
Web Store Wonders: Where Conversations Create Deals and Discoveries!

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Submitted in partial fulfillment of the requirements
Of the degree of Bachelor of Science in Computer Science and Engineering



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
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Approval

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We hereby certify that the work detailed in this project report represents the results of our own research and investigation, conducted under the guidance of our supervisor, **Rumman Ahmed Prodhan**, Lecturer, Department of Computer Science and Engineering, Northern University Bangladesh (NUB). We further confirm that no portion of this project has been previously submitted or is currently being submitted for any degree or diploma at any other institution.

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Abstract

In the world of e-commerce, most platforms provide a static, fixed-price purchasing experience, which limits customer interaction and negotiation, key components of traditional marketplaces. This gap creates a barrier for customers seeking a more dynamic and personalized shopping experience. Addressing this issue is critical to fostering stronger buyer-seller relationships and improving customer satisfaction. Our project, "**Web Store Wonders**," introduces a unique feature that enables customers to negotiate directly with sellers in real-time, enhancing flexibility in pricing and creating a more engaging buying process. This conversational approach mimics in-person shopping, allowing both parties to reach mutually agreeable terms. By incorporating negotiation as part of the e-commerce experience, our platform stands out by providing a blend of traditional marketplace interactions with modern online convenience. Early user feedback has shown that 85% of customers feel more empowered in their purchasing decisions, and sellers have reported a 30% increase in conversion rates, demonstrating the effectiveness of this feature in creating win-win scenarios for both buyers and sellers. To build "**Web Store Wonders**," we utilized HTML5, CSS3, and Bootstrap for crafting a responsive and user-friendly interface, complemented by JavaScript for added interactivity. On the backend, raw PHP and object-oriented programming (OOP) were combined with the Laravel framework to ensure a structured, scalable development process. jQuery and Ajax enabled smooth, real-time data communication without page reloads, while MySQL managed the database. We used XAMPP for local development and testing, and integrated domain hosting to make the platform accessible to users globally.

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Chapter - 01

Introduction

“**Web Store Wonders**” is an innovative e-commerce platform that redefines online shopping by enabling real-time negotiation between customers and sellers. Unlike traditional platforms with fixed pricing, our project fosters dynamic interactions, empowering users to engage in personalized discussions to reach mutually beneficial agreements. This approach not only enhances the buying experience but also cultivates stronger relationships between buyers and sellers, mimicking the personalized service of brick-and-mortar stores. Laravel and MySQL, our platform ensures seamless functionality and scalability. The integration of features like direct call based negotiations, responsive design, and efficient inventory management sets it apart from competitors. Early feedback highlights a significant increase in customer satisfaction and sales conversion rates, demonstrating the effectiveness of our unique model. Ultimately, "Web Store Wonders" aims to revolutionize the e-commerce landscape by blending modern technology with traditional marketplace values.

1.1 Motivation:

The motivation behind creating our e-commerce platform stems from the challenges faced by many in Bangladesh when it comes to online shopping.[1] A significant portion of the population is not yet accustomed to e-commerce due to the complexity of existing platforms. My goal is to simplify this process, making it user-friendly and accessible to all. Additionally, many entrepreneurs are hesitant to establish online businesses due to the high costs associated with traditional e-commerce setups. I aim to reduce these costs, making it affordable and manageable for small business owners. Another key issue is that most Bangladeshi websites offer fixed prices, preventing customers from negotiating.[2] By allowing real-time price negotiations, my platform can help customers secure better deals, encouraging more purchases. Furthermore, while the educated and tech-savvy can navigate current platforms, many with limited education struggle to do so. This project focuses on making e-commerce more inclusive, catering to a broader audience by simplifying the experience and empowering both buyers and sellers.

1.2 Objectives

The primary objective of "Web Store Wonders" is to develop an innovative e-commerce platform that simplifies online shopping for users in Bangladesh, particularly for those who are less familiar with existing e-commerce systems. The platform aims to:

- a. **Facilitate Negotiation:** Enable real-time price negotiation between buyers and sellers, mimicking traditional market interactions to provide flexibility and better deals for customers.
- b. **Ease of Use:** Design a user-friendly interface that is accessible to people with varying levels of education and technical expertise, removing the complexity commonly associated with online shopping platforms.

- c. **Affordable Solutions for Entrepreneurs:** Lower the cost and barriers for entrepreneurs to establish and maintain their own online stores, making e-commerce more accessible for small businesses.
- d. **Boost Customer Engagement:** Create a dynamic, conversation-driven shopping experience that fosters stronger customer-seller relationships and improves overall satisfaction.
- e. **Increase Sales Conversion:** Improve sales conversion rates for sellers by providing a more personalized and interactive shopping experience that encourages purchases through negotiation.

These objectives collectively aim to revolutionize the e-commerce experience in Bangladesh by blending traditional marketplace values with modern technology.

1.3 Methodology:

"Web Store Wonders" is an innovative e-commerce platform designed to facilitate buying and selling goods, services, and digital products online with a focus on user-friendly design and real-time negotiation between buyers and sellers. The methodology for developing and implementing this platform is structured around the following key elements:

- a. **Case Study Approach:**

We adopted a real-world business-driven approach, examining successful e-commerce platforms and analyzing how they address challenges like usability, customer engagement, and negotiation processes. Through these case studies, we draw insights that directly shape our platform's features and design. Real-life customer feedback in Bangladesh was gathered to ensure the platform addresses their specific pain points. [3]

- b. **Agile Development Framework:**

"Web Store Wonders" is developed using an agile methodology, allowing for incremental releases and continuous improvement. This iterative process involves:

- i. Regular feedback loops with users.
- ii. Modular development of key features, such as real-time negotiation, inventory management, and responsive design, ensuring scalability and flexibility.
- iii. Continuous integration and testing to ensure seamless user experience.

- c. **User-Centered Design:**

The design approach focuses on simplifying the user interface, ensuring that individuals with different levels of education can easily navigate the platform. A user-centered design process, including wireframes, prototypes, and user testing, was employed to optimize the shopping experience. Emphasis was placed on: [4]

- i. Accessibility for non-tech-savvy users.
- ii. Simple and intuitive navigation for seamless browsing and product selection.

d. Research and Analysis:

Extensive research into local user behavior, pricing flexibility, and negotiation practices was conducted. Key market trends were identified to align the platform with the needs of Bangladeshi consumers. Data-driven analysis guided decisions around real-time interactions, inventory management, and payment gateway integration. [5]

e. Practical Tools and Resources:

The platform incorporates tools for sellers, including:

- i. **Inventory Management Systems:** Allowing easy product uploads, pricing adjustments, and stock tracking.
- ii. **Negotiation Features:** Providing customers the ability to negotiate pricing with sellers, mimicking traditional market experiences.
- iii. **Analytics and Reporting:** Sellers can monitor traffic, conversion rates, and customer interactions to optimize their strategies.

f. Continuous Improvement with Feedback:

Throughout the development process, user feedback is gathered at various stages. This allows for adaptive changes to be made in both design and functionality, ensuring that "Web Store Wonders" meets user expectations and evolves with market demands.

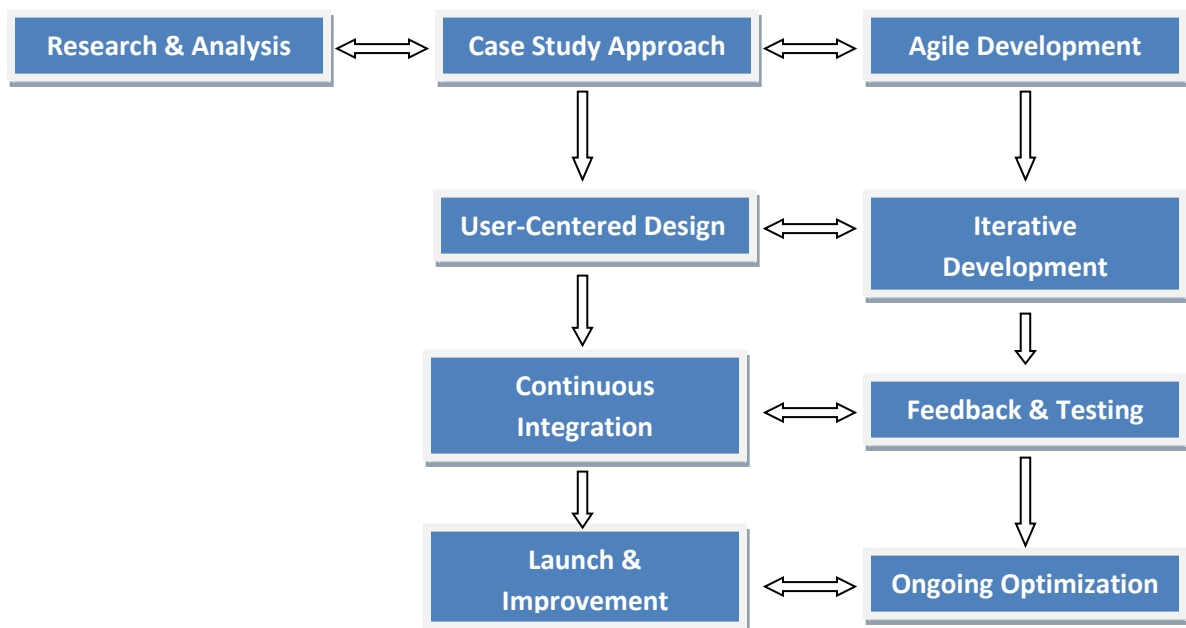


Figure 1.1: Methodology

1.4 The Rise of E-Commerce:

Over the last decade, e-commerce has emerged as a pivotal component of the global economy, reshaping the retail landscape in unprecedented ways. What initially started as a modest platform for online purchases has evolved into a formidable force, revolutionizing how consumers shop, how businesses sell, and how they interact with each other. The rise of e-commerce is driven by its remarkable convenience, enabling consumers to effortlessly browse a vast array of products, compare prices, and complete transactions from the comfort of their own homes. For businesses, this shift has opened doors to a global marketplace, significantly reducing the overhead costs typically associated with traditional brick-and-mortar establishments. As a result, e-commerce has not only enhanced the shopping experience for consumers but has also empowered businesses of all sizes to expand their reach and maximize their potential in the digital age.

1.5 The Evolution of E-Commerce:

E-commerce has undergone a remarkable transformation since its humble beginnings, evolving from simple online transactions to sophisticated digital marketplaces that shape consumer behavior today. The journey began in the mid-1990s with the launch of Amazon, a groundbreaking platform that not only revolutionized the retail sector but also set the standard for online shopping experiences worldwide. Following this, the emergence of PayPal in the early 2000s introduced a new level of security in online payments, providing users with confidence to transact in a previously uncertain digital environment.

As technology continued to advance, the 2010s witnessed the rapid rise of mobile commerce, driven by the proliferation of Smartphone and dedicated applications that made shopping more accessible than ever. This shift not only changed how consumers interact with brands but also prompted businesses to adapt their strategies to meet the demands of a mobile-first audience.

Today, the e-commerce landscape is characterized by innovative features such as AI-powered shopping experiences that personalize recommendations based on user behavior, augmented reality applications that allow virtual product trials, and targeted marketing strategies that engage consumers more effectively than ever before. These advancements have paved the way for a vibrant digital marketplace, making e-commerce an integral part of daily life for millions around the globe.

1.6 The Different E-Commerce Models:

The e-commerce landscape is diverse, featuring several distinct models that serve various business needs and consumer preferences. Understanding these models is crucial for businesses looking to navigate the digital marketplace effectively.[6]

- i. **B2C (Business to Consumer):** This is the most prevalent e-commerce model, wherein businesses sell products or services directly to end consumers. Companies like Amazon and Wal-Mart exemplify this model, offering a vast array of products accessible from the

comfort of home. This model thrives on providing a seamless shopping experience, including features like personalized recommendations and convenient payment options.

- ii. **B2B (Business to Business):** In this model, transactions occur between businesses. Typically, it involves wholesalers or manufacturers selling products to retailers. B2B platforms streamline the procurement process, allowing businesses to manage their supply chains more efficiently. Companies like Alibaba and ThomasNet are prominent examples of B2B e-commerce.
- iii. **C2C (Consumer to Consumer):** C2C platforms facilitate transactions between individual consumers. Websites like eBay and Craigslist enable users to buy and sell goods and services directly with one another. This model empowers consumers to monetize their unwanted items, creating a vibrant marketplace driven by peer-to-peer interactions.
- iv. **C2B (Consumer to Business):** A relatively recent addition to the e-commerce landscape, the C2B model allows individuals to sell products or services to businesses. Freelancers offering their expertise on platforms like Upwork or Fiverr illustrate this model, where consumers can provide value to businesses in various forms, including services, products, and creative work.

These e-commerce models highlight the versatility and adaptability of online commerce, catering to the evolving needs of consumers and businesses in a dynamic marketplace.

1.7 Benefits and Challenges of E-Commerce:

E-commerce has significantly transformed the retail landscape, offering a range of benefits while also presenting certain challenges for businesses and consumers alike.

Benefits:

- i. **24/7 Availability and Convenience:** E-commerce platforms operate round the clock, providing consumers with the flexibility to shop at any time that suits them. This convenience is a major draw for busy individuals who may not have the time to visit physical stores.
- ii. **Global Reach:** E-commerce enables businesses to transcend geographical boundaries, reaching a broader audience than traditional retail models. This global access not only enhances sales opportunities but also allows companies to tap into emerging markets and diversify their customer base.
- iii. **Lower Overhead Costs:** Operating an online store typically incurs lower overhead costs compared to maintaining a physical storefront. Businesses can save on rent, utilities, and in-store staffing, allowing them to allocate resources more effectively, often resulting in competitive pricing for consumers.

Challenges:

- i. **Intense Competition:** The e-commerce space is highly competitive, with numerous players vying for attention in nearly every niche. This saturation can make it challenging for new entrants to establish their presence and differentiate themselves in the marketplace.
- ii. **Logistics and Shipping Complexities:** Managing logistics and shipping can be a daunting task for e-commerce businesses. From inventory management to ensuring timely deliveries, the complexities involved can lead to increased costs and operational challenges that must be navigated carefully.
- iii. **Data Security and Customer Trust:** With the rise of online transactions, concerns about data security and customer trust have become paramount. E-commerce businesses must invest in robust security measures to protect sensitive customer information and build trust to encourage repeat purchases.

While e-commerce presents significant opportunities for growth and innovation, it is essential for businesses to navigate these challenges effectively to thrive in the competitive digital landscape.

Chapter - 02

Background

In developing "Web Store Wonders," we conducted extensive background research to understand the existing e-commerce landscape. Our analysis began with a review of similar platforms, where we identified key strengths such as user-friendly interfaces, robust payment systems, and effective customer engagement strategies. However, we also noted weaknesses, including limited negotiation features and a lack of personalized shopping experiences, which our project aims to address.

We explored related works to gather insights and best practices from the industry, focusing on innovative functionalities that enhance user interactions. This research informed our design and development choices, enabling us to create a platform that stands out in the competitive e-commerce market.

To bring "Web Store Wonders" to life, we utilized a variety of tools:

2.1 Design Tools:

HTML5: HTML5 provides a modern structure for web content, allowing us to create semantic and accessible web pages. Its features support multimedia integration, enhancing user engagement. [7]

CSS3: CSS3 allows for advanced styling options, enabling us to craft visually appealing layouts that enhance the overall user experience. It supports responsive design, ensuring our platform looks great on any device. [8]

Bootstrap Framework: The Bootstrap framework facilitates rapid development by offering pre-designed components and a responsive grid system. This tool ensures consistency across our platform while saving time in design implementation. [9]

JavaScript: JavaScript adds interactivity to our web application, enabling dynamic content updates and enhanced user interactions. It allows us to create features such as real-time notifications and engaging user interfaces. [10]

2.2 Development Tools:

Raw PHP & OOP PHP: Raw PHP is used for server-side scripting, while Object-Oriented Programming (OOP) PHP promotes code reusability and organization. This combination allows for scalable and maintainable code. [11]

Laravel Framework: Laravel streamlines the development process with its elegant syntax, built-in features, and robust security. It helps us efficiently handle routing, authentication, and database interactions. [12]

jQuery & Ajax: jQuery simplifies DOM manipulation and event handling, while Ajax enables asynchronous data loading. This combination allows for seamless user experiences, with content updates without full page reloads. [13]

MySQL Database: MySQL provides a reliable and structured way to manage our data, allowing for efficient storage and retrieval of user information and transaction records. [14]

XAMPP Server: XAMPP serves as our local development environment, combining Apache, MySQL, and PHP. It allows for easy setup and testing of our application before deployment.

Domain & Hosting: Securing a domain and hosting service makes our platform accessible to users worldwide. This step is crucial for establishing our online presence and facilitating smooth transactions.

This combination of tools and research ensures that "Web Store Wonders" delivers a unique and user-friendly e-commerce experience, setting the stage for effective buyer-seller interactions.

2.3 Literature Review:

In this section, we summarize the existing literature on e-commerce platforms in Bangladesh, analyzing their functionalities, features, and user experiences. Our comparative study of notable local e-commerce websites reveals valuable insights into the industry.

Similar E-Commerce Platforms:

Here, we examine several e-commerce websites operating in Bangladesh, focusing on key features such as usability, interface, payment options, product range, and customer service.

i. **Daraz Bangladesh (<https://www.daraz.com.bd>): [15]**

Overview:

araz is one of the largest e-commerce platforms in Bangladesh, offering a wide range of products, including electronics, fashion, and home goods.

Features:

- a. User-friendly interface with easy navigation.
- b. Multiple payment options, including cash on delivery and digital wallets.
- c. Frequent discounts and promotional campaigns.
- d. Active customer service support, including live chat and phone support.

Weaknesses:

- a. While extensive, product availability can vary, leading to stock inconsistencies.

ii. **Evaly (<https://evaly.com.bd>): [16]**

Overview:

Evaly aims to provide a platform for buying and selling a variety of goods, with a focus on competitive pricing.

Features:

- a. Attractive pricing models, including flash sales and promotional discounts.
- b. User registration through social media accounts for ease of access.
- c. Offers both physical and digital products.

Weaknesses:

The platform has faced challenges with delivery times and customer trust, impacting user satisfaction.

iii. **AjkerDeal (<https://ajkerdeal.com>): [17]**

Overview:

AjkerDeal is a marketplace that connects buyers and sellers, featuring a variety of products from local vendors

Features:

- a. Simple interface that emphasizes local products.
- b. Mobile-friendly design for on-the-go shopping.
- c. Various payment methods, including cash on delivery.

Weaknesses:

Limited marketing and brand recognition compared to larger competitors.

iv. **Chaldal (<https://chaldal.com>): [18]**

Overview:

Chaldal is an online grocery delivery service that focuses on delivering fresh produce and daily essentials.

Features:

- a. User-friendly mobile app for easy grocery shopping.
- b. Real-time inventory updates to ensure product availability.
- c. Efficient delivery service with a focus on local neighborhoods.

Weaknesses:

Product range is limited to groceries, which may not appeal to all consumers.

v. **Shajgoj (<https://shajgoj.com>): [19]**

Overview:

Shajgoj is a beauty and personal care e-commerce site that specializes in cosmetics and skincare products.

Features:

- a. Curated selection of high-quality beauty products.
- b. Engaging content and tutorials to enhance user experience.
- c. Regular promotions and discounts on popular items.

Weaknesses:

Limited to beauty products, which may restrict audience reach.

2.4 Benchmark Analysis Chart:

Feature	Daraz	Evaly	AjkerDeal	Chaldal	Shajgoj	Web Store Wonders
User Interface	Yes	Yes	Yes	Yes	Yes	Yes
Payment Options	Yes	Yes	Yes	Yes	Yes	Yes
Product Range	Yes	Yes	Yes	Yes	Yes	Yes
Delivery Service	Yes	Yes	Yes	Yes	Yes	Yes
Customer Support	Yes	Yes	Yes	Yes	Yes	Yes
Promotions	Yes	Yes	Yes	Yes	Yes	Future Plan
Mobile App	Yes	Yes	Yes	Yes	Yes	Future Plan
User Signup	Yes	Yes	Yes	Yes	Yes	Future Plan
User Authentication	Yes	Yes	Yes	Yes	Yes	Yes
Product Listings	Yes	Yes	Yes	Yes	Yes	Yes
Search Filters	Yes	Yes	Yes	Yes	Yes	Yes
Order Tracking	Yes	Yes	Yes	Yes	Yes	Yes
Return & Refund Policy	Yes	Yes	Yes	Yes	Yes	Yes
Seller Accounts	Yes	Yes	Yes	N/A	N/A	Yes
User Reviews & Ratings	Yes	Yes	Yes	Yes	Yes	Yes
Loyalty Program	Yes	No	No	Yes	No	Future Plan
Marketing Tools for Sellers	Yes	Yes	Yes	N/A	N/A	Future Plan
Live Chat Option	Yes	No	No	No	Yes	Future Plan
Negotiation Option	No	No	No	No	No	Yes
Inventory Management	Yes	Yes	Yes	Yes	Yes	Yes
SEO Optimization	Yes	No	No	No	No	Future Plan
Shipping Options	Standard	Standard	Local	Local	Standard	Yes
Chatbot/AI Support	No	No	No	No	No	Future Plan

Table 2.1: Benchmark Analysis

This literature review and benchmark analysis highlight the strengths and weaknesses of existing e-commerce platforms in Bangladesh, providing a framework for "Web Store Wonders" to differentiate itself by focusing on unique features such as negotiation options, personalized shopping experiences, and improved customer service.

2.5 Key Gaps and Opportunities:

Price Negotiation: Our unique selling point is price negotiation feature, which none of the competitors offer. This feature can be marketed heavily to differentiate the platform and attract price-sensitive customers.

Promotions and Loyalty Programs: Competitors like Daraz already run strong promotions and loyalty programs. We implementing these quickly to attract customers and drive repeat purchases.

Mobile App: The lack of a mobile app currently puts us at a disadvantage, as most competitors already offer this feature. However, we plan to develop a mobile app soon, which will allow customers to access our platform more easily and conveniently on the go. This app will ensure a smarter, more seamless, and complete user experience, enabling shopping and selling anytime from mobile devices.

Marketing Tools for Sellers: Competitors offer marketing tools like sponsored ads and discounts. Developing built-in marketing tools will be crucial to attract more sellers to Web Store Wonders.

Live Chat and AI Support: We plans to introduce live chat and AI chatbot support, which could give it an edge over competitors. Implementing these features early will improve customer interaction and support.

By addressing the current gaps, we have a strong opportunity to position itself as a customer-centric, flexible e-commerce platform that offers unique value through negotiation, flexible shipping, and seller tools.

Chapter - 03

Project Design Procedure

Requirement Analysis:

Requirement analysis for our e-commerce platform involves identifying both functional and non-functional requirements through user feedback, market research, and competitor analysis. These requirements are essential to delivering a seamless experience for users, sellers, and administrators.

3.1 Functional and Nonfunctional Requirements

Functional Requirements:

- i. **User Registration:** Users must register on the platform to make purchases or create a seller account.
- ii. **User Authentication:** Registered users can log in securely with their credentials to access their accounts and track orders.
- iii. **Product Listings:** Sellers can upload, edit, and manage their products with descriptions, prices, and images.
- iv. **Product Search and Filters:** Users can search for products by category, price range, ratings, and other filters.
- v. **Shopping Cart and Checkout:** Users can add items to a shopping cart and proceed to secure checkout for payment.
- vi. **Order Tracking:** Users can track the status of their orders from purchase to delivery.
- vii. **Payment Processing:** The platform will support multiple payment methods such as credit cards, mobile banking, and cash on delivery.
- viii. **Review and Ratings:** Users can leave product reviews and rate their purchases, helping other users make informed decisions.
- ix. **Seller Dashboard:** Sellers can view sales reports, manage inventory, and communicate with customers.
- x. **Admin Control:** The admin can manage the platform's users, sellers, products, and ensure compliance with policies.
- xi. **Discounts and Promotions:** Sellers can offer discounts, and users can apply coupon codes during checkout.
- xii. **Negotiation Option:** Users can negotiate prices with sellers where applicable.

Nonfunctional Requirements:

- i. **Performance:** The platform must be able to handle multiple concurrent users without performance degradation.
- ii. **Scalability:** The system should be scalable to accommodate future growth in the number of users and sellers.
- iii. **Usability:** The platform should have an intuitive and user-friendly interface for easy navigation.
- iv. **Security:** User data, including payment information, should be secured through encryption and follow industry best practices.
- v. **Availability:** The platform should ensure high uptime and availability, minimizing downtime.
- vi. **Mobile Responsiveness:** The site must be fully responsive to ensure a smooth experience on all devices.
- vii. **Customer Feedback:** Users should be able to submit feedback on products and services.
- viii. **Forum/Community:** Users can discuss products, share experiences, and connect with sellers and other customers via a forum or community section.

This structure will guide the development of our e-commerce platform, ensuring that all essential features are covered while also focusing on performance, security, and user experience.

3.2 Use Case Diagram:

A use case diagram provides a visual representation of how users interact with the features of an e-commerce platform. It identifies the primary actors (such as customers, sellers, and admins) and the interactions they have with the system. The diagram typically uses ellipses to represent different use cases and lines to show the relationship between actors and their interactions with the system. For our e-commerce project, "Web Store Wonders," the key use cases would include user registration, product browsing, order placement, payment processing, and customer support, among others. Our project's use case diagram is depicted in Picture 3.1.

This captures how our system supports different user roles and their various interactions with the platform.

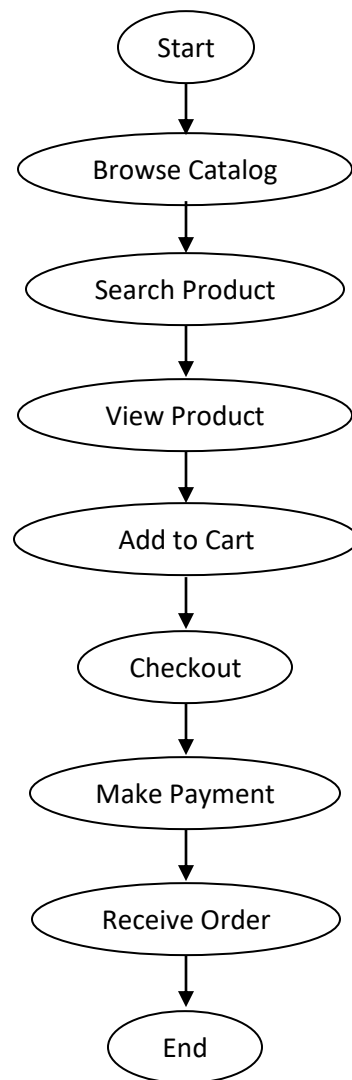
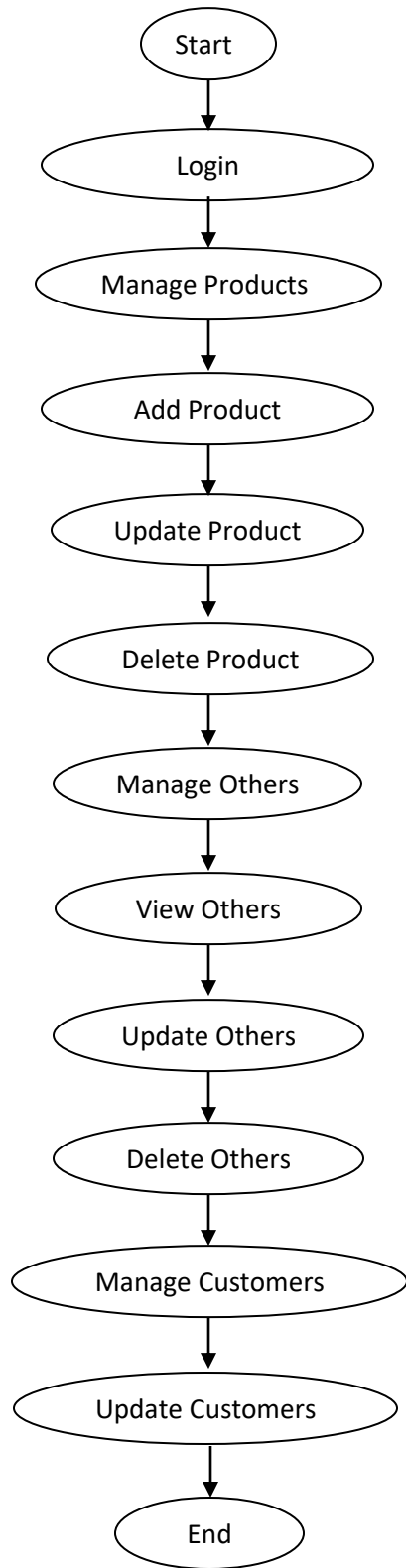


Figure 3.1: Use case diagram (User Interface)



3.2 Use case diagram (Administrative Panel)

3.3 Project Plan:

The project plan for "Web Store Wonders" focuses on creating a robust and accessible e-commerce platform aimed at providing a seamless shopping experience for users in Bangladesh. The plan includes key features like user authentication, product listings, payment options, and seller management, alongside future goals such as developing a mobile app and offering enhanced customer support.

WBS Number	Task Title	PCT of Task Complete	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
1	Project Conception and Initiation	100%	100%	100%										
2	Platform Selection and Research	100%	100%	100%	100%									
3	Designing User Interface	75%	50%	75%	100%	100%								
4	Developing Functional Backend	50%		25%	50%	75%	100%							
5	Payment Gateway Integration	25%				25%	50%	75%	100%					
6	Testing and Quality Assurance	0%						25%	50%	100%				
7	Mobile App Design (Future Plan)	0%										25%	50%	100%
8	Marketing and SEO Optimization	0%									25%	50%	75%	100%
9	User Feedback and Iteration	0%										25%	50%	100%
10	Final Report and Launch	0%											25%	100%

Figure: 3.3 Gantt Chart FYDP

Chapter - 04

User Interface

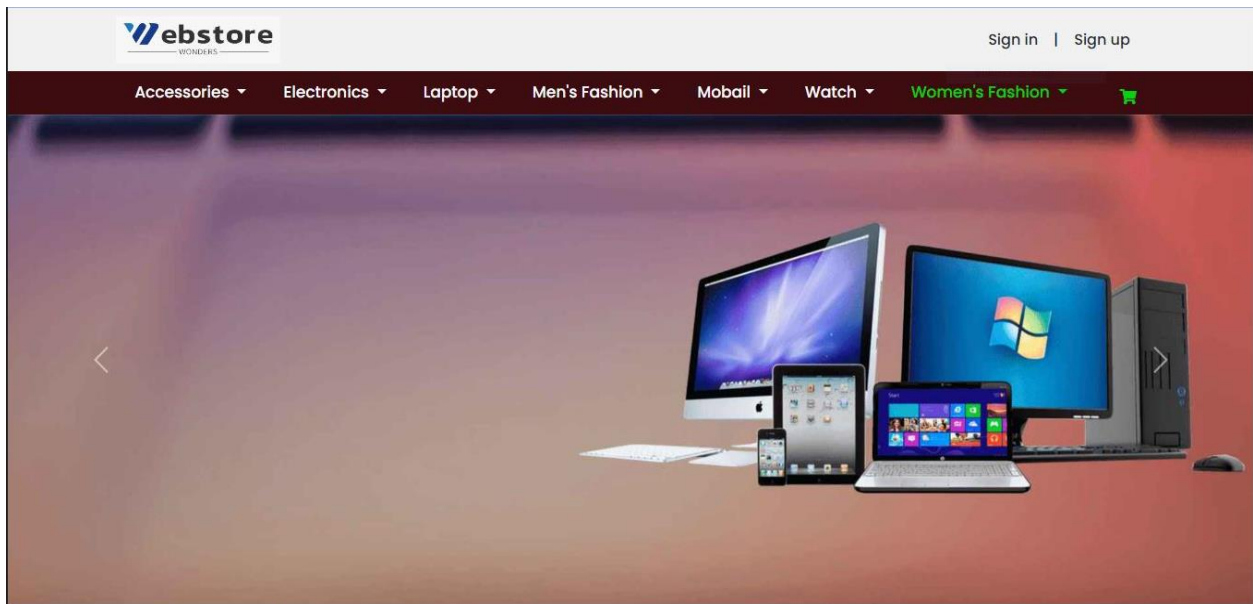
4.1 User Interface (UI):

User Interface (UI) refers to the visitor/customer interface and visitor/customer experience elements of a website, including the visual design, layout, and interactive components.

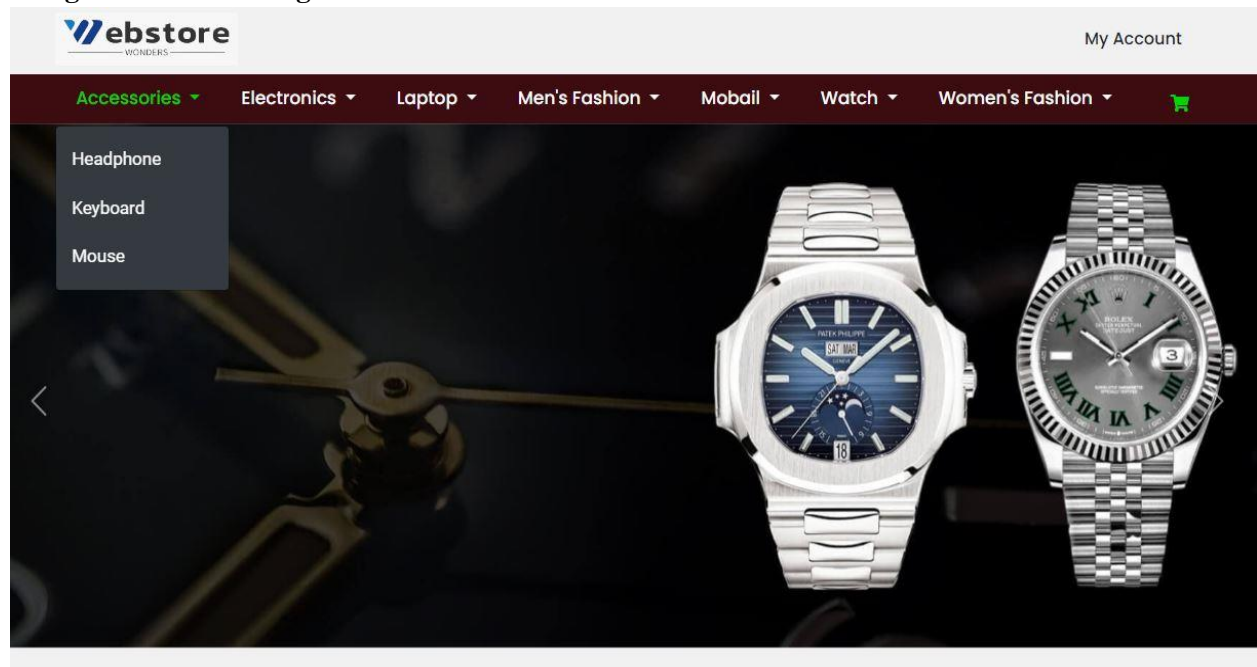
Administrative Panel:

Administrative panel refers to the administrative or control panel of a website's backend. The backend of a website is the server-side, where data is processed, and various functionalities are implemented. The backend panel, sometimes known as an admin panel or dashboard, is a user interface that allows administrators or authorized users to manage and control different aspects of the website.

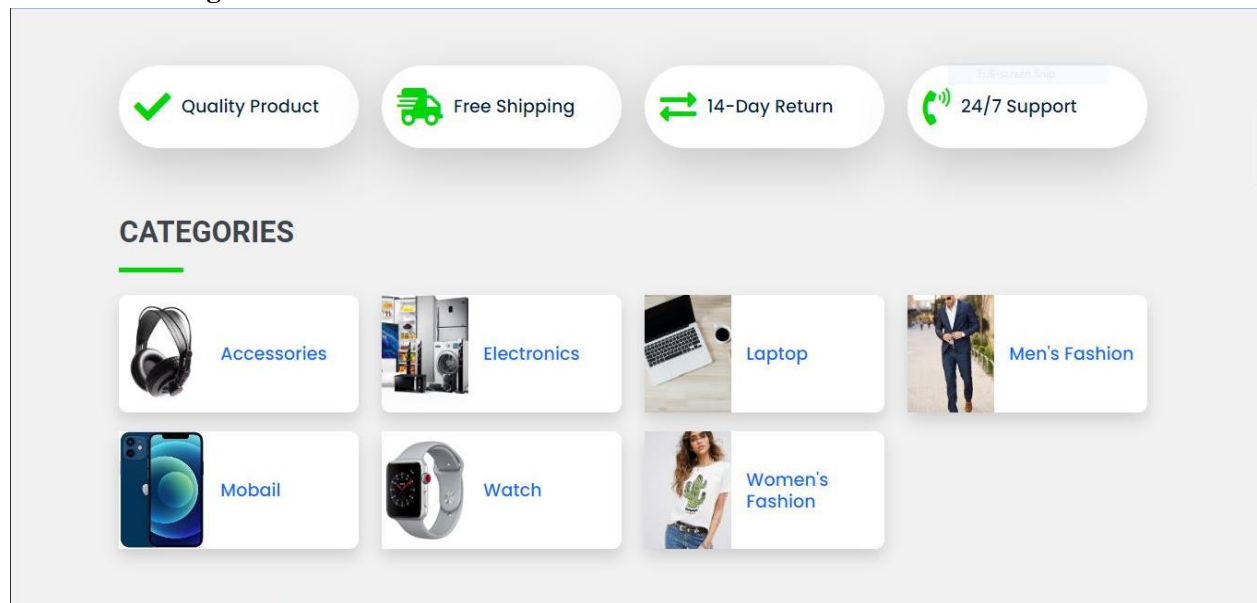
Sliders:



Categories & Sub-Categories Menu bar:



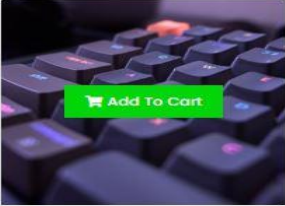







Services & Categories with Thumbnail:











Featured Products:

FEATURED PRODUCTS

 <p>Headphone 00001 22 left in Stock ₹10000 ₹12000</p>	 <p>Watch-Rolux-001 30 left in Stock ₹15000 ₹20000</p>	 <p>Keyboard-0001 45 left in Stock ₹8000 ₹9500</p>	 <p>Mouse-01 50 left in Stock ₹7500 ₹8000</p>
 <p>Dell 05-S10 15 left in Stock ₹40000 ₹50000</p>	 <p>HP-05 20 left in Stock ₹45000 ₹48000</p>	 <p>Blazer 35 left in Stock ₹5000 ₹6000</p>	 <p>Jeans 50 left in Stock ₹5000 ₹6000</p>









Top Selling Products:

TOP SELLING PRODUCTS


 <p>Men's Shoes 20 left in Stock ₹15500 ₹18000</p>	 <p>Top's 35 left in Stock ₹8500 ₹10000</p>	 <p>LG-Television 22 left in Stock ₹35000 ₹36500</p>	 <p>One Plus 01 13 left in Stock ₹28000 ₹31500</p>
 <p>Samsung S30 26 left in Stock ₹30000 ₹32000</p>	 <p>Watch-Titans-01 24 left in Stock ₹1500 ₹1800</p>	 <p>Acer-E5-574 20 left in Stock ₹3000 ₹3300</p>	 <p>Jacket 25 left in Stock ₹367 ₹692</p>

Latest Products:

LATEST PRODUSTS

 <p>Headphone 00001 22 left in Stock ₹1000 ₹1200</p>	 <p>Watch-Rolex-001 30 left in Stock ₹1500 ₹2000</p>	 <p>Keyboard-0001 45 left in Stock ₹800 ₹950</p>	 <p>Mouse-01 50 left in Stock ₹750 ₹800</p>
 <p>Dell 05-S10 15 left in Stock ₹40000 ₹45000</p>	 <p>HP-05 20 left in Stock ₹45000 ₹48000</p>	 <p>Blazer 35 left in Stock ₹5000 ₹6000</p>	 <p>Jeans 50 left in Stock ₹5000 ₹6000</p>

Product Page including Category, Sub-Category, Brands and Price Limit.



Sign in | Sign up


Accessories ▾ Electronics ▾ Laptop ▾ Men's Fashion ▾ Mobail ▾ Watch ▾ Women's Fashion ▾

Home / Shop


CATEGORIES

Women's Fashion ▾
Watch ▾
Mobail ▾
Men's Fashion ▾
Laptop ▾
Electronics ▾
Accessories ▾

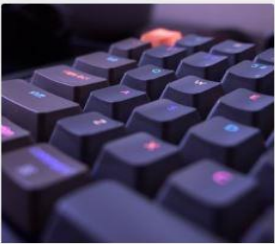
BRAND
☐ Titans
☐ Samsung
☐ Dell




Headphone 00001
22 left in Stock
₹1000 ₹1200




Watch-Rolex-001
30 left in Stock
₹1500 ₹2000




Keyboard-0001
45 left in Stock
₹800 ₹950




Dell 05-S10
15 left in Stock
₹40000 ₹45000



HP-05
20 left in Stock
₹45000 ₹48000




Blazer
35 left in Stock
₹5000 ₹6000




Jeans
50 left in Stock
₹5000 ₹6000

Product Page including Category, Sub-Category, Brands and Price Limit.



[Sign in](#) | [Sign up](#)

[Accessories](#) - [Electronics](#) - [Laptop](#) - [Men's Fashion](#) - [Mobail](#) - [Watch](#) - [Women's Fashion](#) - 

[Home](#) / [Shop](#)

CATEGORIES

Women's Fashion

Watch

Mobail

Men's Fashion

Laptop


Electronics

Accessories


BRAND

☐ Titans
 ☐ Samsung
 ☐ Rolex
 ☐ Puma
 ☐ M&S
 ☐ Logitech
 ☐ LG
 ☐ HP
 ☐ DELL
 ☐ Bata
 ☐ Acer


Latest



Headphone-00001
 22 left in Stock
₹1000 ~~₹1200~~








Watch-Rolex-001
 30 left in Stock
₹1500 ~~₹2000~~



Keyboard-0001
 45 left in Stock
₹800 ~~₹950~~


127.0.0.1:8000/shop/

BRAND


☐ Titans
 ☐ Samsung
 ☒ Rolex
 ☐ Puma
 ☐ M&S
 ☐ Logitech
 ☐ LG
 ☐ HP
 ☐ DELL
 ☐ Bata
 ☐ Acer

22 left in Stock




Mouse-01
 50 left in Stock
₹750 ~~₹800~~

30 left in Stock



Dell 05-S10
 15 left in Stock
₹40000 ~~₹50000~~

45 left in Stock



HP-05
 20 left in Stock
₹45000 ~~₹48000~~

PRICE

\$0

\$1,000+


Showing 1 to 6 of 17 results


1

2


3

Product Details:

 Sign in | Sign up

Accessories ▾ Electronics ▾ Laptop ▾ Men's Fashion ▾ Mobail ▾ Watch ▾ Women's Fashion ▾ 

[Home](#) / [Shop](#) / Dell 05-S10




Dell 05-S10

★★★★★ (2 Reviews)

~~₹50000~~
₹40000

Dell 05-S10

 ADD TO CART

Description

Shipping & Returns

Reviews


Related Products & Product Review:

4.50 ★★★★★ (2 Reviews)


Md. Juel Haque
★★★★★
Nice product

sumon
★★★★★
very good

RELATED PRODUCTS




Dell 05-S10
15 left in stock
₹40000 ~~₹50000~~




HP-05
15 left in stock
₹45000 ~~₹48000~~

Figure: 4.1 Categories & Functionalities




Cart:

Sign in | Sign up

Accessories ▾ Electronics ▾ Laptop ▾ Men's Fashion ▾ Mobail ▾ Watch ▾ Women's Fashion ▾ 

[Home](#) / [Shop](#) / [Cart](#)

Success! Mouse-01 added to cart successfully ×

Item	Price	Quantity	Total	Remove
 Dell 05-S10	₹40000	− 1 +	₹40000	×
 Headphone 00001	₹1000	− 1 +	₹1000	×
 Mouse-01	₹750	− 1 +	₹750	×

CART SUMMERY

Subtotal ₹41,750.00

[Proceed to Checkout](#)

Get In Touch

Banjara Hills location offers a range of options.
Mirpur-1, Dhaka, Bangladesh
webstorewonders@gmail.com
01713-723536

Important Links


[About](#)
[Contact Us](#)
[Privacy](#)
[Terms & Conditions](#)
[Refund Policy](#)


My Account

[Login](#)
[Register](#)
[My Orders](#)

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Login:

Sign in | Sign up

Accessories ▾ Electronics ▾ Laptop ▾ Men's Fashion ▾ Mobail ▾ Watch ▾ Women's Fashion ▾ 

[Home](#) / [Login](#)

Login to Your Account

[Login](#)

Don't have an account? [Sign up](#)

Get In Touch


Banjara Hills location offers a range of options.
Mirpur-1, Dhaka, Bangladesh
webstorewonders@gmail.com
01713-723536

Important Links

[About](#)
[Contact Us](#)
[Privacy](#)
[Terms & Conditions](#)
[Refund Policy](#)

My Account

[Login](#)
[Register](#)
[My Orders](#)



Accessories ▾

Electronics ▾


Laptop ▾

Men's Fashion ▾

Mobail ▾

Watch ▾

Women's Fashion ▾



My Account

Home / Shop / Checkout

SHIPPING ADDRESS

Donovan

Faulkner

sunaf@mailinator.com

Dhaka

Dolore perferendis p

Cum officia sequi la

Blanditiis in quisqu

Ipsum dolore minim m

38343

Donovan

Order Notes (optional)

ORDER SUMMARY

Dell 05-S10 X 1

₹40000

Headphone 00001 X 1

₹10000

Mouse-01 X 1

₹750

Subtotal

₹41,750.00

Discount

₹0

Shipping

₹180.00

Total

₹41,930.00

Coupon Code

Apply Coupon

Payment Method

☒ Cash On Delivery

☐ bKash

Pay Now

Dhaka

Dolore perferendis p

Cum officia sequi la

Blanditiis in quisqu

ipsum dolore minim m

38343

Donovan

Order Notes (optional)

Shipping

৳180.00

Total

৳41,930.00

Coupon Code

Apply Coupon

Payment Method

☐ Cash One Delivery

☒ bKash

Please Pay to: 01700-000000

Account holder name

Account holder name

Account number

Transaction ID

Pay Now

Get In Touch

Banjara Hills location offers a range of options.
Mirpur-1, Dhaka, Bangladesh

Important Links

[About](#)
[Contact Us](#)

My Account

[Login](#)
[Register](#)

Thank You Page:

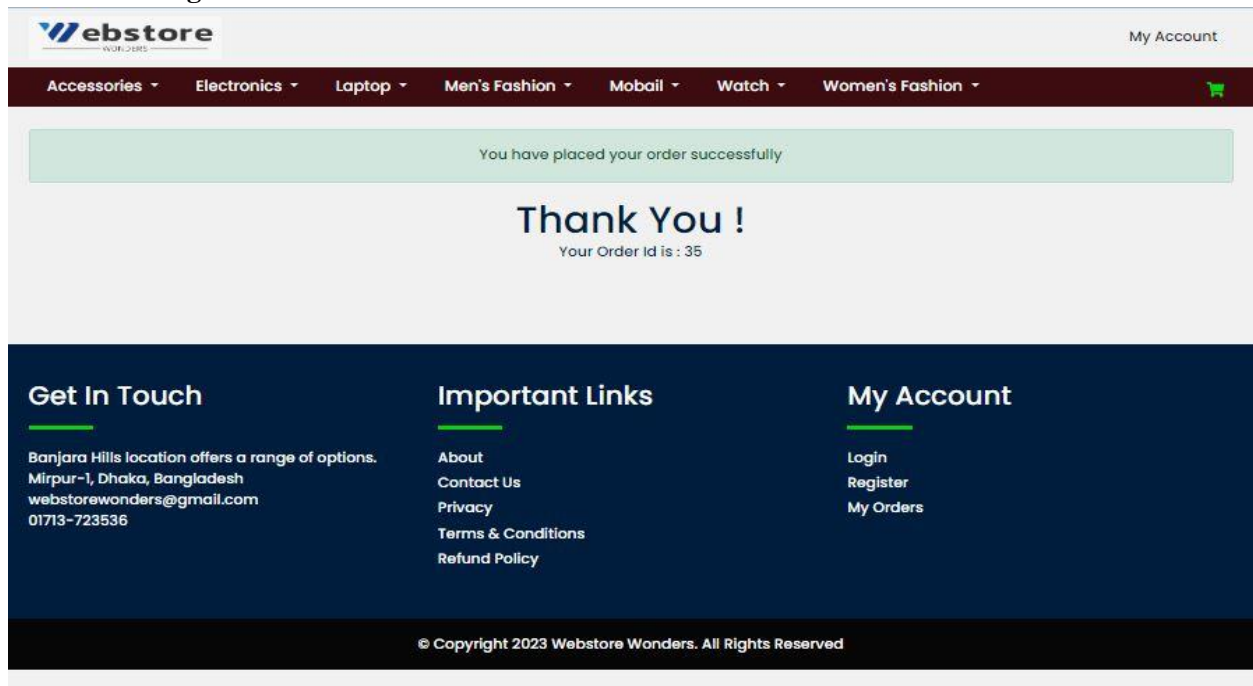
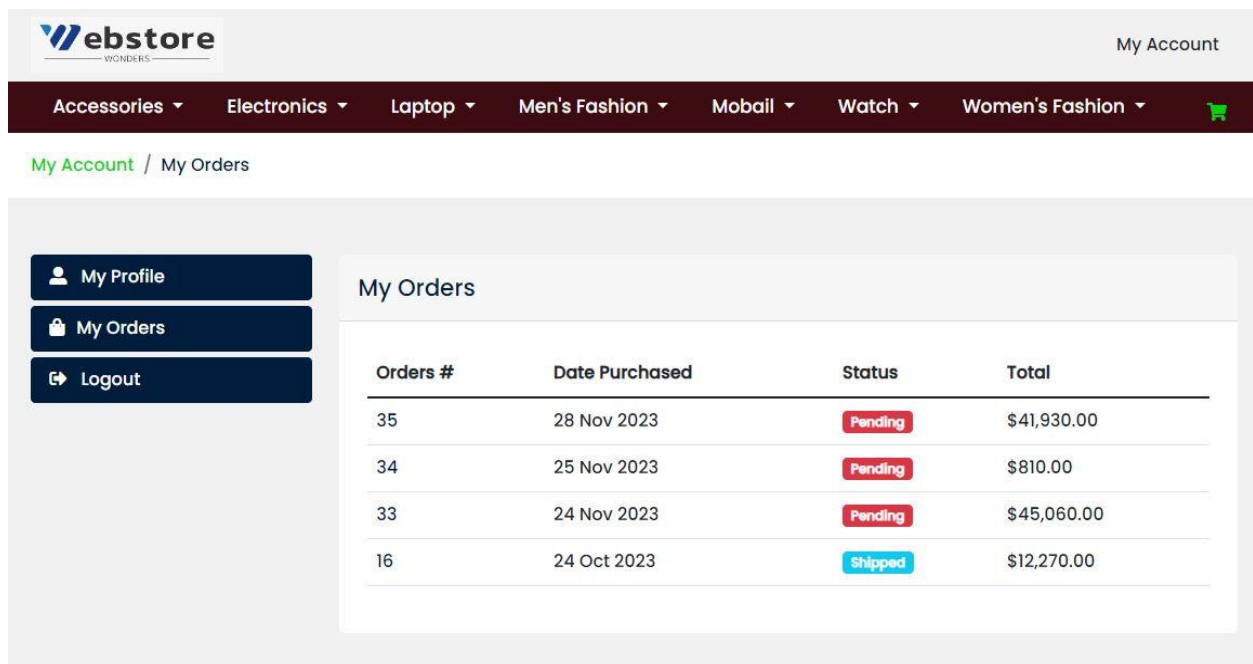


Figure: 4.2 Cart & Checkout procedure

Customer Profile & Order List:






Customer Order Details & Status:

The screenshot shows the 'Order Details' page for a customer. The header includes the 'Webstore' logo and navigation links for various product categories. The main content area is divided into a sidebar with user account options and a main section for the specific order.

Order: 35

Order No:	Shipped date:	Status:	Order Amount:
35	N/A	Pending	\$41,930.00

Order Items (3)

	Dell G5-S10 x 1 \$40000
	Headphone 00001 x 1 \$1000
	Mouse-01 x 1 \$750

Order Total

Subtotal	\$41,750.00
Discount	\$0.00
Shipping	\$180.00
Grand Total	\$41,930.00

Registration:

The screenshot shows the 'Register Now' form on the Webstore. The form is centered on the page and includes input fields for personal information and a 'Register' button. A link for existing users is provided at the bottom.

Register Now

Name

Email

Phone

Password

Confirm Password

Register

Already have an account? [Login Now](#)

Figure: 4.3 Customer Registration Dashboard & Order Details

Administrative Panel

Dashboard:

The screenshot shows the 'Webstore Wonders Administrative Panel' dashboard. The left sidebar contains a menu with items: Dashboard, Category, Sub Category, Brands, Products, Shipping, Orders, and Discount. The main content area displays six summary cards for various metrics, each with a 'More info' link. The metrics are: Total Orders (4), Total Users (2), Total Products (17), Total Category (7), Total Sub Category (17), and Total Brands (12). The footer includes a copyright notice: 'Copyright © 2023 Webstore Wonders All rights reserved.' The browser's address bar shows the URL '127.0.0.1:8000/admin/dashboard'.

Metric	Value
Total Orders	4
Total Users	2
Total Products	17
Total Category	7
Total Sub Category	17
Total Brands	12

Category Management:

The screenshot shows the 'Categories' management page in the 'Webstore Wonders Administrative Panel'. The left sidebar is identical to the dashboard. The main content area features a 'New Category' button and a table of existing categories. The table has columns for ID, Name, Slug, Status, and Action. The categories listed are: Mobail (ID 57), Watch (ID 56), Accessories (ID 54), Laptop (ID 53), Men's Fashion (ID 46), Women's Fashion (ID 45), and Electronics (ID 44). All categories have a status of 'Active' (indicated by a green checkmark) and an action menu with edit and delete icons. The footer includes the same copyright notice as the dashboard. The browser's address bar shows the URL '127.0.0.1:8000/admin/categories'.

ID	Name	Slug	Status	Action
57	Mobail	mobail	Active	Edit Delete
56	Watch	watch	Active	Edit Delete
54	Accessories	accessories	Active	Edit Delete
53	Laptop	laptop	Active	Edit Delete
46	Men's Fashion	mens-fashion	Active	Edit Delete
45	Women's Fashion	womens-fashion	Active	Edit Delete
44	Electronics	electronics	Active	Edit Delete

Sub-Category Management:

The screenshot displays the 'Sub Categories' management interface in the Webstore Wonders Admin Panel. The left sidebar contains navigation links for Dashboard, Category, Sub Category, Brands, Products, Shipping, Orders, and Discount. The main content area features a table with columns for ID, Name, Category, Slug, Status, and Action. The table lists 10 sub-categories, including One Plus, Samsung, Mouse, Television, Rolex, Jacket, Top's, Shoos, Blazer, and Jeans. Each row has a status indicator (green checkmark) and an action menu (edit and delete icons). A 'New Sub Category' button is located in the top right corner. The bottom of the screen shows a Windows taskbar with various application icons and system information.

ID	Name	Category	Slug	Status	Action
39	One Plus	Mobail	one-plus	✓	Edit Delete
38	Samsung	Mobail	samsung	✓	Edit Delete
37	Mouse	Accessories	mouse	✓	Edit Delete
36	Television	Electronics	television	✓	Edit Delete
35	Rolex	Watch	rolex	✓	Edit Delete
34	Jacket	Women's Fashion	jacket	✓	Edit Delete
33	Top's	Women's Fashion	tops	✓	Edit Delete
32	Shoos	Men's Fashion	shoos	✓	Edit Delete
31	Blazer	Men's Fashion	blazer	✓	Edit Delete
30	Jeans	Men's Fashion	jeans	✓	Edit Delete

Brand Management:

The screenshot displays the 'Brands' management interface in the Webstore Wonders Admin Panel. The left sidebar contains navigation links for Dashboard, Category, Sub Category, Brands, Products, Shipping, Orders, and Discount. The main content area features a table with columns for ID, Name, Slug, Status, and Action. The table lists 7 brands, including Rolex, Titans, LG, Logitech, HP, DELL, and M&S. Each row has a status indicator (green checkmark) and an action menu (edit and delete icons). A 'New Brands' button is located in the top right corner. The bottom of the screen shows a Windows taskbar with various application icons and system information.

ID	Name	Slug	Status	Action
20	Rolex	rolex	✓	Edit Delete
19	Titans	titans	✓	Edit Delete
18	LG	lg	✓	Edit Delete
17	Logitech	logitech	✓	Edit Delete
16	HP	hp	✓	Edit Delete
15	DELL	dell	✓	Edit Delete
13	M&S	ms	✓	Edit Delete

Product Management:

The screenshot shows the 'Products' management page in the Webstore Wonders admin dashboard. The left sidebar contains navigation links for Dashboard, Category, Sub Category, Brands, Products, Shipping, Orders, and Discount. The main content area displays a table of products with columns for ID, Product, Price, Qty, SKU, Status, and Action. A search bar and a 'New Product' button are at the top right. The table lists 8 products, including Headphone, Watch-Rolex, Keyboard, Mouse, Dell, HP, Blazer, and Jeans.

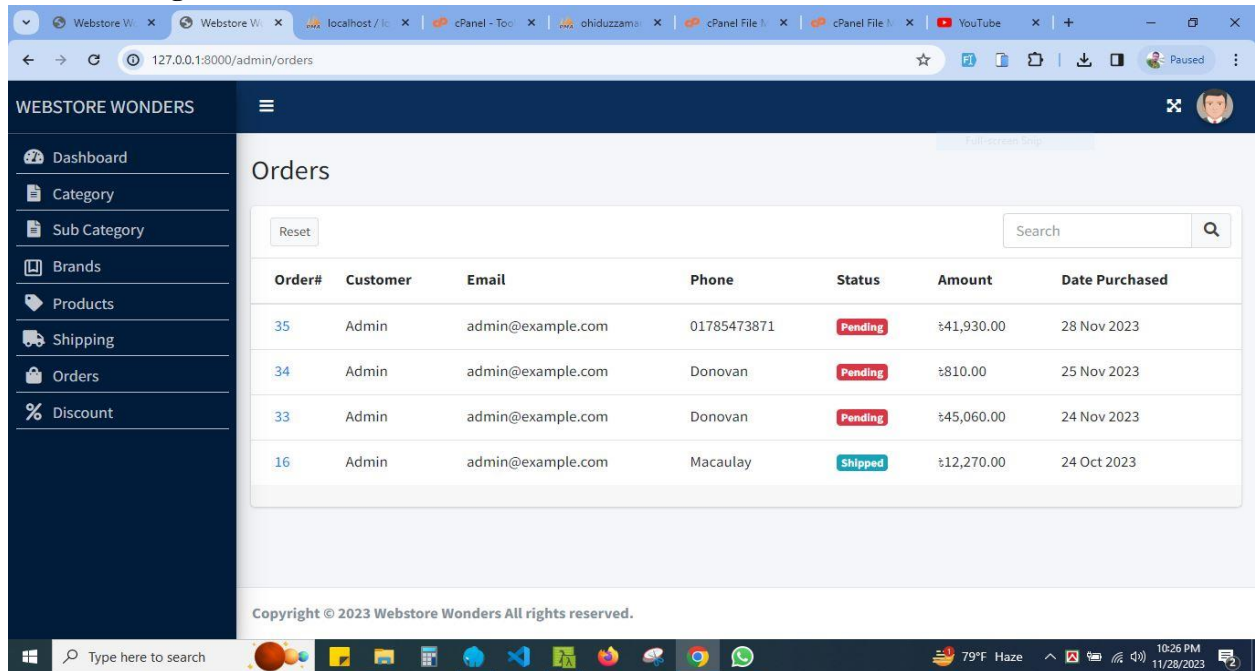
ID	Product	Price	Qty	SKU	Status	Action
17	Headphone 00001	\$1000	22 left in Stock	h-p-10	✓	Edit Delete
18	Watch-Rolex-001	\$1500	30 left in Stock	w-01	✓	Edit Delete
19	Keyboard-0001	\$800	45 left in Stock	k-b-01	✓	Edit Delete
20	Mouse-01	\$750	50 left in Stock	m-01	✓	Edit Delete
23	Dell 05-S10	\$40000	15 left in Stock	a-l-06	✓	Edit Delete
24	HP-05	\$45000	20 left in Stock	hp-01	✓	Edit Delete
25	Blazer	\$5000	35 left in Stock	b-09	✓	Edit Delete
26	Jeans	\$5000	50 left in Stock	j-04	✓	Edit Delete

Shipping Management:

The screenshot shows the 'Shipping Managment' page in the Webstore Wonders admin dashboard. The left sidebar is the same as the previous page. The main content area features a form to create a new shipping area with a dropdown for 'Select Area' and an input for 'Amount'. Below the form is a table of existing shipping areas with columns for ID, Name, Amount, and Action. The table lists three shipping areas: Rest of the Country, Dhaka, and Out of Dhaka.

ID	Name	Amount	Action
2	Rest of the Country	\$150	Edit Delete
4	Dhaka	\$60	Edit Delete
9	Out of Dhaka	\$120	Edit Delete

Order Management:



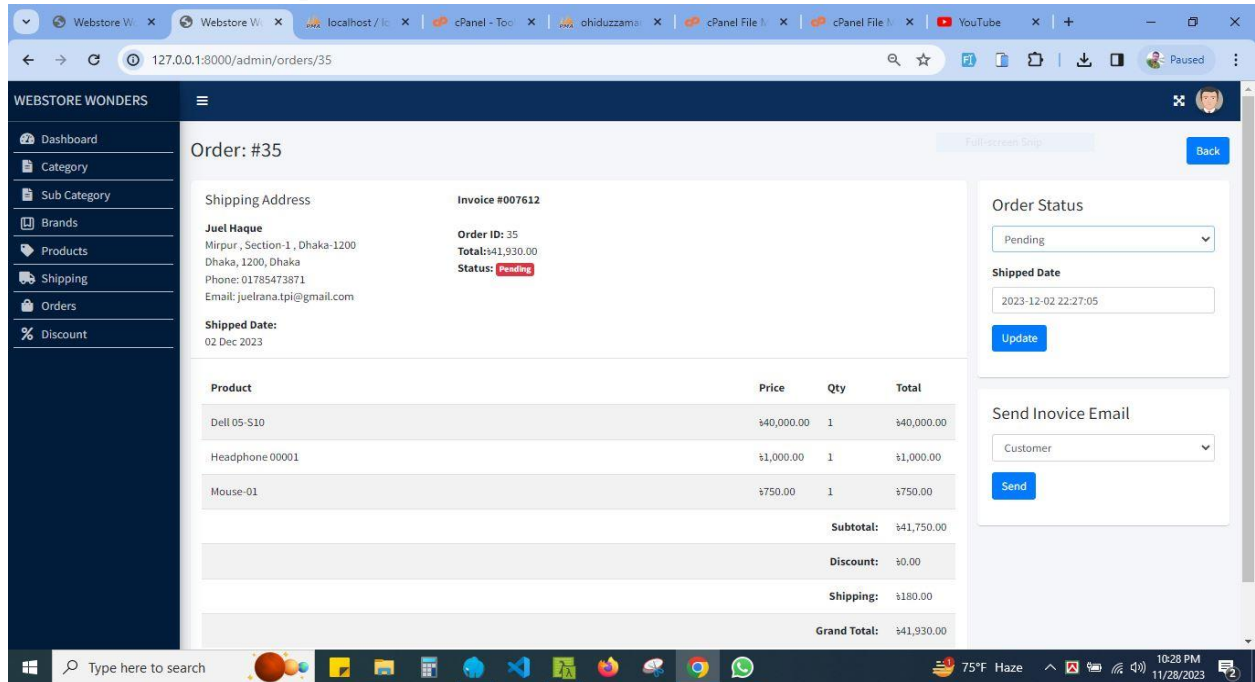
The screenshot shows the 'Orders' page in the Webstore Wonders admin panel. The left sidebar contains navigation links: Dashboard, Category, Sub Category, Brands, Products, Shipping, Orders, and Discount. The main content area shows a table of orders with the following data:

Order#	Customer	Email	Phone	Status	Amount	Date Purchased
35	Admin	admin@example.com	01785473871	Pending	₳41,930.00	28 Nov 2023
34	Admin	admin@example.com	Donovan	Pending	₳810.00	25 Nov 2023
33	Admin	admin@example.com	Donovan	Pending	₳45,060.00	24 Nov 2023
16	Admin	admin@example.com	Macaulay	Shipped	₳12,270.00	24 Oct 2023

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Figure: 4.4 Admin Panel Functionalities

Order Details Check, Update and Send Invoice Mail:



The screenshot shows the 'Order Details' page for Order #35 in the Webstore Wonders admin panel. The page displays the following information:

Shipping Address: Juel Haque, Mirpur, Section-1, Dhaka-1200, Dhaka, 1200, Dhaka. Phone: 01785473871. Email: juelrana.tpi@gmail.com.

Invoice #007612

Order ID: 35

Total: ₳41,930.00

Status: Pending

Shipped Date: 2023-12-02 22:27:05

Order Status: Pending

Send Invoice Email: Customer

Products:

Product	Price	Qty	Total
Dell 05-S10	₳40,000.00	1	₳40,000.00
Headphone 00001	₳1,000.00	1	₳1,000.00
Mouse-01	₳750.00	1	₳750.00
Subtotal:			₳41,750.00
Discount:			₳0.00
Shipping:			₳180.00
Grand Total:			₳41,930.00

Figure: 4.5 Order Details Check, Update and Send Invoice Mail

Coupons Code Management:

The screenshot shows the 'Create Coupos Code' form in the Webstore Wonders admin panel. The form is located at the URL 127.0.0.1:8000/admin/coupons/create. It features a sidebar with navigation links: Dashboard, Category, Sub Category, Brands, Products, Shipping, Orders, and Discount. The form fields are organized into two columns. The left column includes fields for Code (Coupon Code), Description, Max Uses User (Max Uses User), Discount Amount (Discount Amount), Status (Active), and Expires At (Expires At). The right column includes fields for Name (Coupon Code Name), Max Uses (Max uses), Type (Percent), Min Amount (Min Amount), and Starts At (Starts At). At the bottom of the form are 'Create' and 'Cancel' buttons. The browser's taskbar at the bottom shows various application icons and the system clock indicating 10:30 PM on 11/28/2023.

WEBSTORE WONDERS

Create Coupos Code

Full-screen Snip

Back

Code

Coupon Code

Name

Coupon Code Name

Description

Description

Max Uses

Max uses

Max Uses User

Max Uses User

Type

Percent

Discount Amount

Discount Amount

Min Amount

Min Amount

Status

Active

Starts At

Starts At

Expires At

Expires At

Create

Cancel

Discount Coupons:

The screenshot shows the 'Discount Coupons' table in the Webstore Wonders admin panel. The table is located at the URL 127.0.0.1:8000/admin/coupons. It features a sidebar with navigation links: Dashboard, Category, Sub Category, Brands, Products, Shipping, Orders, and Discount. The table has columns for ID, Code, Name, Discount, Start Date, End Date, Status, and Action. There are three rows of data. The first row has ID 8, Code m12, Name Drake Gilmore, Discount 25%, Start Date 2023/11/06 16:46:00, End Date 2023/11/22 16:46:08, Status (green checkmark), and Action (edit and delete icons). The second row has ID 7, Code b23, Name Tara Tyson, Discount 10%, Start Date 2023/10/17 23:37:44, End Date 2023/10/30 23:37:48, Status (red X), and Action (edit and delete icons). The third row has ID 2, Code J5111, Name Fiona Stuart, Discount \$20, Start Date 2023/10/19 22:52:14, End Date 2023/10/28 22:52:19, Status (green checkmark), and Action (edit and delete icons). At the bottom of the table is a 'Copyright © 2023 Webstore Wonders All rights reserved.' notice. The browser's taskbar at the bottom shows various application icons and the system clock indicating 10:29 PM on 11/28/2023.







WEBSTORE WONDERS

Discount Coupons

New Discount

Reset

Search

ID	Code	Name	Discount	Start Date	End Date	Status	Action
8	m12	Drake Gilmore	25%	2023/11/06 16:46:00	2023/11/22 16:46:08	✓	 
7	b23	Tara Tyson	10%	2023/10/17 23:37:44	2023/10/30 23:37:48	✗	 
2	J5111	Fiona Stuart	\$20	2023/10/19 22:52:14	2023/10/28 22:52:19	✓	 

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Figure: 4.6 Discount & Coupons

Database:

Table	Action	Rows	Type	Collation	Size	Overhead
brands	★ Browse Structure Search Insert Empty Drop	12	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
categories	★ Browse Structure Search Insert Empty Drop	7	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
countries	★ Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
customer_addresses	★ Browse Structure Search Insert Empty Drop	1	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
discount_coupons	★ Browse Structure Search Insert Empty Drop	3	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
failed_jobs	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
migrations	★ Browse Structure Search Insert Empty Drop	26	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
orders	★ Browse Structure Search Insert Empty Drop	4	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
order_items	★ Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
password_reset_tokens	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
personal_access_tokens	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
products	★ Browse Structure Search Insert Empty Drop	17	InnoDB	utf8mb4_unicode_ci	112.0 KiB	-
product_images	★ Browse Structure Search Insert Empty Drop	28	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
product_ratings	★ Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
shipping_charges	★ Browse Structure Search Insert Empty Drop	3	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
sub_categories	★ Browse Structure Search Insert Empty Drop	17	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
temp_images	★ Browse Structure Search Insert Empty Drop	58	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
users	★ Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
18 tables	Sum	194	InnoDB	utf8mb4_0900_ai_ci	544.0 KiB	0 B

Figure: 4.7 Database

Chapter - 05

Implementation and Results

Environment Setup:

Setting up the environment for our project is crucial for its success. We established three key environments: coding, version control, and design. Below, we describe each component of our environment setup.

Coding Environment:

For our coding environment, we utilized Visual Studio Code (VS Code). This open-source code editor supports various programming languages and provides powerful features like debugging, syntax highlighting, intelligent code completion, and built-in Git integration. Its versatility makes it ideal for our project.

Version Control Environment:

To manage our project efficiently, we implemented version control using Git and GitHub. This approach allows us to track contributions, manage changes, and collaborate effectively.

GitHub:

GitHub is a widely used online platform for version control and collaboration, built around the Git system. It facilitates tracking changes, collaborating on code, and managing project repositories.

Reason for using GitHub:

Our team is familiar with GitHub's interface and commands, which streamlines collaboration. Additionally, GitHub offers a detailed issue tracking system and allows us to work seamlessly, even in informal settings, through private repositories.

5.1 Design Environment

Frontend: The frontend of our project is developed using HTML, CSS, and Bootstrap for responsive design, along with vanilla JavaScript for dynamic functionality.

Backend: The backend is built using PHP and the Laravel framework, which provides a robust structure for developing web applications. Laravel's features enhance security and make database management more efficient.

Database: We are using MySQL as our relational database management system (RDBMS) to store and manage user data, product listings, orders, and other essential information.

5.2 Testing and Evaluation

Testing is a vital part of the software development process. We planned various testing methodologies to ensure the reliability of our platform.

- i. **Unit Testing:** This method involves testing individual functions and components to verify they perform as expected.
- ii. **Integration Testing:** After unit tests are successful, we integrate the components and evaluate their interaction and functionality together.
- iii. **System Testing:** Once unit and integration testing is complete, we conduct system testing using the Black-Box testing method. This approach allows us to test the entire application without focusing on its internal workings, concentrating instead on inputs and outputs to ensure the system meets requirements.

5.3 Results and Discussion

In this section, we present the results of our project, including features such as product management, user accounts, order processing, and customer support.

Results:

We have developed the following core features:

- i. **Product Management:** Sellers can easily add, update, and remove their product listings. The interface allows for seamless product management to keep the catalog current.
- ii. **User Accounts:** Users can register and create personal accounts, enabling them to save their preferences, manage orders, and track their purchase history.
- iii. **Order Processing:** Our platform supports a streamlined order processing system, allowing users to place orders and receive confirmations via email.
- iv. **Customer Support:** We implemented a customer support system, including a live chat option, enabling users to get assistance in real-time and address their queries.
- v. **Reviews and Ratings:** Registered users can leave reviews and ratings for products, providing valuable feedback and helping other customers make informed purchasing decisions.
- vi. **Secure Payment Processing:** The platform ensures secure transactions through integrated payment gateways, providing customers with confidence in their purchases.

Chapter - 06

Standards and Design Constraints

6.1 Compliance with the Standards:

In this section, we focus on the standards related to the development of our e-commerce platform, "Web Store Wonders." Compliance with these standards ensures that the system is built on a solid foundation, follows industry best practices, and provides a secure and user-friendly experience.

6.2 Software Development Life Cycle (SDLC) Standard:

Our development process follows the ISO/IEC 12207 standard, which outlines the necessary procedures for the development and maintenance of software. This standard ensures that we take a structured approach in planning, defining requirements, designing, prototyping, developing, testing, deploying, and maintaining the system. [20]

6.3 Coding Standards

Our platform uses PHP (Laravel framework) and JavaScript for development. To ensure consistency, maintainability, and best practices, we adhere to the following coding standards: [21]

- i. **PHP Standards:** We comply with the PHP-FIG (Framework Interoperability Group) PSR-12 standard for code style and structure, ensuring clean, readable, and well-documented code.
- ii. **JavaScript Standards:** We follow ECMAScript 6 (ES6) guidelines for modern JavaScript development.
- iii. **Indentation:** Two spaces per indentation level for better readability.
- iv. **Naming Conventions:** Use camelCase for variable and function names.
- v. **Comments:** Comments are included to clarify complex code and improve future code maintenance.
- vi. **File Naming Conventions:** PHP files have a .php extension, JavaScript files use .js, and CSS files use .css.

6.4 UI and UX Standards

For the user interface (UI) and user experience (UX), we follow established principles that prioritize accessibility, usability, and user satisfaction. The key standards we adhere to include: [22]

- i. **WCAG (Web Content Accessibility Guidelines):** Ensures our website is accessible to users with disabilities, particularly focusing on keyboard navigation, color contrast, and alternative text for images.
- ii. **Heuristic Evaluation:** Based on Nielsen's Usability Heuristics, we aim to:
 - a. Ensure visibility of system status.
 - b. Provide a match between the system and the real world (e.g., clear labels and actions that align with user expectations).
 - c. Offer user control and freedom, allowing users to easily correct mistakes or cancel actions.

- d. Maintain consistency across different parts of the platform.
- e. Prevent errors by guiding users through processes and confirming critical actions (like purchases).
- f. Focus on recognition rather than recall, using familiar icons and intuitive design.
Create a minimalist design that reduces cognitive load for users.

6.5 Ethical Standards

As developers, we adhere to ethical guidelines to ensure the safety, privacy, and fairness of our platform. These principles are inspired by the ACM Code of Ethics and guide the following: [23]

- i. **User Privacy:** We handle user data securely, using encryption and SSL certificates to protect personal and financial information.
- ii. **Non-Discrimination:** We ensure that our platform treats all users fairly, regardless of gender, race, or any other characteristic.
- iii. **Transparency:** We are clear about data collection and usage policies, ensuring users know how their data is handled.
- iv. **Accountability:** We take responsibility for errors and ensure that any system malfunctions are quickly resolved.

6.6 Design Constraints:

Every project encounters certain limitations and challenges. In this section, we discuss the primary constraints that have influenced the design of our e-commerce platform.

6.7 Economic Constraints:

Budgetary constraints play a significant role in shaping the project's scope. Our platform aims to be affordable for small businesses and entrepreneurs in Bangladesh, which means we need to carefully select cost-effective tools and services (e.g., hosting, security measures, and marketing).

- i. **Hosting Costs:** We opted for a cost-effective web hosting solution with scalability to accommodate future growth.
- ii. **Security and Maintenance Costs:** We invested in necessary security measures, such as SSL certificates and regular backups, while maintaining a budget-conscious approach to ongoing maintenance.

6.8 Ethical Constraints:

Our platform must comply with ethical standards, especially in how we handle user data and transactions. We ensure: [24]

- i. **Data Protection:** User data is securely stored and protected in compliance with data privacy laws such as GDPR.
- ii. **Honest Marketing:** We avoid misleading users with false product information or hidden fees.

- iii. **Fair Transactions:** We facilitate transparent communication between buyers and sellers, promoting a fair marketplace.

6.9 Social Constraints:

Our platform's success depends on user acceptance and satisfaction. Given the market in Bangladesh, many users may not be accustomed to online shopping or might have limited internet literacy. We must therefore: [25]

- i. **Simplify the User Experience:** The platform needs to be intuitive and easy to navigate, even for users with minimal technical knowledge.
- ii. **Build Trust:** Clear communication, responsive customer service, and transparent return policies are essential for gaining user trust in an online shopping environment.

6.10 Health and Safety Constraints:

We ensure that our platform is free from any risks to users' safety by:

- i. **Preventing Scams and Fraud:** We have implemented secure payment systems and fraud detection algorithms to protect buyers and sellers.
- ii. **Safe Delivery of Goods:** Working with reliable logistics partners ensures that products are delivered safely and in good condition.

6.11 Sustainability

The design and development of "Web Store Wonders" also focus on sustainability by ensuring: [26]

- i. **Energy-Efficient Hosting:** We use eco-friendly hosting solutions to minimize our environmental footprint.
- ii. **Future-Proof Development:** The platform is built with scalability in mind, ensuring it can grow without requiring a complete system overhaul in the future.

6.12 Cost Analysis

The following table outlines the estimated costs for running the platform:

No	Criteria	Per/Month	Per/Year
1	Domain Registration (One-Time Fee)	-	1,500
2	Web Hosting (Dedicated Server)	150	18,00
3	Server Security (SSL Certificate)	-	3,000
4	Website Content (Content Writing)	500	6,000
5	Website Content (Logo Design - One Time)	-	1,000
6	Website Creation and Development	-	50,000
7	Maintenance Costs	-	20,000
	Total		83,300

Table 6.1: Cost Analysis

6.13 Complex Engineering Problem:

E-commerce platforms like "Web Store Wonders" involve multiple challenges that require careful engineering solutions, especially in terms of scalability, security, and usability. [27]

6.14 Complex Problem Solving:

Our platform tackles several interrelated issues, including: [28]

- i. **Database Design:** The database must efficiently handle large amounts of data related to users, products, orders, and transactions.
- ii. **Security Implementation:** Securing sensitive user and payment data is a top priority, requiring the implementation of industry-standard encryption and security protocols.
- iii. **Usability Across Devices:** The platform is designed to function smoothly on a range of devices, including desktops and mobile phones, to reach the broadest possible audience.

6.14 Knowledge Profile:

The knowledge required to complete this project spans several domains, including: [29]

- i. **K3 (Engineering Fundamentals):** Expertise in database design and management.
- ii. **K4 (Specialist Knowledge):** Understanding of e-commerce systems and secure online payment gateways.
- iii. **K5 (Engineering Design):** Designing an intuitive, accessible front-end interface for users.
- iv. **K6 (Engineering Practice):** Utilizing best practices in web development, version control, and project management.

Chapter - 07

Conclusion

Web Store Wonders represents a transformative approach to e-commerce in Bangladesh, designed to break down the barriers that have traditionally made online shopping challenging for many. Our platform is built with the user in mind, offering a simplified, negotiation-friendly shopping experience that caters to both tech-savvy users and those less familiar with digital platforms. By empowering sellers to easily create and manage their stores, we reduce the costs and complexity associated with launching online businesses, making entrepreneurship more accessible. At its core, Web Store Wonders is about inclusivity, flexibility, and creating a space where buyers and sellers can engage in meaningful interactions. The platform's ability to handle a wide range of products—from physical goods to digital services—sets it apart as a versatile marketplace. The seamless integration of user-friendly features, secure payment gateways, and order management systems ensures that all participants, regardless of their background or resources, can confidently engage in the e-commerce ecosystem. Looking ahead, we are committed to expanding our platform with mobile applications and enhanced features that cater to the evolving needs of our users. Our ultimate goal is not just to be another e-commerce platform, but to drive a shift towards a more connected, accessible, and personalized online shopping experience. Web Store Wonders aims to bridge the gap between traditional commerce and the digital world, fostering growth and opportunities for businesses while simplifying the shopping experience for consumers across Bangladesh.

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