UCS 503 Software Engineering Project Report

END-Semester Evaluation

Submitted by:

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BE Second Year, CSE

Group No: 2CS9

Submitted to:

Dr. Tanu Goyal

Computer Science and Engineering Department

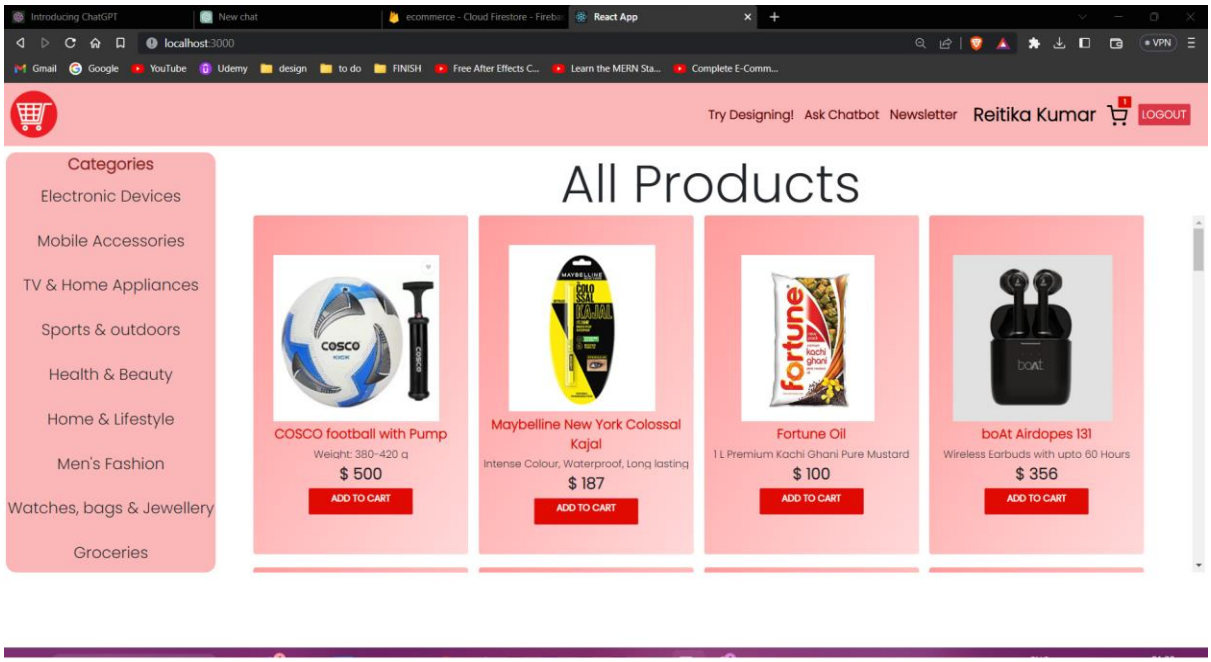
TIET, Patiala

April 2023

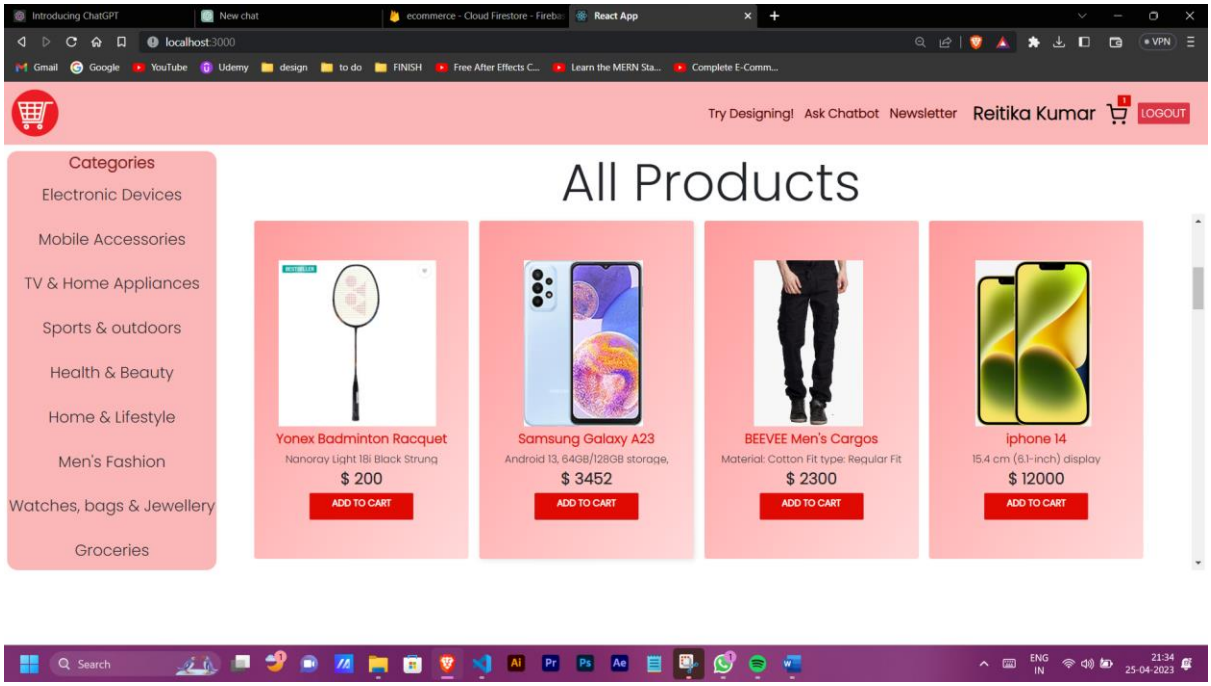
UCS503- Software Engineering Lab

EZYSHOP

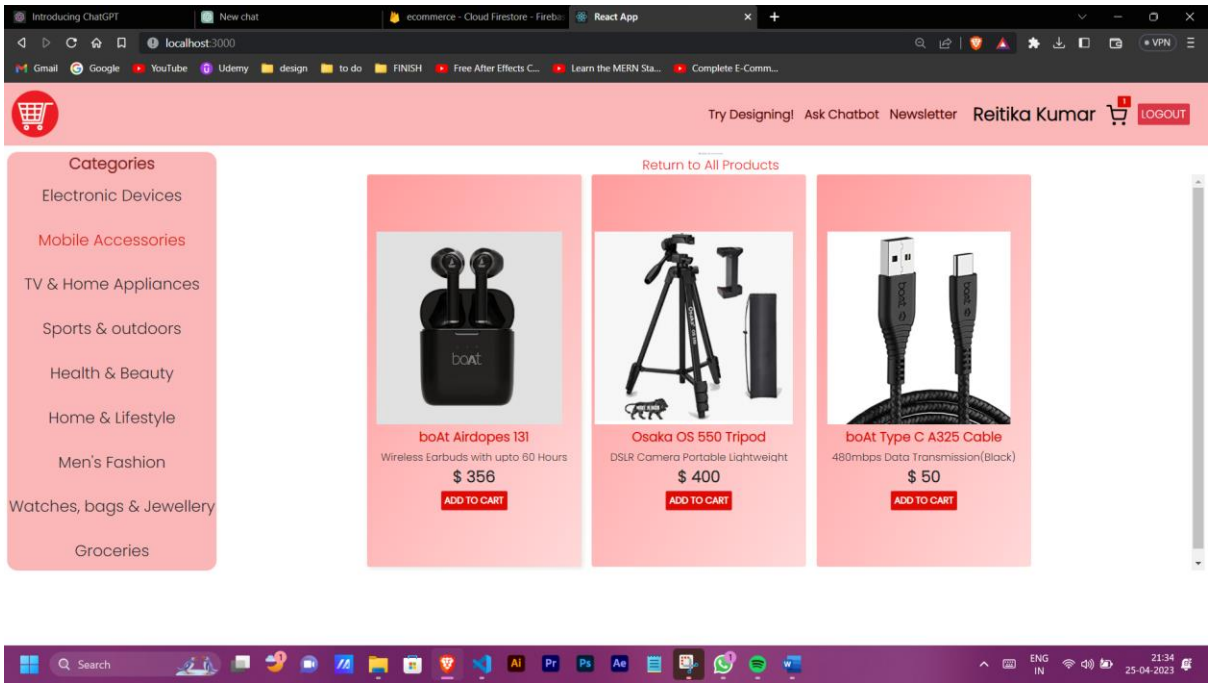
Screenshots:



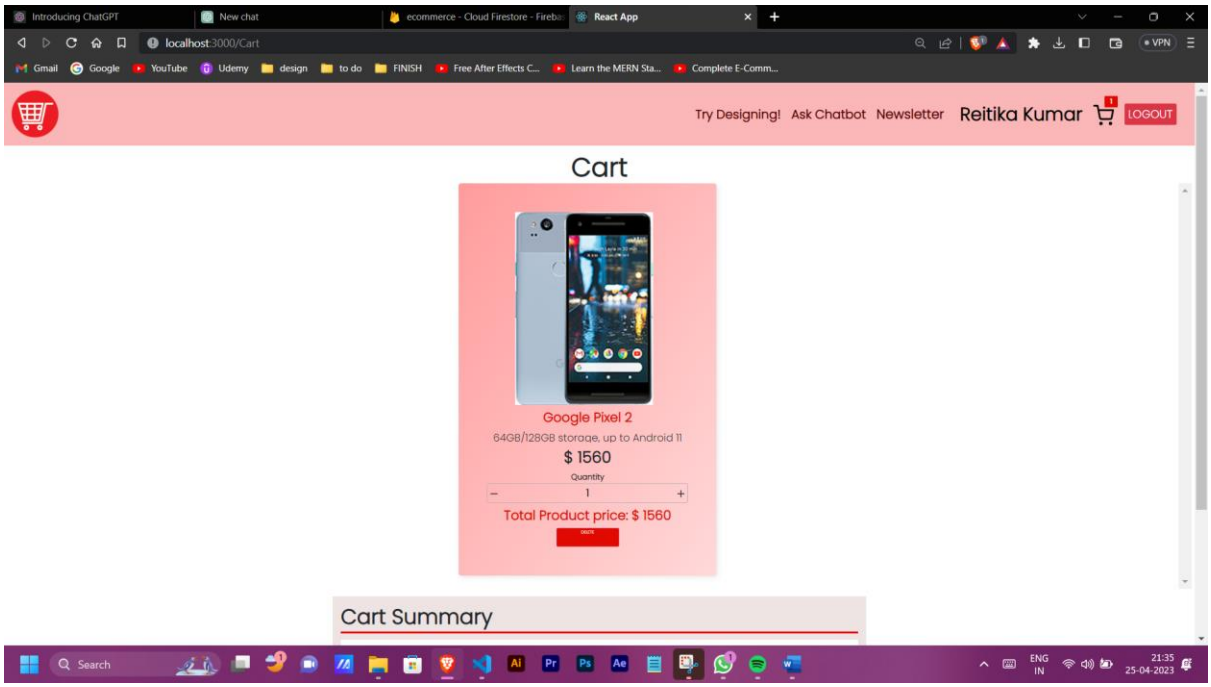
The above screenshot displays the main screen of the app that contains all the products along with a filter panel.



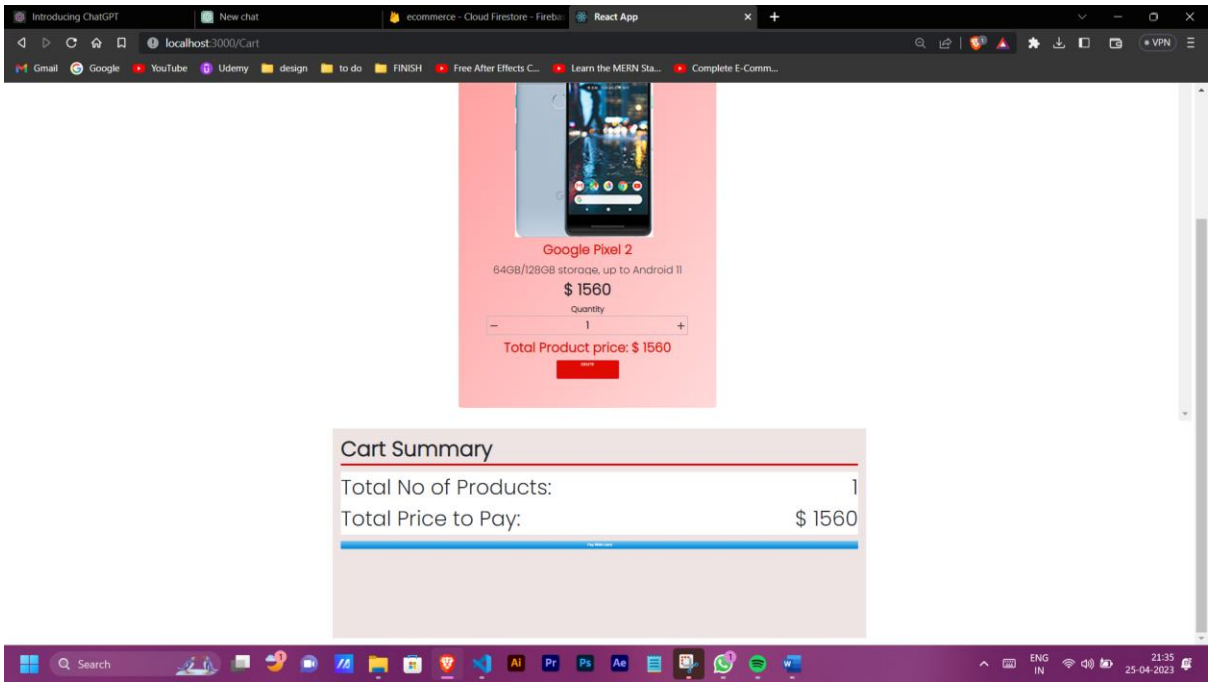
More Products.



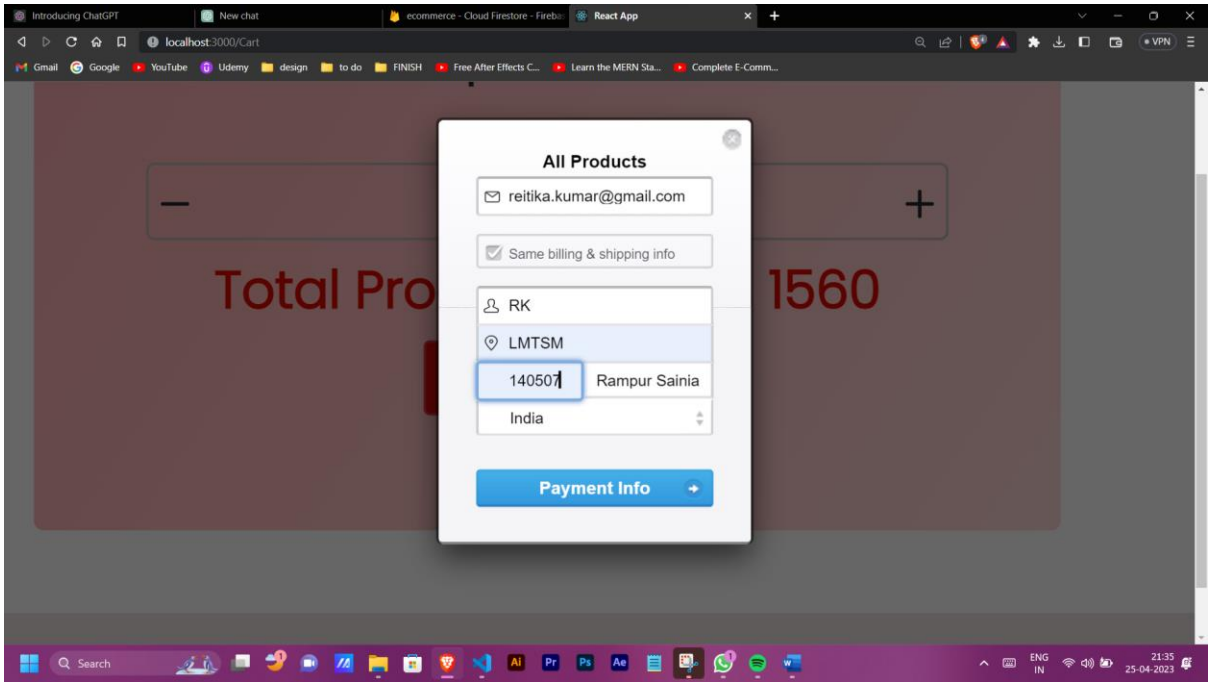
Filter according to category, here: Filter=mobile accessories, 3 products available for sale in this category.



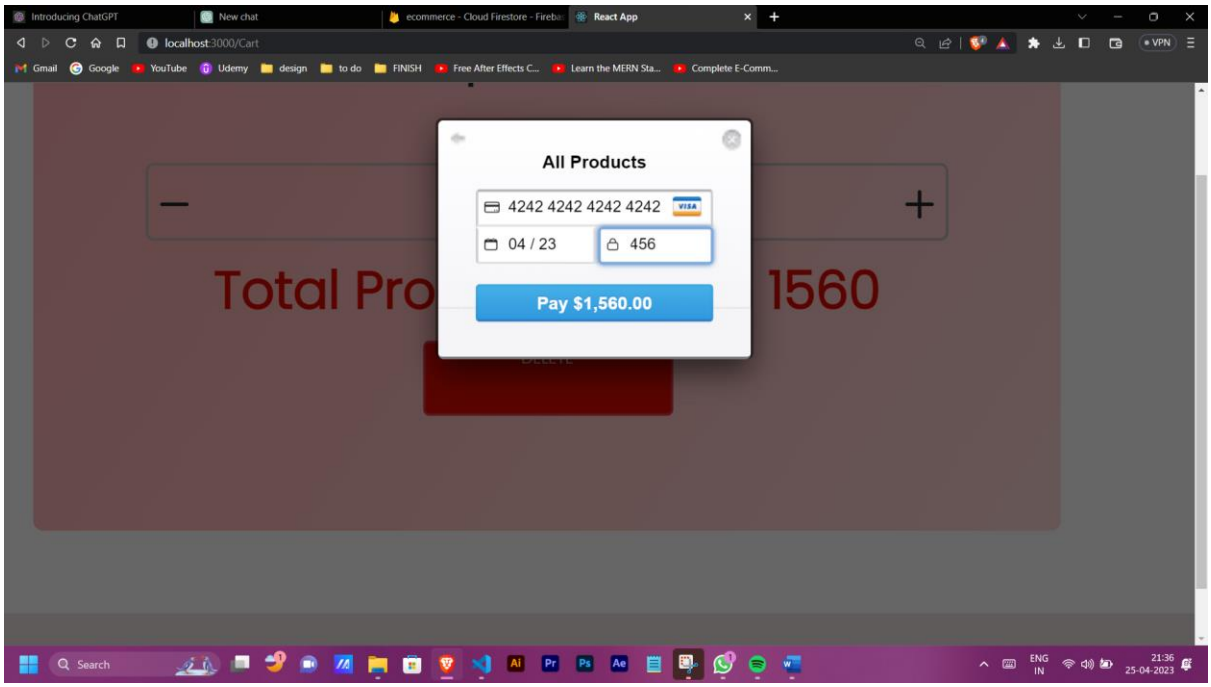
Cart of a User. Displays the all products in cart with their quantity and total price.



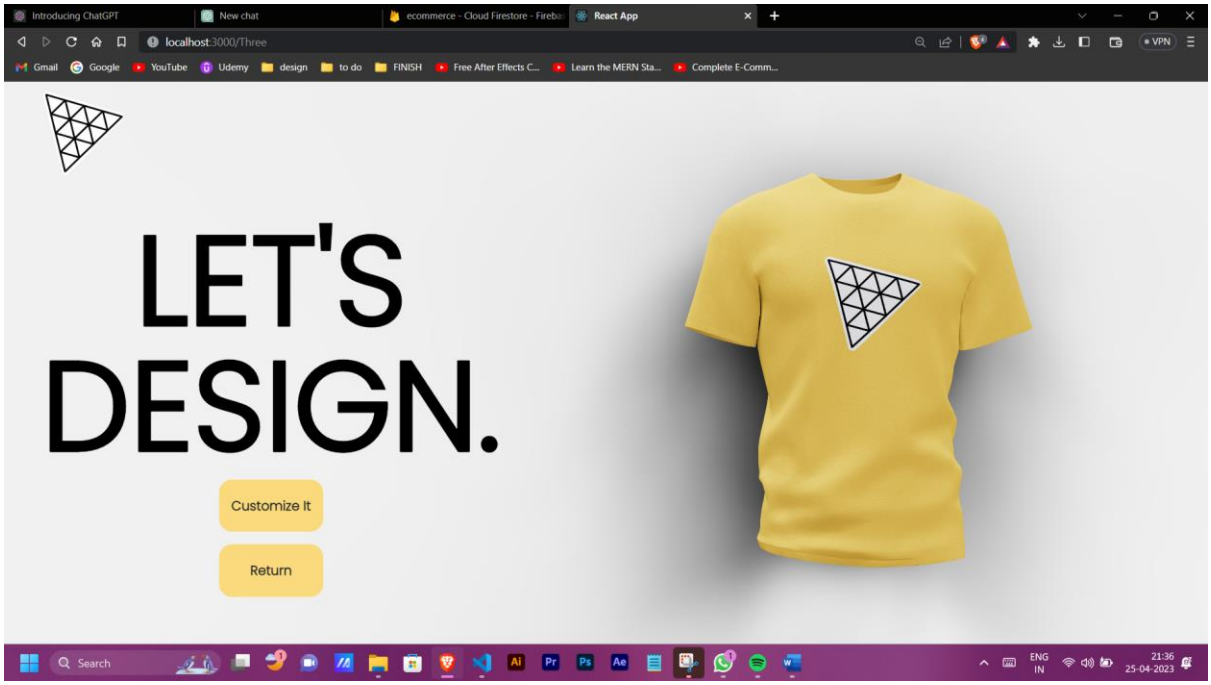
Displays total number of products and total amount to pay.



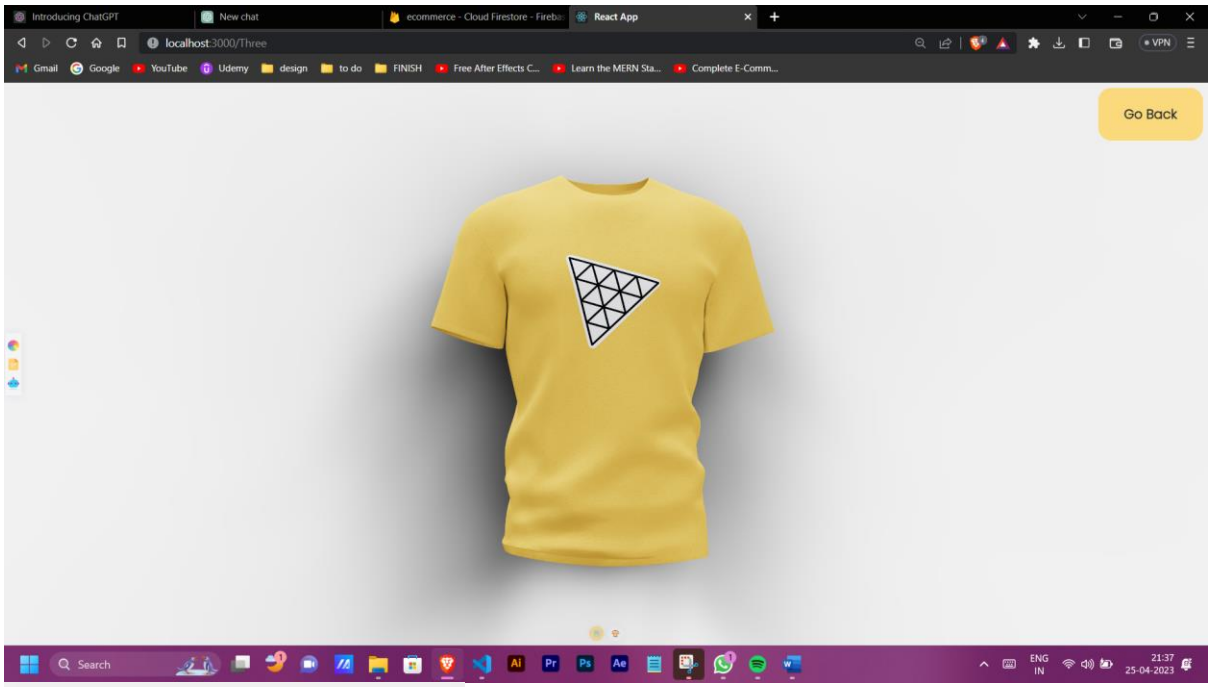
Payment gateway.

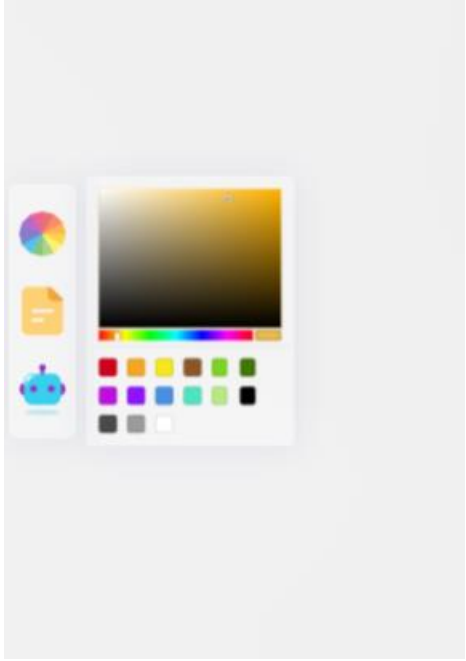


Payment Gateway

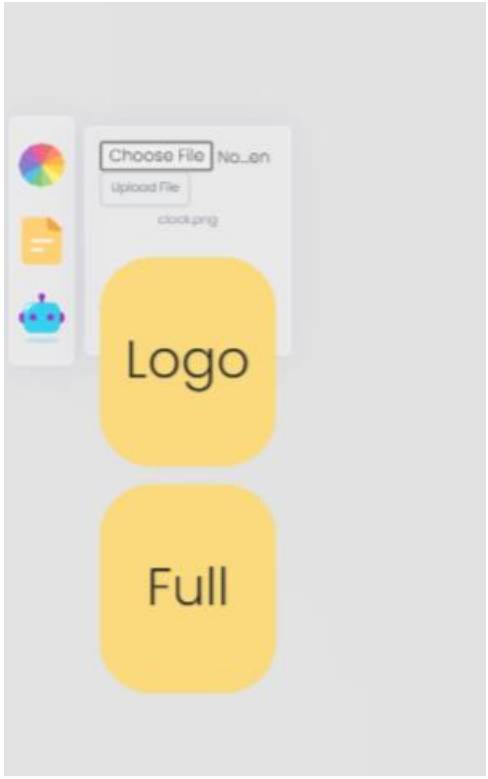


Additional feature: Customise tshirt.



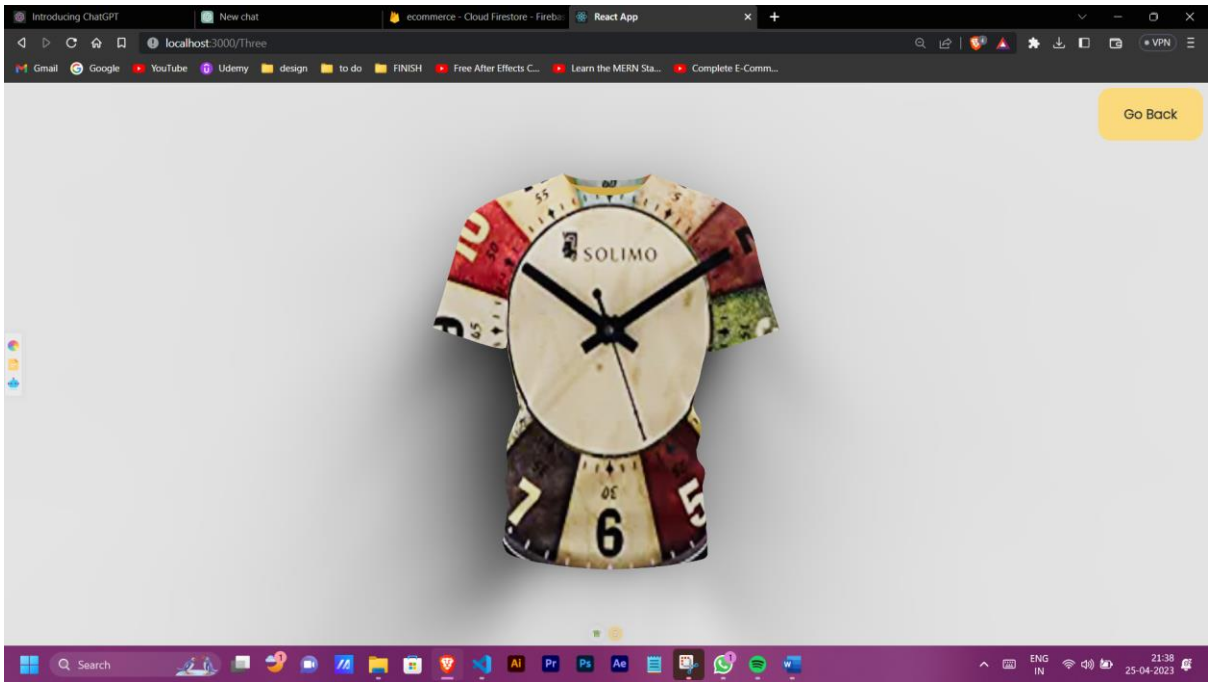


Can change the color of the tshirt.

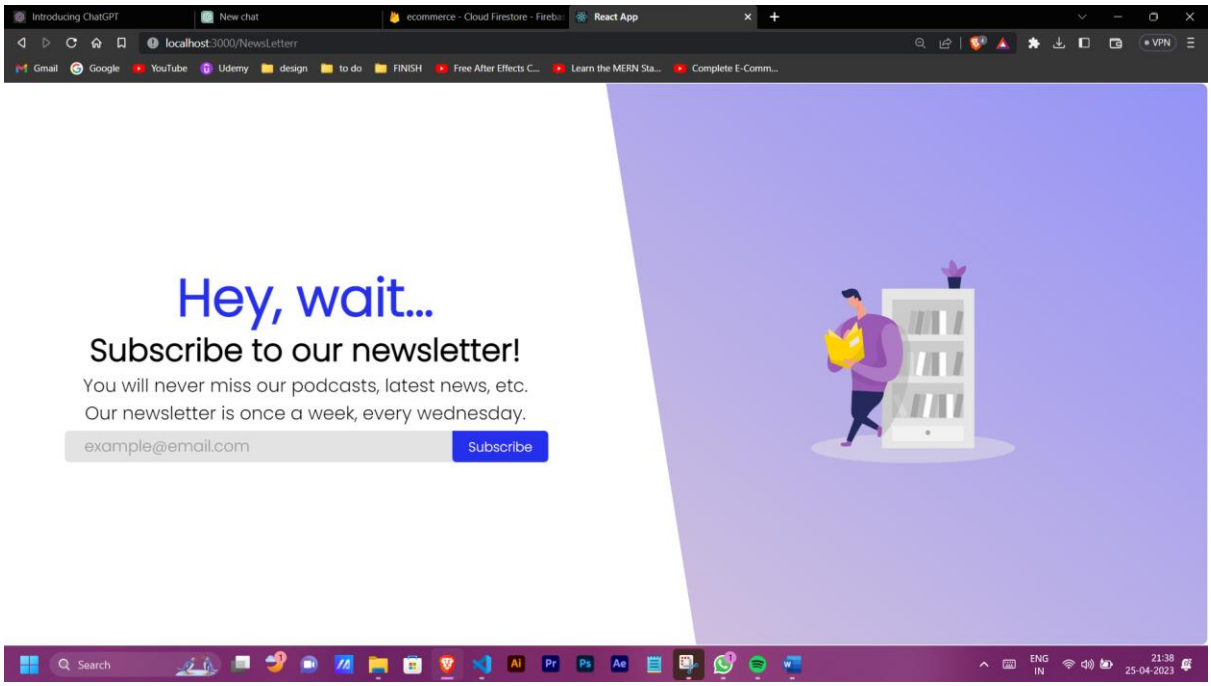


Can upload an image that we want as a logo or full design for the shirt.

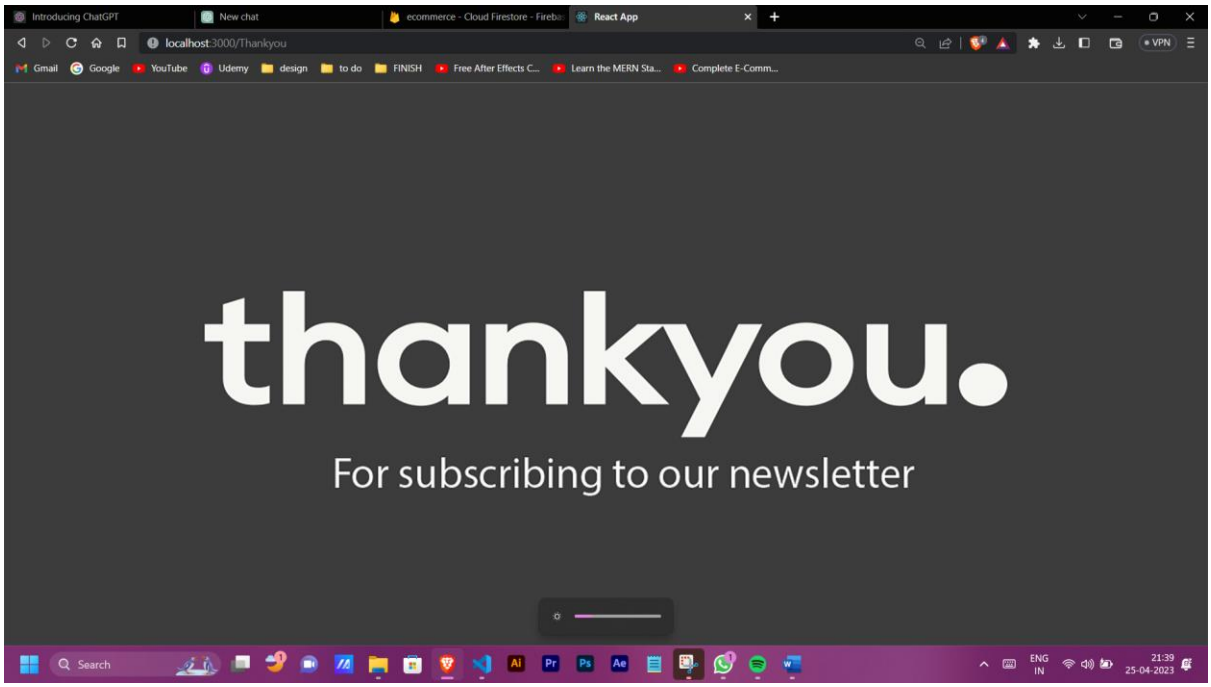
eg: we upload this image of a clock.



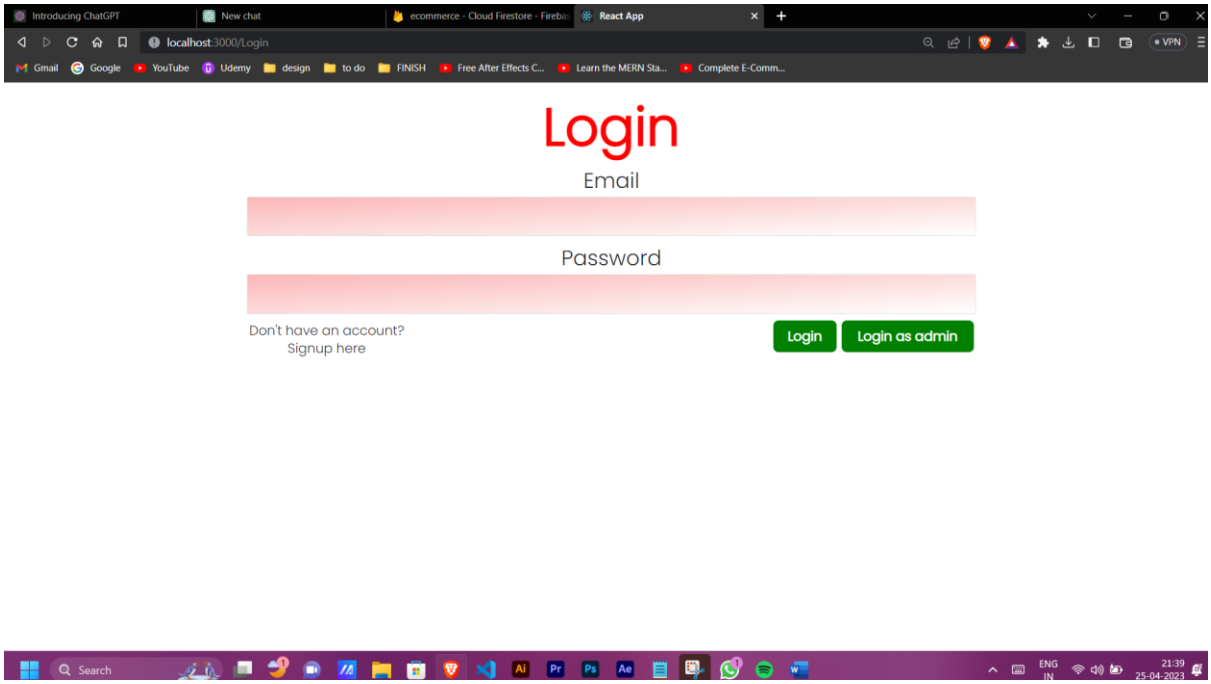
Implemented design.



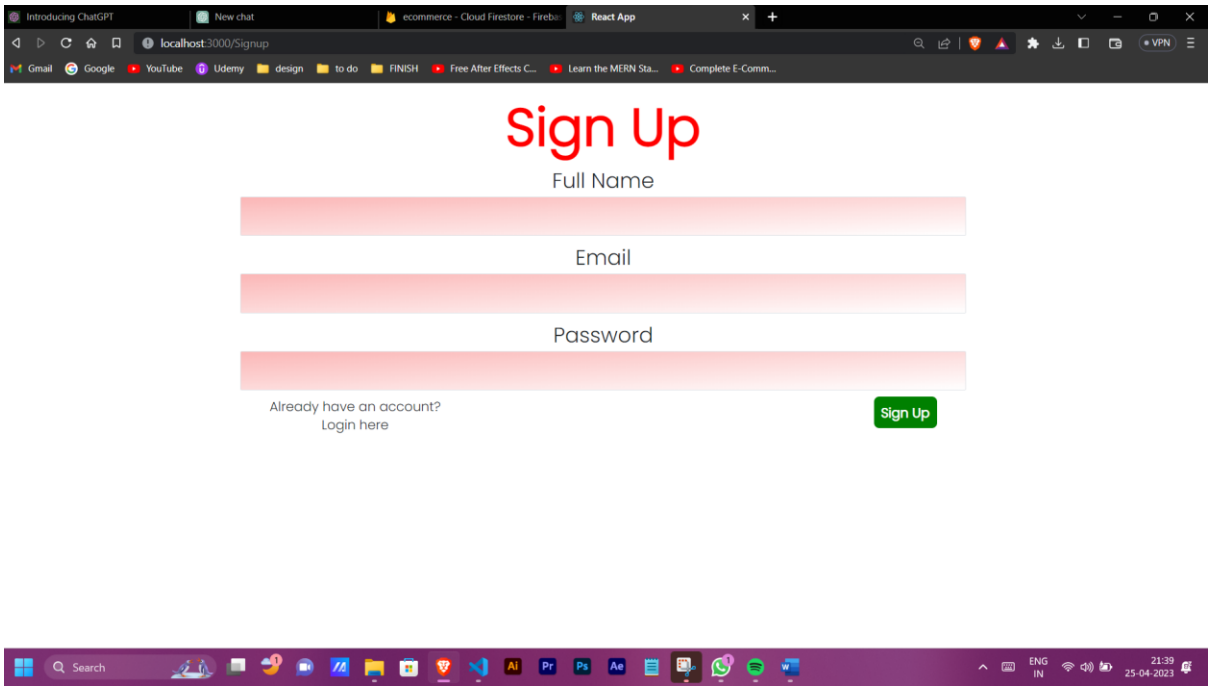
Option to subscribe to newsletter.



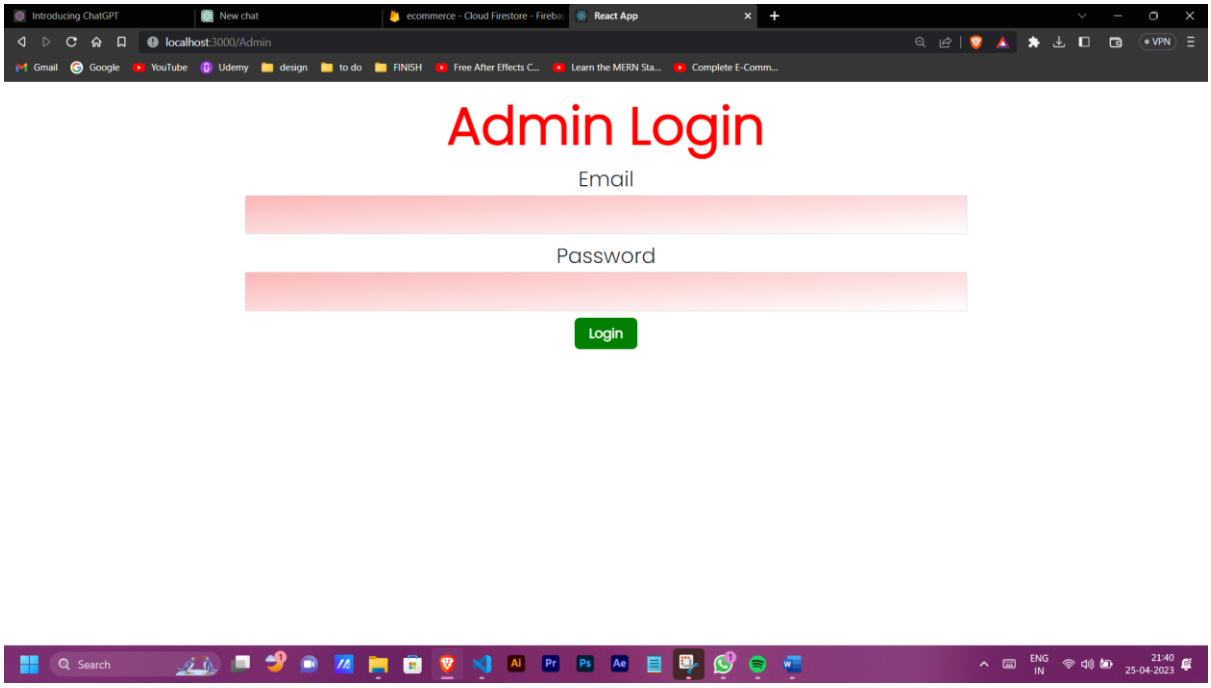
Redirected to this Thank you page after subscribing to news letter.



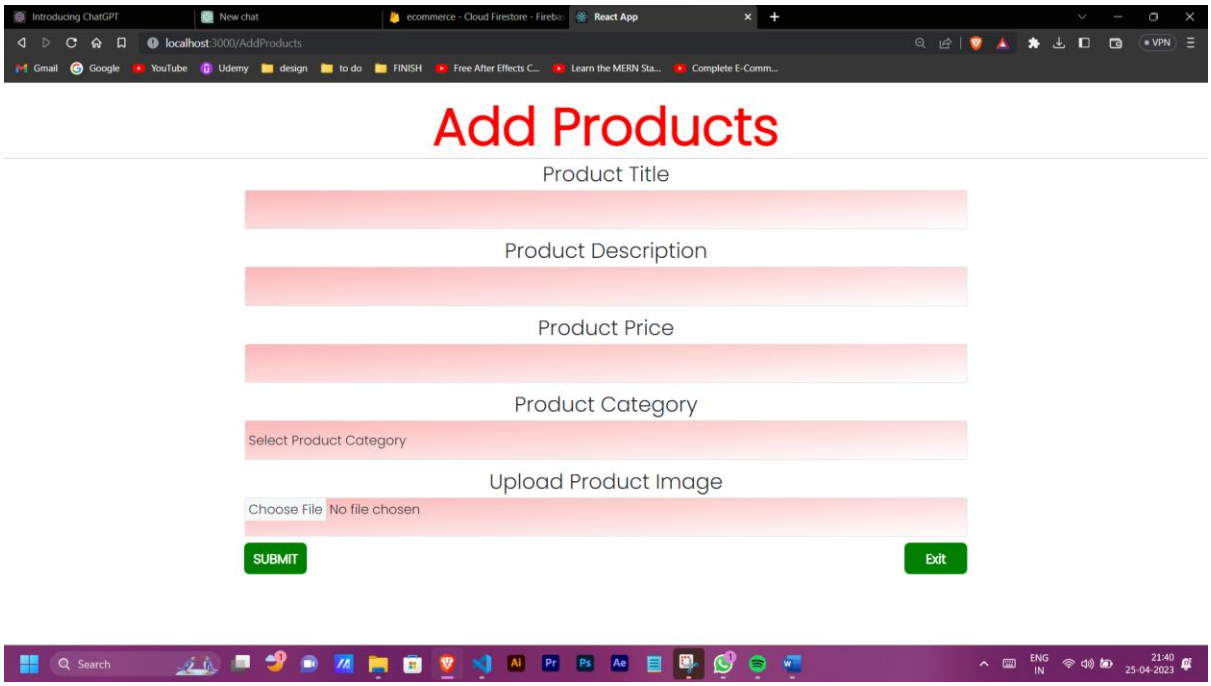
Login page for User/Customer.



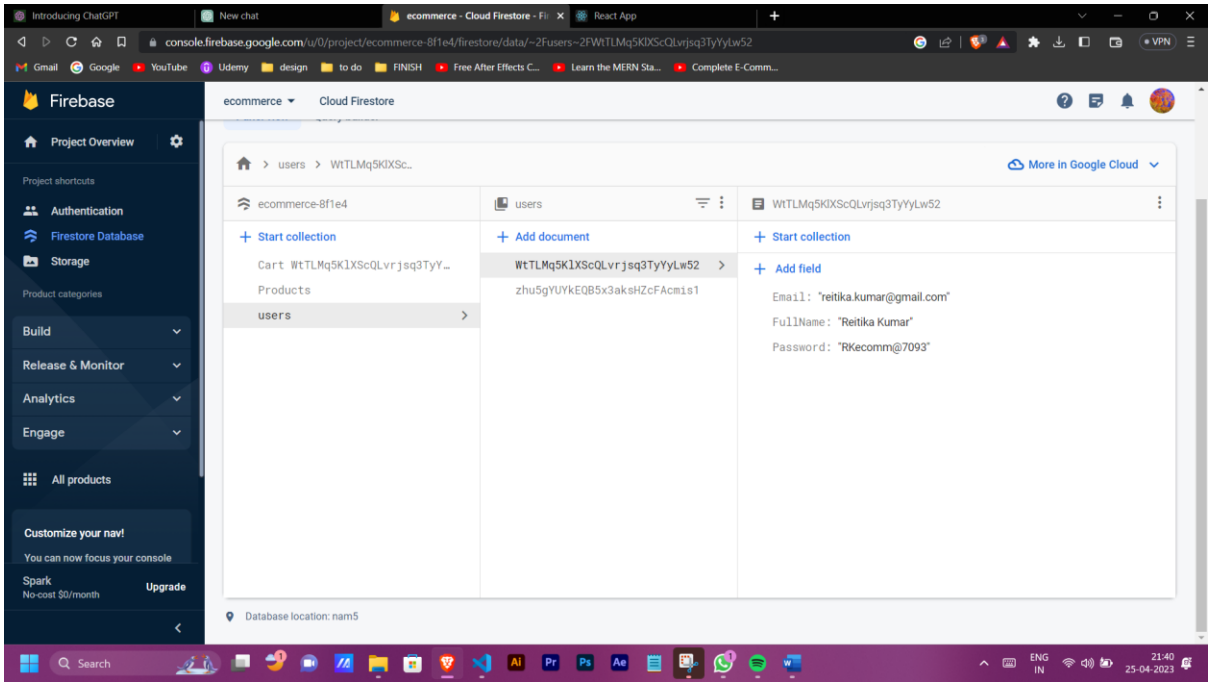
Signup page for a new Customer/User.



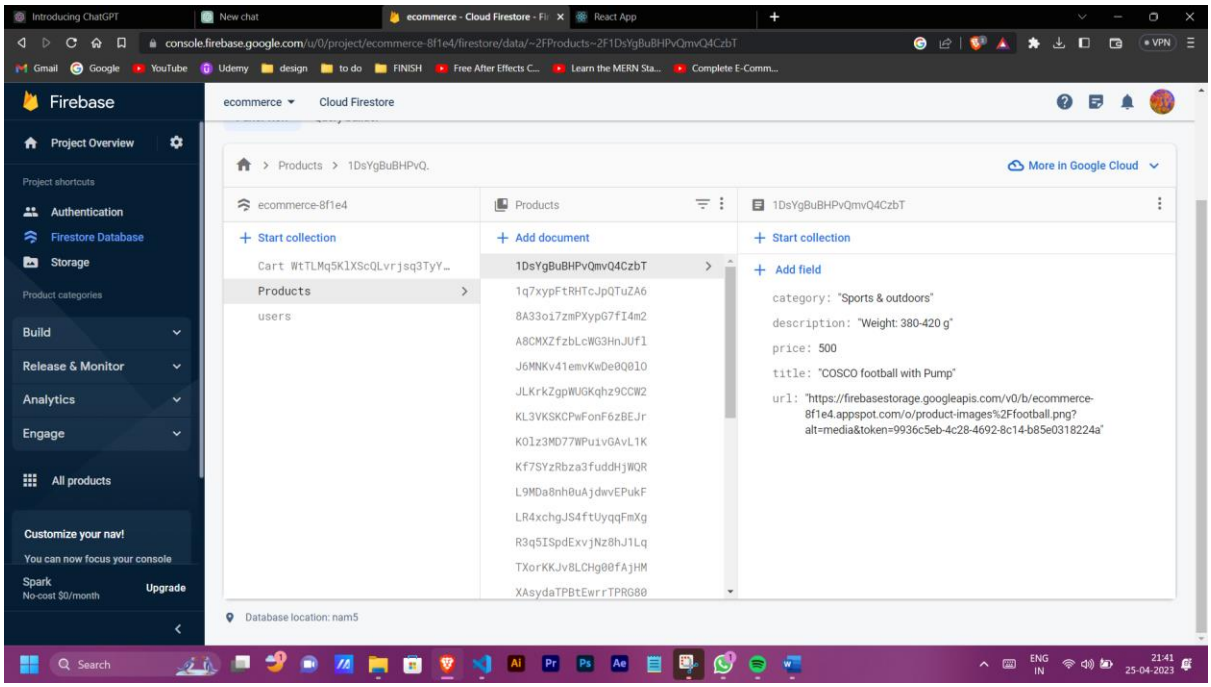
Login page for Admin.



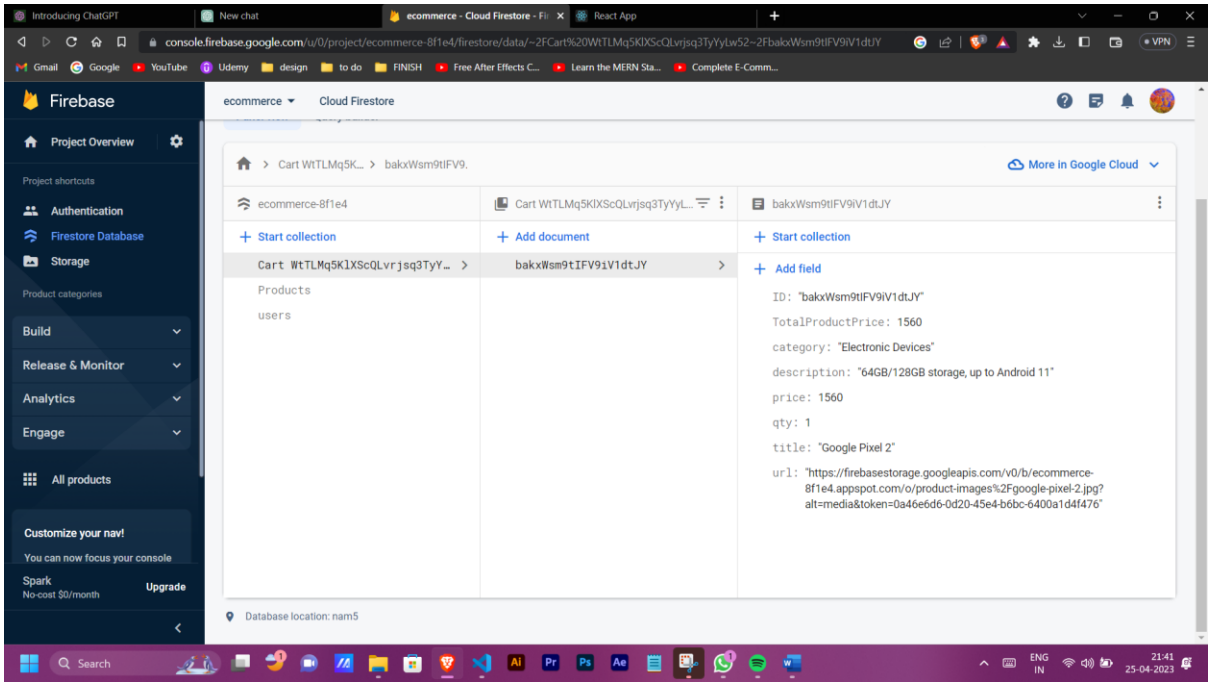
Admin feature: Add products on the website for sale.



Firebase Database: All Users

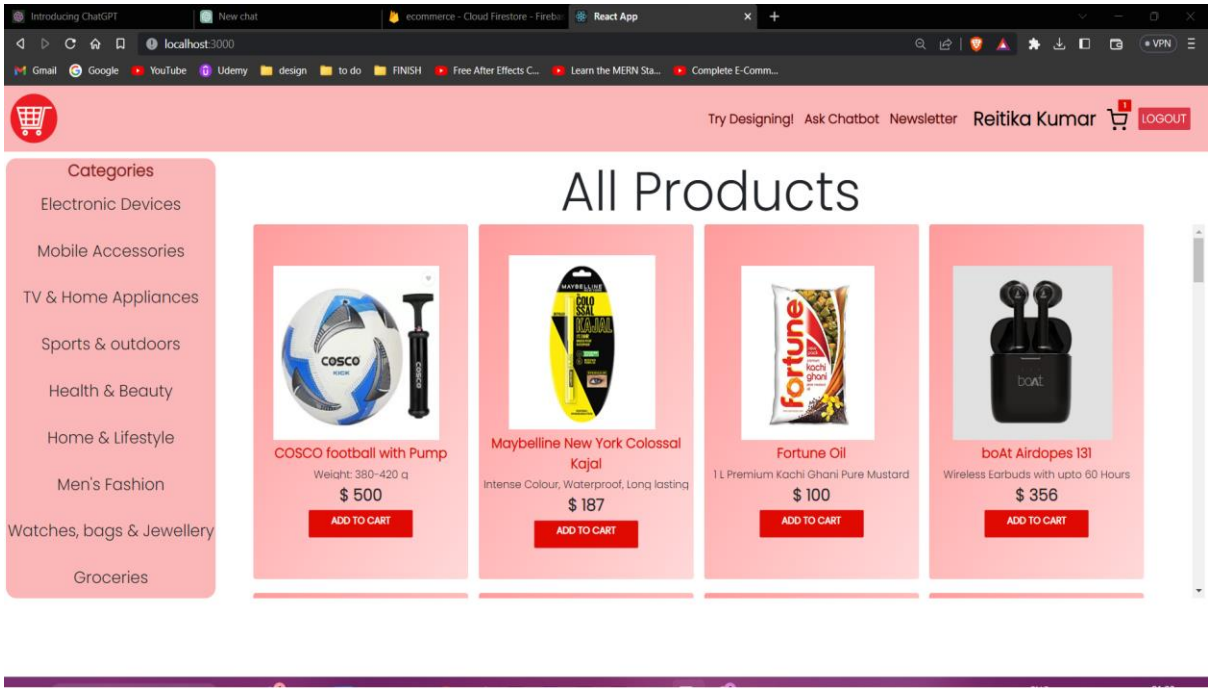


Firebase Database: All products.



Firebase Database: Cart for a user.

An Ecommerce Website



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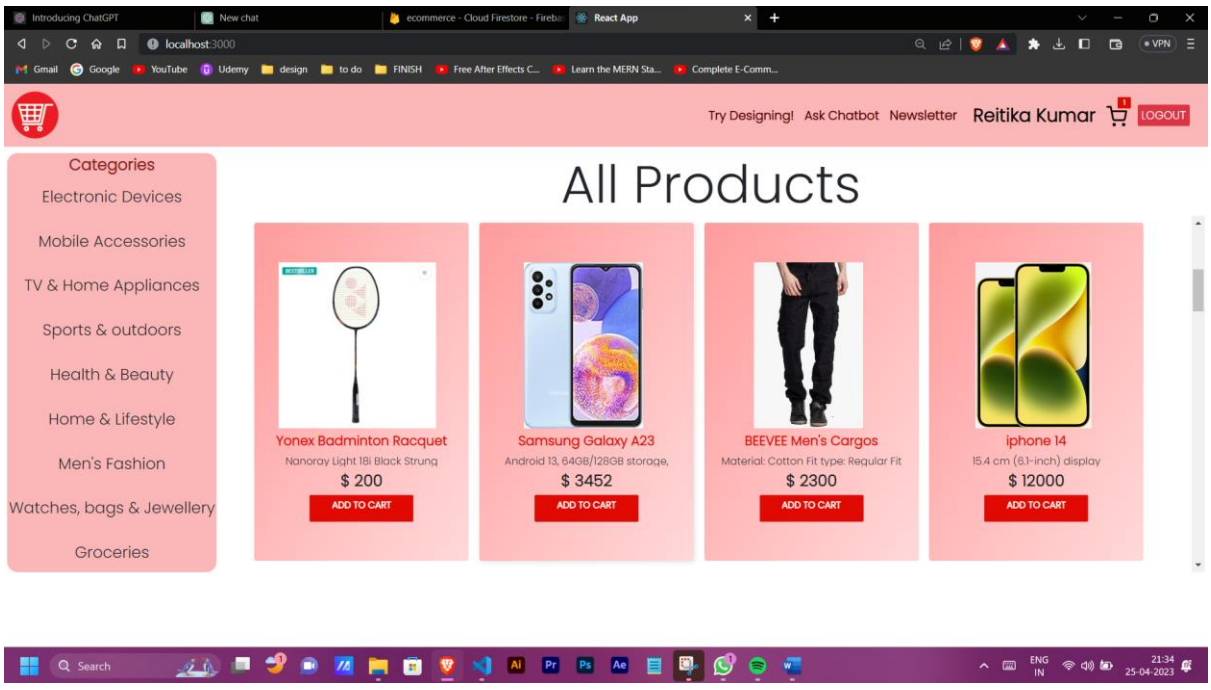

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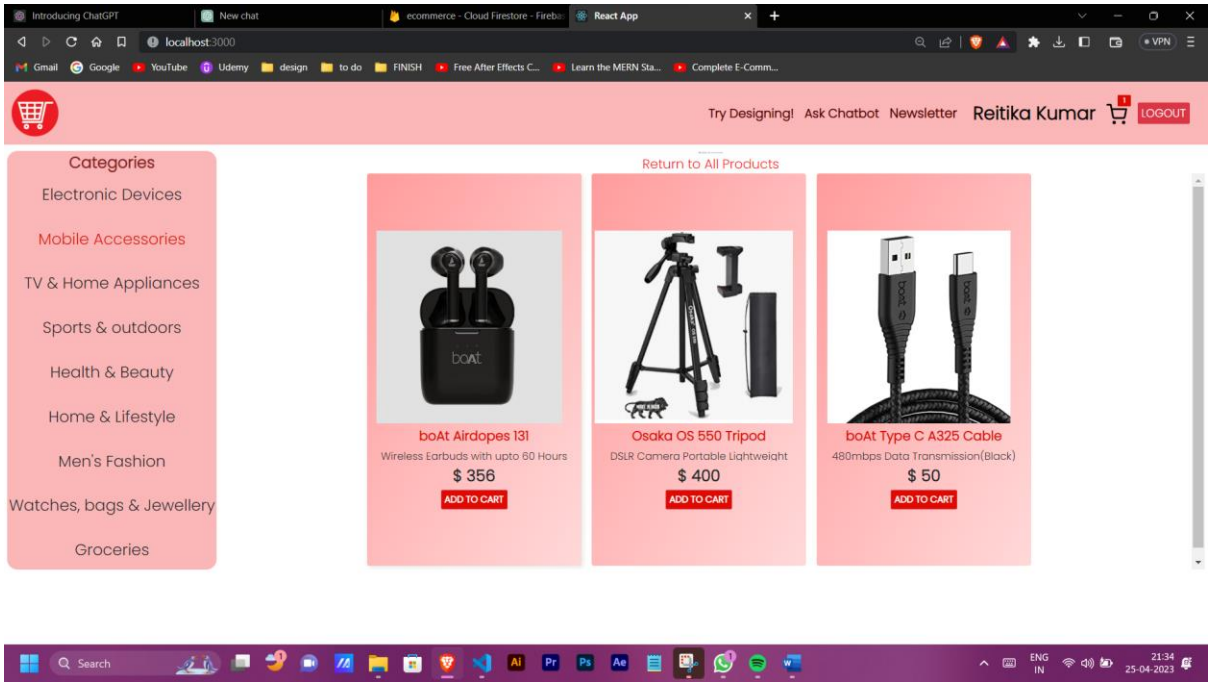

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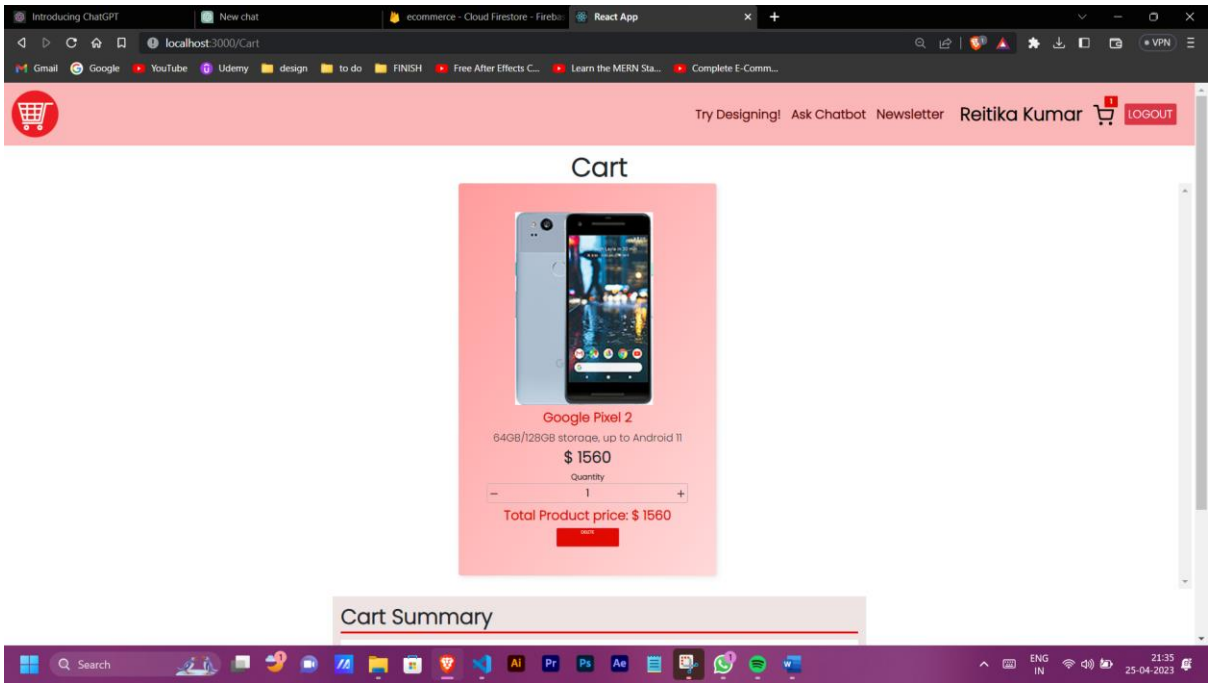

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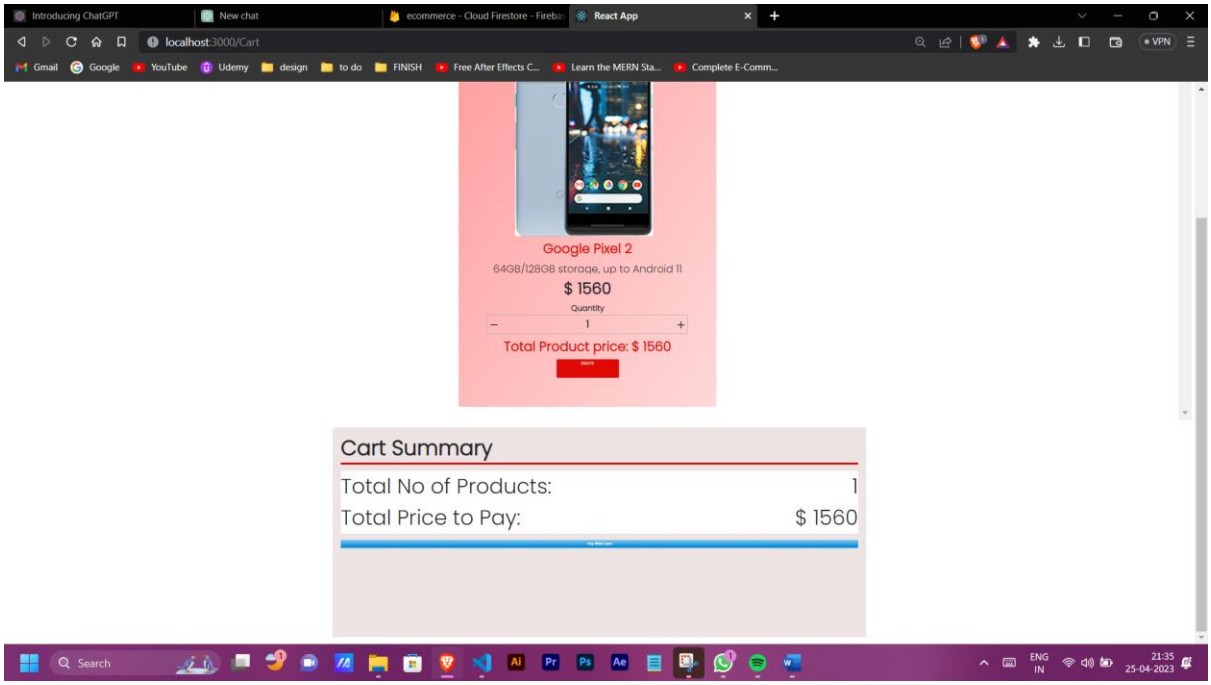

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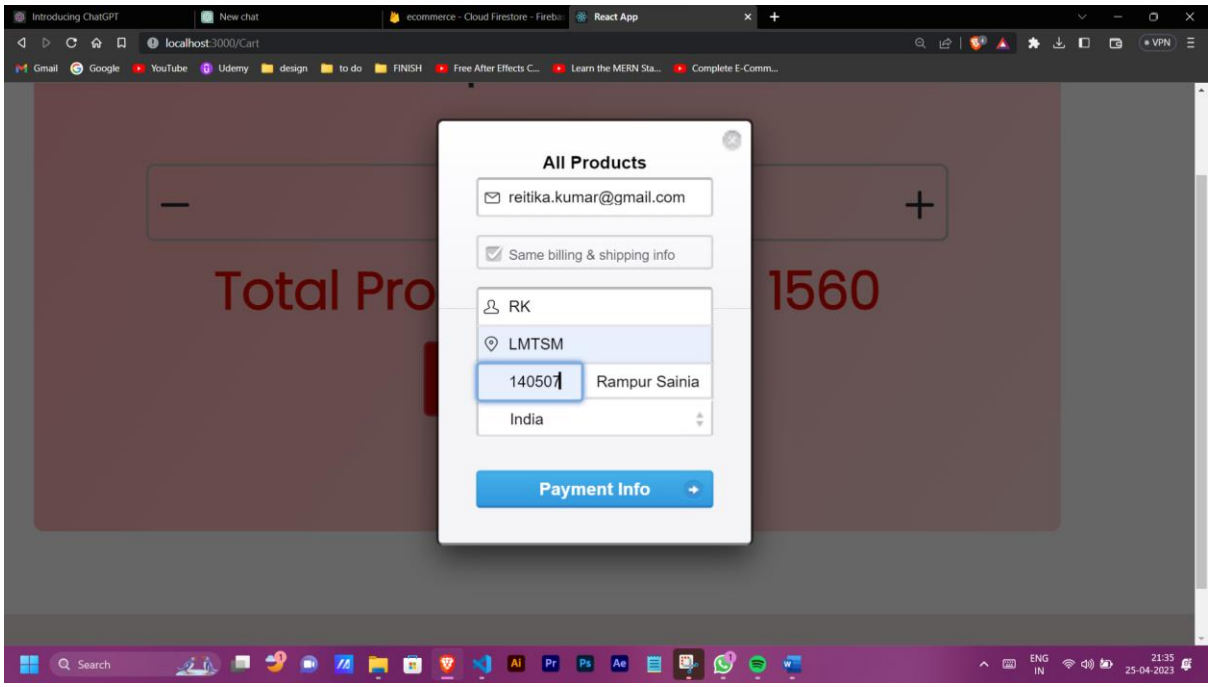

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Brief Overview

An ecommerce website is an online platform that allows businesses to sell their products and services directly to consumers over the internet. The website typically features a virtual storefront, where customers can browse through a range of products or services, view product images and descriptions, compare prices, and place orders.

The design and functionality of an ecommerce website can vary depending on the type of products or services being sold, the size and scope of the business, and the target audience. However, Our Ezyshop ecommerce website have a few key features:

1. Product Catalog: A list or grid of all the products or services that are available for purchase on the website, often with accompanying images and detailed descriptions.

2. Shopping Cart: A digital shopping cart that allows customers to add and remove products as they browse, and keeps track of the total cost of their order.

3. Checkout: A secure and user-friendly process for customers to enter their payment and shipping information, and complete their purchase.(Stripe API used for checkout gateway)

4. Customer Accounts: An option for customers to create an account on the website, Signup and Login and maintain Cart.

5. Customer Service: A chatbot where customers can get assistance with any questions or issues they may have about their order or the website.

6.Filter option: An option to filter products on basis of various categories like electric devices etc.

7. Designing/Customising and preview a product: Additional functionality of our eCommerce website is that user can customise a product like a tshirt on their own, eg: they can change the logo on the tshirt, color of tshirt, can upload their desired image for design and logo from their pc. For now, this functionality is only available for a tshirt. Future goal is to expand the website by adding this feature for many more products.

8. A Page to add products for sale on the website accessible to admins only.

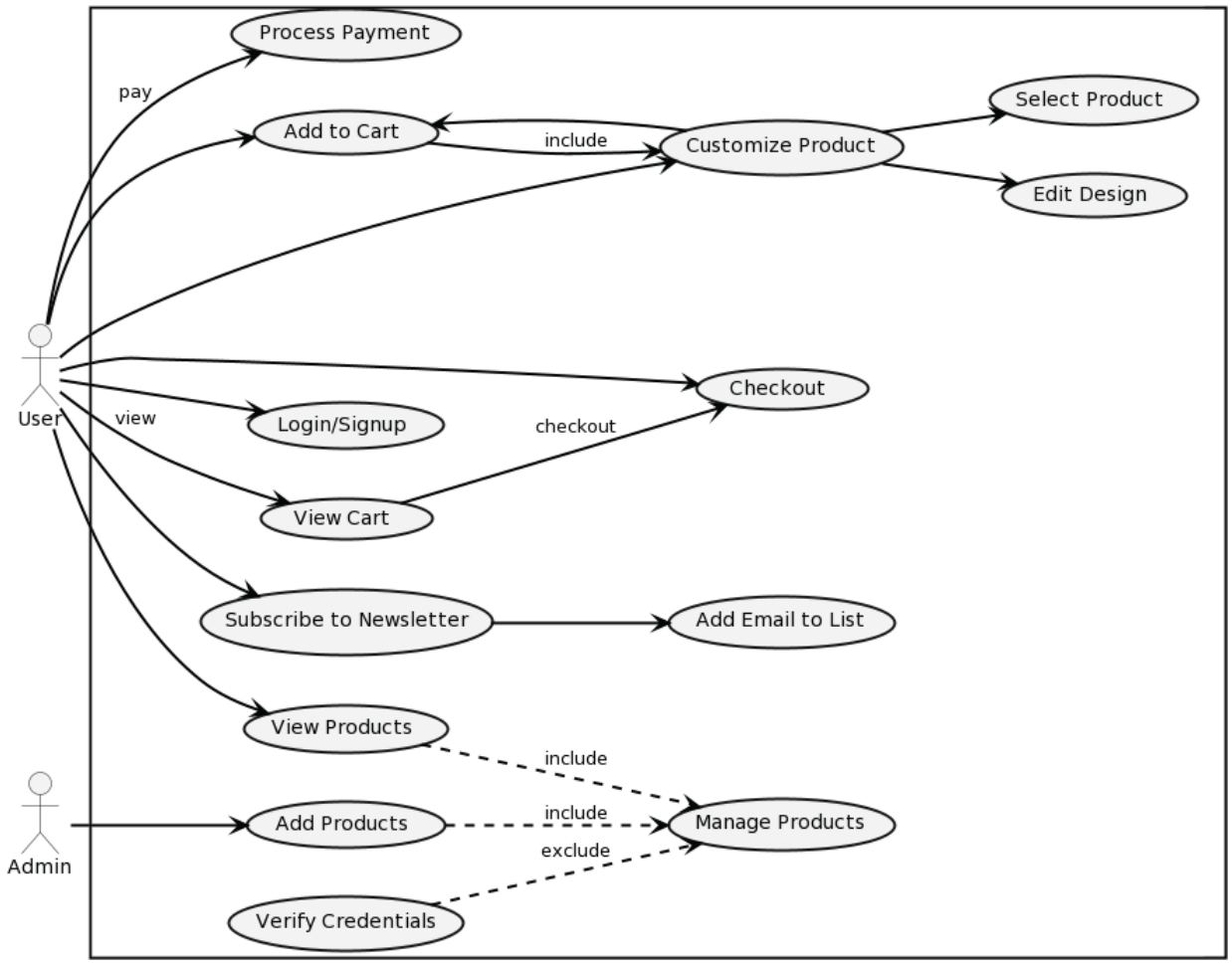
Overall, an ecommerce website aims to create a seamless and convenient shopping experience for customers, while allowing businesses to expand their reach and increase their sales potential by tapping into the global marketplace of online shoppers and helps users to purchase and customise a product according to their liking, which hugely decreases the probability of a purchase where the user does not like the product and greatly eliminates the need for returning the product.

Analysis Phase

Use Cases:

View Products: This use case allows users to view the products available on the eCommerce website.
Add to Cart: This use case enables users to add products to their shopping cart.
Checkout: This use case allows users to proceed to the checkout process and complete their purchase.
Login/Signup: This use case enables users to log in or sign up for an account on the eCommerce website.
Customize Product: This use case allows users to customize a product before adding it to their shopping cart.
Subscribe to Newsletter: This use case enables users to subscribe to the eCommerce website's newsletter.
Add Products: This use case allows the admin to add new products to the eCommerce website's catalog.
Manage Products: This use case enables the admin to manage the products available on the eCommerce website, including editing, deleting, or adding new products.
View Cart: This use case enables users to view their shopping cart and the products they have added.
Process Payment: This use case represents the payment gateway integration that allows users to make payment for their purchases.
Verify Credentials: This use case represents the authentication process that verifies users' credentials during login or signup.
Add Email to List: This use case enables the eCommerce website to add a user's email to the newsletter subscription list.

Use case Diagram:



Use case Template:

Use Case Title:	Login
Abbreviation Title:	L
Use Case ID:	1
Actor:	User/Customer
Description: User logs in to the website.	
Pre-conditions: User/Admin has an account with the website. User/Admin has internet access and a web browser. The website is live and accessible.	
Task Sequence: The website displays the Login page. User/Admin enters their email/username and password in the provided fields. User/Admin clicks on the "Login" button. The website validates the entered credentials and checks if the user/admin account exists in the database. If the entered credentials are correct and the account exists, the website redirects the user/admin to their respective dashboard. If the entered credentials are incorrect, the website displays an error message asking the user/admin to enter the correct credentials. If the user/admin does not have an account, they can click on the "Signup" button/link to create a new account.	
Post Conditions: User/Admin is successfully logged in and can access their respective dashboard. If the entered credentials are incorrect, the user/admin is not logged in and an error message is displayed. If the user/admin does not have an account, they can click on the "Signup" button/link to create a new account.	
Modification History: 25-4-23	
Author: Sam Vasishat	

Use Case Title:	Add to Cart
Abbreviation Title:	AC
Use Case ID:	2
Actor:	User/Customer
Description: The user wants to add a product to their cart for purchase.	
Pre-conditions: User has a registered account with the website. User is logged in to their account. User has internet access and a web browser. The website is live and accessible. The product is available for purchase and is listed on the website	
Task Sequence: The website displays the Product page with the "Add to Cart" button/link. User clicks on the "Add to Cart" button/link. The website adds the selected product to the user's cart in the backend database. The website displays a confirmation message that the product has been added to the cart. User can continue shopping or proceed to the checkout to pay for the products in their cart.	
Post Conditions: The selected product is added to the user's cart. The user can view the added product in their cart and can continue shopping or proceed to checkout. If the user adds a product that is already in their cart, the website updates the quantity of the product in the cart instead of adding a new entry. If the product is not available for purchase, the website displays an error message and the product is not added to the user's cart.	
Modification History: 25-4-23	
Author: Sidhhi Upadhyay	

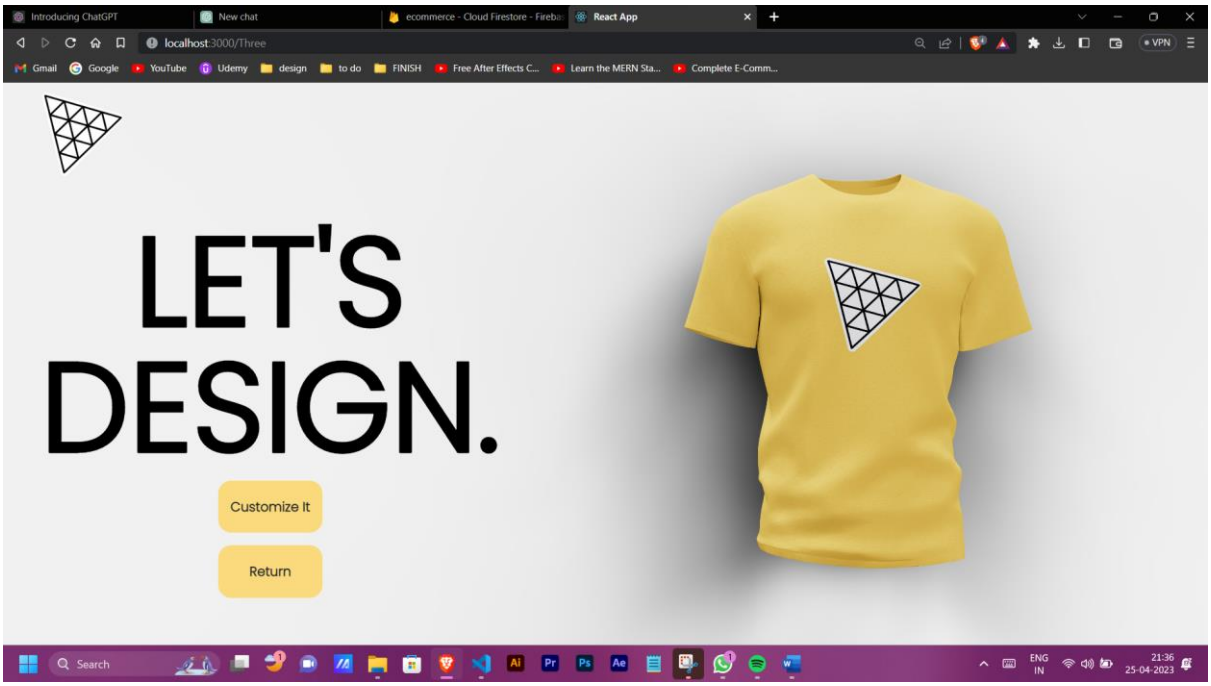
Use Case Title:	Customise Product
Abbreviation Title:	CP
Use Case ID:	3
Actor:	User
Description: The user wants to customise a product, such as a t-shirt, with their desired design, color, and logo	
Pre-conditions: User has a registered account with the website. User is logged in to their account. User has internet access and a web browser. The website is live and accessible. The selected product is available for customisation and is listed on the website. User has the necessary files or images to upload for the customisation.	
Task Sequence: The website displays the Customisation page with options for the selected product. User selects the desired color, size, and other customisation options. User uploads their desired image or design to be printed on the product. The website displays a preview of the product with the selected customisation options and uploaded image/design. User can make additional changes or confirm the customisation. The website adds the customised product to the user's cart in the backend database. The website displays a confirmation message that the customised product has been added to the cart. User can continue shopping or proceed to the checkout to pay for the products in their cart.	
Post Conditions: The selected product is customised with the user's desired design, color, and logo. The customised product is added to the user's cart. The user can view the customised product in their cart and can continue shopping or proceed to checkout. If the user cancels the customisation process, the website returns them to the Product page without adding the customised product to their cart	
Modification History: 25-4-23	
Author: Neeraj	

User story cads:

User story card 1:

Title: Customize T-Shirt

Description: As a customer, I want to be able to customize a T-shirt on the website, so I can design my own T-shirt according to my preferences.



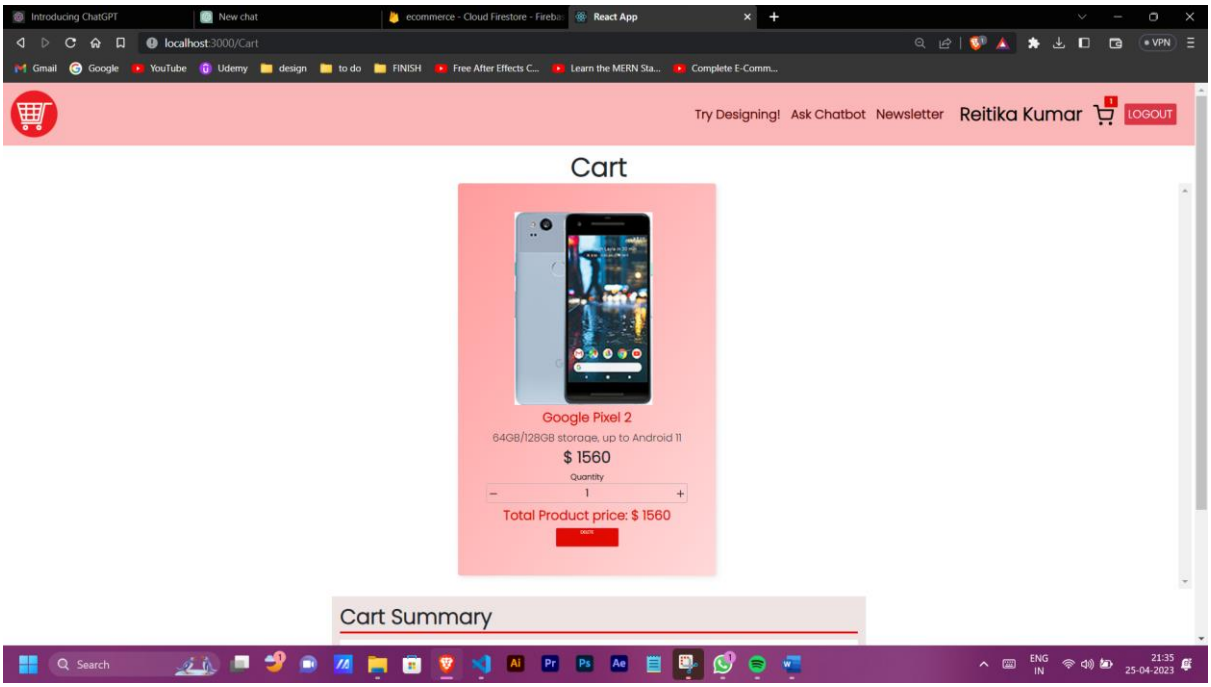
Acceptance Criteria:

The website should have a user-friendly T-shirt customization tool.
Customers should be able to select the color, design, and logo for their T-shirt.
Customers should be able to upload their own images to use in the T-shirt design.
User story card 3

User story card 2:

Title: Add Products to Cart

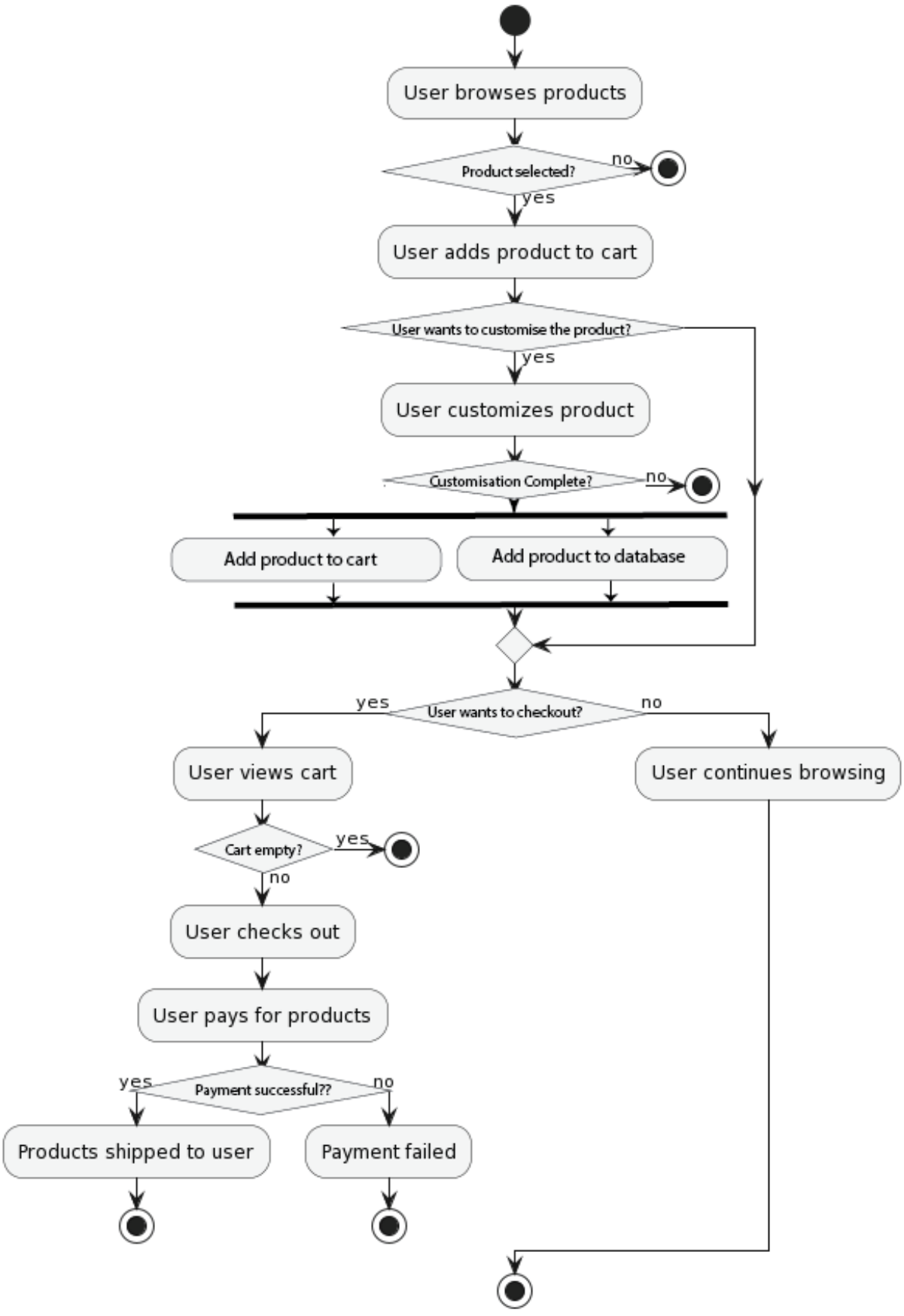
Description: As a customer, I want to be able to add products to my cart, so I can purchase multiple products in a single transaction.



Acceptance Criteria:

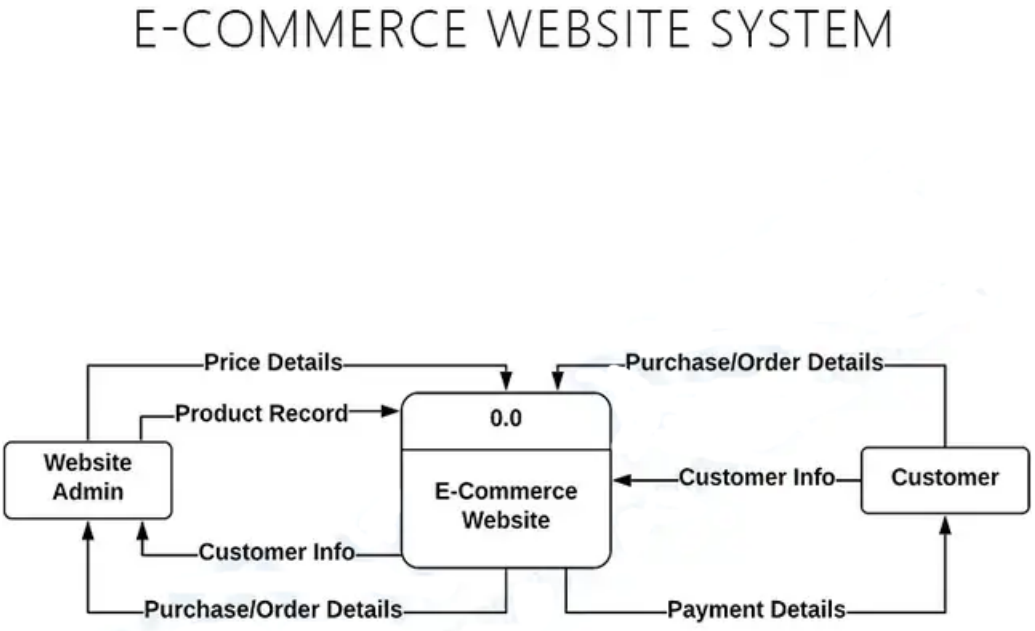
Customers should be able to add products to their cart from the product catalog or from the T-shirt customization tool.
The website should display the contents of the cart clearly.
Customers should be able to modify the contents of the cart as needed.

Activity Diagram and Swimlane Diagram:


User browses products
Product selected?
no
yes
User adds product to cart
User wants to customise the product?
yes
User customizes product
Customisation Complete?
no
Add product to cart
Add product to database
yes
User wants to checkout?
no
User views cart
User continues browsing
Cart empty?
yes
no
User checks out
User pays for products
yes
Payment successful??
no
Products shipped to user
Payment failed

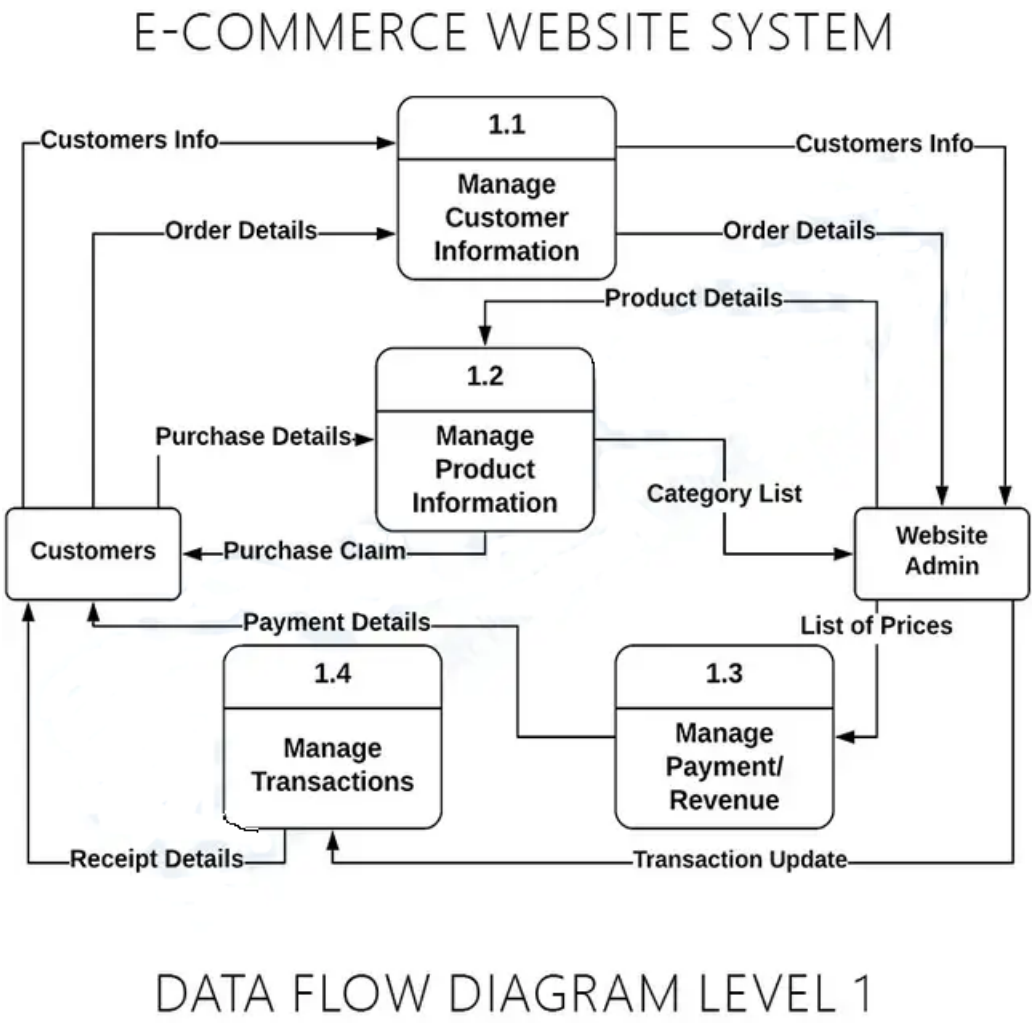
Data Flow Diagrams (DFDs):

2.3.1 DFD Level 0

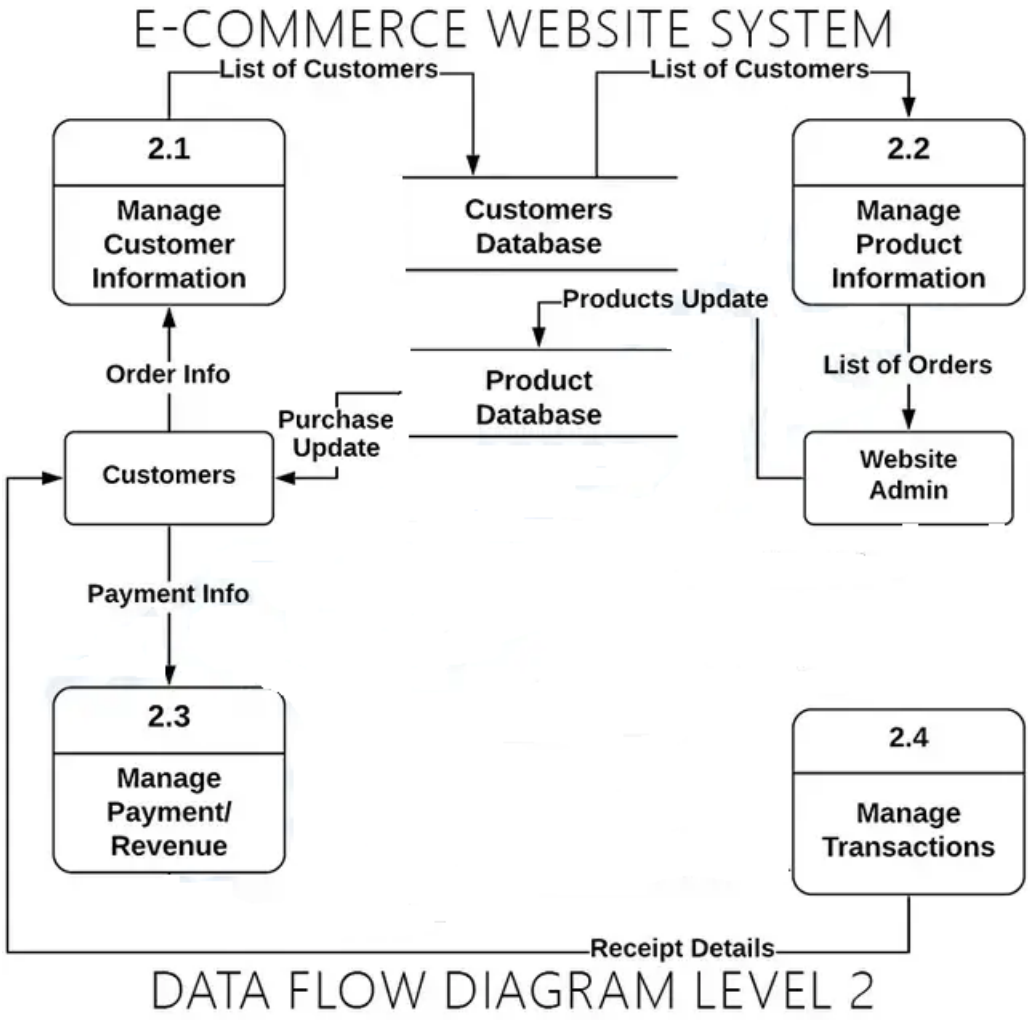


DATA FLOW DIAGRAM LEVEL 0

2.3.2 DFD Level 1



2.3.2 DFD Level 2



Software Requirement Specification in IEEE Format:

Software Requirements Specification

for

EzyShop

An Ecommerce Website

Version 1.0 approved

Prepared by :
Sam Vasishat: 102116007
Reitika Kumar: 102116008
Neeraj : 102116013
Siddhi Upadhyay: 102116024

Thapar Institute of Engineering And Technology, Patiala

26th April 2023

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Introduction

1. Purpose

The purpose of an ecommerce website is to enable businesses to sell products or services to customers online. It provides a platform for businesses to showcase their products or services, manage inventory, process orders, and receive payments securely.

Some of the key benefits of ecommerce websites include :
- Increased Reach
- Convenience
- Cost-Effective
- Personalization
- Analytics and Insights

2. Document Conventions

Here are some common document conventions that are often used in ecommerce website design and development:

- Site map: A site map is a visual representation of the website's hierarchy and organization, outlining the main pages, categories, and subcategories.
-Wireframes: Wireframes are simple, black and white layouts that illustrate the basic structure and content of each page, without including detailed design elements.
-Mockups: Mockups are high-fidelity designs that show the final look and feel of each page, including colors, typography, and images.
-Content style guide: A content style guide outlines the tone, voice, and language to be used in all website content, including product descriptions, blog posts, and marketing copy.
-Technical documentation: Technical documentation includes all the technical specifications and requirements for the website, such as server configurations, database schemas, and security protocols.
-Accessibility guidelines: Accessibility guidelines ensure that the website is accessible to users with disabilities, including guidelines for color contrast, font size, and keyboard navigation.

3. Intended Audience and Reading Suggestions

The intended audience for an ecommerce website can vary depending on the products or services being sold. However, in general, the primary audience is likely to be consumers who are interested in purchasing products or services online. This audience may include people of different ages, genders, and locations, as well as those with varying levels of technological literacy.

To cater to this audience, here are some reading suggestions for an ecommerce website:

-Clear and concise product descriptions: Make sure the product descriptions are easy to understand and provide all the necessary information about the product, including features, benefits, and specifications.
-High-quality product images: Use high-quality images that accurately represent the product, and provide different angles and zoom-in capabilities to give customers a better idea of what they are buying.
-Customer reviews and ratings: Include customer reviews and ratings to help customers make informed purchase decisions based on the experiences of others.
-Secure payment options: Provide a range of secure payment options, such as credit/debit card, PayPal, and other online payment methods, to give customers confidence in their purchases.
-Shipping and delivery information: Provide clear and concise information about shipping and delivery times, costs, and options to avoid confusion and frustration.

4. Product Scope

The scope of an ecommerce website is the range of features, functionality, and services it offers to its customers. The scope of an ecommerce website can vary depending on the size of the business, the type of products or services being sold, and the target audience. Here are some common elements that may be included in the scope of an ecommerce website:

-Product catalog: The website should provide a catalog of products or services that are available for purchase.
-Shopping cart: The website should have a shopping cart feature that allows customers to add products to their cart and proceed to checkout.
-Checkout process: The website should have a clear and easy-to-use checkout process that allows customers to enter their payment and shipping information and complete their purchase.
-Payment gateway: The website should have a secure payment gateway that enables customers to make payments using a variety of payment methods

5. **References**

2. Overall Description

1. Product Perspective

This product aimed toward a person who don’t want to visit the shop as he might don’t get time for that or might not interested in visiting there and dealing with lot of formalities.

2. Product Functions

- Category Management
- Items Management
- User Management
- Shipment Management
- Order Management
- Invoice Management

3. User Classes and Characteristics

To design an ecommerce website, it's important to understand the different user classes and their characteristics. Here are some common user classes and their characteristics for an ecommerce website:

-Guest users: These are users who visit the website without creating an account or logging in. They may be first-time visitors or occasional shoppers. Their characteristics include:
  -Limited knowledge of the website's features and functionality
  -Prefer quick and easy checkout processes
  -May not be interested in creating an account or receiving promotional emails
-Registered users: These are users who have created an account on the website and have logged in. They may be regular customers or loyal shoppers. Their characteristics include:
  -Familiarity with the website's features and functionality
  -May have saved preferences or wishlists on the website
  -May be interested in receiving promotional emails or discounts

-Administrators: These are users who manage the website's backend, including inventory management, order processing, and customer service. Their characteristics include:
  -Advanced knowledge of the website's features and functionality
  -Ability to manage and update product information and pricing
  -Access to sensitive customer information, such as order details and payment information
-Developers: These are users who develop and maintain the website's codebase, including front-end and back-end development. Their characteristics include:
  -Advanced technical skills and knowledge of programming languages and frameworks
  -Ability to troubleshoot and resolve technical issues on the website
  -May work with third-party integrations, such as payment gateways and shipping providers

4. Operating Environment

The operating environment for an ecommerce website includes the hardware, software, and network infrastructure required to support the website's operations. Here are some key components of the operating environment for an ecommerce website:

1. Web server: This is the hardware and software that hosts the website and delivers web pages to users' browsers.
2. Database server: This is the hardware and software that stores and manages the website's data, including product information, customer information, and order details.
3. Network infrastructure: This includes the hardware and software required to connect the web server and database server, as well as the routers, switches, and firewalls that protect the website from external threats.
4. Operating system: The web and database servers require an operating system to function, such as Linux, Windows, or macOS.
5. Web development platform: This includes the software and tools used to develop and maintain the website, such as a content management system (CMS) or an ecommerce platform like Magento or Shopify.
6. Payment gateway: An ecommerce website requires a payment gateway to securely process and authorize online payments.

5. Design and Implementation Constraints

Design and implementation constraints are factors that limit the design and implementation choices for an ecommerce website. Here are some common design and implementation constraints for ecommerce websites:

1. Budget: The budget for the project can limit the choice of development platform, hosting solution, and third-party integrations.
2. Technology stack: The technology stack used to develop the website can be constrained by the developer's skill set or the availability of resources.
3. Compliance: The website must comply with legal and regulatory requirements, such as data privacy laws and payment card industry (PCI) standards.
4. User experience: The website must provide a seamless and intuitive user experience, with clear navigation, fast loading times, and easy checkout processes.
5. Accessibility: The website must be accessible to users with disabilities, including those who use screen readers or other assistive technologies.
6. Security: The website must be designed with security in mind, including protection against hacking attempts, data breaches, and fraudulent activity.
7. Scalability: The website must be designed to handle increasing traffic and sales as the business grows.

6. User Documentation

User documentation for an ecommerce website should provide clear and concise instructions for customers to use the website's features and functionality. Here are some common types of user documentation for ecommerce websites:

1. User guides: User guides provide step-by-step instructions for using specific features of the website, such as creating an account, browsing products, or completing a purchase.
2. FAQs: Frequently Asked Questions (FAQs) provide answers to common questions that customers may have about the website, such as shipping and return policies, payment options, and security.
3. Tutorials: Tutorials provide video or interactive demonstrations of how to use specific features of the website, such as searching for products or using filters to refine search results.
4. Help center: A help center provides a centralized location for customers to access all user documentation, including user guides, FAQs, tutorials, and customer support contact information.
5. Product manuals: For ecommerce websites that sell physical products, product manuals provide instructions for using and maintaining the products.
6. Glossary: A glossary provides definitions of common terms used on the website, such as product categories or shipping methods.

7. Assumptions and Dependencies

Assumptions and dependencies for an ecommerce website refer to factors that are considered to be true or relied upon during the development and operation of the website. Here are some common assumptions and dependencies for ecommerce websites:

1. Assumptions about customer behavior: The website may make assumptions about how customers will use the website, such as their preferred payment methods or browsing behavior.
2. Assumptions about technology: The website may make assumptions about the technology that customers are using, such as the type of device or internet connection.
3. Dependencies on third-party services: The website may rely on third-party services for features such as payment processing, shipping, or customer support.
4. Dependencies on hardware and software: The website may rely on specific hardware and software to function properly, such as a specific web server or database technology.
5. Dependencies on data: The website may rely on accurate and up-to-date data to provide customers with product information, pricing, and availability.

It is important to document assumptions and dependencies for ecommerce websites to ensure that they are understood by all stakeholders and can be monitored and managed effectively. Any changes to these assumptions and dependencies should be carefully considered and communicated to all relevant parties.

3. Specific Requirements

Various interfaces for the product could be

- Signup / Login Page
- Home Page
- Cart : If the customer, select the buy button then another screen of shopping cart will be opened.
- After ordering for the product, the system will have sent one copy of the bill to the customers's Email Address.

3.1 User Interfaces

There are several user interfaces that can be used for e-commerce websites to enhance user experience and make it easier for customers to browse, search, and purchase products. Here are a few examples:

1. Search bar: A search bar is essential for any e-commerce website. It allows customers to quickly find the products they are looking for by typing in keywords or phrases.
2. Navigation menu: A clear and concise navigation menu makes it easy for customers to find the products they want. The menu should be organized into categories and subcategories, making it easy for customers to browse products.
3. Product filters: Filters allow customers to narrow down their search results by selecting specific criteria, such as price range, color, size, or brand.
4. Product images: High-quality product images that can be zoomed in on or viewed from multiple angles help customers to get a better understanding of the product and can increase the likelihood of a purchase.
5. Product descriptions: Detailed product descriptions that include information such as dimensions, materials, and care instructions help customers to make informed decisions.
6. Reviews and ratings: Customer reviews and ratings provide social proof and can help customers to feel more confident about their purchase decisions.

3.2 Hardware Interfaces

Hardware interfaces are physical devices that allow customers to interact with e-commerce websites. Here are some examples of hardware interfaces that can enhance the user experience of e-commerce websites:

1. Point of Sale (POS) Systems: POS systems are hardware interfaces that allow customers to make purchases in-store. They can be integrated with e-commerce websites to provide a seamless experience across online and offline channels.
2. Touchscreens: Touchscreens can be used in-store or on kiosks to allow customers to browse and purchase products. They can also be used to display product information and promotions.
3. Mobile Devices: Mobile devices, such as smartphones and tablets, can be used to browse and purchase products on e-commerce websites. Mobile devices can also be used as payment terminals in-store, allowing customers to make purchases using mobile payment apps.
4. Payment Terminals: Payment terminals, such as credit card readers and NFC (near-field communication) terminals, can be used in-store to accept payments from customers. They can

be integrated with e-commerce websites to provide a seamless checkout experience across online and offline channels.

3.3 Software Interfaces

This is compatible with Windows, Linux & Mac operating Systems.
Software is a web based so user only need s a web browser and internet connection.

3.4Communications Interfaces

User can connect with website using browser and internet once then login user can easily buy products

3.5 Functional Requirements

This section provides requirements overview of the system.
Various functional modules that can be implemented by the system will be

3.5.1 Registration

If customer wants to buy the product then he/she must be registered, unregistered user can't go to the shopping cart.

3.5.2 Login

Customer logins to the system by entering valid user id and password for the shopping.

3.5.3 Changes to Cart

Changes to Cart means the customer after login or registration can make order or cancel order of the product from the shopping cart.

3.5.4 Payment

In this system we are dealing the mode of paymeny by Debit/Credit card only.

3.5.5 Logout

After ordering or surfing for the product customer has to logout.

3.5.6 Report Generation

After ordering for the product, the system will have sent one copy of the bill to the customer's Email-address and another one for the website's database.

4. Non functional Requirements

1. Performance Requirements

These requirements define the performance parameters that an e-commerce website must adhere to, such as:
-Response time: The website should respond to user requests within a specific time limit.
-Availability: The website should be available to users 24/7 without any downtime.
-Scalability: The website should be able to handle a large number of users and transactions

-Reliability: The website should be reliable and should not fail during critical transactions.

2. Safety Requirements

Some general safety requirements for e-commerce websites, but please keep in mind that these may not be exhaustive, and you should consult with a professional for a more comprehensive list. Here are some safety requirements:

-Secure Socket Layer (SSL) Certificate: An SSL certificate is a must-have for any e-commerce website. It encrypts sensitive information (like credit card numbers) so that it cannot be intercepted by hackers.
-Strong Passwords: Require customers to create a strong password that includes a mix of upper and lowercase letters, numbers, and symbols.
-Trusted Payment Gateway: Use a trusted payment gateway to process transactions on your website.
-User Verification: Verify the identity of customers who are making purchases on your website.
-Privacy Policy: Make sure you have a clear and concise privacy policy that outlines how you collect and use customer data.

3. Security Requirements

These requirements define the security parameters that an e-commerce website must adhere to, such as:
-Confidentiality: The website should ensure that user data is kept confidential and not accessible to unauthorized users.
-Authentication and Authorization: The website should ensure that only authorized users can access the website and perform transactions.
-Integrity: The website should ensure that user data is not tampered with during transactions.
-Compliance: The website should comply with industry-specific security standards and regulations.

4. Software Quality Attributes

Some common software quality attributes that are important for e-commerce websites. Here are a few:

-Usability: An e-commerce website should be easy to use, navigate, and search. It should provide a positive user experience and be intuitive for customers to find what they are looking for.
-Performance: E-commerce websites need to be fast and responsive. Customers will quickly leave a website if it takes too long to load or if the checkout process is slow.
-Security: E-commerce websites must be secure to protect customer data, such as credit card information. They must also be protected against attacks from hackers and malicious software.
-Reliability: E-commerce websites must be reliable and available at all times. Customers expect to be able to access the website, make purchases, and receive updates on their orders without any issues.
-Scalability: E-commerce websites should be able to handle a large number of customers and orders, especially during peak periods like holidays and sales events.

5. Business Rules

Some common business rules for e-commerce websites. Here are a few:

-Payment rules: Define the accepted payment methods, the currency accepted, and the payment terms for the website. This includes rules for refunds, returns, and chargebacks.
-Shipping rules: Define the shipping options, rates, and delivery times. This includes rules for international shipping, expedited shipping, and tracking information.
-Product rules: Define the product catalog, including rules for pricing, discounts, and promotions. This includes rules for product availability, product descriptions, and images.
-Customer rules: Define the rules for customer registration, login, and authentication. This includes rules for customer data collection, privacy, and security.
-Order rules: Define the rules for order placement, processing, and fulfillment. This includes rules for order tracking, cancellation, and confirmation.
-Inventory rules: Define the rules for managing inventory, including stock levels, reordering, and backorders.
-Tax rules: Define the tax rules for the website, including the tax rates, exemptions, and regulations.

6. Other Requirements

Some other common requirements for e-commerce websites. Here are a few:

-Mobile optimization: E-commerce websites must be optimized for mobile devices as a growing number of customers shop on their phones and tablets. This includes ensuring that the website is responsive, easy to navigate, and loads quickly on mobile devices.
-Analytics and reporting: E-commerce websites must have analytics and reporting tools to help businesses track customer behavior, sales, and marketing performance. This includes tracking website traffic, user engagement, and conversion rates.
-Search engine optimization (SEO): E-commerce websites must be optimized for search engines to improve their visibility and attract more customers. This includes optimizing website content, product descriptions, and meta tags for relevant keywords.
-Social media integration: E-commerce websites must integrate with social media platforms to increase their reach and engagement with customers. This includes adding social media buttons, product sharing options, and social media advertising.
-Personalization: E-commerce websites must provide personalized experiences to customers based on their browsing history, purchase behavior, and preferences. This includes offering personalized product recommendations, targeted promotions, and customized email marketing.

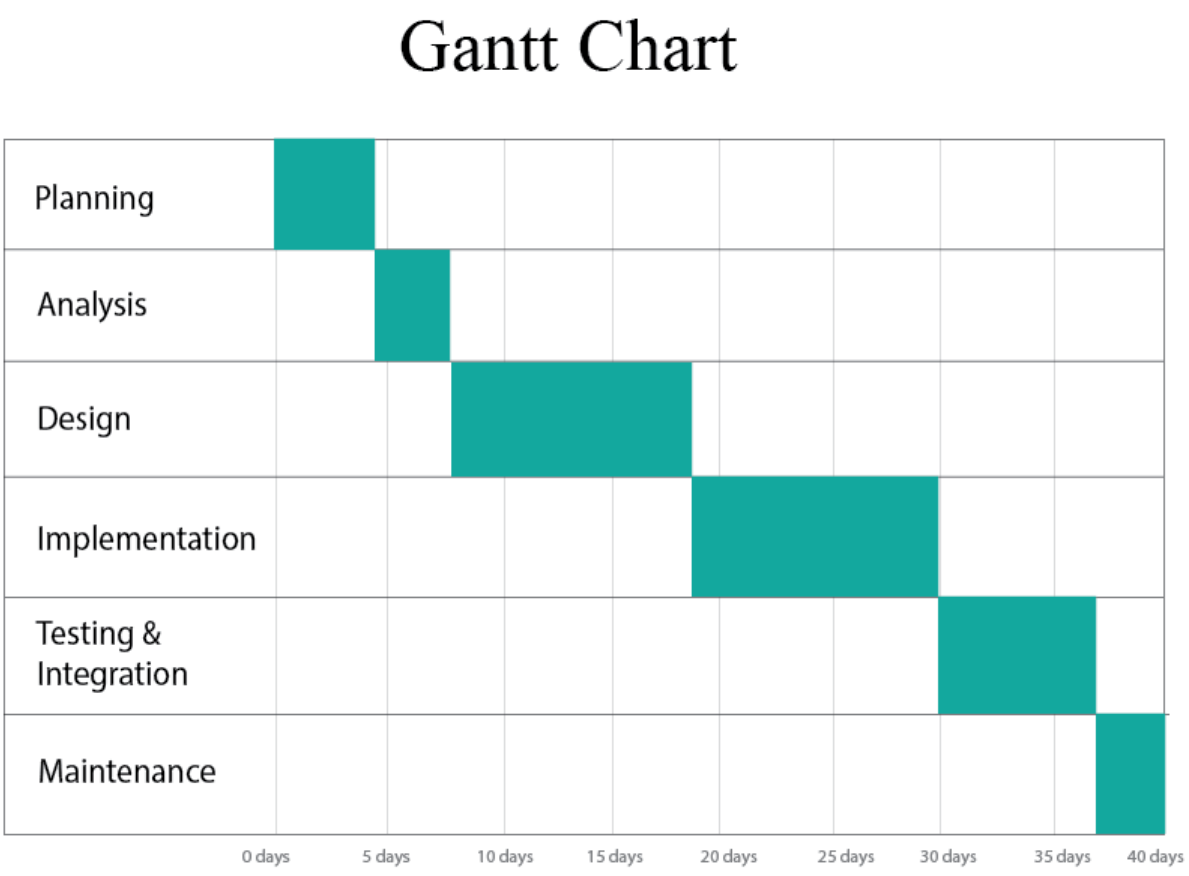
Appendix A : Glossary

Here are some common terms used in the context of e-commerce websites:

-E-commerce: The buying and selling of goods and services over the internet.
-Online store: A website that allows customers to purchase products or services online.
-Shopping cart: A virtual cart or basket on an e-commerce website that stores the items selected by a customer for purchase.
-Checkout: The process of completing a purchase on an e-commerce website.
-Payment gateway: An online service that authorizes credit card or other payment transactions.
-Shipping: The process of delivering products to customers, including packaging, labeling, and transport.
-Return policy: The rules and procedures for returning or exchanging products purchased from

-Customer service: The process of providing assistance and support to customers before, during, and after a purchase.
-Search engine optimization (SEO): The process of optimizing a website to rank higher in search engine results pages for relevant keywords.

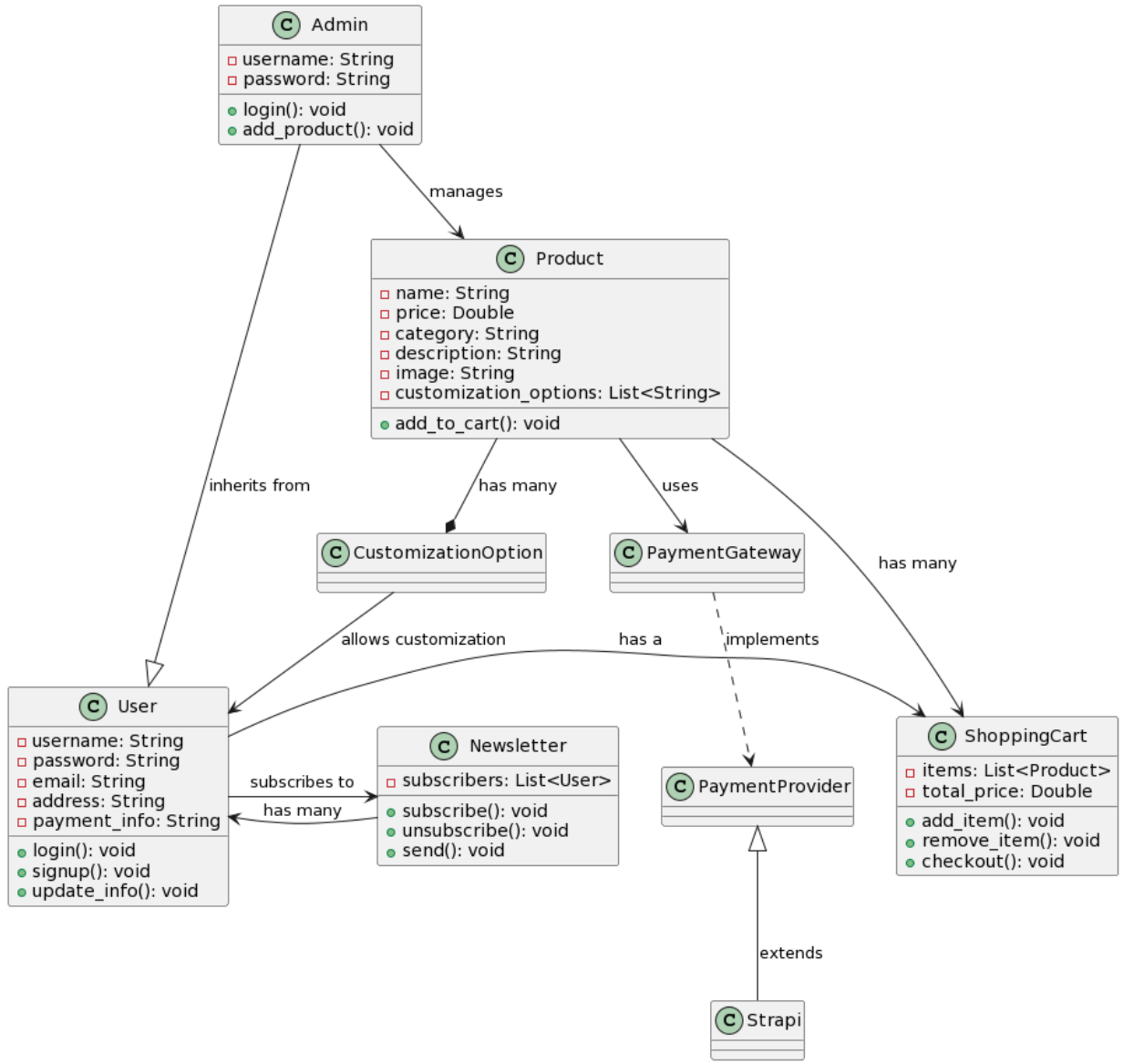
Gantt Chart:



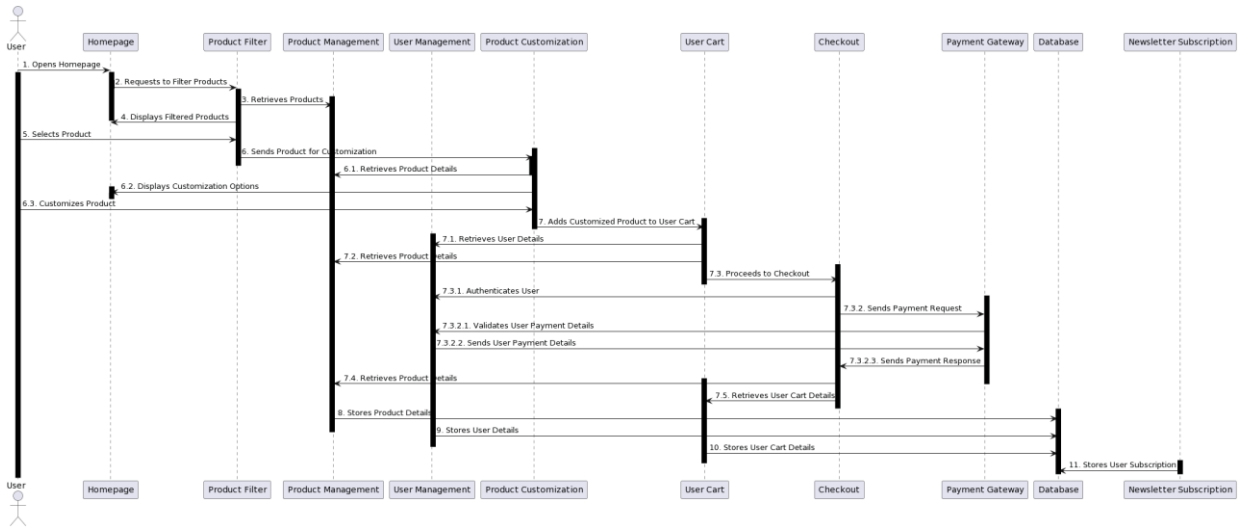
User Stories and Story Cards

Design Phase

Class Diagram:

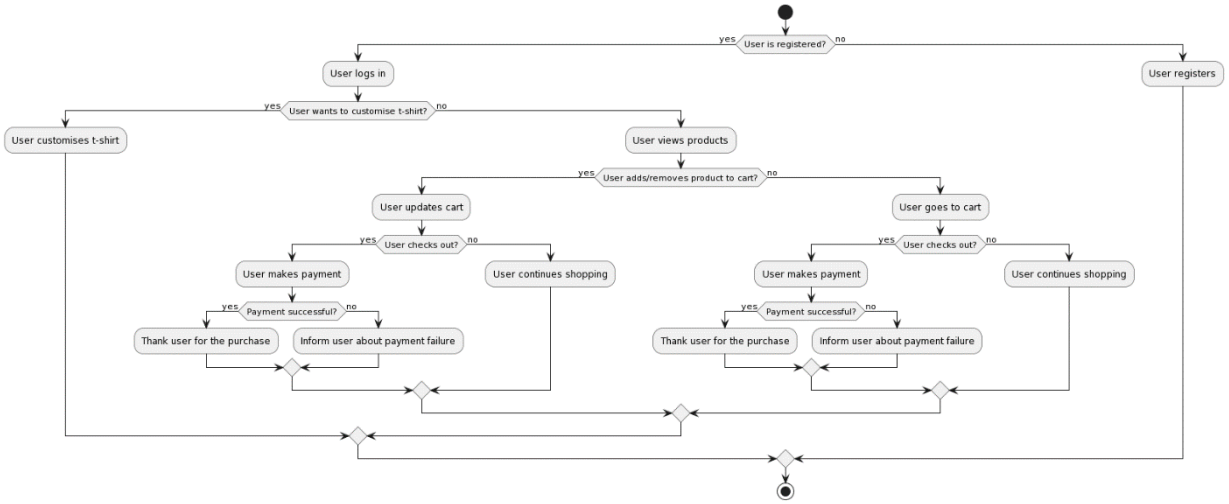


Sequence Diagram:



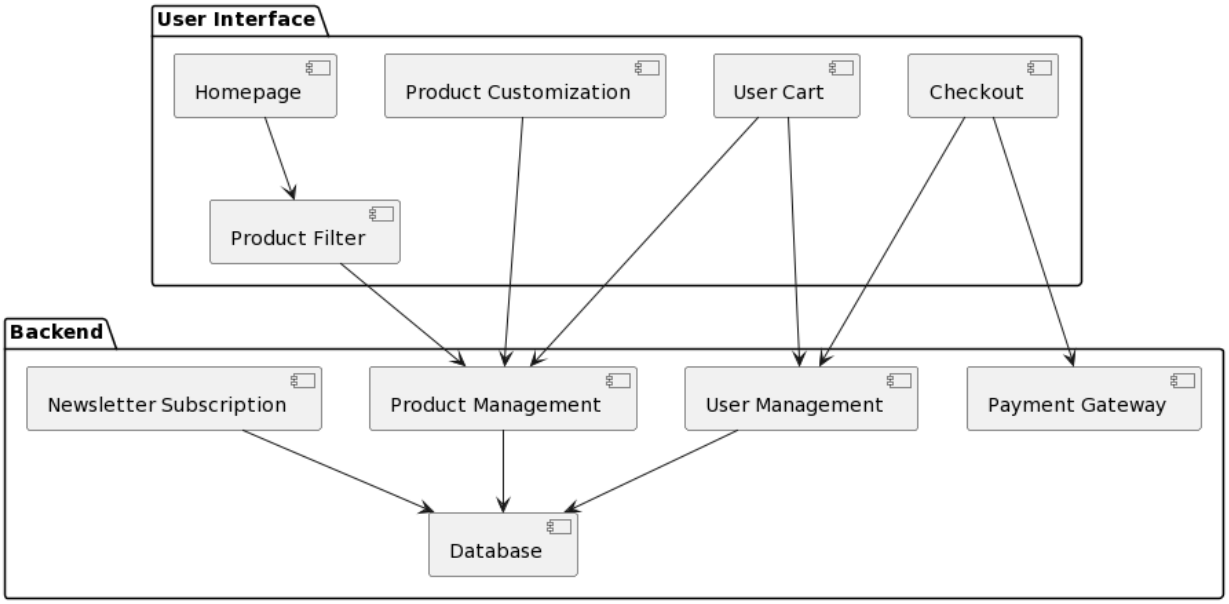
Collaboration Diagram:

State Chart Diagram:

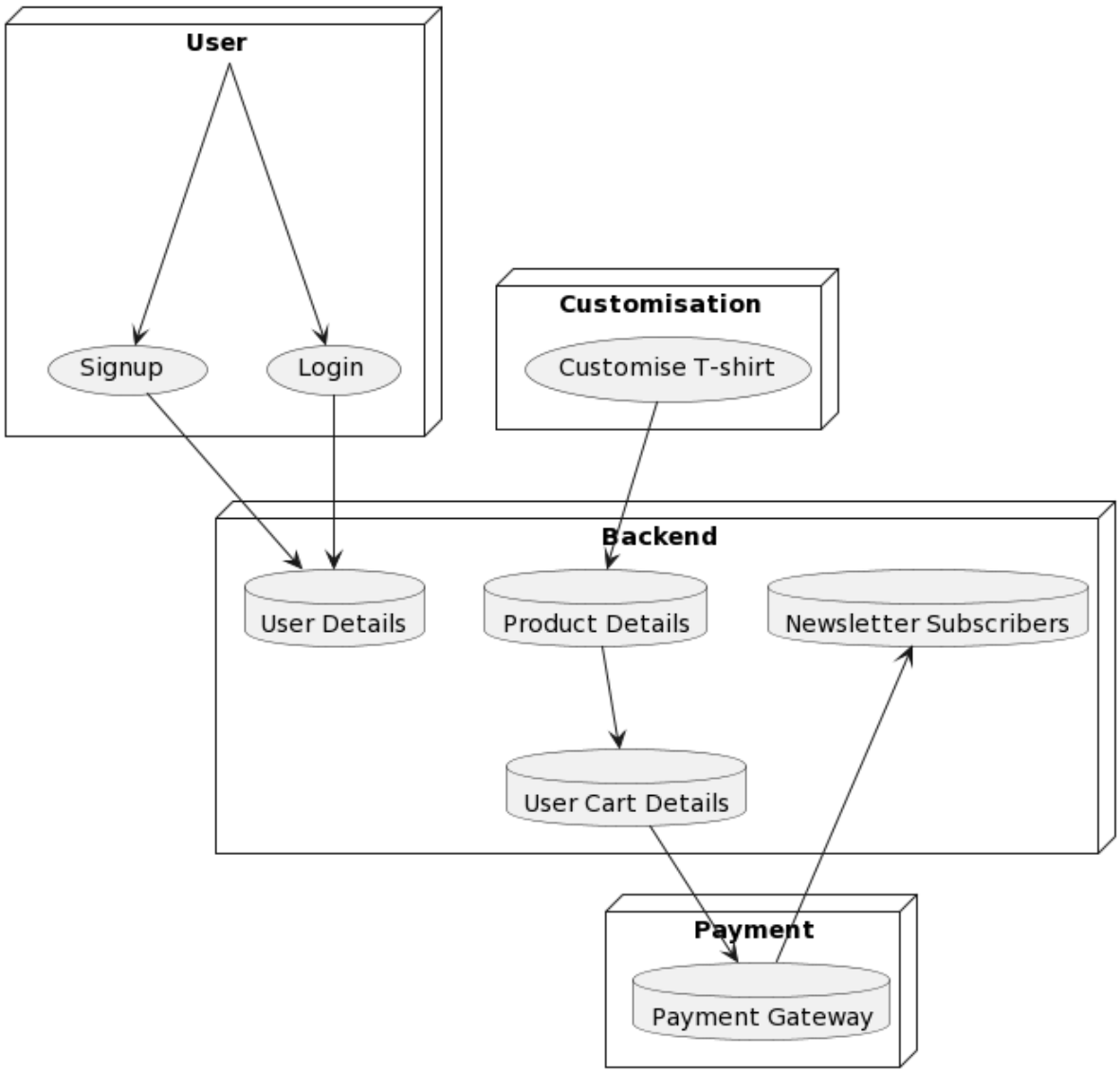


Implementation

Component Diagrams:



Deployment Diagrams:



Testing

5. Testing

5.1 Test Planning

1. Introduction:
The purpose of this test plan is to provide a framework for testing the website. The test plan will ensure that the website functions as expected, is user-friendly, and meets all the requirements.

2. Scope:
The scope of this test plan includes testing the following areas of the website:
- User registration and login functionality
- Product filter functionality
- Adding Products functionality
- Adding Products to cart functionality

3. Test Environment:
The test environment for the website includes the following:
- Operating System: Windows 11
- Browser: Google Chrome, Mozilla Firefox, Safari, Microsoft Edge
- Internet Connection: Stable and high-speed internet connection

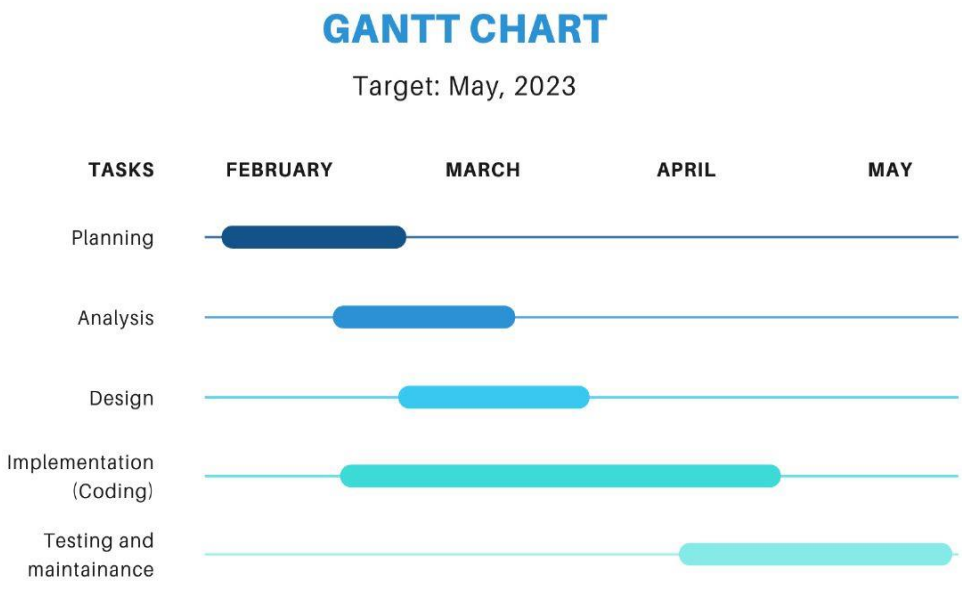
4. Test Cases:
The test cases for the website will cover the following scenarios:
- Verify that user can successfully register and login to the website
- Check the responsiveness of the site
- Verify that user can filter products according to categories.
- Verify that user can Add products to his/her cart.

5. Testing Schedule:
The testing schedule will be as follows:
- Testing for login: After 1st week of project
- Testing for Filtering: After 3rd week of project
- Testing for Cart functionality: After 6th week of project
- Testing for responsiveness of site: 8th week of project

6. Risk Assessment:
The following risks have been identified:
- Payment processing failure
- Security vulnerabilities
- Not Responsive

7. Conclusion:
This test plan outlines the testing approach for the website. The testing will ensure that the website meets all the requirements and is user-friendly. The testing will be carried out using various testing techniques and tools. Any issues identified will be tracked and resolved within the given time frame.

Gantt Chart of our project



5.2 Test Cases

1. Test Case: 1	**Test Case Name:** Login Signup	**Page 1 of 4**
System: RKayy	**Subsystem:** Login	
Designed by: Reitika Kumar	**Design Date:** 25-03-2023	
Executed by: Sam Vasishat	**Execution Date:** 26-03-2023	
Short Description: Login and sign up pages testing		

Pre-Conditions:
User must have a valid email ID
For login the user must have valid account

Step	Action	Expected System Response	Pass/Fail	Comment
1	Login with valid email id and password	Login successfully	Pass	
2	Able to open signup page by clicking on signup	Signup page opens	Pass	
3	Able to enter the valid details	Details taken successfully	Pass	
4	successfully creating a account for new users	Account created	Pass	
5	Log in with user details	Login successfully	Pass	

Post-conditions:
User must be logged into the system
Use must be able to create a profile
The information should be stored in database for first-time users

Test Case: 2	**Test Case Name:** Test on different devices	**Page 2 of 4**
System: RKayy	**Subsystem: -**	
Designed by: Sam	**Design Date: 0**2-04-2023	
Executed by: Neeraj	**Execution Date:** 08-04-2023	
Short Description: Checking the system on different devices		

Pre-Conditions:
System should be working with full functionalise

Step	Action	Expected System Response	Pass/Fail	Comment
1	Testing the system on laptop	Responsive to the device	Pass	
2	Testing system on mobile phone dimensions	Responsive to the device	Fail	Interface is jumbled up.

Post-conditions:
Should work on laptop without errors
Should work on mobile layout without errors

Test Case: 3	**Test Case Name:** Functionalities	**Page 3 of 4**
System: RKayy	**Subsystem:** Add Products	
Designed by: Reitika Kumar	**Design Date:** 25-11-2022	
Executed by: Neeraj	**Execution Date:** 28-11-2022	
Short Description: Checking the functionality of Adding products for sale		

Pre-Conditions:
User must be logged in

Step	Action	Expected System Response	Pass/Fail	Comment
1	Admin can login	Able to login	Pass	
2	Admin can enter details of a new product	Entered details	Pass	
3	Product added to database	Successfully added	Pass	
4	Products visible to user.	Visible	Pass	

Post-conditions:
User is able to new Products

Test Case: 4	**Test Case Name:** Functionalities	**Page 4 of 4**
System: RKayy	**Subsystem:** Cart functionality	
Designed by: Sam Vasishat	**Design Date:** 25-11-2022	
Executed by: Siddhi	**Execution Date:** 28-11-2022	
Short Description: Add Products to cart		

Pre-Conditions:
User must be logged in

Step	Action	Expected System Response	Pass/Fail	Comment
1	User can view a product	Product visible	Pass	
2	User can add products to cart	Product added	Pass	
3	User redirected to Cart automatically	Redirected to cart	Fail	
4	User able to increase, decrease, delete products from carts.	Cart Successfully edited	Pass	

Post-conditions:
User can view their added products in their respective carts.

5.3 Test Reports

Introduction:

This report is for the testing performed on an ecommerce website. The website was tested for its login functionality, responsiveness, Product Addition and Cart functionality.

Test Cases:

1. Login Functionality:
   a. Test Case 1: Verify that the user is able to enter valid login credentials.
   b. Test Case 2: Verify that the user is not able to login with invalid credentials.
   c. Test Case 3: Verify that the user is able to reset their password.

2. Responsiveness:
   a. Test Case 1: Verify that the website is responsive across all screen sizes.
   b. Test Case 2: Verify that the website is compatible with different web browsers.

3. Product Addition:
   a. Test Case 1: Verify that the admin is able to login
   b. Test Case 2: Verify that the user is able to enter details of the new product
   c. Test Case 3: Verify that the user is able to add product to cart.

4. Cart Functionality:
   a. Test Case 1: Verify that the user is able to filter products.
   b. Test Case 2: Verify that the user is able to add products to cart.
   c. Test Case 3: Verify that the user is able to increase/decrease/delete product.

Test Results:

1. Login Functionality:
   a. Test Case 1: Pass
   b. Test Case 2: Pass
   c. Test Case 3: Pass

2. Responsiveness:
   a. Test Case 1: Fail
   b. Test Case 2: Pass

3. Product Addition:
   a. Test Case 1: Pass
   b. Test Case 2: Pass
   c. Test Case 3: Pass

4. Cart Functionality:
   a. Test Case 1: Pass
   b. Test Case 2: Pass
   c. Test Case 3: Pass

Conclusion:

The Ecommerce website hasn't passed all the test cases that were performed. The website is not responsive, but is accessible, and user-friendly. The login functionality, Product Addition, and Cart features are working as expected except for the payment part.

Process Model used in making of project:
V-Model:

The V-model is an extension of the Waterfall model and is a more structured and rigorous approach to software development. It involves testing at every phase of the project, which ensures that each phase is completed before moving on to the next one.

The V-model in our project involved the following phases:

1. Requirements analysis: The team gathered all the requirements from stakeholders and creates a detailed requirements document.

2. System design: Once the requirements were finalized, the team moved on to the system design phase, where we create a high-level design of the system, including hardware and software components.

3. Architectural design: In this phase, we created a detailed design of the system architecture, including modules, interfaces, and data flow.

4. Module design: In this phase, we created a detailed design of each module, including input, output, processing, and data storage.

5. Implementation: Once the design was finalized, we moved on to the implementation phase, where we coded the system according to the design.

6. Unit testing: In this phase, each module was tested individually to ensure that it was functioning as expected.

7. Integration testing: Once all the modules were completed and tested, we moved on to integration testing, where we tested the entire system for functionality and compatibility.

8. System testing: In this phase, we tested the entire system for performance, usability, and security.

Overall, the V-model is a more complex and structured approach to software development than the Waterfall model, but it ensures that testing is conducted at every phase of the project, which helps to identify and fix issues early in the development process which made it suitable for our project