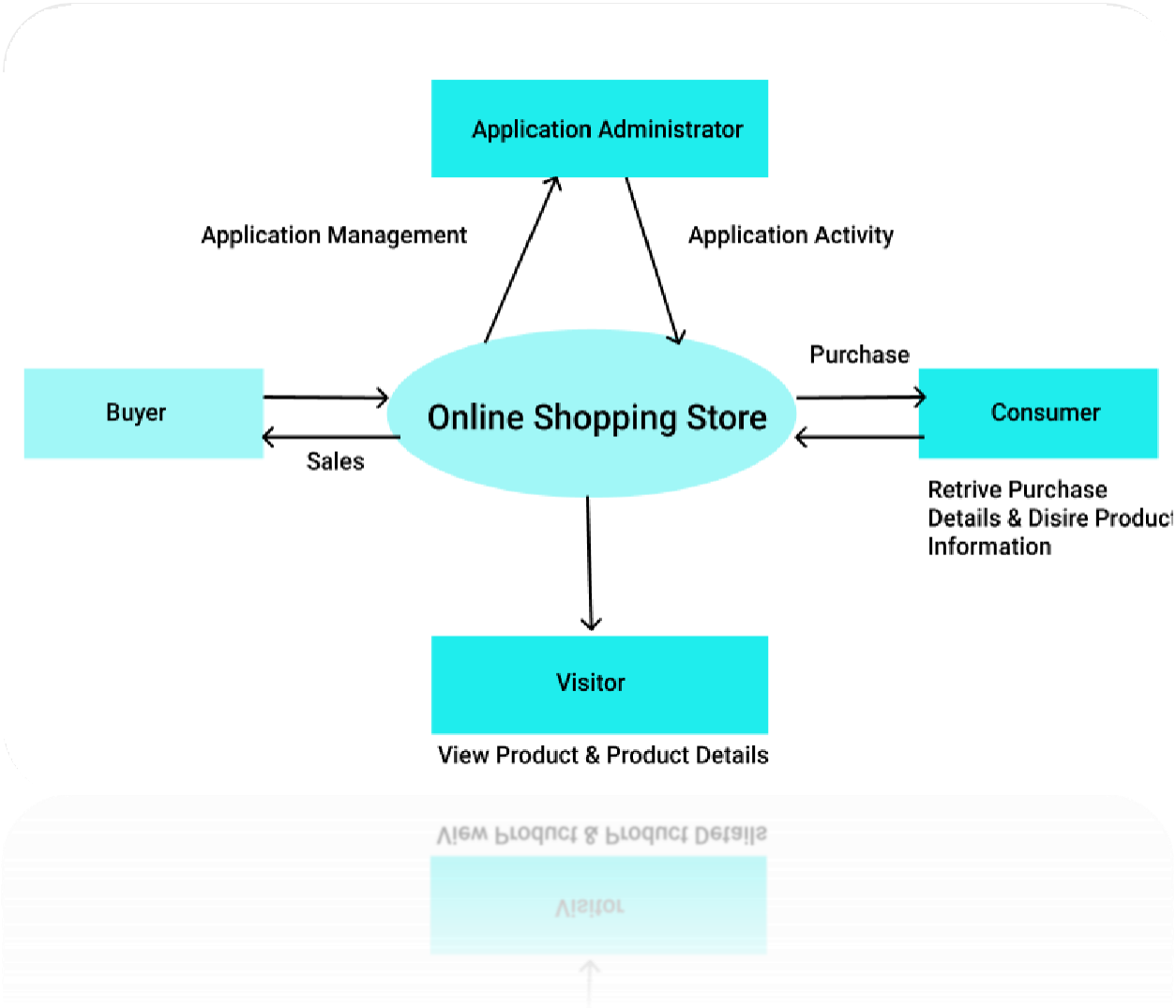

Fig 4.1: Data Flow Diagram

Use Case Diagram

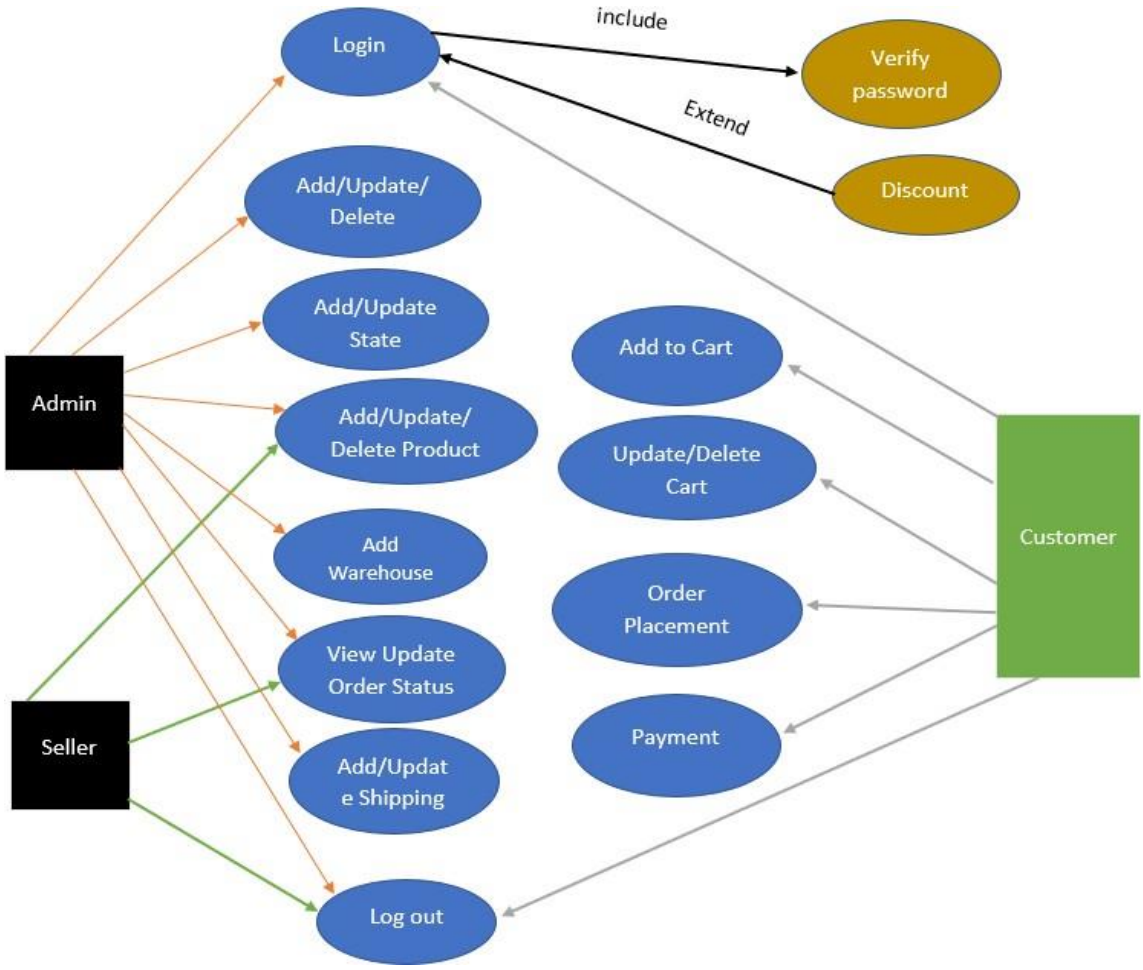

Fig 4.2: Use Case Diagram of the Application

Class Diagram

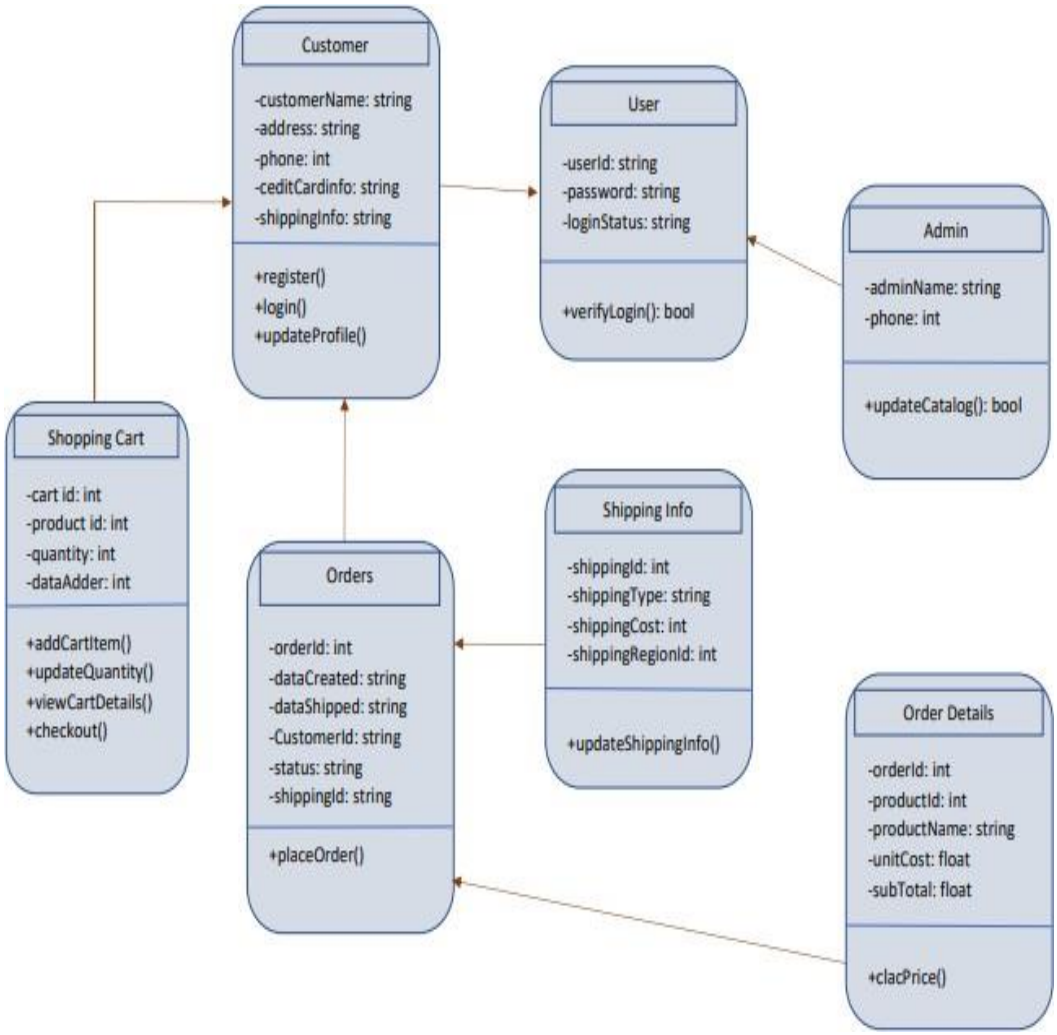

Fig 4.3: The application's class diagram

Activity Diagram

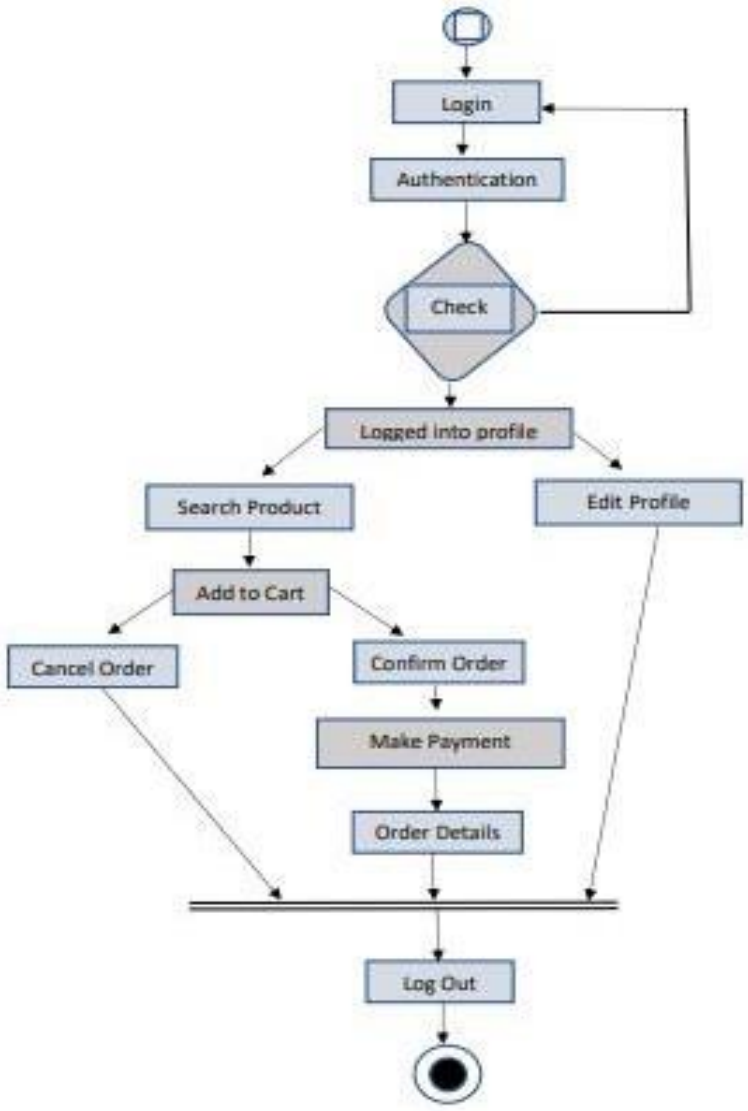

Fig 4.4: Activity diagram of the application

Flow Chart

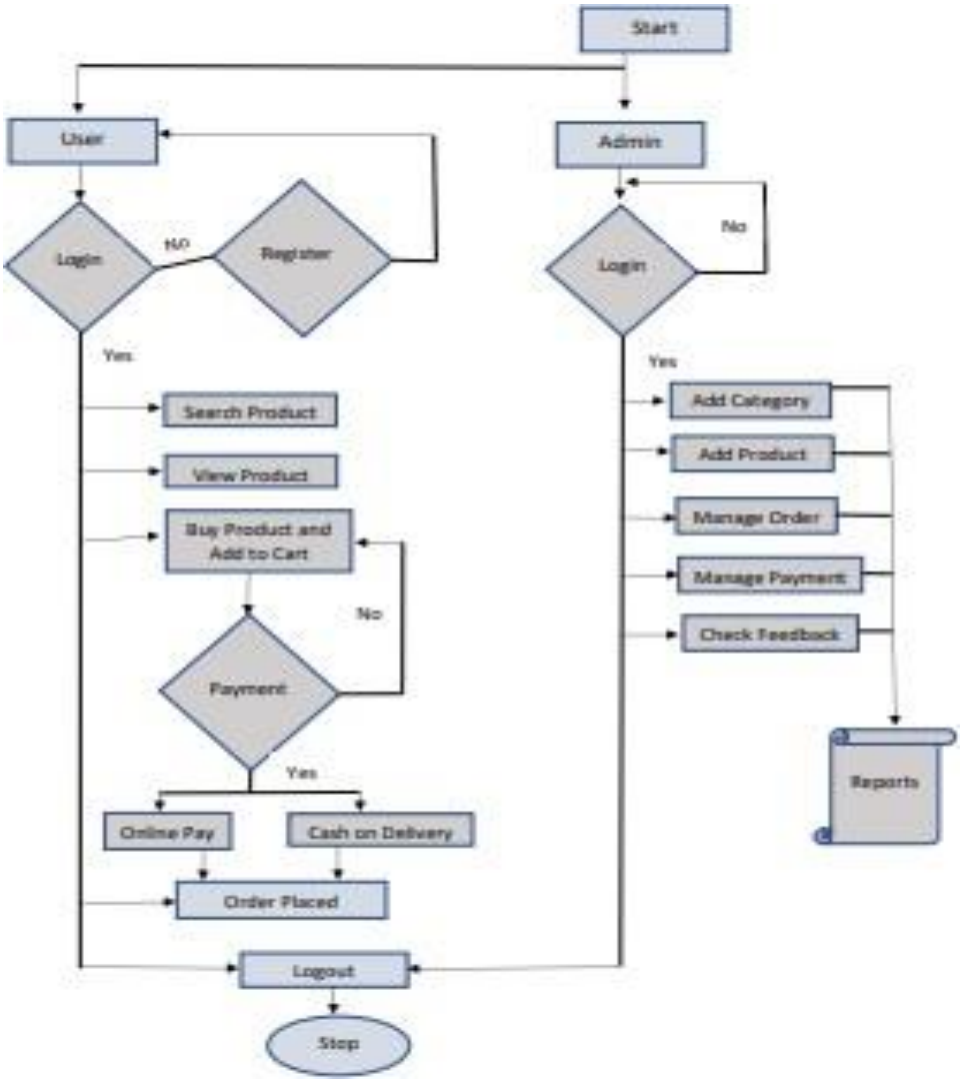

Fig 4.5: Flow Chart of the application

CHAPTER: 5
IMPLEMENTATION

Home Page:

There are several duties that an e-commerce webpage must complete. Customers should be able to easily find what they were looking for and be informed about the site's purpose. Additional objectives include marketing new product lines, offers, and email signups.

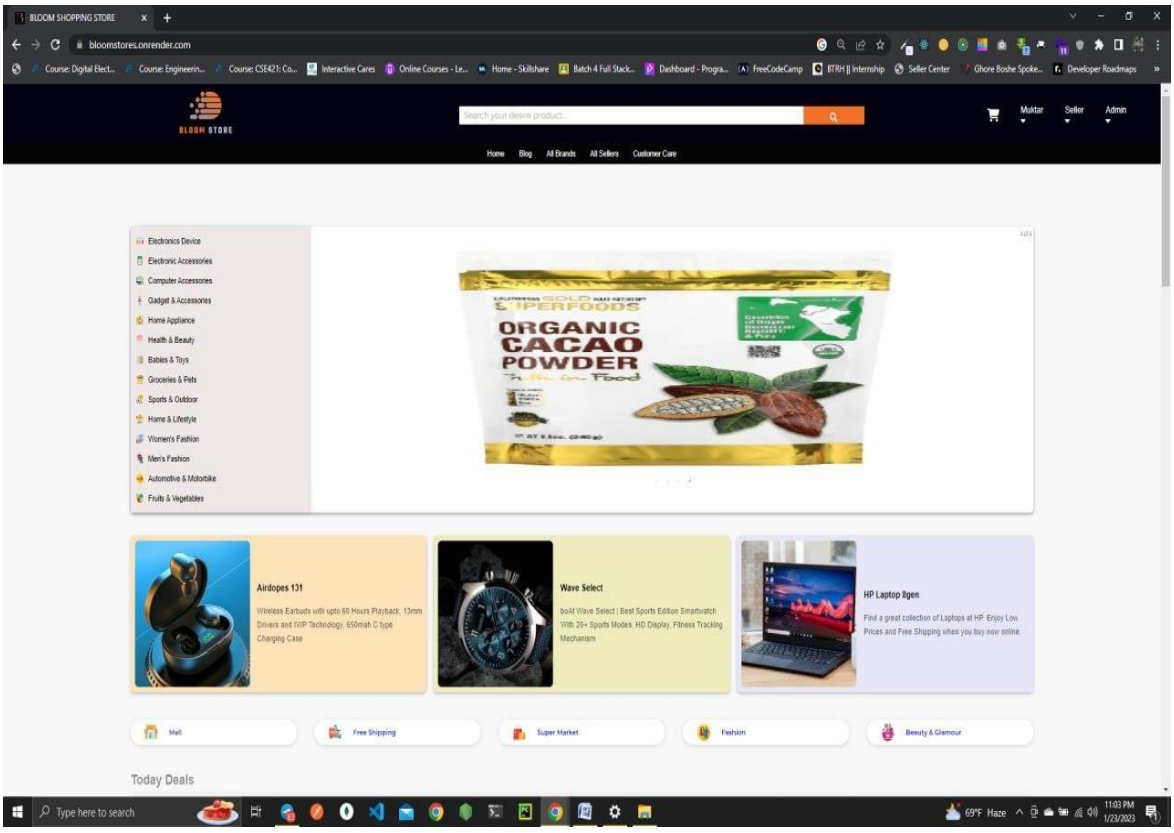

Fig 5.1.1: Home Page

Shopping Cart:

An ecommerce shopping cart is a type of software that allows customers to purchase items from your shop or store a list of the items they wish to purchase in the future.

Add to Cart is one of the most pivotal moments in a customer's journey—the point when someone shifts from merely browsing to actually making a purchase.

But choosing the wrong shopping cart solution or having a poorly designed checkout flow can deter potential customers before they complete the checkout process, which is why it's important to create a great shopping cart experience for your ecommerce store.

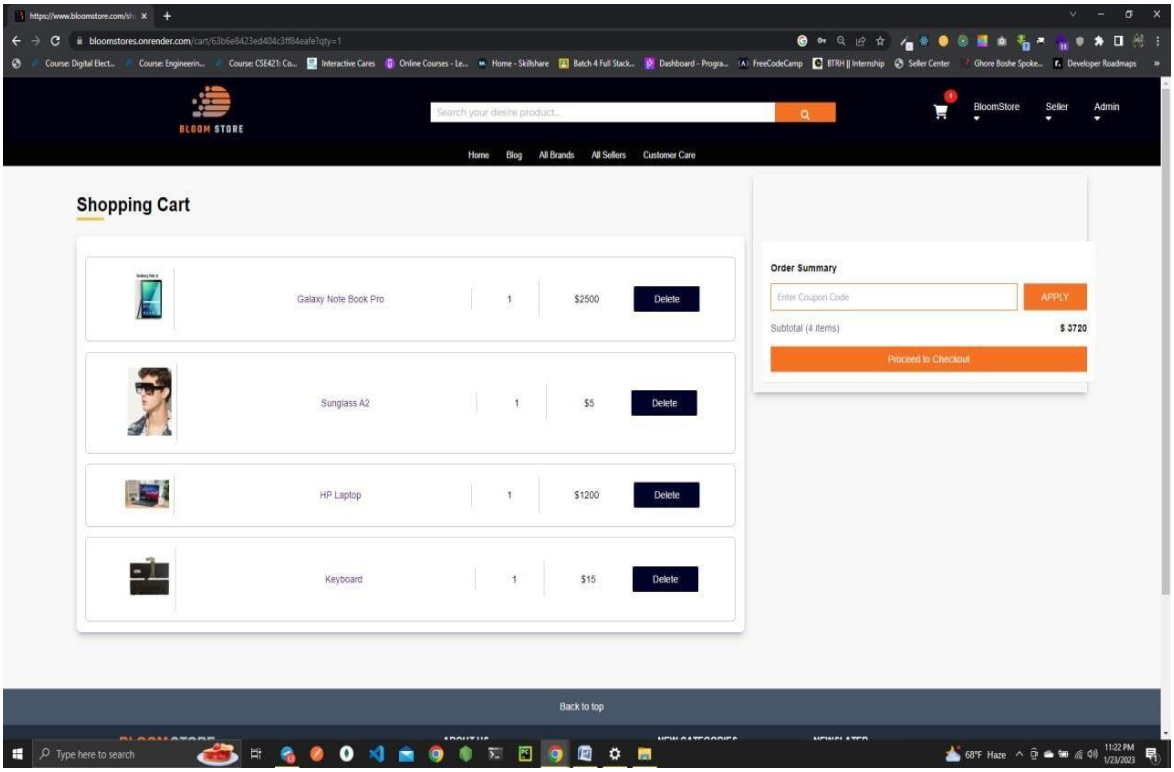

Fig 5.1.2: Shopping cart

Add/Edit /Delete product

Using the add product feature, we can add any product to our shopping cart. Using the edit product feature, we can update any product if something is wrong product.

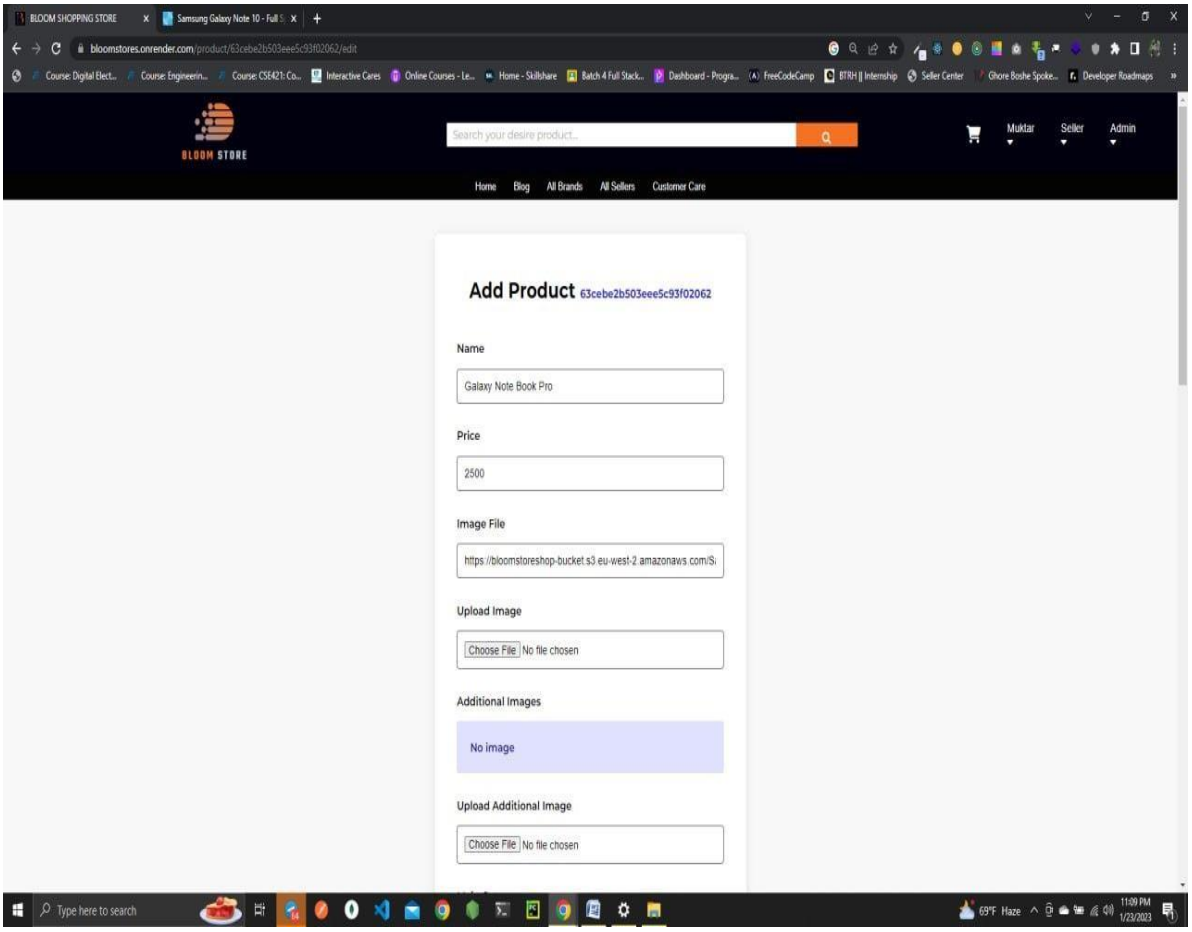

Fig 5.2.1: Add Product Page

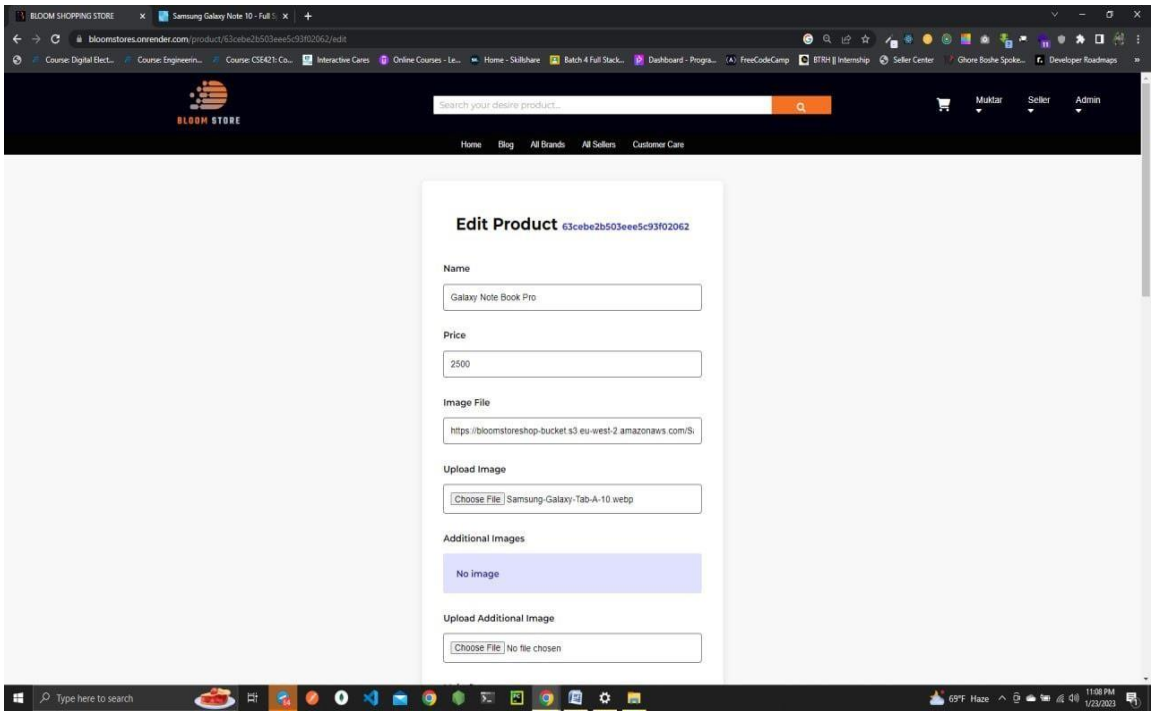

Fig 5.2.2: Edit Product Page

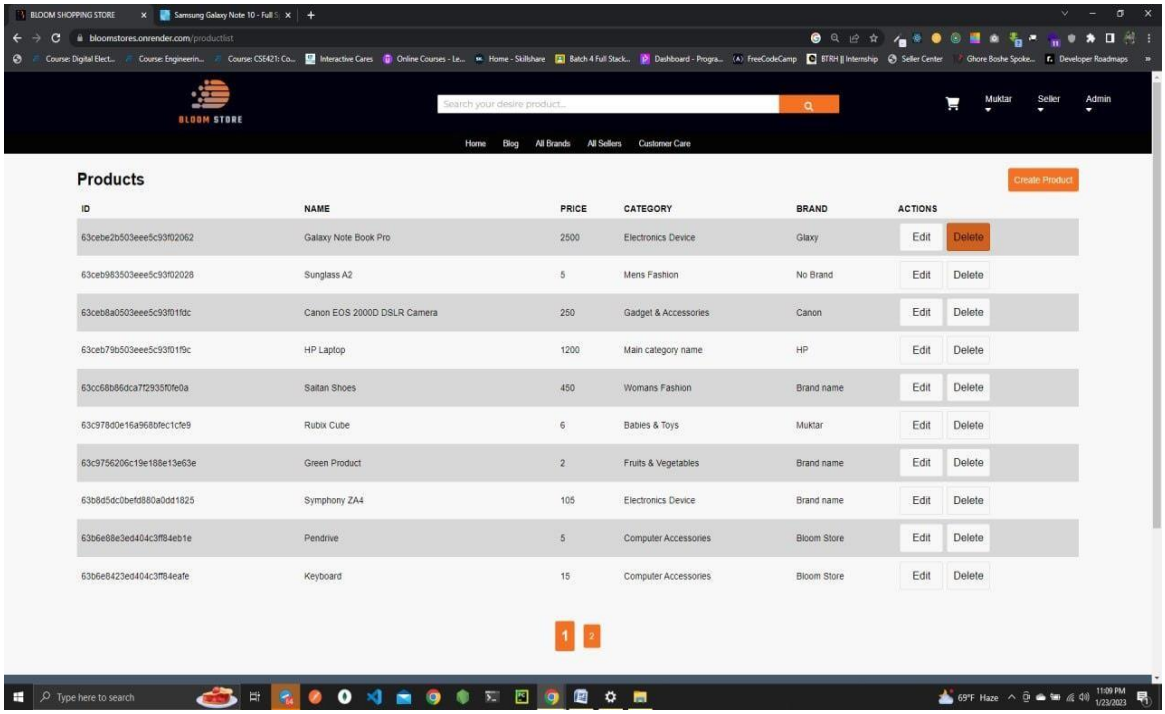

Fig 5.2.3: Delete Product Page

Search Product

An ecommerce site search solution is a search engine that is integrated or built into your online business. By matching the search phrases, a user enters with the products in your business, it seeks to locate the things the customer is looking for.

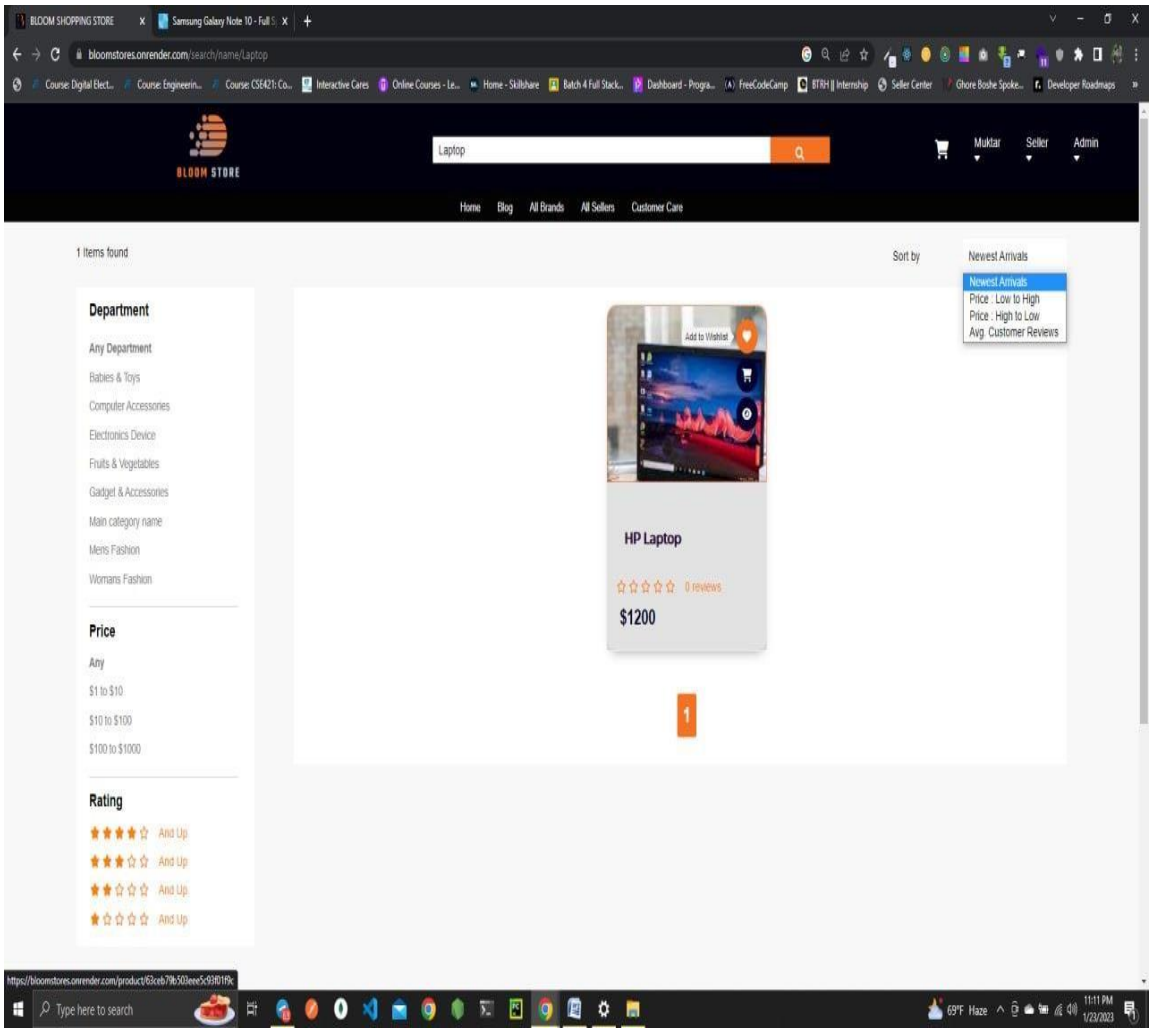

Fig 5.3: Search Product Page

Registration / Sign-up Page:

If a person accesses the page without having an account on our website. After choosing "Register," the user may fill out his information to establish an account, however only one account with a single Gmail address can be opened.

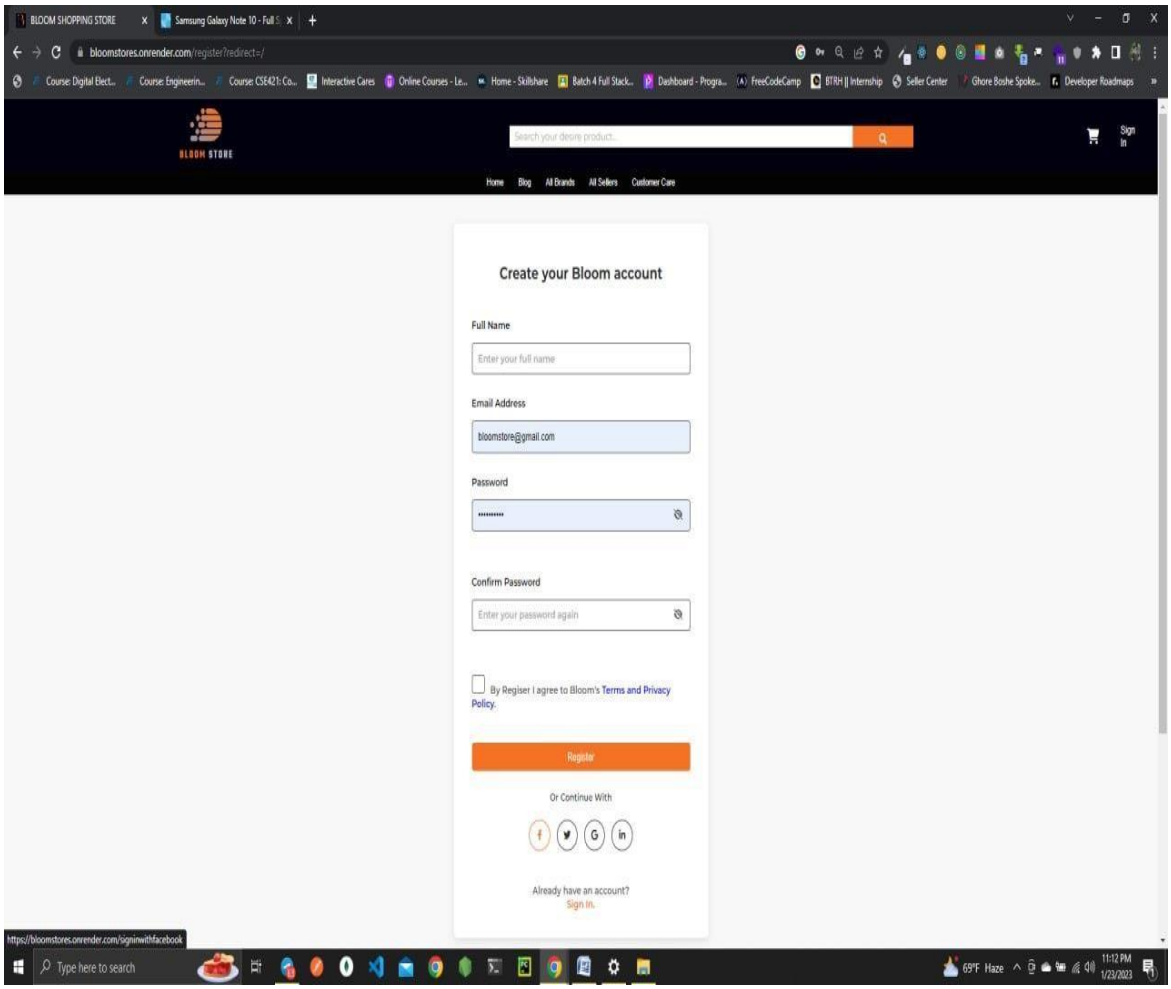

Fig 5.4: Registration / Sign-up Page

Login Page:

A user can access an application by providing their username and password or by authenticating with a social media login on the login screen.

Users enter their credentials on the website's login form, which is a reasonably basic process. Following that, the information is transmitted to the authentication server, where it is compared to all the user credentials stored there. The system will authenticate users and give them access to their accounts once a match is discovered.

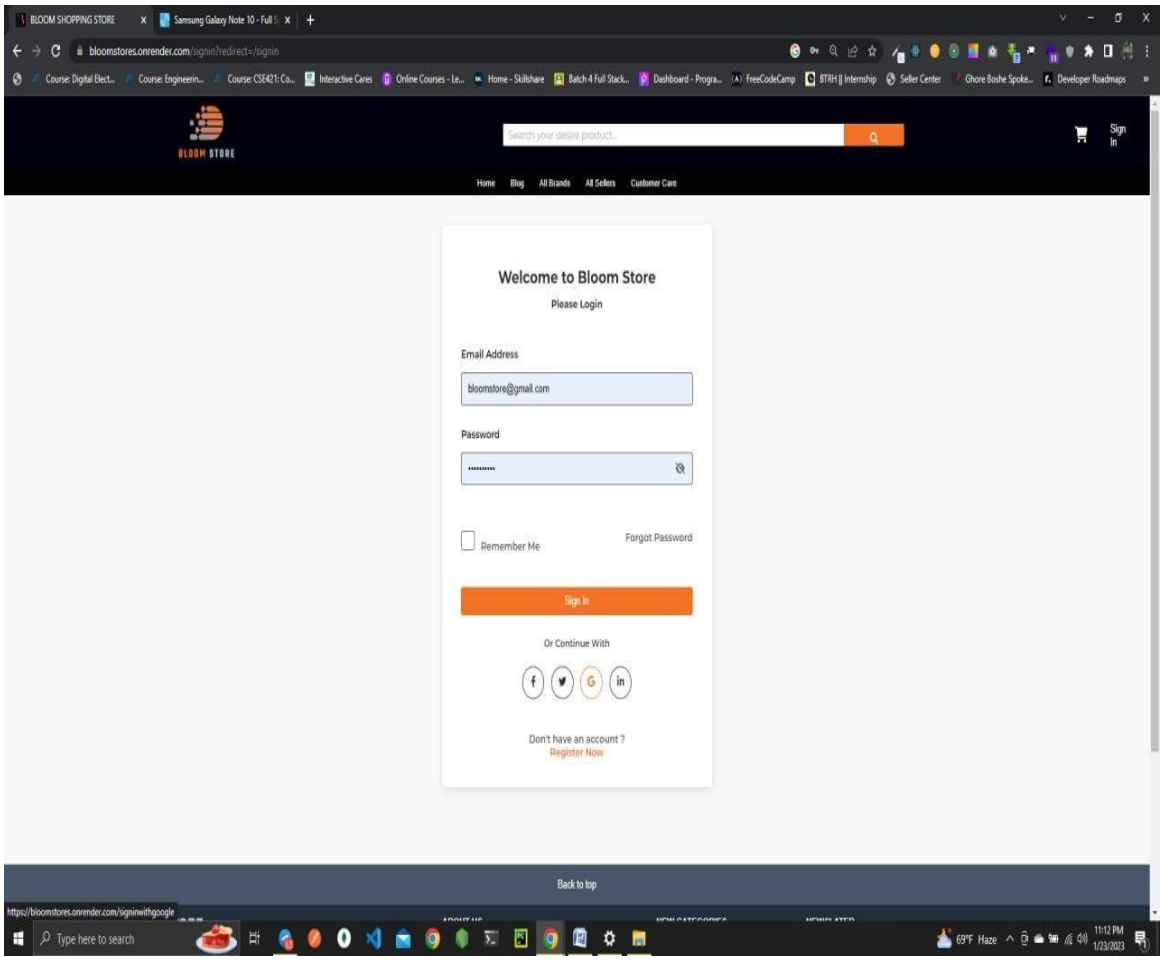

Fig 5.5: Login Page

Payment Page:

E-commerce payment processing happens whenever a business accepts payments from customers online. The transaction is carried out through a secure terminal, or gateway, which protects customers' sensitive financial information and serves as a channel for money transfers from them to the store.

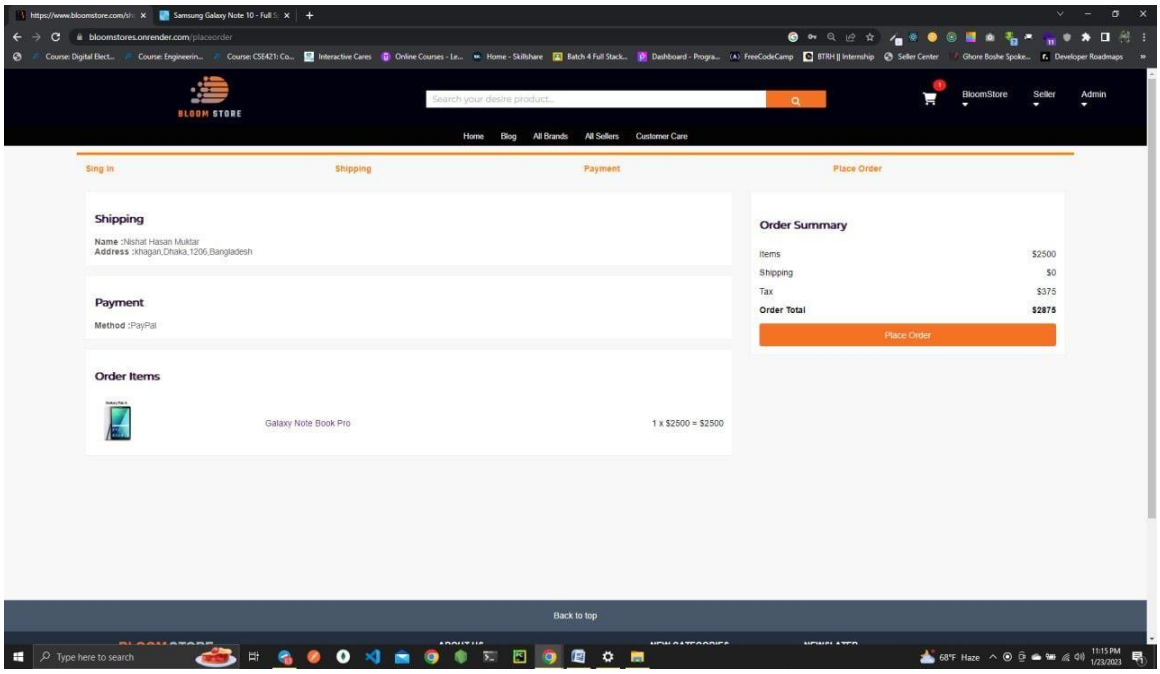

Fig 5.6.1: Place Order Page

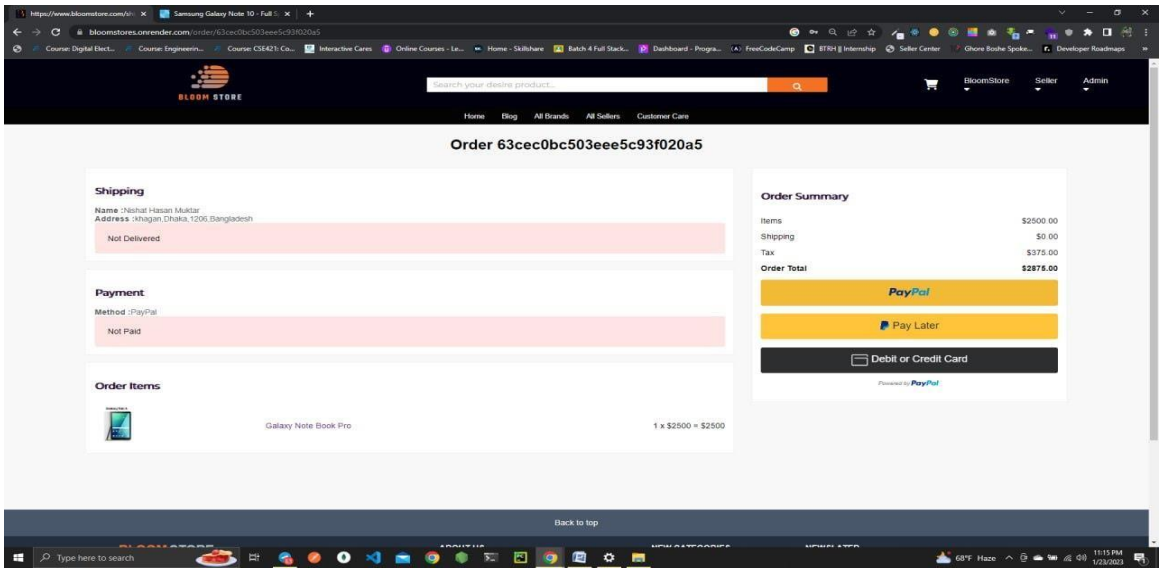

Fig 5.6.2: Payment Page

Payment Success Page:

E-commerce is the term used to describe online shopping or trade in which people or businesses may buy and sell their goods and services from a website or mobile application and have these products delivered to them. E-commerce shipping is the process used to deliver things purchased online to the buyer's address.

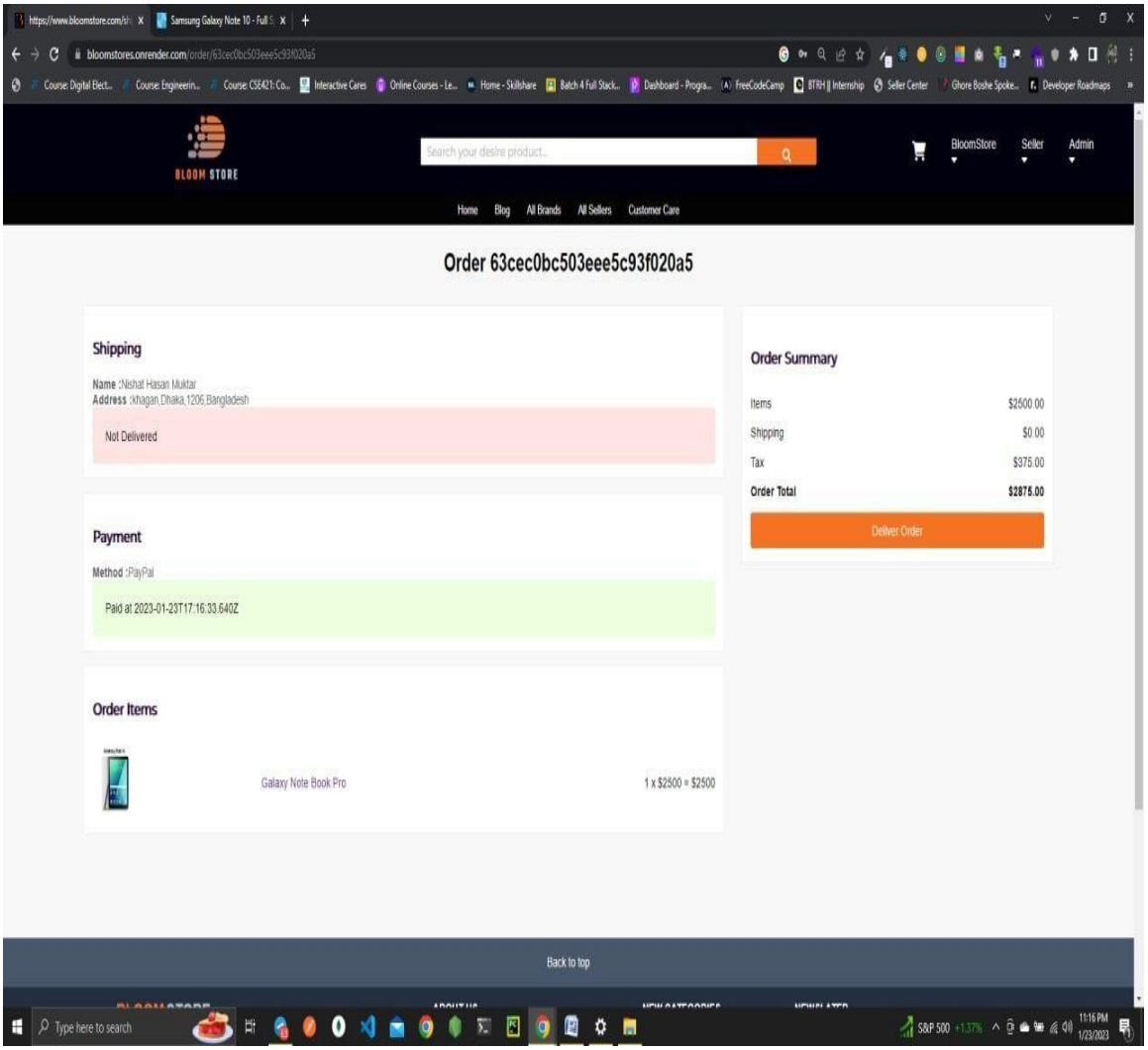

Fig 5.7.1: Payment Success

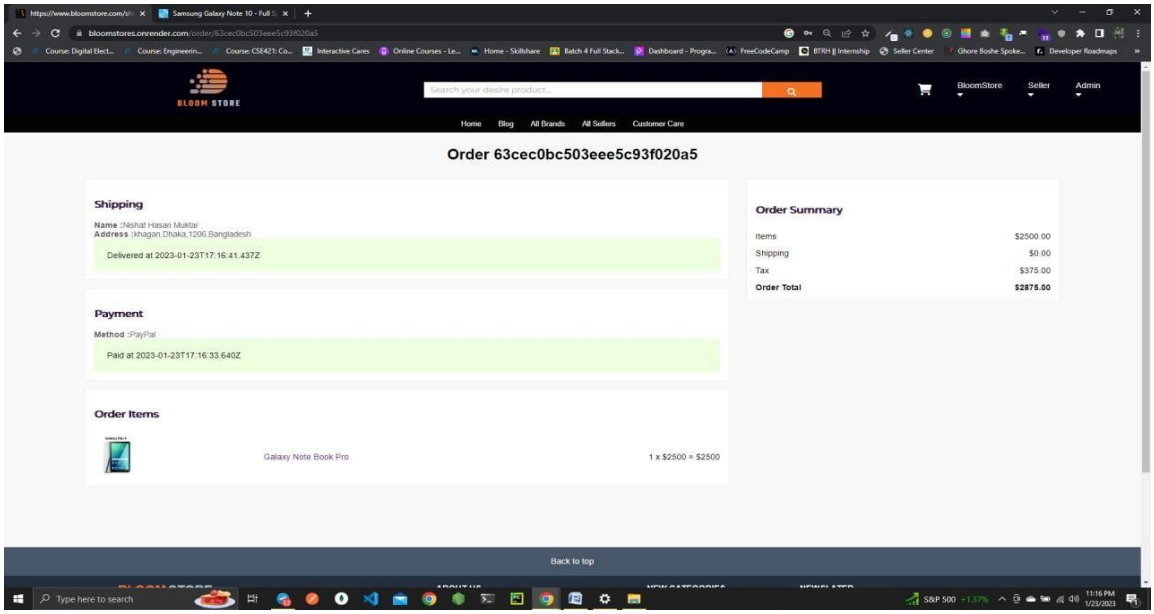

Fig 5.7.2: Payment Success Page

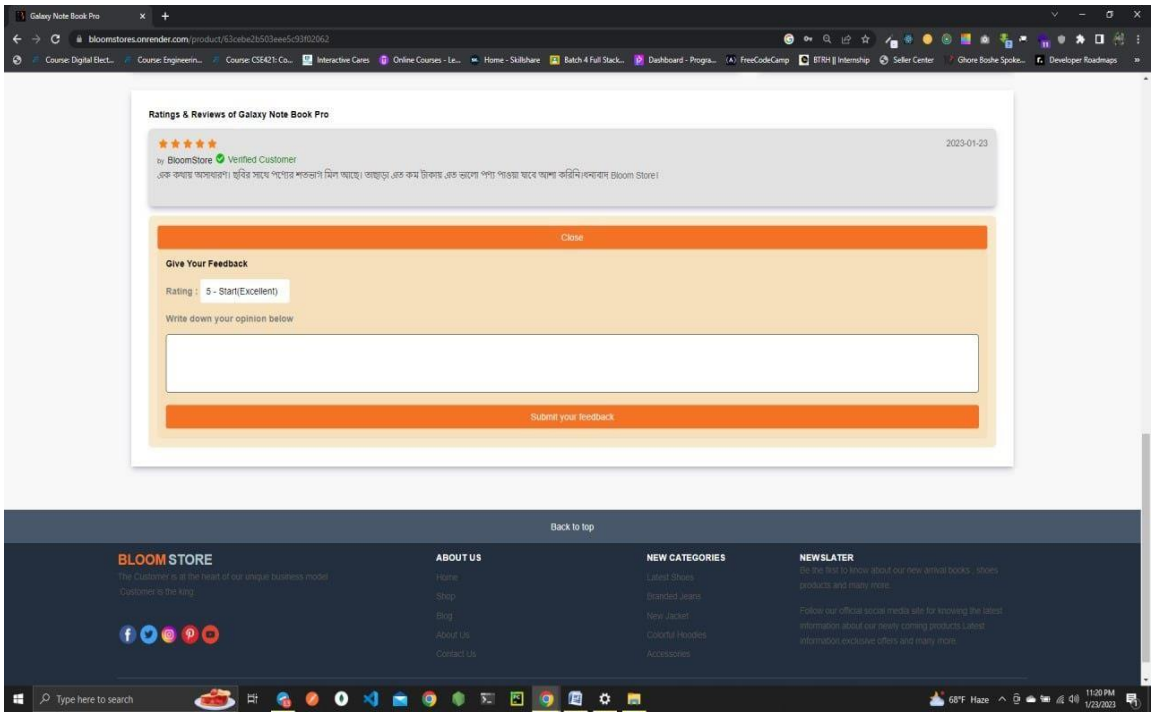

Fig 5.7.3: Ratings & Review

Live Chat& Google Map:

On your e-commerce website, e-commerce live chat frequently appears as a pop-up or a tiny window, allowing your business to help customers with even the most straightforward queries. It is an essential element of the ecommerce consumer experience and may increase your online clients' sense of security regarding their transactions.

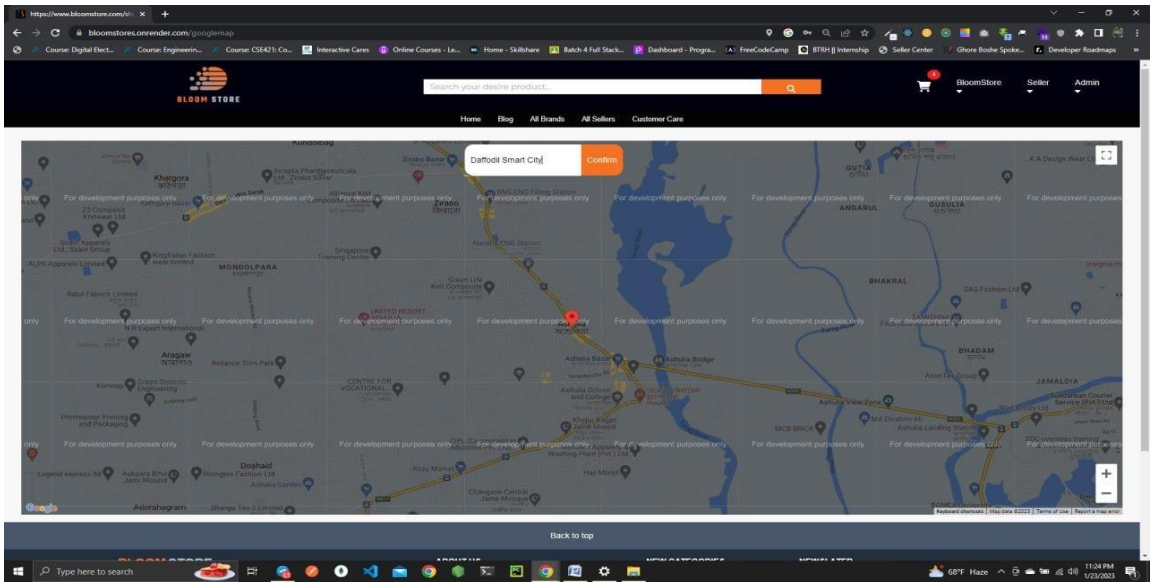

Fig 5.8.1: Google Map

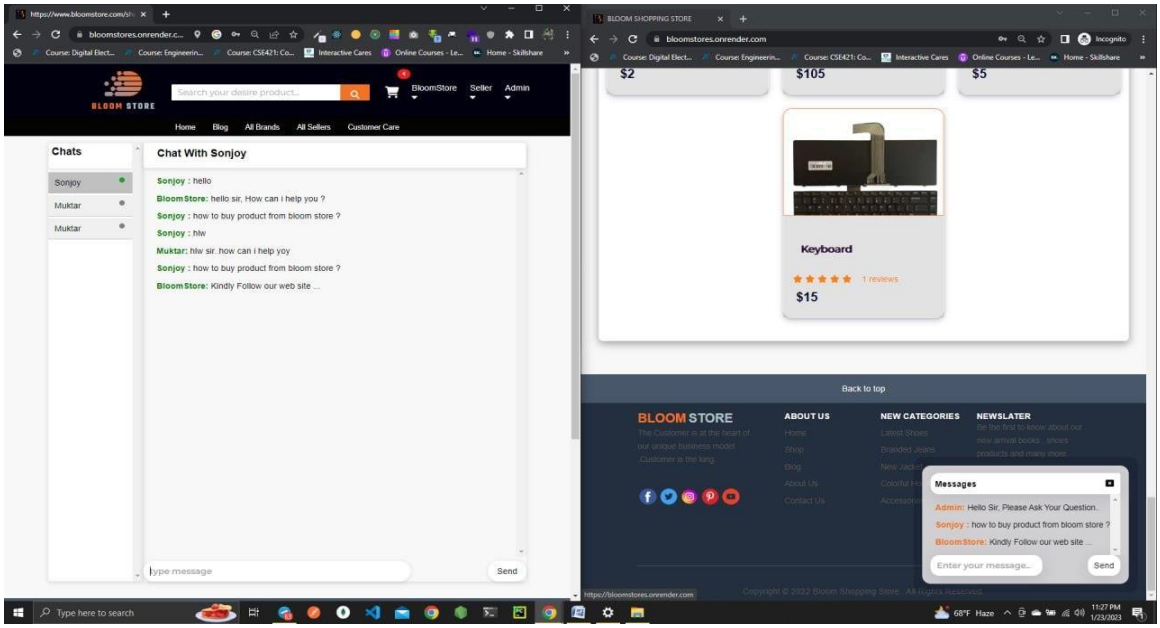

Fig 5.8.2: Live Chat

5.9 Admin Dashboard:

You can manage everything on your online store with the aid of the E-commerce Admin Panel. To manage orders, shipping, and payments wherever you are, use a single dashboard.

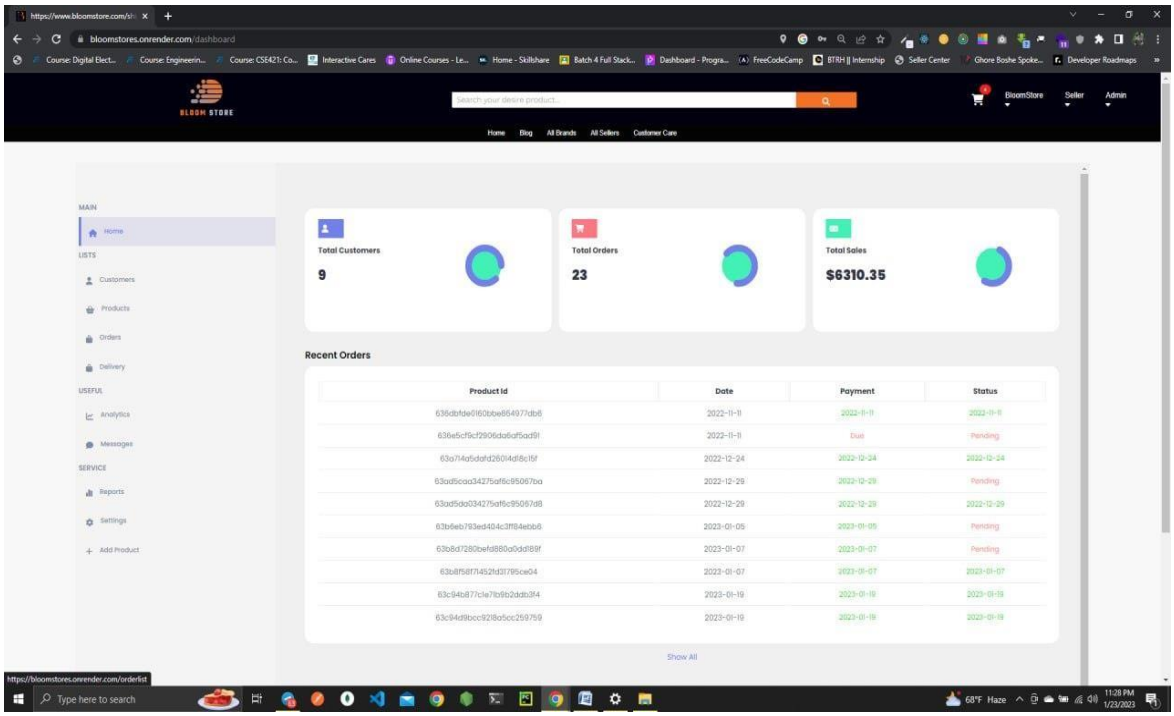

Fig 5.9.1: Admin Panel Home

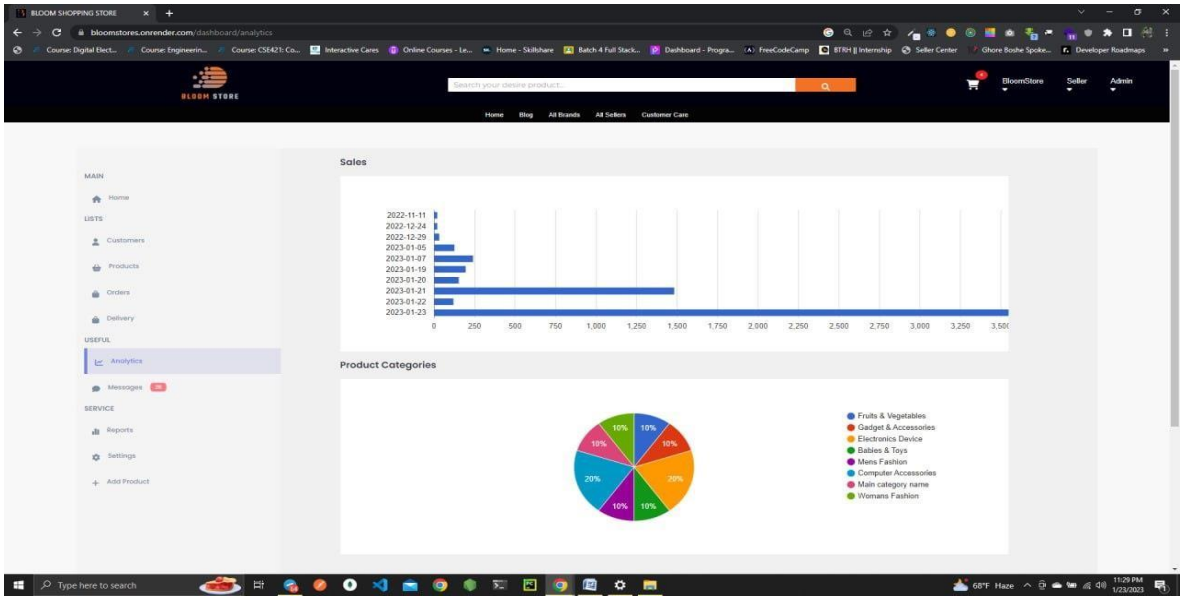

Fig 5.9.2: Admin Analytics

CHAPTER 6

CONCLUSION

Conclusion:

I now have a better understanding of how e-commerce and methodology may combine to bring about even more development in this sector after the implementation and documentation processes.

E-commerce encompasses much more than just online transactions. The results are really powerful. It's now simpler than ever thanks to the information technology revolution. The growth of the digital market brought about by the new era of global E-commerce will directly affect our daily life. A growing number of other firms are creating their own websites in an effort to boost their sales as a result of certain companies' enormous visibility. The economics has become increasingly significant as more transactions are made online. If done properly, it might be a successful business enterprise.

Future work

There is a lot of opportunity for improvement in this project. Many capabilities, such as :

- We can add a voice messaging option in our live chat.
- We can add multiple payment gateways to our platform.
- We can add multiple languages.
- Also, we can use React Native for mobile applications (Cross-Platform).

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