Software Engineering Project

E-COMMERCE

The Way Shop

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Team Members

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Introduction

E-commerce, or electronic commerce, refers to the buying and selling of goods and services over the internet. It has become a significant aspect of the modern economy, revolutionizing the way businesses operate and consumers shop, allowing businesses of all sizes to reach a global audience. E-commerce encompasses various online activities, including online retail (e-retail), electronic payments, online auctions, and internet banking.

Description of the project

Project overview:

The way shop is a user-friendly online shopping application designed to facilitate the way users browse, shop, and experience e-commerce, specifically online retail. With a sleek and intuitive interface, The way shop provides a seamless and enjoyable shopping journey, connecting users with a vast array of products from various categories.

Key features:

a- User Authentication and Profiles: Secure user authentication for personalized experiences.
b- Intuitive Product Navigation: Easy to navigate product categories for efficient browsing.
c- Product Details: Comprehensive product details including images, descriptions, and specifications.
d- Wishlist and Favorites: For users to save items for future consideration.

Project Objectives:

a- Create an intuitive and visually appealing user interface to enhance the shopping experience.
b- Implement a secure and efficient backend infrastructure for seamless data management.
c- Facilitate smooth and secure transactions.

Conclusion:

The way shop aims to set standards in the online shopping industry by combining technological innovation, vast product catalog and user-centric design. The project's goal is to create a platform that the online shopping process besides providing users with a delightful and personalized journey from discovery to checkout.

The model

The project will be done using Agile model because of the following reasons:

- Sprints: Agile projects are divided into sprints (sprints like the deliveries that we will provide at specific intervals), tends to move along faster as each sprint with a specific goal and timeline. This helps in maintaining focus and ensures that the project progresses steadily.

- Feedback: Agile encourages frequent feedback from users and stakeholders. This helps in incorporating changes and improvements early in the development process, leading to a better final product.

- Quality Improvement: By receiving feedback and making adjustments regularly, Agile aims to enhance the overall quality of the final product. This iterative feedback loop contributes to higher customer satisfaction.

- Efficient Work Management: Agile methods emphasize efficient work management. Teams work collaboratively, and tasks are prioritized based on their importance and value to the project. This ensures that the most critical features are delivered early.

- Budget Constraints: Agile helps in managing work within budget constraints by delivering a working product at the end of each sprint. This allows for adjustments based on the project's progress and ensures that resources are allocated effectively.

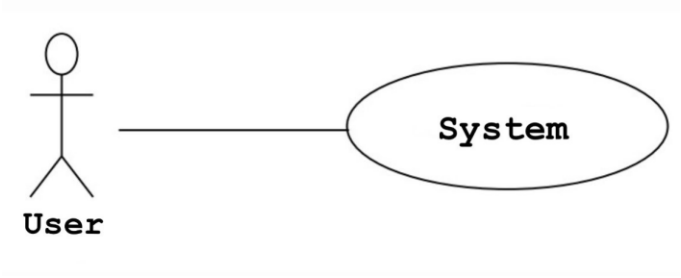
First:

Software Requirements Specification (SRS)

1. System Requirements

1.1 Functional Requirements

1.1.1 Actor: User



1. Product Browsing (Home page):

   The system must enable users to browse products by categories, brands, and other relevant filters.

   The system must support efficient search functionality with suggestions and auto-complete.

2. Product Listings (Shop detail):

   The system must create detailed product pages with images, descriptions, prices, and specifications.

   The system must display availability status and stock information (stock information like available sizes and colors).

   The system should display reviews of other customers.

3. Shopping Cart:

   The system must enable users to add, remove, and update items in their shopping cart.

   The shopping cart must display the total price, taxes, and shipping costs.

4. Checkout Process:

-Must first include User Authentication:

The user choices: The system must present the user with two choices: click on the sign in button or click on the register button.

- If the user already has an account, they must click the log in button.
    - User action: The system must prompt the user to enter their email in email button and enter their password in password button.
- If the user does not have an account, their must click on the register button.
    - User action: The system must prompt the user to enter their name in name button, and enter their email in email button and create a password in password button.

- The system must provide a secure and user-friendly checkout process with multiple payment options (credit card, digital wallets, etc.).
- The system should enable users to enter shipping details and track the status of their orders.

5. User Profiles:

The system should provide user profiles for order history, saved addresses, payment methods, and wish lists.

6. Coupons and Discounts:
   The system should allow users to add discounts before checkout.

7. Customer Support:
   A user should be able to contact customer support via email.

8. Order History:
   A user should view detailed order history with information on past purchases.
   A user should view order receipts and invoices for reference.

1.2 Non-Functional Requirements

1.2.1 Usability:

- *User Interface (UI):*
  It may take users from 5 to 7 minutes to familiarize themselves with the functioning of the application.
  User can take just from 2-3 minutes to make an order.

- *Accessibility:*
  The app should be accessible to users with disabilities, adhering to accessibility standards.

1.2.2 Security:

Admin is the only one who can create a new item set its price ,colors, sizes available.
The only one who can see user information is the admin so, that's why we have created a different log in for the admin to see user orders that have been received by the user.

1.2.3 Performance:

Application should be able to handle a large number of concurrent users without significant degradation in performance.
The maximum acceptable response times (eg. 50 requests per minute) for different types of transactions or operations within the e-commerce platform.

1.2.4 Maintainability:

- *Code maintainability:*
  Requirement → The codebase should follow clean coding practices, with meaningful variable and function names, proper indentation, and consistent formatting.

- *Comprehensive Documentation:*
  The online shopping app should be well-documented, including both code comments and high-level system documentation.

- *Scalable and Adaptable Architecture:*
  App architecture should be designed to accommodate future updates and feature additions.
  App's architecture should be scalable and adaptable to accommodate future growth and changes in requirements.

1.2.5 Availability and Reliability:

- *Uptime:*
  The app should be available and accessible to users 24/7, with minimal downtime for maintenance.
- *Fault Tolerance:*
  The system should be resilient to failures, and there should be mechanisms in place to recover quickly in case of system disruptions.

1.2.6 Testing:

Comprehensive Testing: Regular testing, including unit tests, integration tests, and regression tests, helps catch and fix issues early, preventing them from becoming larger problems.

1.2.7 Compatibility:

- *Cross-Browser Compatibility:*
  The app should function consistently across different web browsers.
- *Device Compatibility:*
  Ensure the app is compatible with various devices, including smartphones, tablets, and desktops.

2. Domain Requirements

2.1 User Management:

- User Registration: Ability for users to create accounts.
- User Authentication: Secure login and authentication mechanisms.
- User Profiles: Ability to manage personal information and preferences.

2.2 Product Catalog:

- Product Listings: Display of products with details, prices, and images.
- Product Categories: Organization of products into categories.
- Search and Filtering: Tools for users to find specific products easily.

2.3 Shopping Cart:

- Add to Cart: Functionality to add products to a virtual shopping cart.
- Cart Management: Ability to view, edit, and remove items from the cart.
- Checkout Process: Seamless process for users to complete their purchase.

2.4 Order Management:

- Order Confirmation: Generation of order confirmation and receipt.
- Order History: Storage and display of past orders for users.
- Order Tracking: Ability for users to track the status of their orders.

2.5 Payment and Billing:

- Secure Payment Gateway: Integration with secure payment methods.
- Billing Information: Collection and management of user billing details.

2.6 Security:

- Secure Transactions: Use of encryption and secure protocols for data transfer.
- User Data Protection: Compliance with data protection regulations.

2.7 Admin Panel:

- Product Management: Tools for administrators to add, edit, or remove products.
- User Management: Admin capabilities to manage user accounts and permissions.

2.8 Order Processing:

Features to manage and process incoming orders.

2.9 Scalability:

- Efficient handling of high traffic during peak times.
- Quick response times for user interactions.

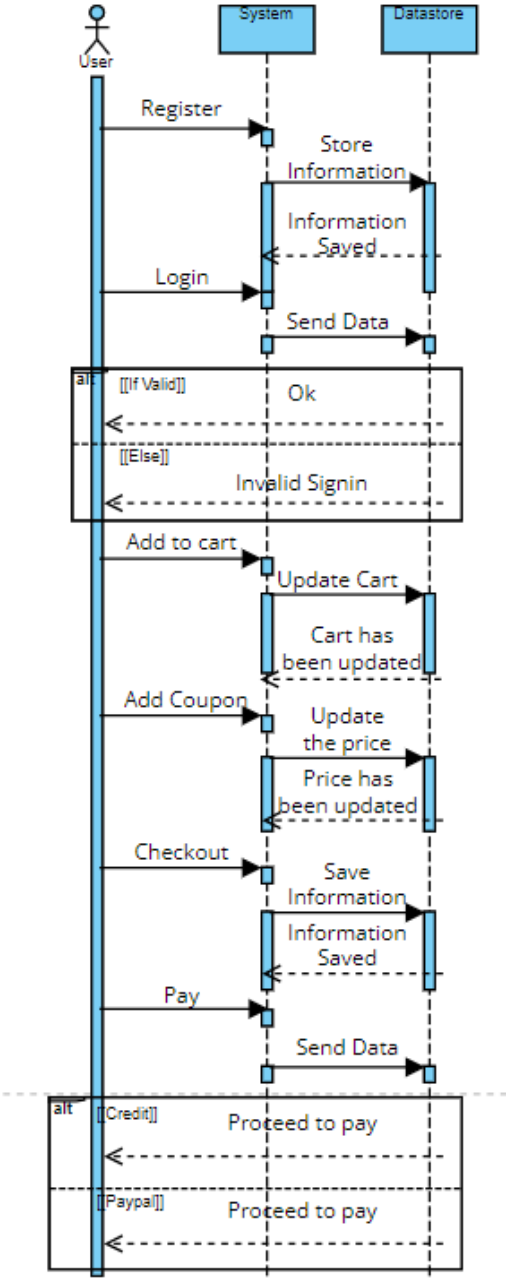
2.10 Legal and Compliance:

- Terms and conditions: Clearly defined terms of service.
- Compliance with e-commerce laws and regulations.

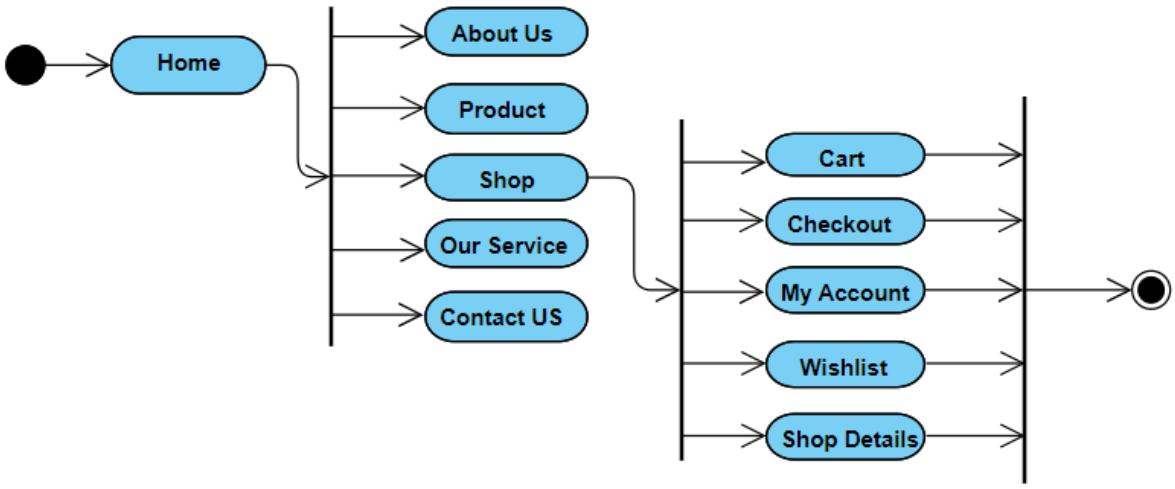
Second:

UML Designs

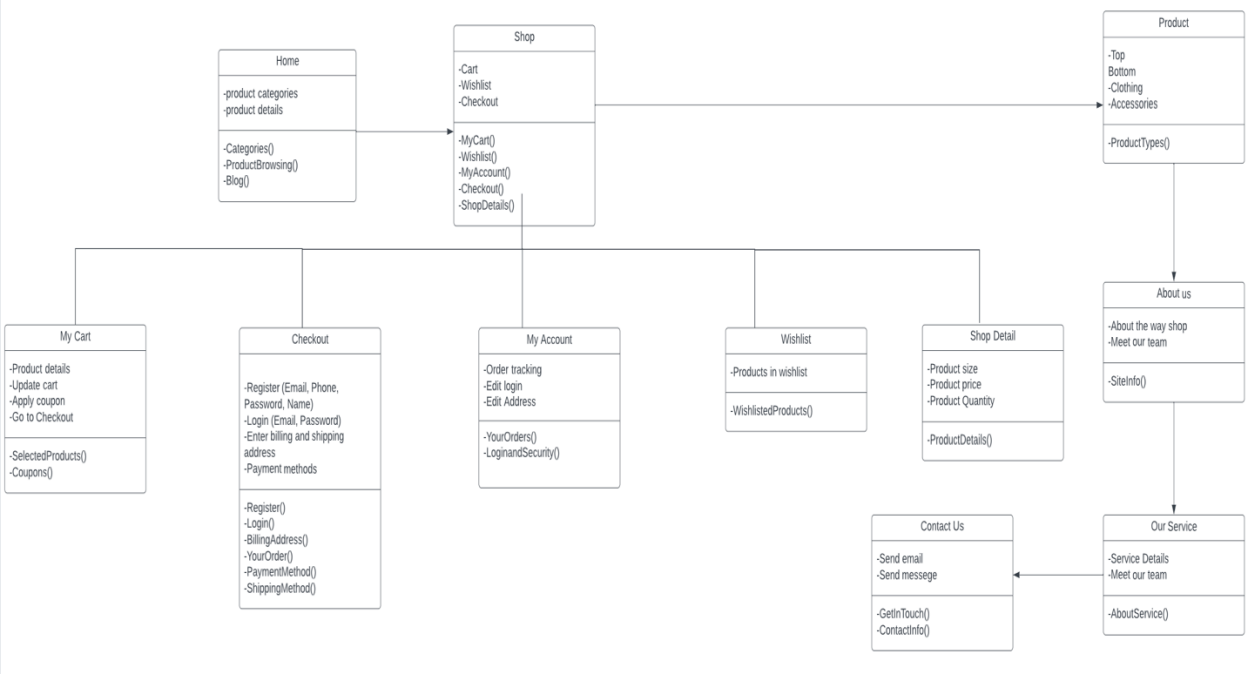
1. Sequence Diagram



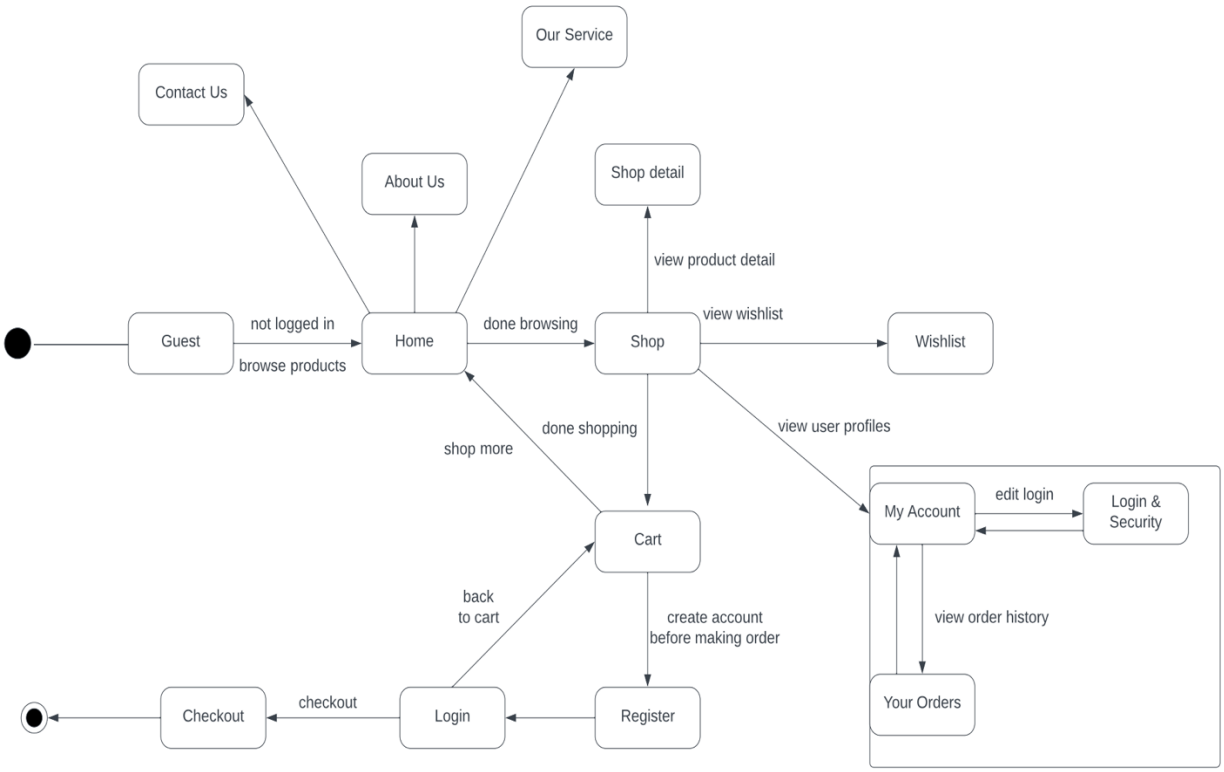
2. Activity Diagram



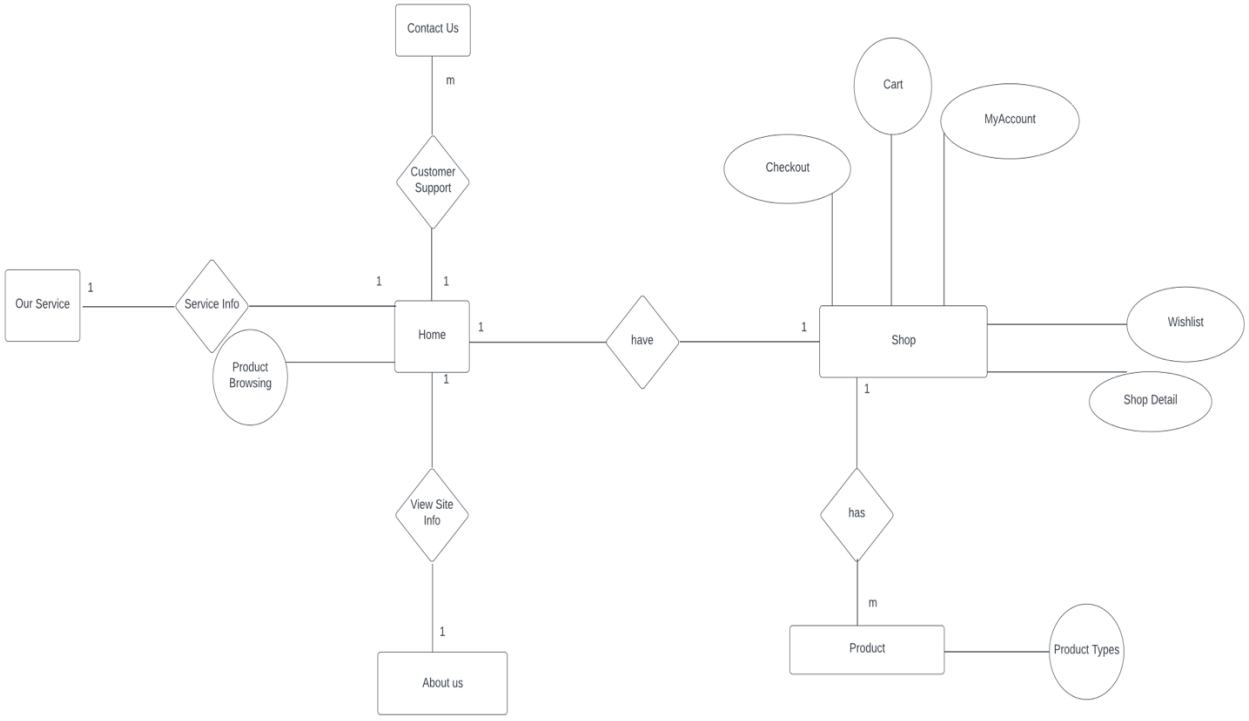
3. Class Diagram



4. State Diagram



5. ER Diagram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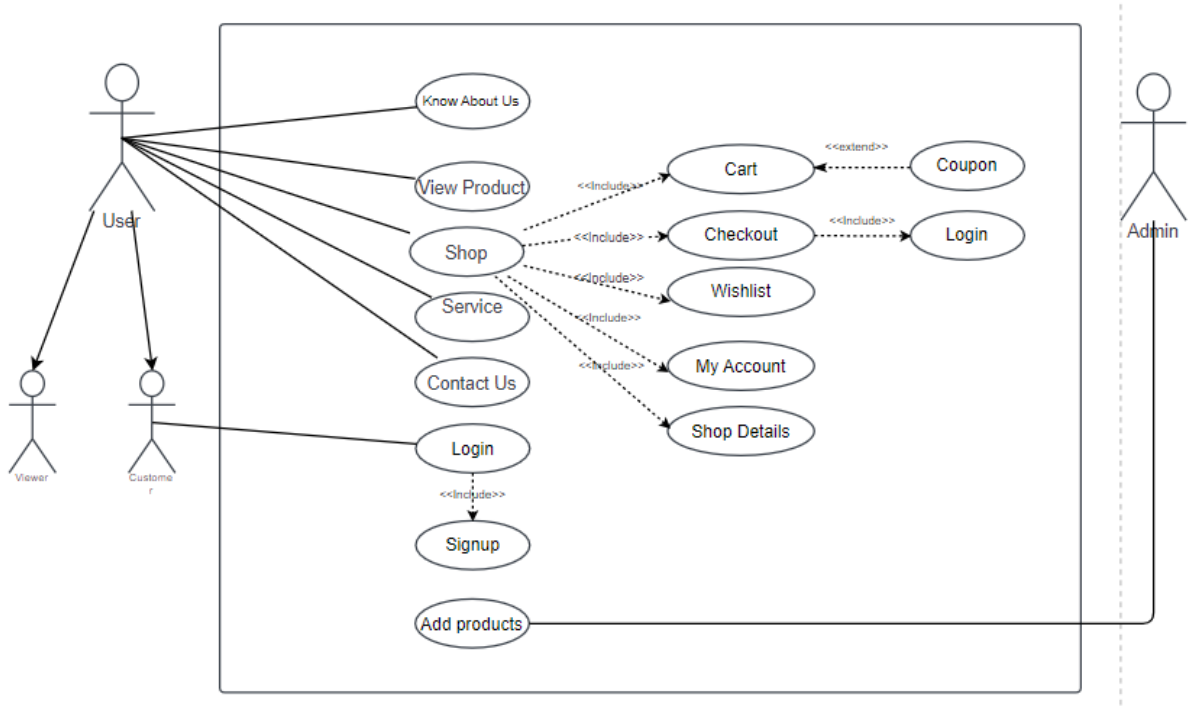
About us

6. Use-Case Diagram



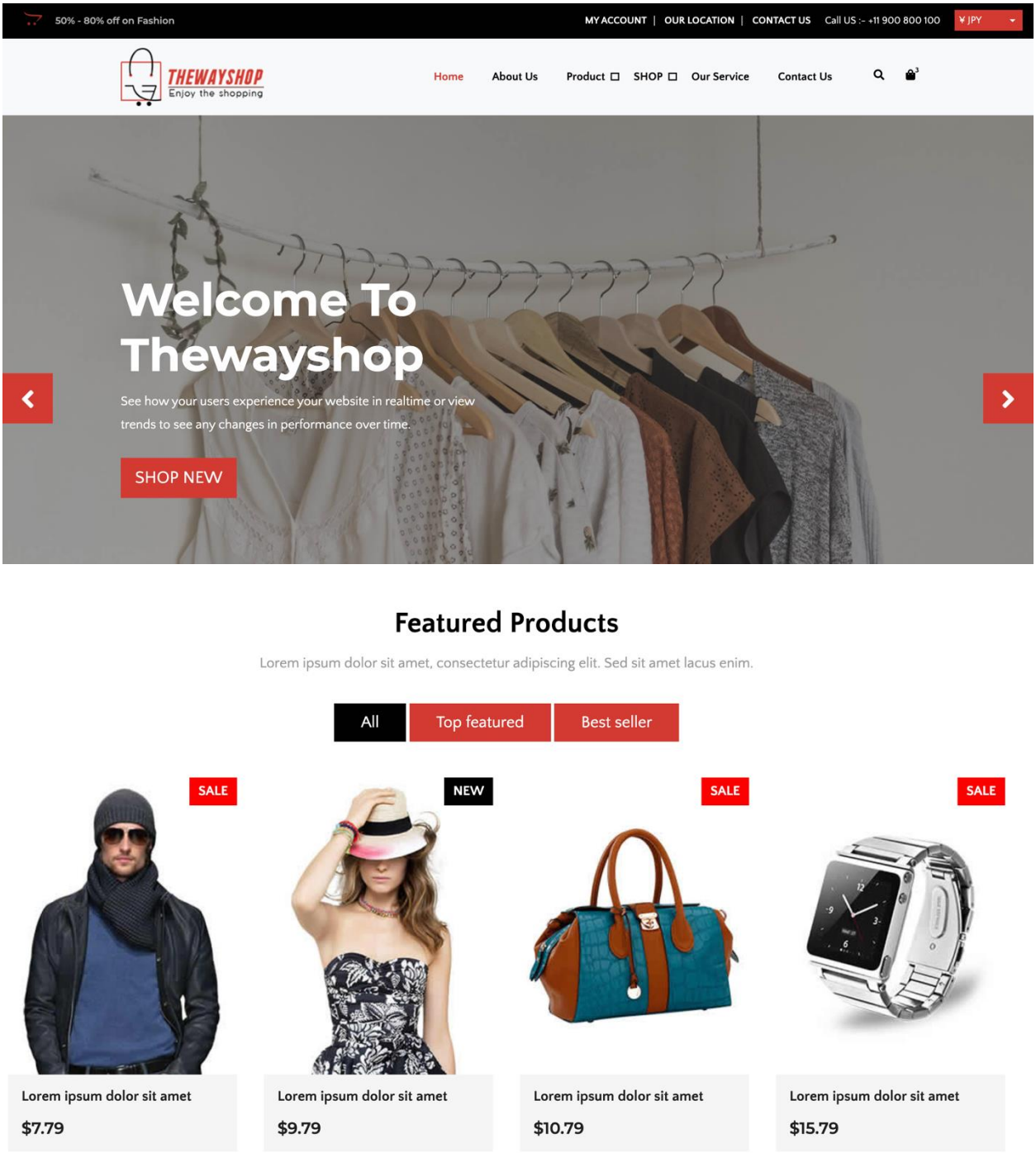
Description of Use-Case Diagram:

Actors	Users, Admin
Description	The user enters the home page to buy clothes. He has a lot of choices: he can view products, add products to the card or to his Wishlist, he can view shop details, and after that he can go to checkout but first he should register if he had not any account or login if he already has an account, and he can view his account. User can also know about us and about our services, or contact us if he need anything
Stimulus	User wants to order something.
Response	User has been ordered successfully.
Comments	User don't have to login or register to view products in our website.

Third:

The Interface

Home Page: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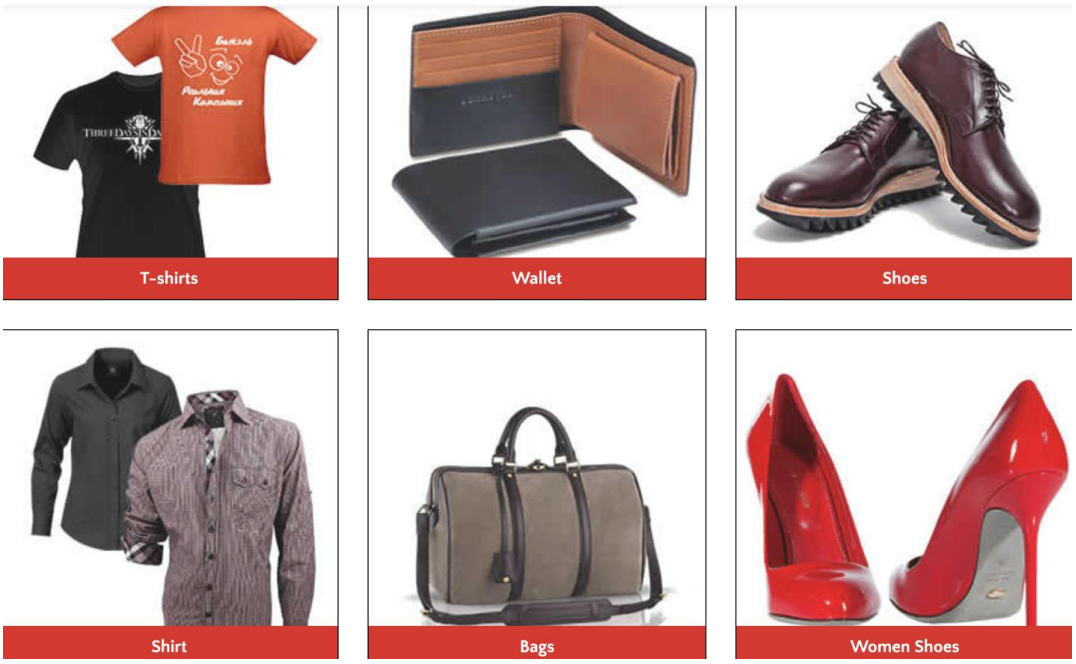
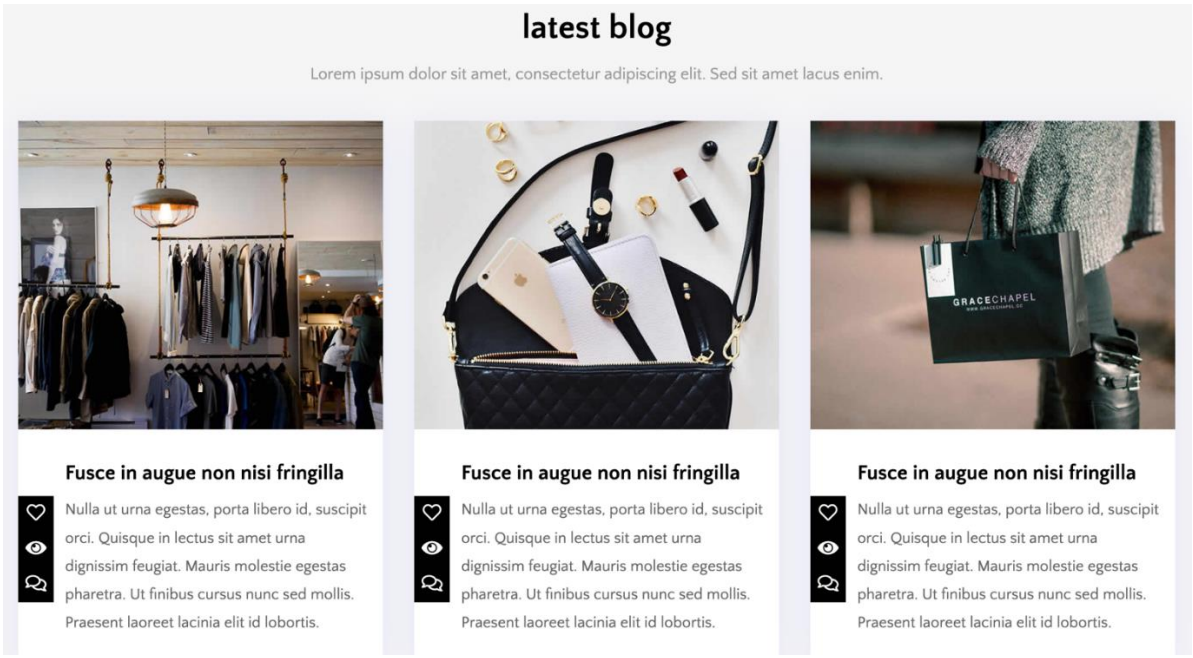


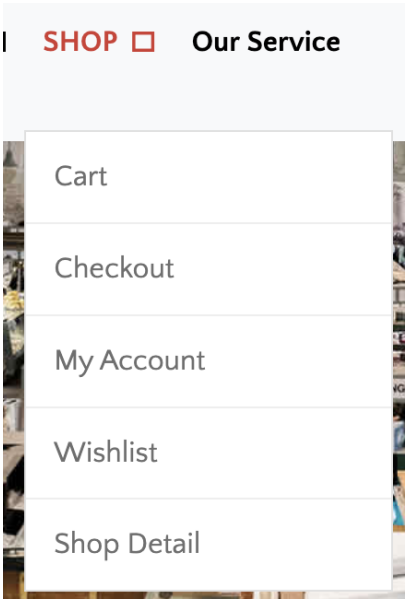


Description:

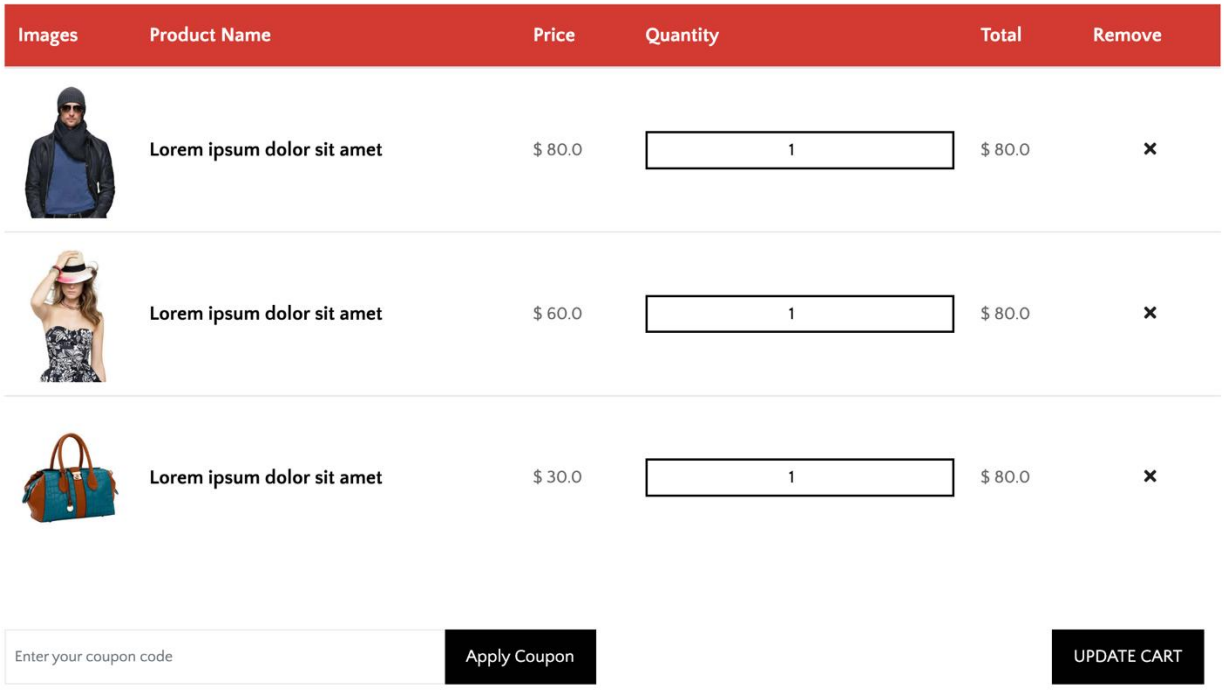
In the home page we're able to do product browsing, view the blog of the website and product categories.

Shop :

1st , we have this pop up menu to choose from.

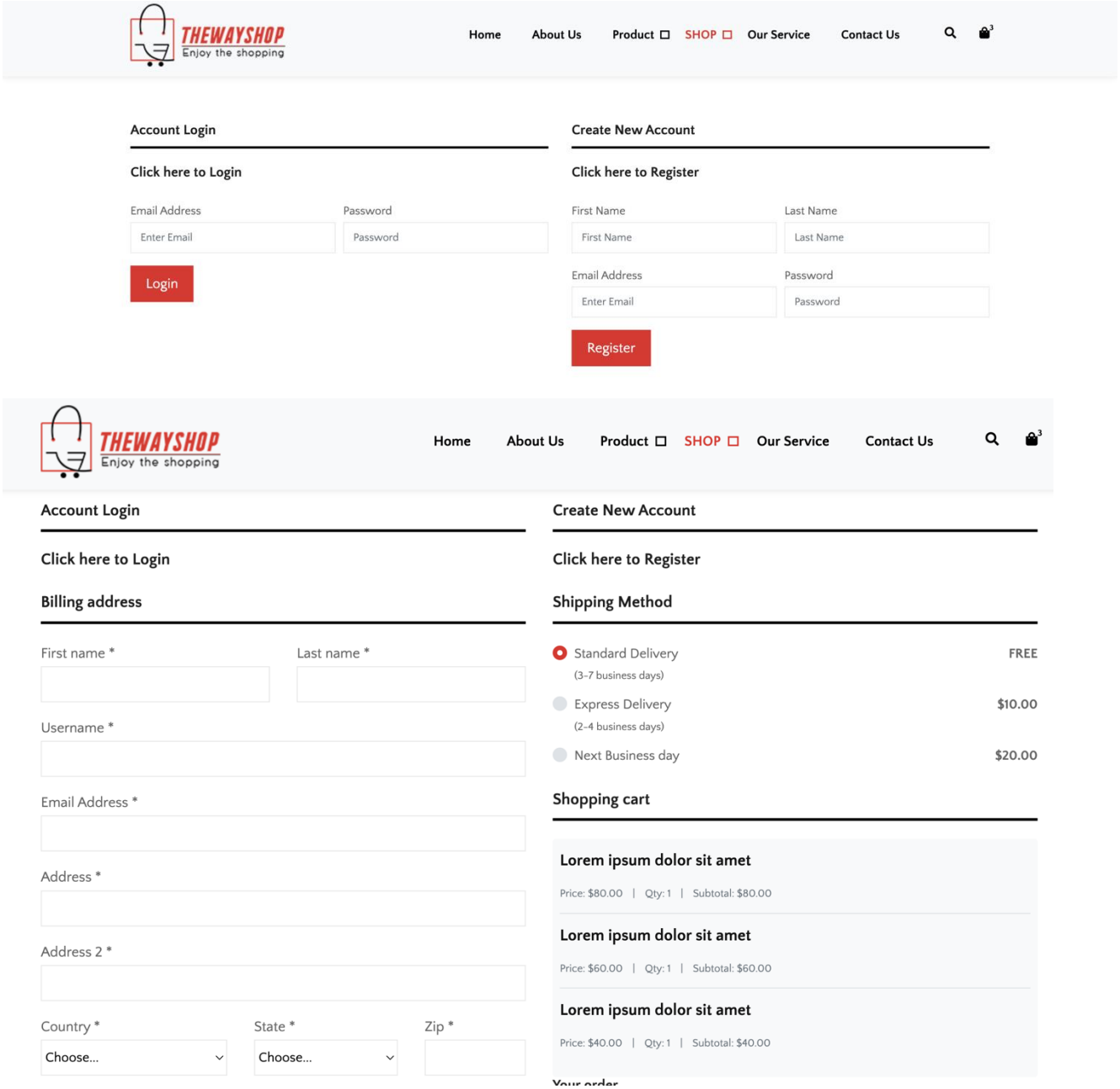


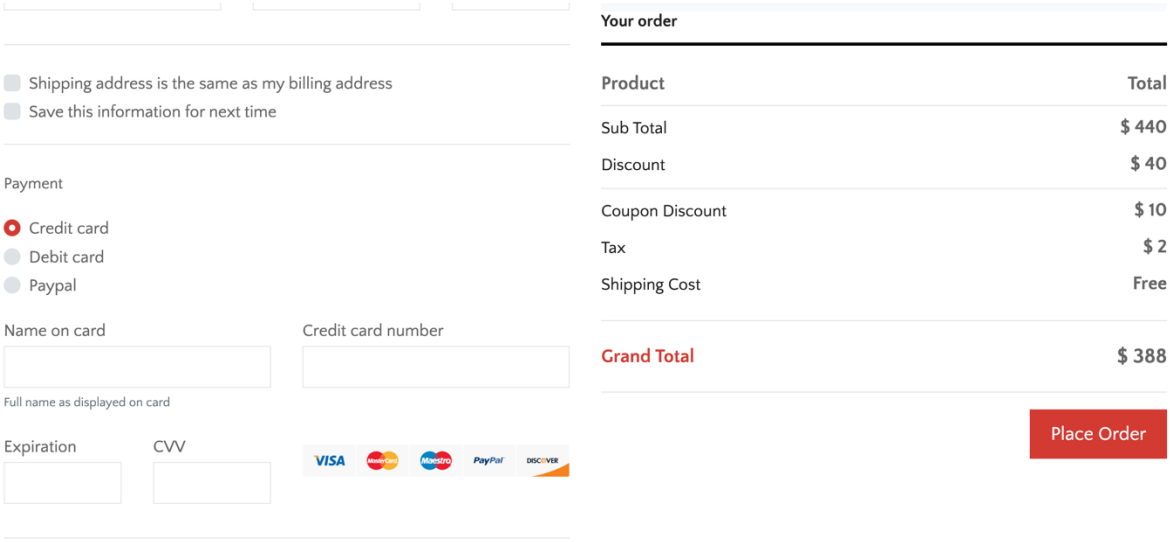
Cart: where we are able to apply coupons and update cart.



Checkout:

1st, user must have an account in order to make an order.

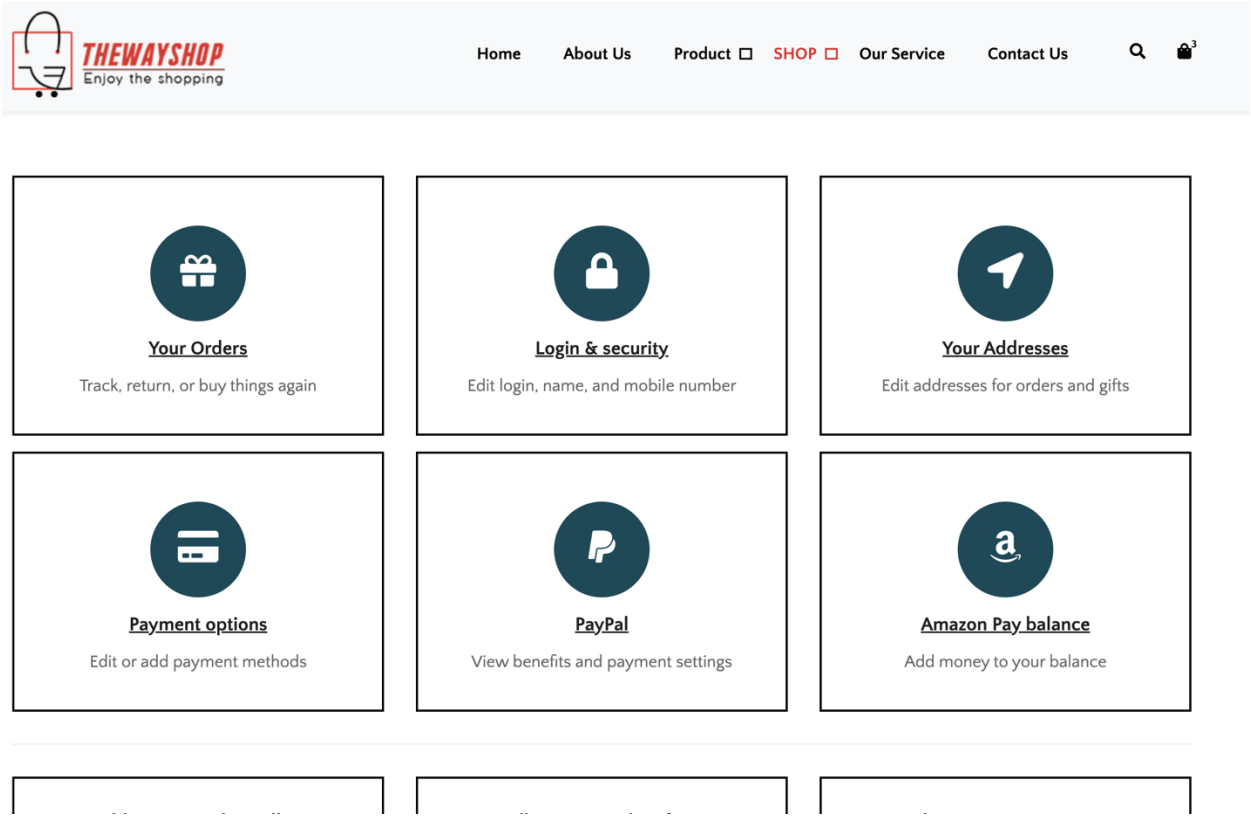




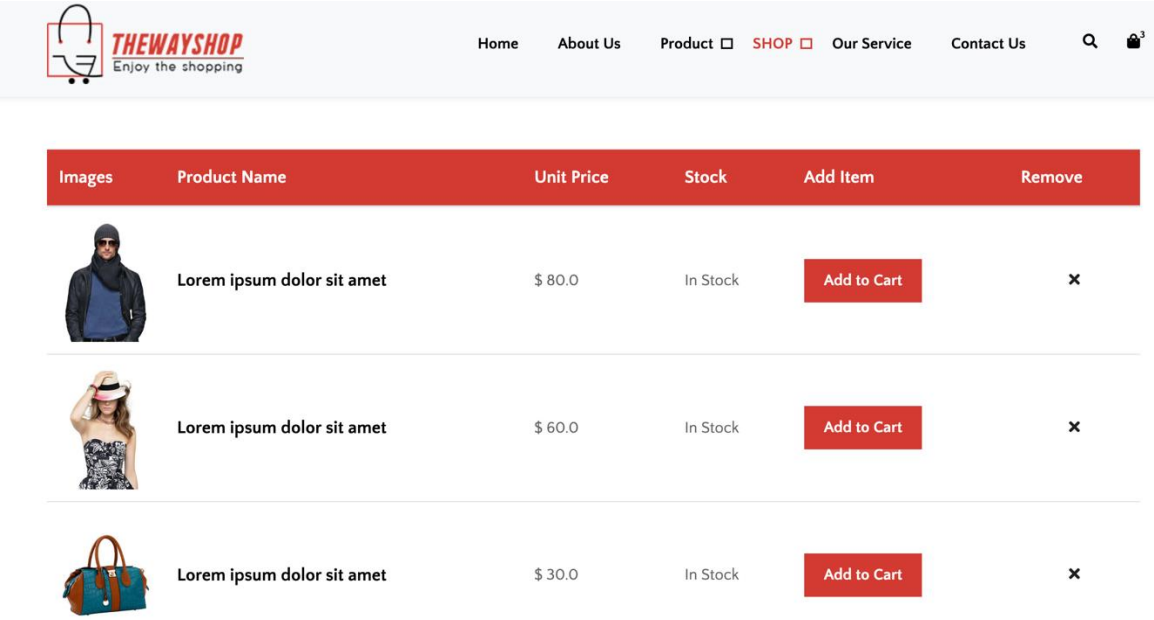
Then user enters billing address, chooses shipping method and payment method then places order.

My Account:

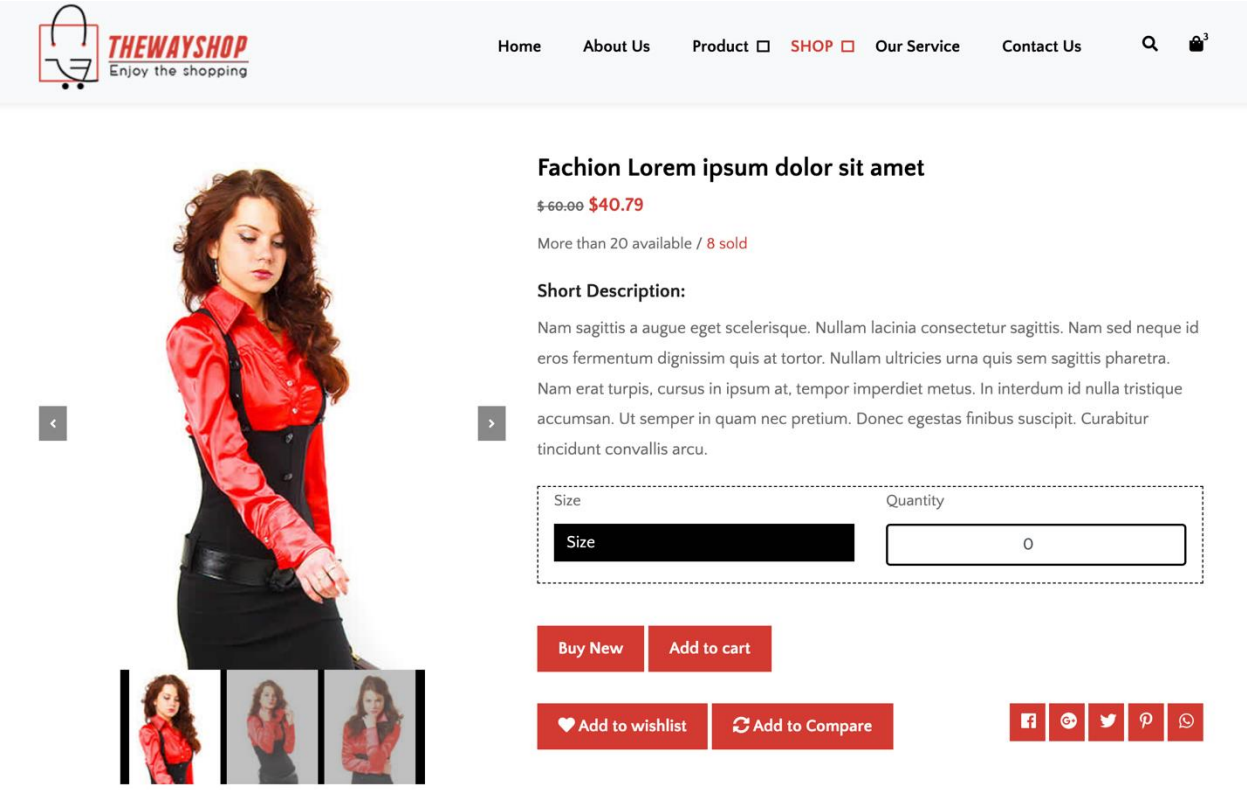
User can edit login and view order tracking.



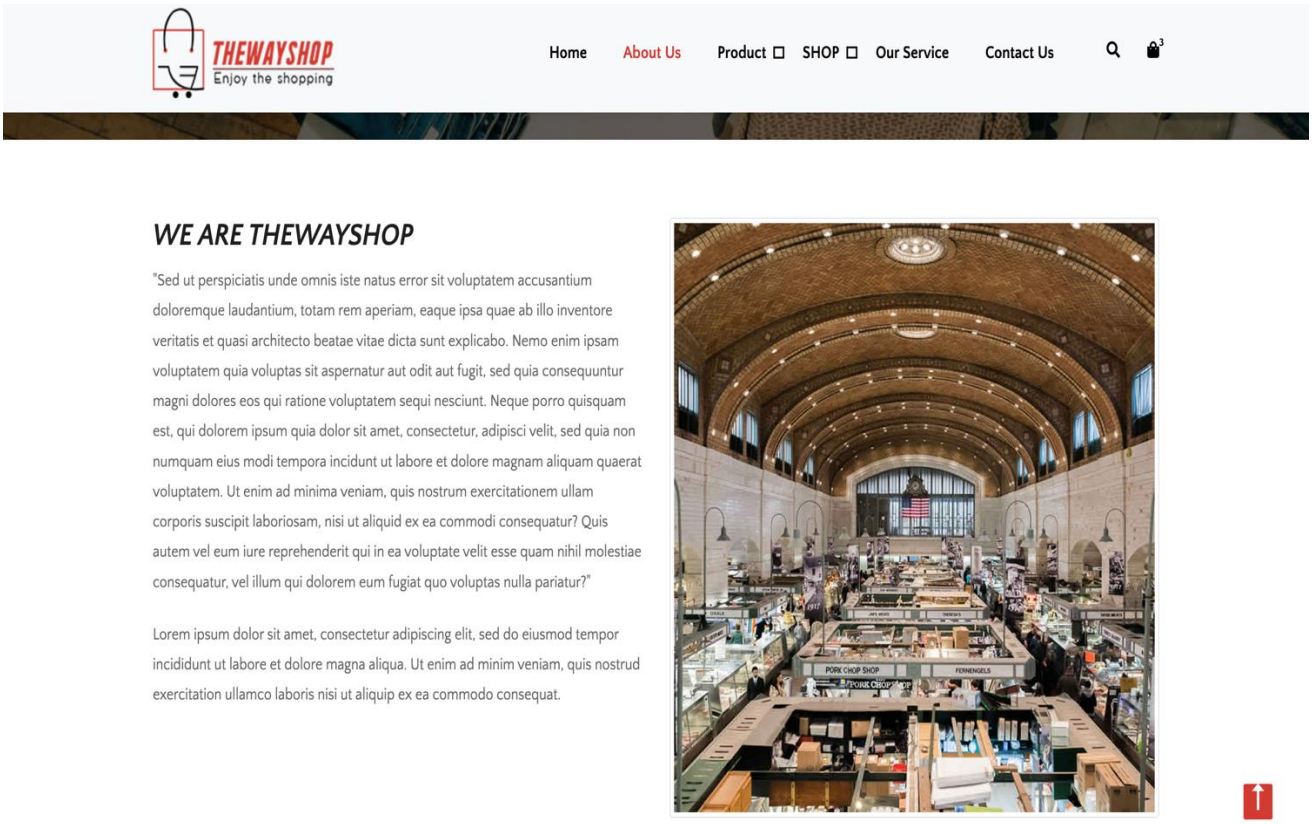
Wishlist: user views wishlist



Shop detail: user views details of project

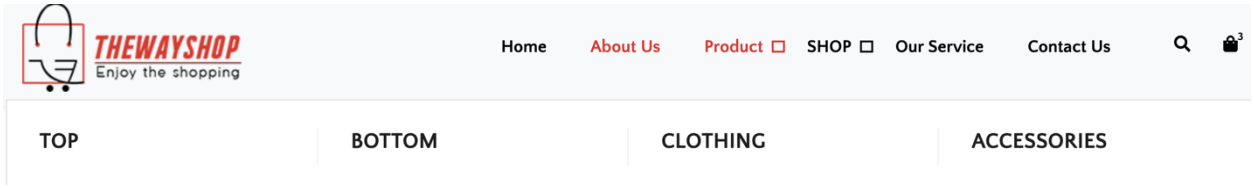


About Us :



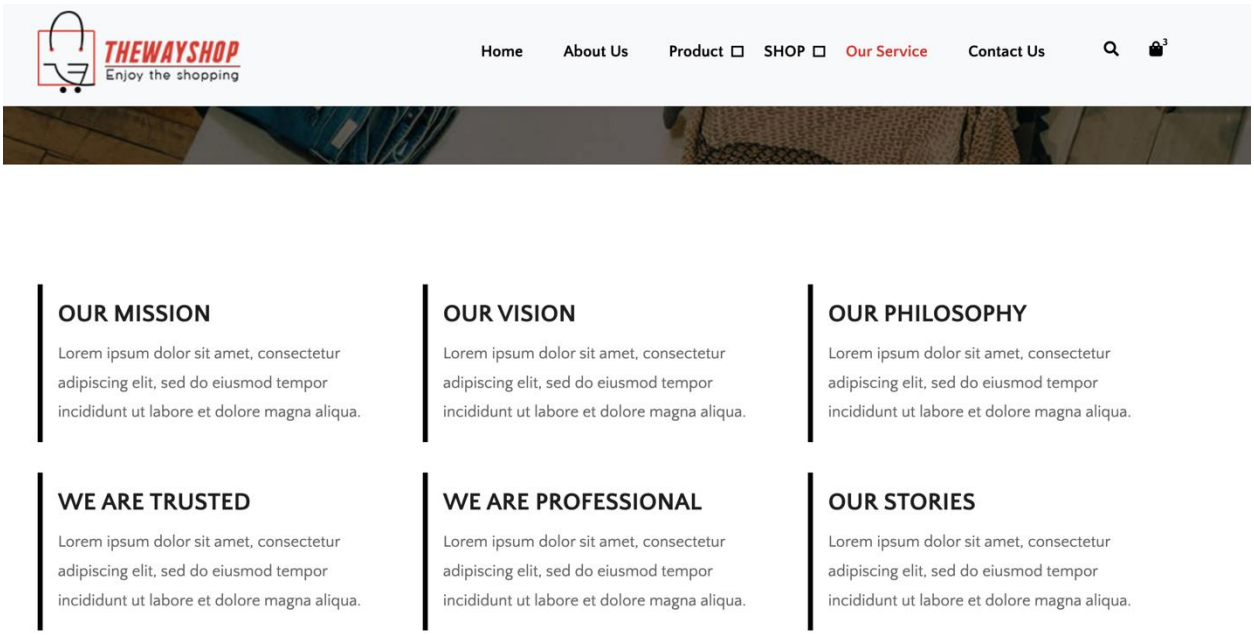
User is able to view information about website.

Product :



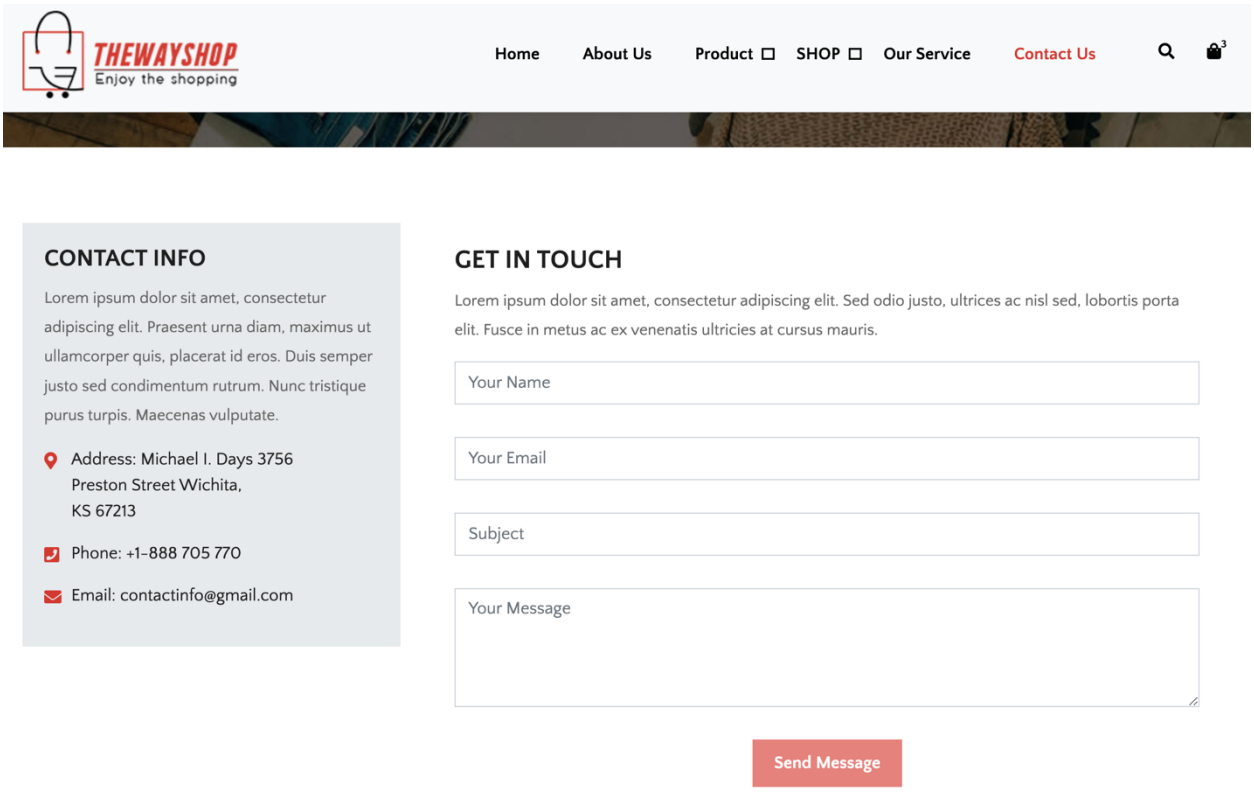
User can see product categories.

Our Service:



User can see information about our service.

Contact Us :



User can contact customer support.