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Abbreviations and Acronyms

| | |
|-------|---------------------------------------|
| BCA | Bachelor of Computer Application |
| CSS | Cascading Style Sheet |
| DFD | Data Flow Diagram |
| ES | ECMAScript |
| HTML | Hyper Text Markup Language |
| HTTP | Hyper Text Transfer Protocol |
| IDE | Integrated Development Environment |
| RDBMS | Relational Database Management System |
| SQL | Structured Query Language |
| UI | User Interface |

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Chapter 1: Introduction

1.1 Introduction

In today's rapidly advancing technological landscape, e-commerce has become an integral facet of the global retail sector, transforming the way consumers acquire goods and services. At the forefront of this digital revolution is the Eshop:E-Commerce System, an advanced online platform tailored for the streamlined purchase of clothing and related fashion items. Distinguished by its sophisticated technology stack, this system aims to revolutionize the shopping experience by offering customers an intuitive and user-centric interface. Within its expansive digital marketplace, customers encounter a diverse array of clothing options spanning various brands, styles, and price ranges. This comprehensive report provides an insightful exploration of the Eshop:E-Commerce System, highlighting its core elements, from identifying the challenges it addresses to outlining its objectives, scope, and limitations.

In the midst of this digital transformation, the Eshop:E-Commerce System takes center stage as a testament to the evolving retail landscape. Leveraging cutting-edge technology, it strives to redefine shopping by making it effortless and enjoyable. Its core focus is fashion, bridging the gap for consumers seeking the latest trends with ease and finesse. As the digital marketplace continues to thrive, this system aims to reshape online retail by offering a diverse range of clothing options that cater to a wide spectrum of tastes, preferences, and budgets. This report serves as a beacon of insight into the workings of this visionary system, shedding light on its challenges, ambitious objectives, extensive scope, and inherent limitations.

Amid the relentless march of technology and the digitalization of commerce, the Eshop:E-Commerce System represents the evolving consumer landscape. Recognizing the vital importance of convenience, accessibility, and variety in the fashion industry, it tackles critical issues. These challenges encompass limited access to fashion trends, the inefficiency of traditional online shopping experiences, concerns about trust and security, and the lack of comprehensive product information. It seeks to democratize access to global fashion trends, improve the user experience through a user-friendly interface, bolster security measures, and provide customers with detailed product information for informed decision-making. In this context, this report thoroughly explores the system's mission, innovation potential, and dedication to delivering solutions aligned with modern consumer

expectations.

1.2 Problem Statement

When there's no online shopping, people face a lot of problems that make their shopping harder. First, if you live far away from big stores, you can't get the things you want because you can only shop at nearby places. Second, going to physical stores takes a long time, especially if you're very busy. Also, local stores don't have as many things to choose from as online stores, so you might not find what you like. Plus, you can't easily see how much things cost in different stores, so you might end up spending too much money. It can also be risky to pay in person because you might have to carry cash or share your credit card info. And it's hard to know if a product is good or if it will fit you well when you can't see all the details. This is especially tough for people who can't easily go to stores, live far away, or want to shop when stores are closed.

1.3 Objectives

The main purpose of this system is to develop a web application program that would circumvent all those problems encountered in the physical commerce. The main objectives of the proposed system are:

- To enable people in remote areas to access a wide range of products online,
- To provide a convenient shopping option for individuals with busy schedules,
- To allow customers to shop anytime, even outside regular store hours, to accommodate varying schedules and preferences
- To provide comprehensive product details and images to aid customers in making informed purchasing decisions.

1.4 Scope and Limitation

These extend to be covered in these project is the designing and implementation of computerized e-commerce system. This study is aimed at finding out how effective the e-commerce system will improve the operations of sell of goods and services. However, out of the several products that makes up the complete e-commerce site, this research project is restricted to only Cloths.

1.4.1 Scope

- Enable people in remote areas to access a wide range of products online,
- Provide a convenient shopping option for individuals with busy schedules,
- Allow customers to shop anytime, even outside regular store hours, to accommodate varying schedules and preferences,

- Offer comprehensive product details and images to aid customers in making informed purchasing decisions.

1.4.2 Limitation

- Relies on internet access, which may not be available to everyone,
- May face challenges in delivering products to extremely remote locations,
- Customers cannot physically inspect products, which may lead to dissatisfaction,
- Potential technical glitches or downtime can disrupt the shopping experience.

1.5 Development Methodology

Since this project involves design and implementation of a software system regardless that it is web-based, it will be important to mention and consider some models used in software development and deployment. The general model of software development that is used in the development of this project is described below.

The Waterfall approach for software development

This is the model that will be used to develop the “Eshop:E-Commerce System”. However, feedback loops will be allowed during the whole software development process. The model chosen for this project has to favors one developer for a project. Because we are the only ones who are going to implement this project. We find this model suitable for us to follow.

The waterfall model is a **breakdown of project activities into linear sequential phases**, where each phase depends on the deliverables of the previous one and corresponds to a specialization of tasks. The approach is typical for certain areas of engineering design.

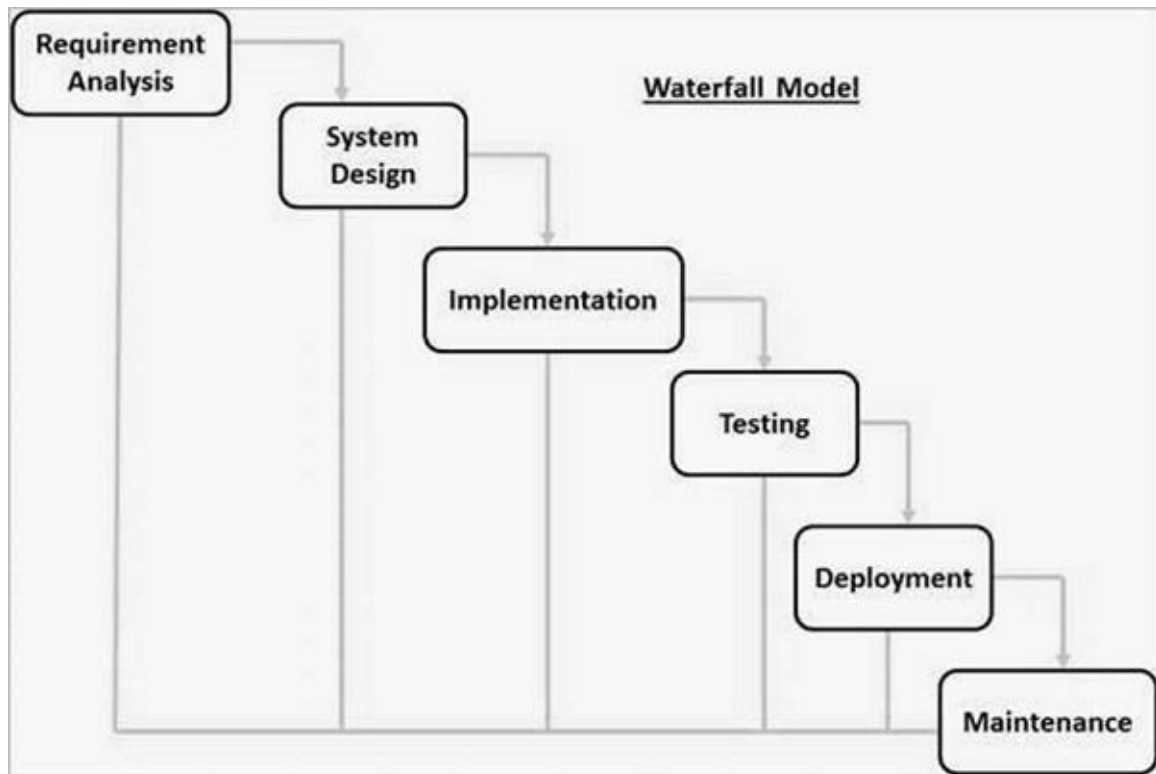


Figure 1.1: Waterfall Model [1]

1.6 Report Organization

This report document contains five chapters including this chapter. Chapter two defines and describes Background Study and Overview of related existing systems and their pros and cons. Chapter three presents the System Analysis and Design including Requirement Analysis and Feasibility Analysis. Chapter four presents the Implementation, Testing and debugging are explained. In chapter five, Conclusion, Limitations and Future Enhancement are briefly explained.

Chapter 2: Background Study and Literature Review

2.1 Background Study

The historical evolution of e-commerce systems has been marked by significant technological advancements. It began with the introduction of electronic data interchange (EDI) in the 1960s, which laid the groundwork for digital transactions between businesses. However, the true transformation occurred in the 1990s with the rise of the World Wide Web. Notable milestones include the emergence of online marketplaces like eBay and Amazon, the development of secure payment gateways like PayPal, and the expansion into mobile commerce (M-commerce) and social commerce. Recent innovations, such as blockchain technology and cryptocurrencies, have further enhanced security and transparency in e-commerce transactions. This evolution has continually reshaped the way businesses operate and customers shop, resulting in a dynamic and ever-changing e-commerce landscape.

E-commerce systems consist of several integral components, each playing a crucial role in the online shopping experience. The website or online store serves as the digital storefront, showcasing products and facilitating transactions. The shopping cart allows customers to select items for purchase, while the payment gateway securely processes payments using various methods. Inventory management ensures product availability and accurate stock levels, while robust security measures safeguard sensitive customer data. Together, these components create a seamless and secure e-commerce ecosystem, enabling businesses to reach a global customer base and streamline their operations in the digital age.

2.2 Literature Review

Current Websites providing providing E-commerce services

To get more ideas on how to implement the system in our business, we reviewed some available websites that have the same type of service and their description can be seen below.

Alibaba

Alibaba Group, founded by Jack Ma in 1999, stands as a global powerhouse in e-commerce, technology, and various other sectors. Headquartered in Hangzhou, China, the company has revolutionized the way people conduct business and shop online. Alibaba's extensive portfolio includes platforms such as Alibaba.com, connecting businesses worldwide, and Taobao, a popular online marketplace in China. Moreover, Tmall caters to

brand-conscious consumers seeking high-quality products. Beyond e-commerce, Alibaba has a significant presence in cloud computing through Alibaba Cloud, offering a wide range of cloud services. With its innovative and expansive approach, Alibaba has become a cornerstone of the digital age, shaping the future of commerce and technology on a global scale. [2]

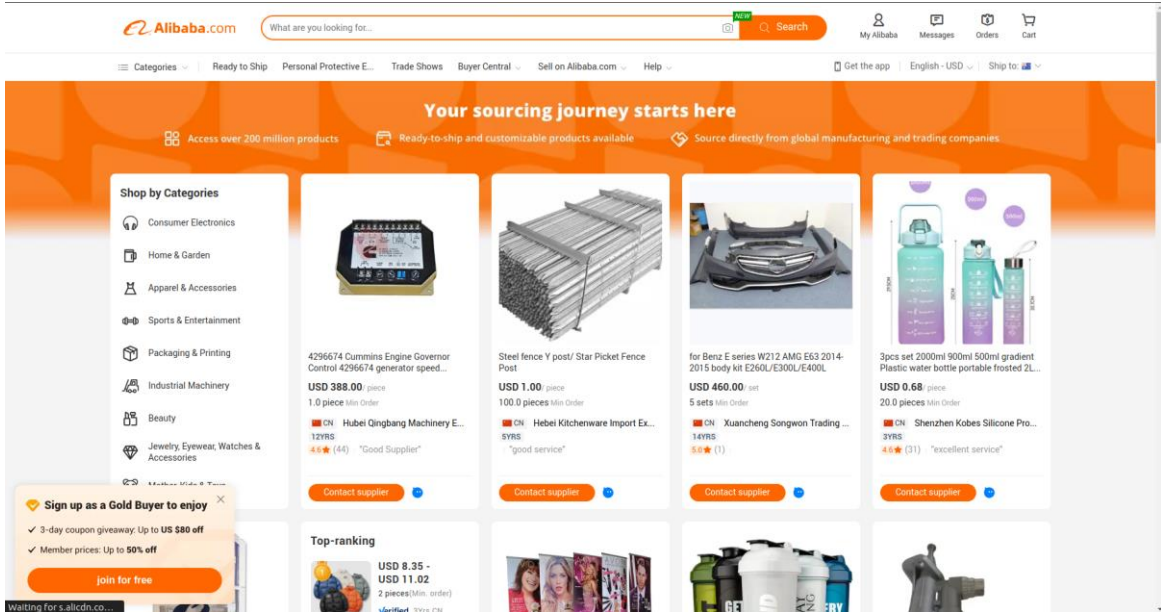


Figure 2.1: Alibaba Home Page

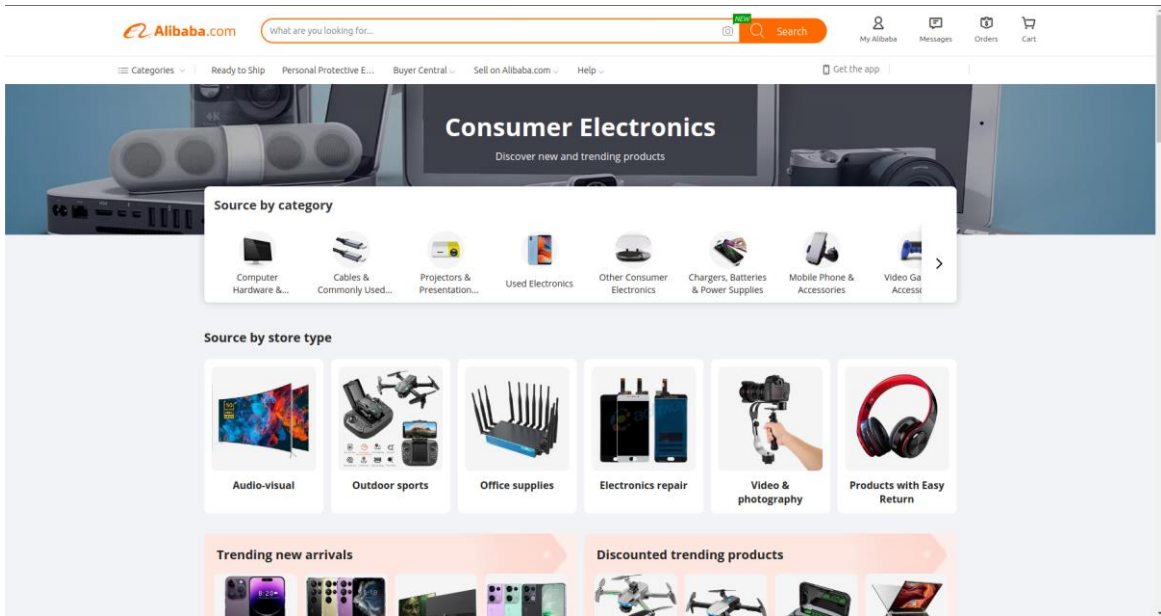


Figure 2.2: Alibaba Categories Page

Daraz

Daraz is a prominent e-commerce platform that has established a strong presence in South Asia, particularly in countries like Pakistan, Bangladesh, Sri Lanka, Myanmar, and Nepal. Founded in 2012, Daraz has grown to become one of the leading online marketplaces in the region, offering a diverse range of products, from electronics and fashion to household goods and more. It has played a pivotal role in shaping the e-commerce landscape in these emerging markets, providing consumers with a convenient and reliable platform for online shopping. Acquired by Alibaba Group in 2018, Daraz benefits from the expertise and resources of one of the world's largest e-commerce companies, further enhancing its reach and capabilities. As the digital economy continues to expand in South Asia, Daraz remains at the forefront, connecting buyers and sellers and contributing to the growth of online commerce in the region. [3]

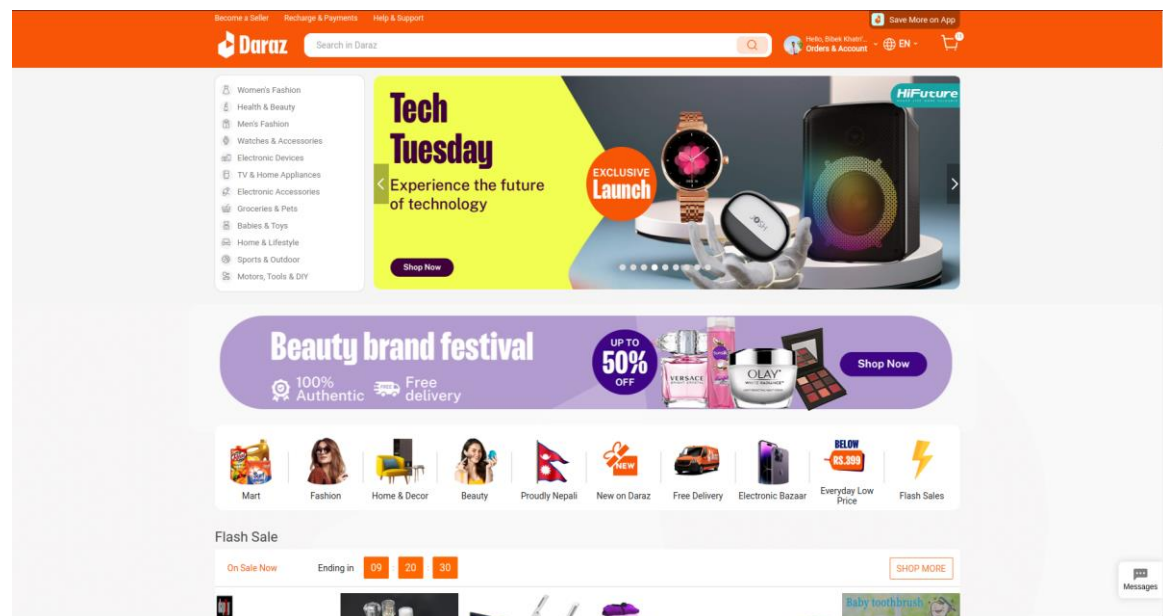


Figure 2.3: Daraz Home Page

Amazon

Amazon is a global e-commerce and technology behemoth that has fundamentally transformed the way people shop and access digital services. Founded by Jeff Bezos in 1994, Amazon started as an online bookstore but rapidly diversified its offerings to encompass a vast array of products, including electronics, clothing, and household goods. Over the years, it has also ventured into cloud computing with Amazon Web Services (AWS), streaming with Amazon Prime Video, and voice-activated technology with Amazon Echo and Alexa. Amazon's commitment to customer-centric innovation, extensive

distribution network, and disruptive business models, such as one-day delivery through Amazon Prime, have made it a dominant force in the retail and technology sectors. With a global presence and a relentless pursuit of excellence, Amazon continues to shape the future of e-commerce and redefine convenience in the digital age. [4]

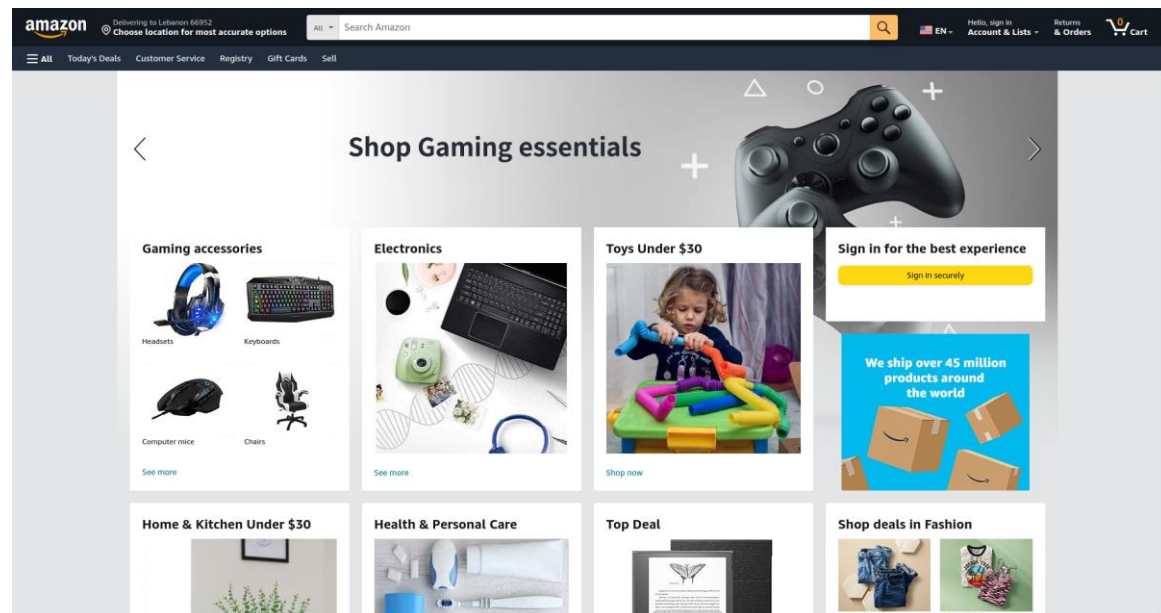


Figure 2.4: Amazon Home Page

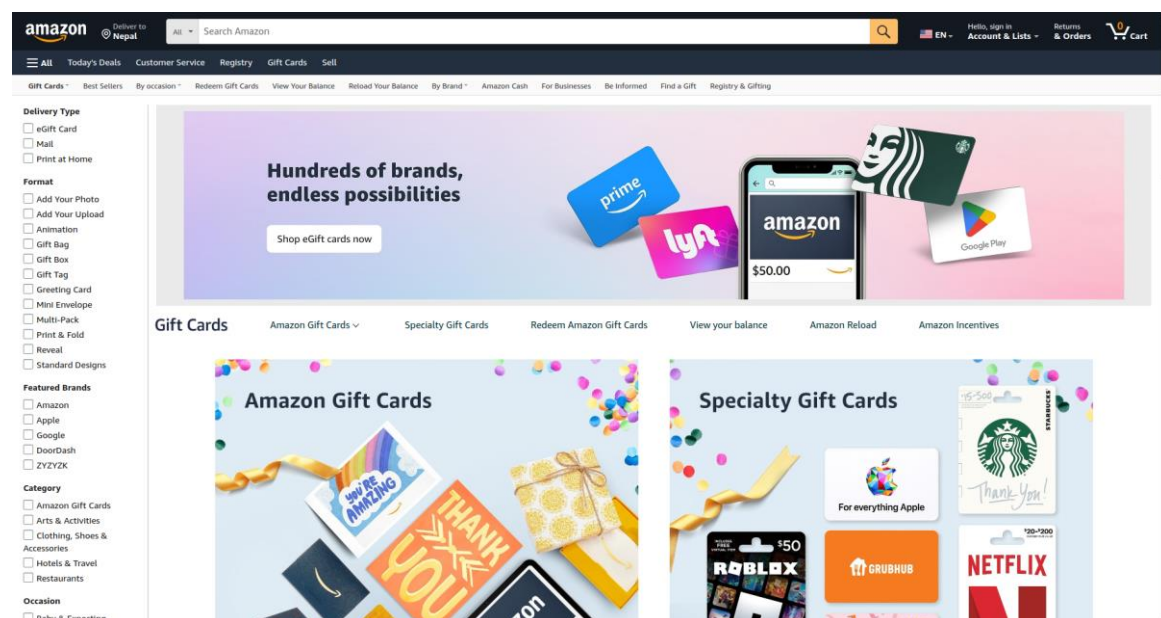


Figure 2.5: Gift Card Page

Chapter 3: System Analysis and Design

3.1 System Analysis

3.1.1 Requirement Analysis

Requirement analysis is done while developing a system and before implementing it, it is necessary to analyze the whole system requirement. It is categorized into mainly two parts:

1. Functional Requirements
2. Non-functional Requirements

For any system, there are functional and nonfunctional requirements to be considered while determining the requirements of the system. The functional requirements are user “visible” features that are typically initiated by stakeholders of the system, such as generating reports, login, and sign up. On the other hand, nonfunctional requirements are requirements that describe how the system will do what it is supposed to do, for example, Usability, Reliability & Availability, Performance, Security and maintainability.

1. Functional Requirements

- **Admin**

1. Can login/ Logout
2. Manage banner, category, products, brands, shipping, post, tags, users, reviews, orders, setting.

- **Guest**

1. Can browse the website without the need for an accounts
2. Cannot perform actions that require user authentication, such as making purchase or accessing a personal profile

- **Customer**

1. Can Signup
2. Can Login/ Logout
3. Can update the profile
4. Can view all products
5. Can purchase the products
6. Can see the purchase history
7. Can view banner, blogs

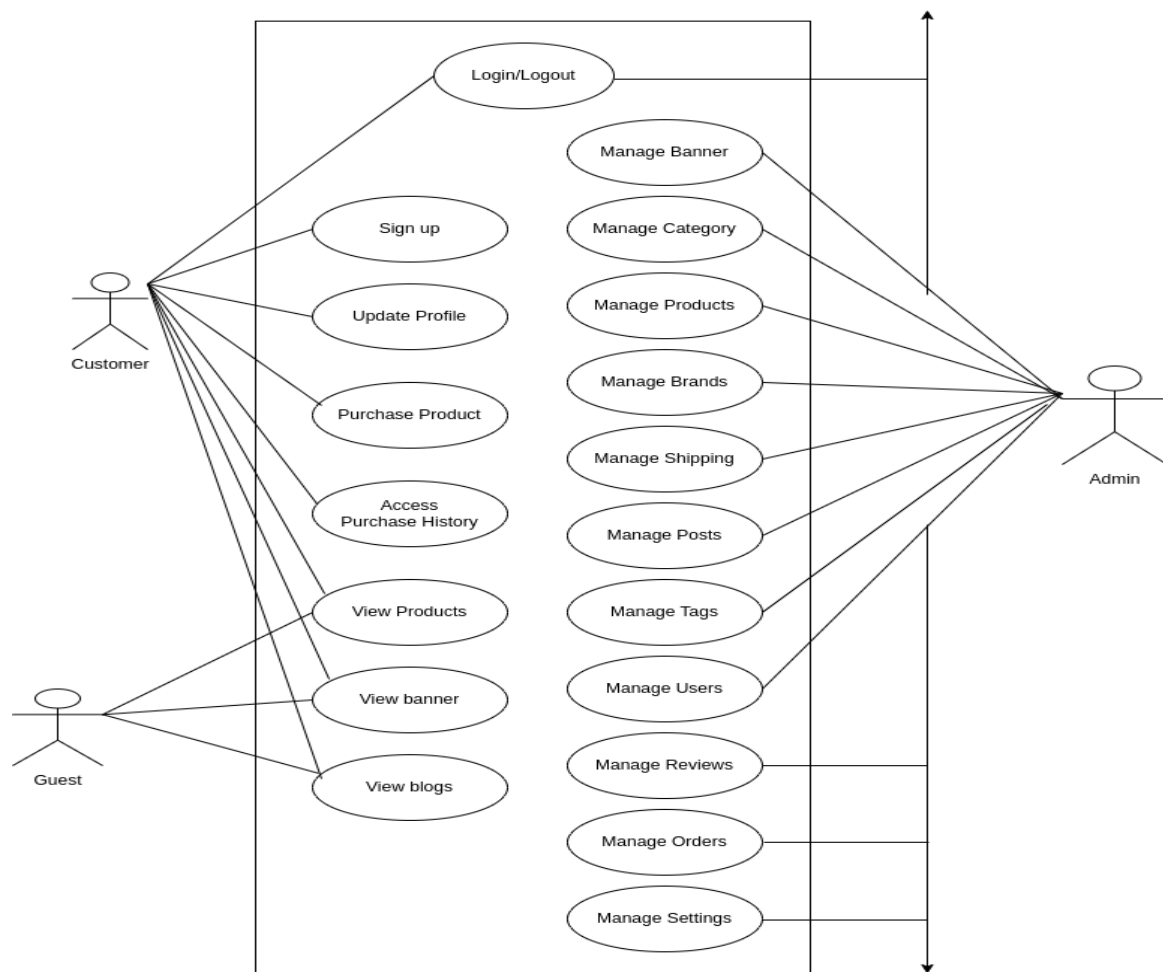


Figure 3.1: Use-Case Diagram

In the above use case diagram, the use case involves three distinct user roles within a digital platform: Admin, Customer, and Guest. The Admin, holding the highest level of access, is responsible for system management and administration. They can log in, perform various administrative tasks such as adding banners, categories, products, brands, and managing shipping, posts, tags, users, reviews, orders, and system settings. Customers, on the other hand, can sign up, log in, update their profiles, view all available products, make purchases, and review their purchase history. Lastly, Guests can explore the platform without the need for an account but do not have access to actions requiring user authentication. This role-based approach ensures that each user type has a specific set of permissions and functionalities tailored to their role, maintaining security and enabling a seamless user experience within the system.

2. Non-Functional Requirements

- **Security:** This system has accounts for its users and only authorized users can access the

system with username and password. The passwords are encrypted using secretkey.

- **Availability:** This system is available to users anytime, anywhere, just need a PC or Mobile and Internet Connection. Also, the system works in multiple web browserslike (Chrome, Mozilla and Opera).
- **Reliability:** The system has to be 100% reliable due to the importance of data and the damages that can be caused by incorrect or incomplete data. The system will run 7 days a week, 24 hours a day. This system provides a quick and efficient information of the vehicle.
- **Maintainability:** The system will be easily maintained by the developer or other authorized trained person.

3.1.2 Feasibility Analysis

Feasibility study assesses the operational, technical and economic merits of the proposed project. The feasibility study is intended to be a preliminary review of the facts to see if it is worthy of proceeding to the analysis phase. From the systems analyst perspective, the feasibility analysis is the primary tool for recommending whether to proceed to the next phase or to discontinue the project.

Feasibility studies undergo four major analyses to predict the system to be success and they are as follows

1. Operational Feasibility
2. Technical Feasibility
3. Schedule Feasibility
4. Economic Feasibility

1. Economic Feasibility

The project was developed within the organization's budgetary constraints. The project was resource was freely available, and no additional obligations are required. The creation of the system does not necessitate the use of expensive hardware or software. The platform is open sources and the resources required for the project are also open source.

2. Technical Feasibility

These include hardware, software and technologies. The suggested system is technically possible because it requires access to the use of a Smartphone, Laptop or desktop and the internet. The system's user interface is also quite simple.

3. Operational Feasibility

Reliability, maintainability, usability, and supportability are among them. The suggested system is operationally practical since it is reliable for all people regardless of whether or not they are computer literate. For a small to large-scale organization, the proposed system is supported. It is simple and straight forward to use.

4. Schedule Feasibility

Among various phases of the project data collecting took longer time as data were collected from different online e-library system and its working mechanism. After the data is acquired, the next development phase can be completed in as little as a month.

3.1.3 Object Modeling using Class and Object Diagrams

Object modeling using class and object diagrams is an essential step in the software development process. It helps in understanding the structure and behavior of the application's objects and their relationships. Here's a general overview of how you can use class and object diagrams for Eshop: Ecommerce System.

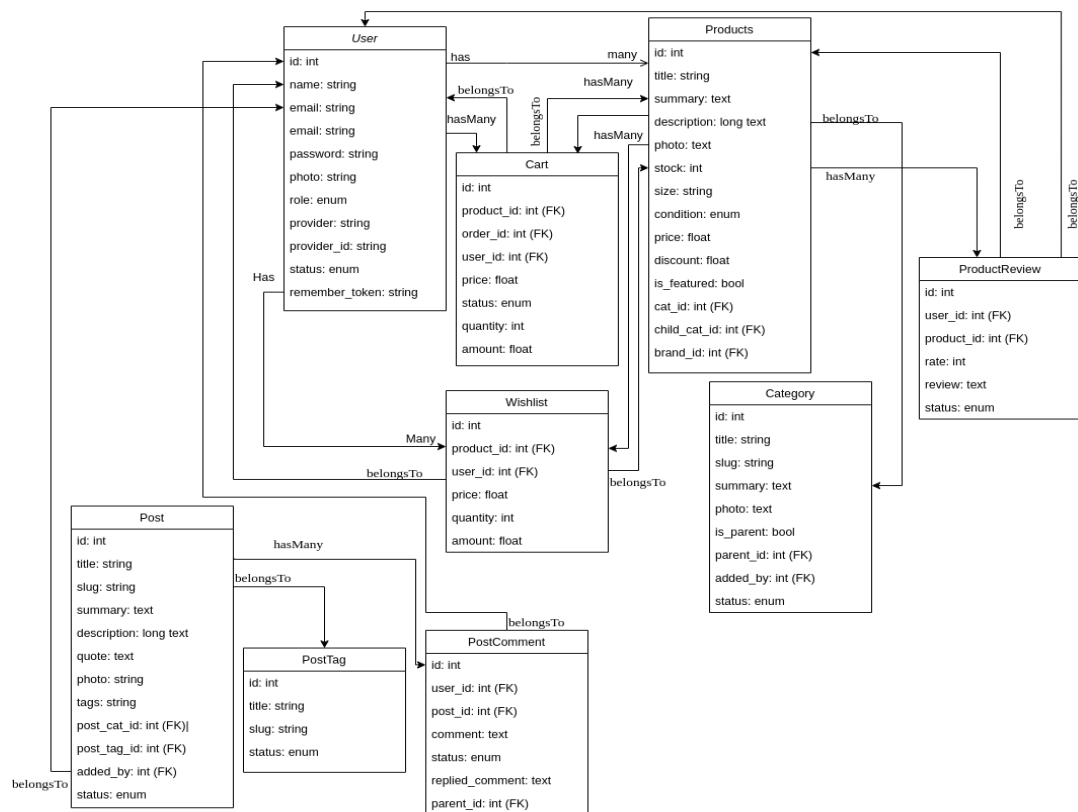


Figure 3.2: Class Diagram

The above class diagram provides an overview of the structure and relationships between the key classes in the application. In the diagram, each class is represented with its attributes and operations. Relationships between classes, such as associations and

inheritance, are also depicted. The class diagram serves as a blueprint for designing the software system, showcasing how different components interact and what operations can be performed on them.

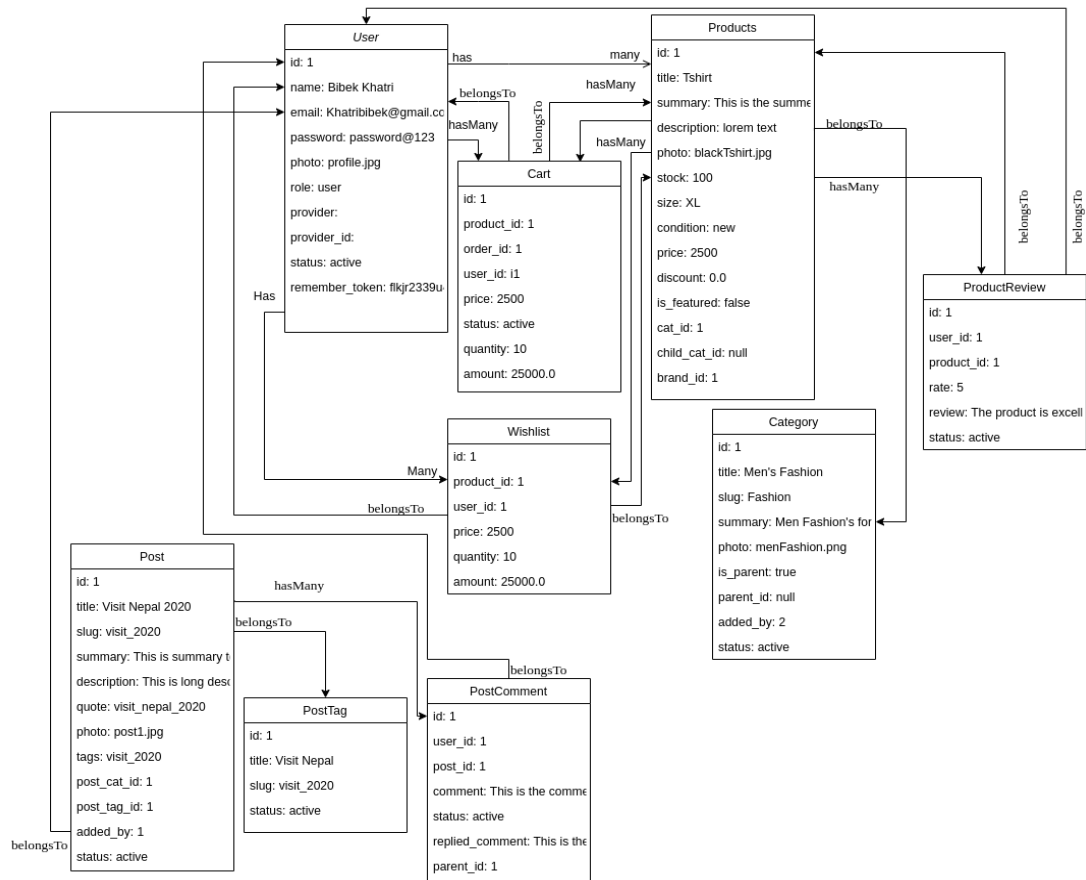


Figure 3.3: Object Diagram

The above object diagram is a specific instance of the class diagram, showing actual objects and their relationships at a particular point in time. It represents a snapshot of the application's state by instantiating classes and populating them with real data. Each object in the diagram corresponds to an instance of a class, and the links between objects illustrate how they are connected.

3.1.4 Dynamic Modeling using State and Sequence Diagrams

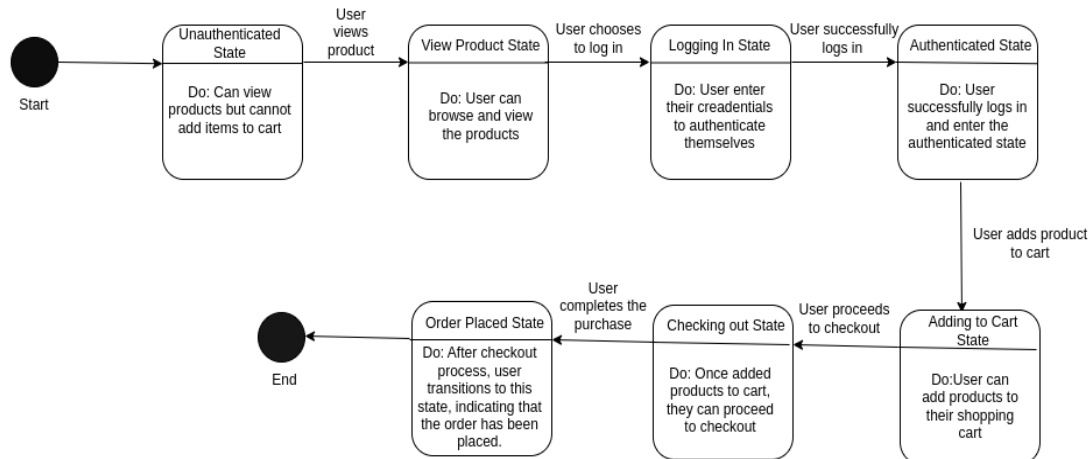


Figure 3.4: State Diagram

The above state diagram outline the user journey in Eshop: E-commerce app. It begin with user viewing products when unauthenticated. After logging in successfully, they enter an authenticated state, allowing them to add products to their cart. From there, they can proceed to checkout and place an order.

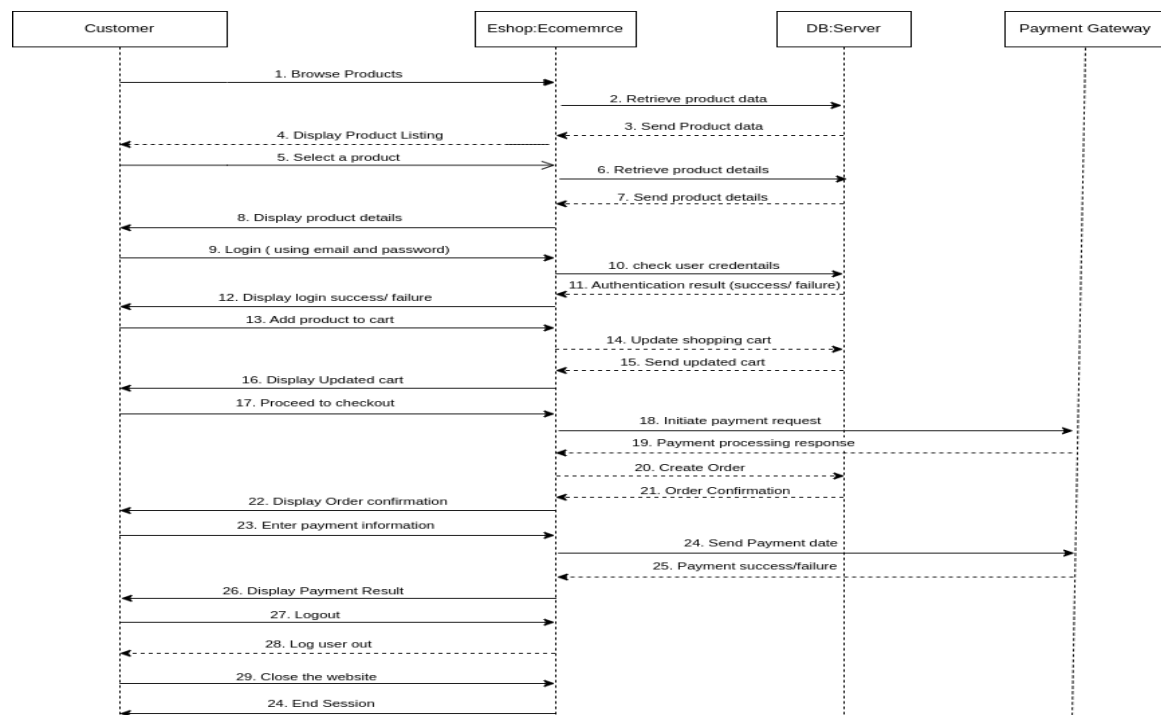


Figure 3.5: Sequence Diagram

The above sequence diagram illustrates interactions between users, the website, a database, a payment gateway, and a bank. Users begin by browsing products and selecting

items, which prompts the website to retrieve and display product information from the database. After choosing products, users can log in or proceed to checkout, with login credentials verified against the database. Once logged in, users add products to their cart, initiate the payment process, and enter payment information. The payment gateway then communicates with the bank to process the payment. Upon payment confirmation, an order is created in the database, and the user receives an order confirmation. Users can also log out or close the website to end their session. This sequence diagram illustrates the core interactions in an e-commerce system, including product browsing, authentication, shopping cart management, and payment processing.

3.1.5 Process Modeling using Activity Diagrams

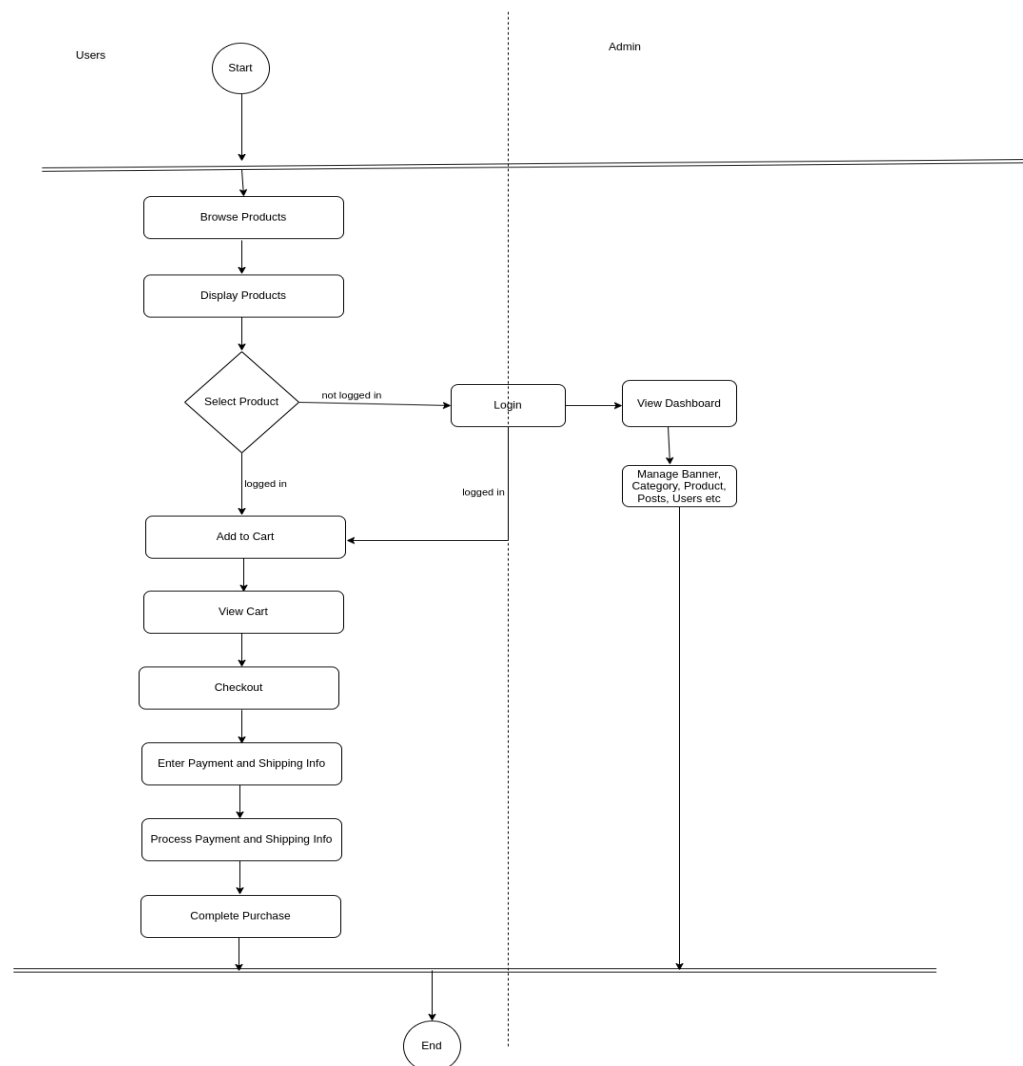


Figure 3.6: Activity Diagram

The above activity diagram of an Eshop: E-commerce system illustrates the sequence of actions for both users and administrators. On the user side, it start with browsing products, display product details, selecting items, adding them to the cart (if

logged in), reviewing the cart, and proceeding to checkout. During checkout, users enter payment and shipping information, which is then processed, leading to the completion of the purchase. On the admin side, administrators begin by logging into the system and accessing a dashboard. From there they can manage products, categories, content posts, coupons ensuring the smooth operation and maintenance of the platform.

3.2 System Design

3.2.1 Refinement of Class, Object, State, Sequence and Activity diagrams

3.2.2 Component Diagrams

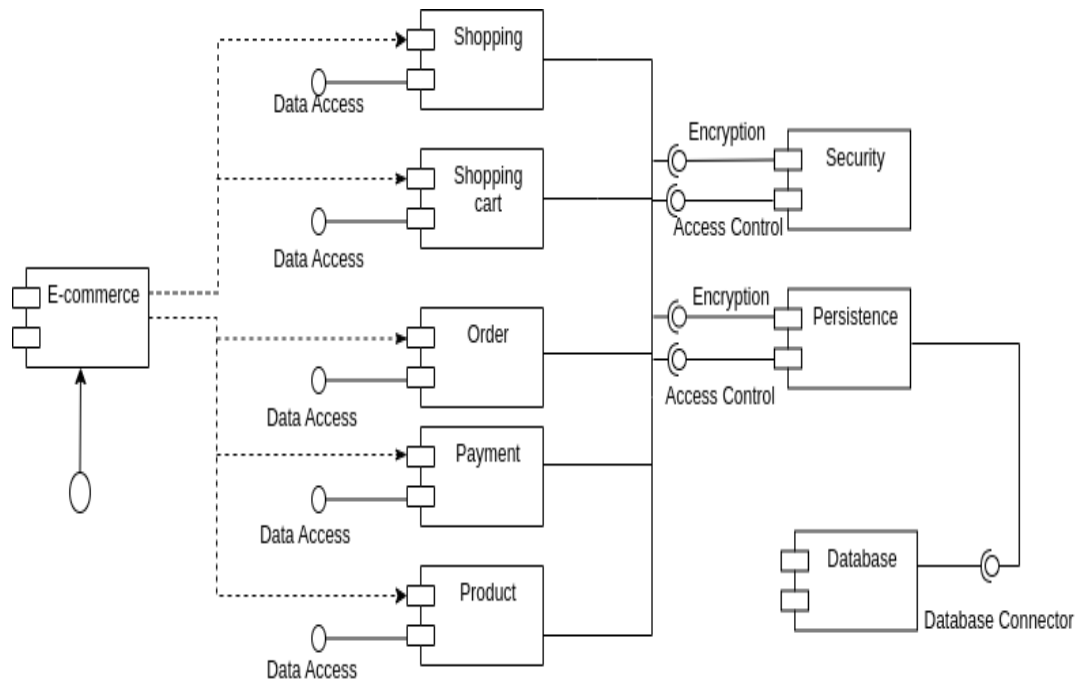


Figure 3.7: Component Diagram

The above component diagram illustrates how various components interact to facilitate online shopping. At the core is the "E-commerce" component, orchestrating the entire system. "Shopping" represents the user interface, enabling product browsing, while the "Shopping Cart" manages selected items before purchase. "Order" handles transaction finalization and tracking, and "Payment" manages secure transactions. "Product" manages the catalog, while "Security" ensures data protection. "Persistence" maintains data consistency, and the "Database" stores critical information. Together, these components create a seamless and secure online shopping experience, from product selection to payment processing, underpinned by a robust data storage and security infrastructure.

3.2.3 Deployment Diagrams

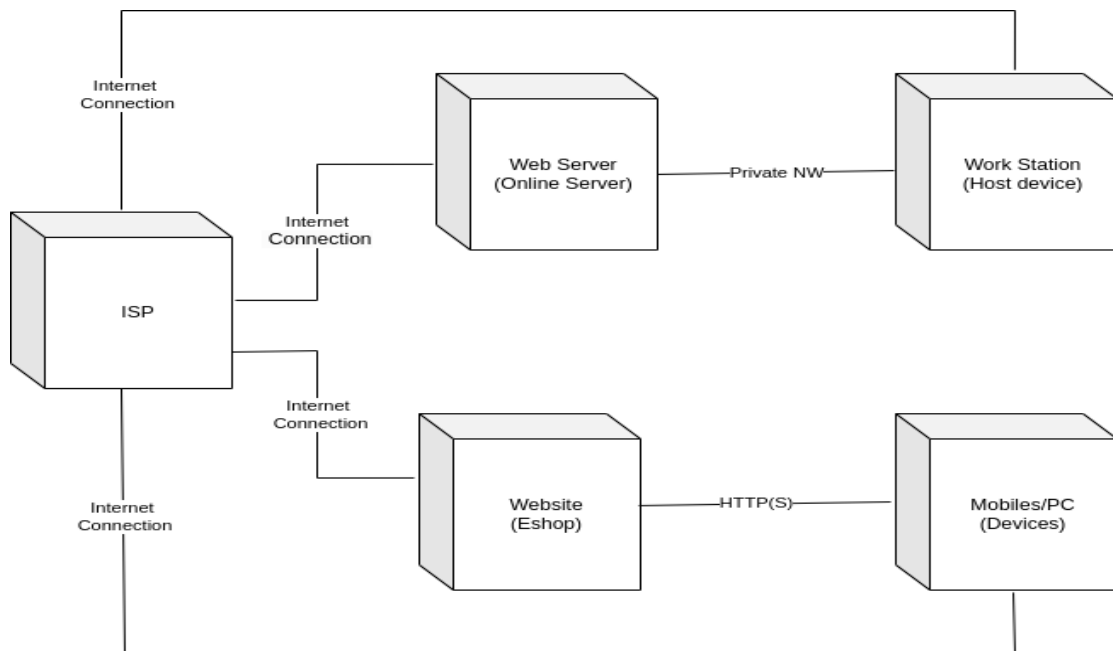


Figure 3.8: Deployment Diagram

Customers on Mobiles/PCs use their web browsers to access the E-commerce website through the internet, sending HTTP(S) requests to the public IP address provided by the ISP. The ISP routes incoming requests to the appropriate destination within network. In this case, it routes HTTP(S) requests to web server. The web server processes these requests, retrieves data from the database (if necessary), and generates responses that are sent back to the customers' devices via the ISP. The Work Station, being part of private network, is not directly accessible from the internet. It may communicate with the web server for administrative tasks, such as updating product information or managing orders. This communication typically occurs within private network and is not exposed to external users.

3.3 Algorithm Details

3.3.1 User-Based Collaborative Filtering Algorithms

User-Based Collaborative Filtering is a recommendation algorithm that makes predications about a user's preferences for items based on the preferences of other users who are similar to user. The underlying idea is that users who have similar tastes or preferences in the past are likely to have similar tastes in the future.

The main steps involved in User-Based Collaborative Filtering Algorithm are:

1. User Similarity Calculation:

- For each pair of users, calculate a similarity score based on their historical interactions or preferences. Common similarity metrics include cosine similarity or Pearson correlation.

2. Neighborhood Selection:

- Identify a subset of users who are most similar to the target user. This subset is referred to as the user's "neighborhood."
- Select the top- k most similar users, where k is a predefined parameter.

3. Rating Prediction:

- Predict the target user's preference for items they have not interacted with by aggregating the preferences of the users in the neighborhood.
- Calculate a weighted average of the ratings given by similar users to predict the target user's rating for each item.

$$\begin{aligned} & \text{Prediction}(u,i) \\ &= (\sum_{v \in N(u)} \text{Similarity}(u,v) \times \text{Rating}(v,i)) / (\sum_{v \in N(u)} \text{Similarity}(u,v)) \end{aligned}$$

- $N(u)$ is the set of users in the neighborhood of user u .
- $\text{Similarity}(u,v)$ is the similarity between users u and v .
- $\text{Rating}(v,i)$ is the rating of user v for item i .

4. Recommendation Generation:

- Recommend items to the target user based on the predicted preferences.
- Rank the items by their predicted ratings and present the top-rated items as recommendations to the user.

Chapter 4: Implementation and Testing

4.1 Implementation

Implementation basically means the phase where the system is actually being built. Firstly, all the information that we gathered is studied and analyzed and implemented a system in operation for users. It is one of the most important phases of any project. Implementation usually consists of coding, testing, installation, documentation, training and support. Different tools and technologies that have been used to develop the system which are already discuss in the previous chapter. It is basically converting system design specification into working software.

4.1.1 Tools Used

The various system tools that have been used in developing both the front-end and back- end of the project are being discussed in this chapter.

- **Front-end**

Figma, HTML5, CSS3, and JavaScript are used for developing the front-end.

- **HTML5 (Hyper Text Markup Language)**

HTML is a syntax used to format a text document on the web.

- **CSS3 (Cascading Style Sheets)**

CSS is a style sheet language used for describing the look and formatting of a document written in a markup language.

- **Java Script V8 8.9.255.25**

Java Script is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. Java Script is used to create popup windows displaying differentalerts in the system.

- **Back-end**

The back-end is implemented using Laravel and MySQL. MySQL is used to design the database.

- **Laravel**

Laravel is a highly regarded open-source PHP web application framework celebrated for its elegant and expressive syntax, which places a premium on developer-friendliness and efficient tooling. Conceived by Taylor Otwell and unveiled in 2011,

Laravel has surged in popularity within the web development sphere due to its emphasis on code simplicity, readability, and developer productivity. At its core, Laravel champions modularity, presenting a well-structured and organized framework that seamlessly incorporates a wealth of built-in libraries and components. These components, ranging from authentication to routing and caching, can be effortlessly integrated into your projects, saving time and effort. Laravel's command-line tool, Artisan, is a standout feature that streamlines various development tasks, such as code generation, database migration, and application management. Whether you're a seasoned developer or just starting, Laravel's user-friendly design and robust features make it an excellent choice for building modern, maintainable, and feature-rich web applications.

- **MySQL 8.0.22**

MySQL is the world's second most widely used open-source relational database management system (RDBMS). The SQL phrase stands for Structured Query Language. MySQL is also used in many high-profile, large-scale websites, including Google (thoughnot for searches), Facebook, Twitter, Flickr and YouTube. [4]

4.1.2 Implementation Details of Modules

After the design was made and the problems arising from the design process were clarified and dealt with, it was time to start implementing the application. Implementing application of this scale requires lots of resources and explaining the whole implantation process will not be clarified in this paper. However major important aspects in the implementation will be described.

- **The website designs**

Figma is used to design over all layout of the project and every other implementation like HTML and CSS tagging was done using VS Code. There are many style sheets and JavaScript for the website. The CSS style sheets are kept inside the css folder and js folder. The actual implementation has been done using Laravel framework that has been used to interact with the backend database. In this implementation, My SQL Server has been used. Laravel blade file process the inputs or commands given by the user and translates them in the commands understandable to the backend database. The output produced by the backend database is also handled by Laravel framework which then displayed onthe browser screen. [4]

- **Home page**

The Home page is made up of navbar at the top which includes options like home button, User Login button and User Signup button. It's the main template of the website. There is a logo on top left corner. If a user is not register in system, there is a button Loginin navbar which helps the user to login and register in system. All the information of the products is fetched from the database. If the user clicks on the Add cart button then it will open the login page if the user is not sign in, If the user is signed in to the system then the products are added to the cart.

- **Cart Page**

The cart page serves as a pivotal element where users can review and manage the products they have added to their virtual shopping cart before proceeding to the checkout process. When a user selects items for purchase, these selections are temporarily stored within a digital cart. When the user later navigates to the cart page, it is responsible for fetching and displaying the contents of their cart, offering a clear and organized overview. Each item is presented with essential details such as an image for visual identification, the product name, the price per unit, and the quantity chosen by the user. The subtotal, reflecting the total cost of that specific item based on the chosen quantity, is also showcased. This user-friendly presentation enables customers to verify their selections and make any necessary adjustments, such as modifying the quantity or removing items. The ultimate goal is to provide a transparent and convenient shopping experience, with a prominent "Proceed to Checkout" option available for users who are ready to finalize their purchase, while also offering the opportunity to continue shopping or apply discounts and promo codes if needed. This approach empowers users with control over their selections and contributes to a smoother transition from product browsing to the checkout phase.

- **Checkout Page**

The checkout page is a pivotal step where customers finalize purchases. Users provide shipping and billing information, including contact details and their name. They can choose from various shipping methods for their convenience. Additionally, the page accommodates multiple payment options, including Cash on Delivery (COD) for those who prefer paying in cash upon delivery and PayPal for secure online transactions, ensuring a smooth and flexible purchasing experience.

Description of Algorithm

User-Based Collaborative Filtering

User-Based Collaborative Filtering is a recommendation algorithm that makes

predictions about a user's preferences for items based on the preferences of other users who are similar to that user. The underlying idea is that users who have similar tastes or preferences in the past are likely to have similar tastes in the future. The algorithm works by comparing a target user's behavior or preferences with those of other users to identify patterns and make personalized recommendations.

4.2 Testing

For the application or website to be deployed it has to be tested. Hence test cases will be written to test the application. There are many types of tests to be carried out on a web application from performance, functionality, database loading time, response time, server time handling, user's actions, and many others. We will not carry out all types of tests for the application considering the time scale to present this project. Hence the performance check related to upload time, memory usage will be part of a future test. We will focus the test cases on functionality, security and performance.

The later test on the website will make sure that the website provides the right results and outcome. The test will help reduce unpredictability on the website. We will run test on various browsers making sure that the application produces the same result and is stable on the major popular browsers.

Finally, the last test will be the checking of all input source such as query strings, web services and textboxes. This will help prevent cross-side scripting attacks and SQL injection.

4.2.1 Test Cases for Unit Testing

In unit testing, we designed the entire system in modularized pattern and each module is tested. Until getting the accurate output from the individual module, I work on the same module. The input forms is tested so that they do not accept invalid input.

Table 4.2.1.1: User Registration

| ID | Test Case Description | Test Data | Expected Result | Actual Result | Pass/Fail |
|---------|------------------------------------|------------------------------|----------------------|---------------|-----------|
| U_REG_1 | User forgets to enter a particular | Name: Bibek Khatri email: | Display message that | As Expected | Pass |

| | | | | | |
|---------|---|--|---|-------------|------|
| | requiredfield. | password:bibek@123 confirm_pass:bibek@123 | “Please fill out this field.” | | |
| U_REG_2 | User entersThe InvalidEmail Formats | Name: Bibek Khatri email: khatribk10 password:bibek@123 confirm_pass:bibek@123 | Display message that “Invalid email” | As Expected | Pass |
| U_REG_3 | User entersall the details successfully | Name: Bibek Khatri email: khatribk10@gmail.com password:bibek@123 confirm_pass:bibek@123 | Display message with swap popup “Success” | As Expected | Pass |

Table 4.2.1.2: Admin Login

| ID | Test Case Description | Test Data | Expected Result | Actual Result | Pass/Fail |
|-----------|---|--|--|----------------------|------------------|
| A_LOG_1 | Admin enters a wrong email and password | email: administrator@gmail.com password:password@123 | Display message that “Invalid email or password” | As Expected | Pass |

| | | | | | |
|---------|--|--|--------------------------|-------------|------|
| A_LOG_2 | Admin enters a correct email and password. | email: admin@gmail.com password:admin@123 | Admin login successfully | As Expected | Pass |
|---------|--|--|--------------------------|-------------|------|

Table 4.2.1.3: User Login

| ID | Test Case Description | Test Data | Expected Result | Actual Result | Pass/Fail |
|---------|---|---|--|---------------|-----------|
| U_LOG_1 | User enters a wrong email and password | email: khatribibek@gmail.com password:khatri@123 | Display message that “Invalid email or password” | As Expected | Pass |
| U_LOG_2 | User enters a correct email and password. | email: khatribk10@gmail.com password:bibek@123 | User login successfully | As Expected | Pass |

4.2.2 Test Cases for System Testing

In system testing, whole system is tested as below:

Table 4.2.1.4: Test Case for Add Banner Failed

| Test Case 1 | Failed Added Category |
|-----------------|---|
| Test Data | Title: Description: This is description Photo: banner.jpg Status: Active |
| Expected Result | Display “The title must be string.” |
| Test Result | Successful |

Table 4.2.1.5: Test Case for Add Banner Successfully

| Test Case 1 | Failed Added Category |
|-----------------|---|
| Test Data | Title: Banner1 Description: This is description Photo: banner.jpg Status: Active |
| Expected Result | Display “The title must be string.” |
| Test Result | Successful |

Table 4.2.1.6: Test Case for Clicking delete button on Banner List

| Test Case | Expected Data | Test Result |
|---------------------------|-------------------|-------------|
| On Click of delete button | Delete the banner | Successful |

Table 4.2.1.7: Test Case for Add Category Failed

| Test Case 1 | Failed Added Category |
|-----------------|---|
| Test Data | Category : Summary: Description for men’s fashion Is parent: checked Photo: http://localhost/storage/photos/1/men.png Status: Active |
| Expected Result | Display “The title must be a string” |
| Test Result | Successful |

Table 4.2.1.8: Test Case for Add Category Successful

| Test Case 1 | Successfully Added Category |
|-----------------|---|
| Test Data | Category : Men’s Fashion Summary: Description for men’s fashion Is parent: checked Photo: http://localhost/storage/photos/1/men.png Status: Active |
| Expected Result | Display “Category Added Successfully” |
| Test Result | Successful |

Table 4.2.1.9: Failed Added Product

| Test Case 1 | Failed Added Product |
|-----------------|--|
| Test Data | Title : Men's Fashion Summary: Description: description on details is Featured: checked Category: Men's Fashion Price(NRS): 1800 Discount(%): 10 Size: Brand: Adidas Condition: New Quantity: 100 Photo: http://localhost/storage/photos/1/men.png Status: Active |
| Expected Result | Display "The summary must be a string" |
| Test Result | Successful |

Table 4.2.1.10: Successful Added Product

| Test Case 1 | Successfully Added Product |
|-----------------|--|
| Test Data | Title : Men's Fashion Summary: Discription Description: description on details is Featured: checked Category: Men's Fashion Price(NRS): 1800 Discount(%): 10 Size: Brand: Adidas Condition: New Quantity: 100 Photo: http://localhost/storage/photos/1/men.png Status: Active |
| Expected Result | Display "Product added successfully" |
| Test Result | Successful |

4.3 Result Analysis

Result analysis for this e-commerce website involves a comprehensive examination of the outcomes from the testing phase, aiming to gauge the performance, reliability, and

overall effectiveness of the platform. The objective of the testing, including functionality, usability, security, and performance aspects, should be clearly stated at the outset. The analysis begin with an overview of the executed test cases, summarizing the key functionalities, scenarios covered, and user interactions tested.

To test the performance, functionality and other aspect of the website, there is some test cases which are mentioned in the unit testing and system testing. And the result obtained from the testing is similar as expected, we can say the project is completed and successfully made.

Chapter 5: Conclusion and Future Recommendation

5.1 Conclusion

The goal was to create an e-commerce website where people can shop for products online. The current application has successfully met these objectives. I adhered closely to the project specifications while also making necessary enhancements when required. With the fulfillment of these goals, the foundation of the application and the project as a whole has been accomplished.

Building this web application has been both challenging and enriching. Throughout the project, I gained valuable knowledge and experience in using Laravel for web development, as well as understanding the complexities involved in creating a fully functional e-commerce platform. Challenges were encountered, particularly in the backend development, ensuring that the application's responses were predictable and efficient. Careful planning played a pivotal role in simplifying our work, as we had to carefully consider the architecture, design, choice of database systems, and the creation of business objects before proceeding with implementation.

The decision to use Laravel for this project was motivated by several factors. Laravel is known for its simplicity and ease of use, making it a practical choice for web development. Additionally, it is an open-source framework, allowing us to freely access and utilize it. Furthermore, Laravel is platform-independent, providing flexibility in deployment.

As the project nears completion, it has become evident that there are numerous opportunities for further enhancements to the application. These ideas have emerged from feedback provided by testers and our own observations. While I opted to prioritize adhering to the initial specifications within the given time frame, it is clear that future development of the application can incorporate these enhancements to improve the user experience and functionality.

5.2 Future Recommendation

Here is what can be added in the future on this website to increase its usability, user experience and portability of the website. There is a lot to be done hence this application can be considered as a starting point for something big to come. It will need more time and resources for all these to be done but it is still very realistic and possible to achieve.

- Add payment gateways,
- Addition of themes,

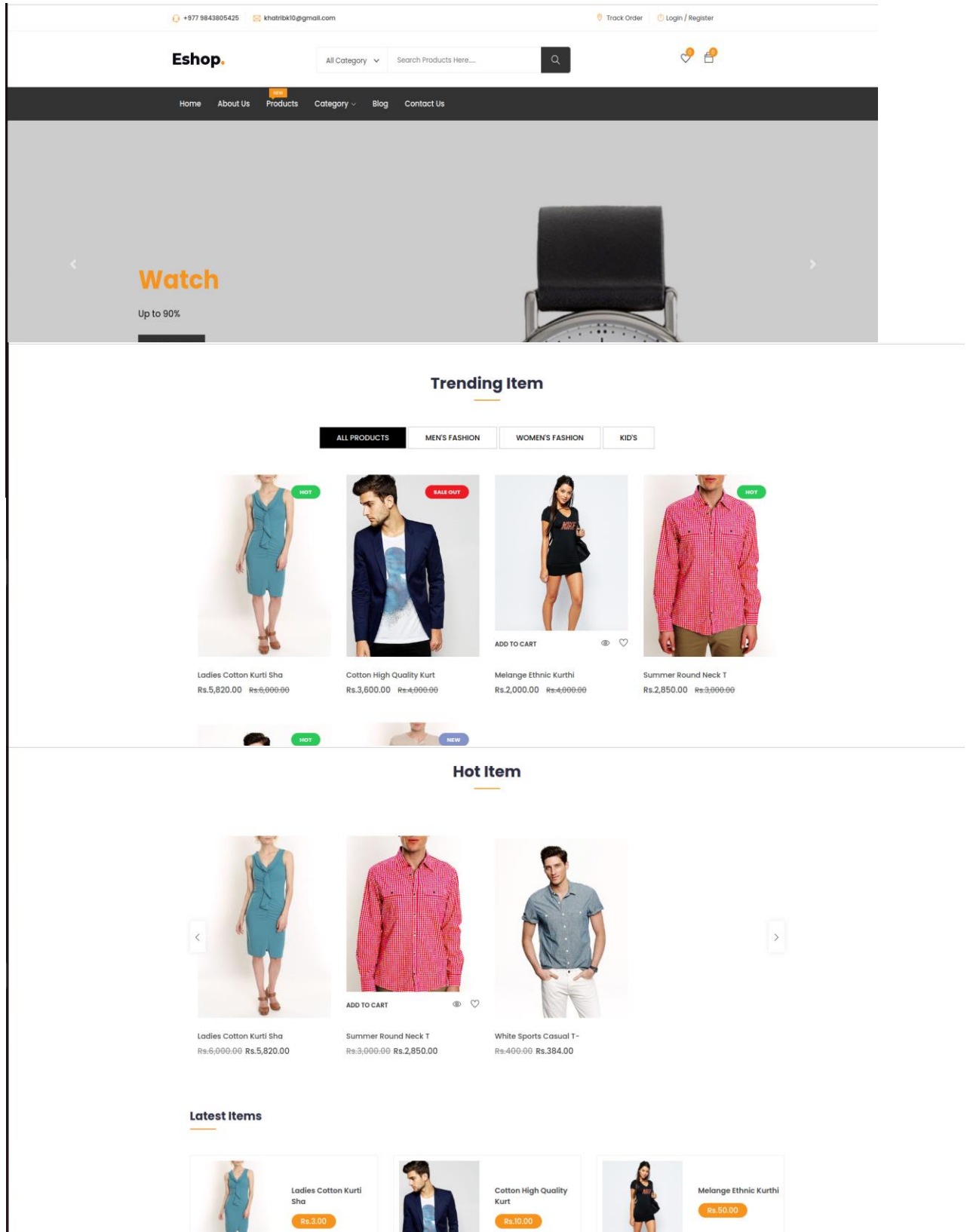
- Cancellation of Orders,
- Possibility of users for discount and provide special packages,
- Access the application on a small device (mobile app),
- Enhanced Search and Filtering.

References

- [1] T. Point, "Tutorials Points," [Online]. Available:
<https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.tutorialspoint.com>.
- [2] Alibaba, "Alibaba," [Online]. Available: <https://www.alibaba.com/>.
- [3] Daraz, "Daraz Website," [Online]. Available: <https://www.daraz.com.np/>.
- [4] Amazon, "Amazon Website," [Online]. Available: <https://www.amazon.com/>.

Appendix

1.1 Screenshots



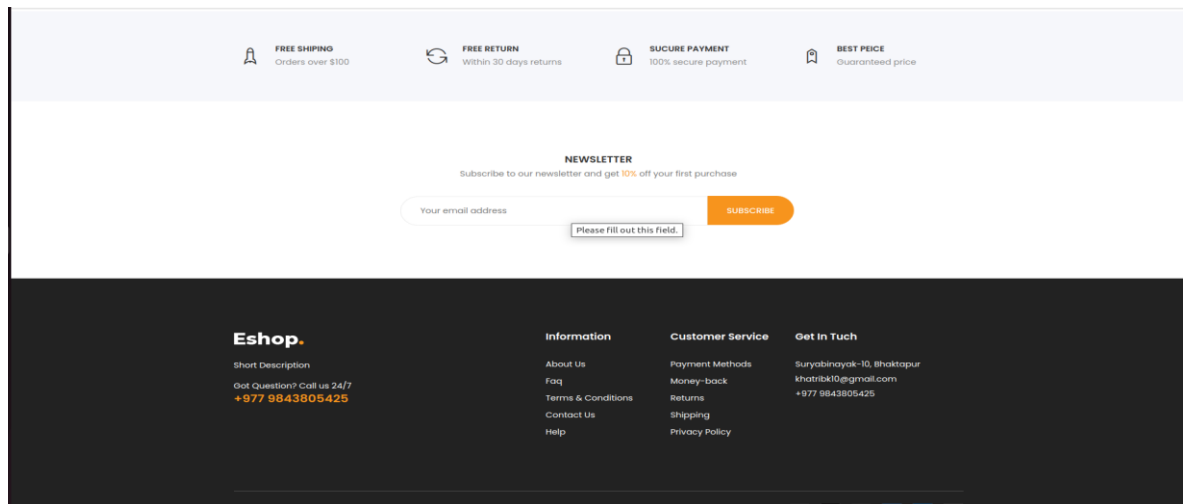


Figure I: Home Page

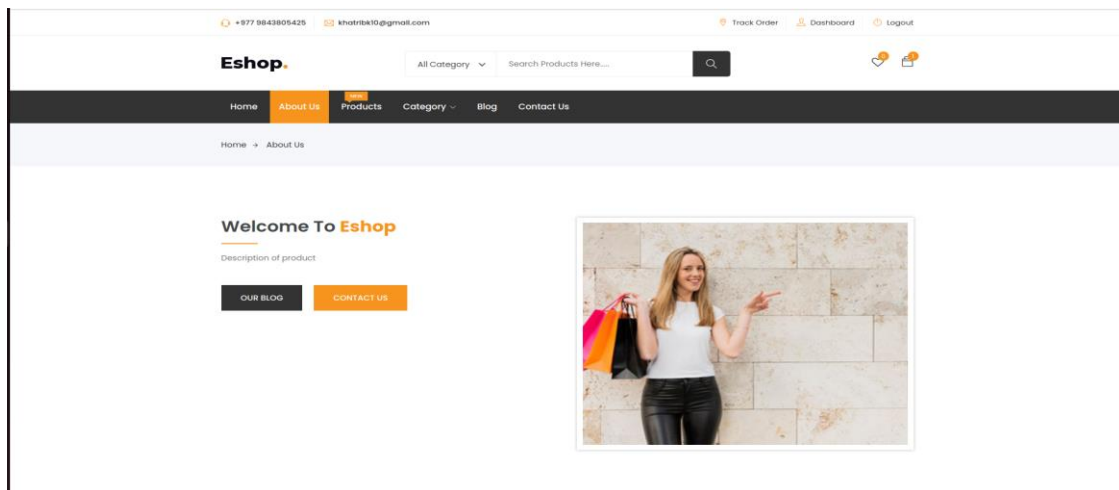


Figure II: About us Page

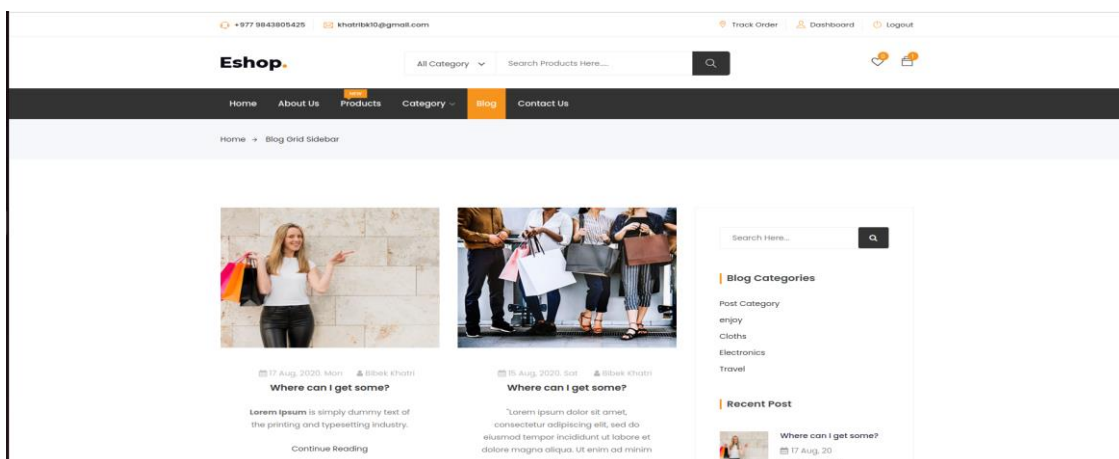


Figure III: Blog Page

[Home](#)
[About Us](#)
[Products](#)
[Category](#)
[Blog](#)
[Contact Us](#)

Home > Contact

Get in touch

Write Us A Message

Your Name

Your Subjects

Your Email

Your Phone

Your message

SEND MESSAGE

Call us Now:
+977 9843805425

Email:
khatribk10@gmail.com

Our Address:
Suryabinayak-10, Bhaktapur

Figure IV: Contact Page

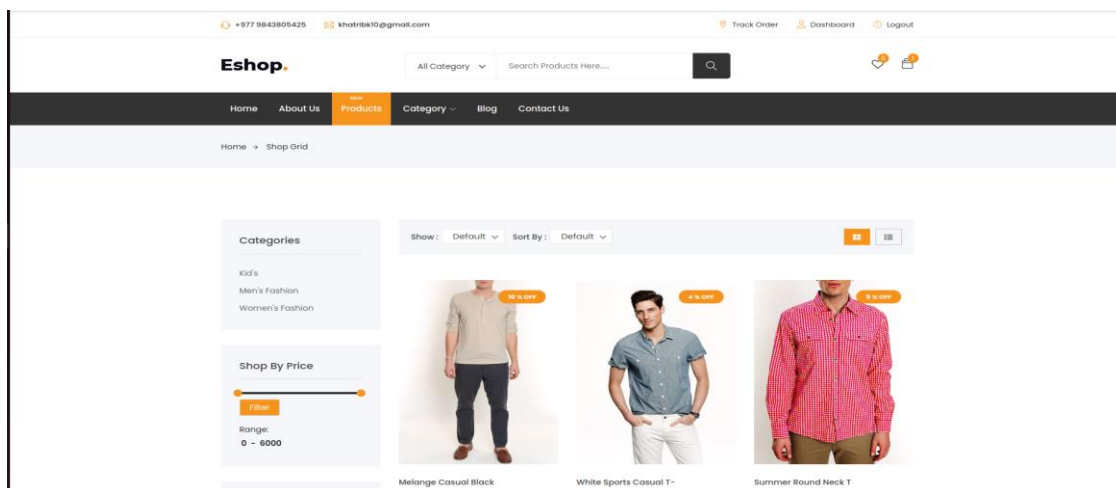


Figure VI: Track Page

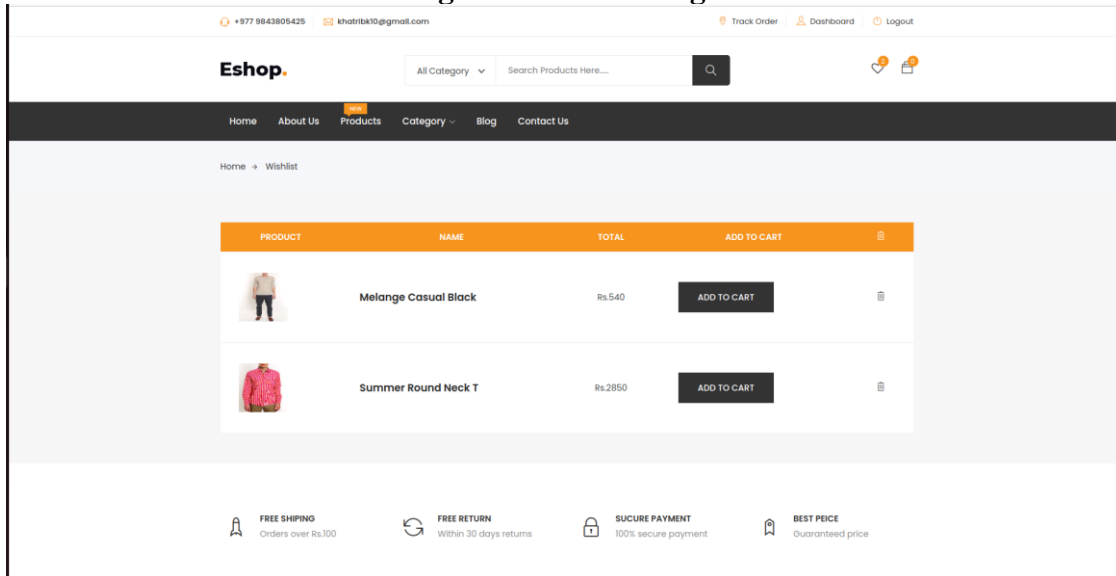


Figure VII: Wishlist Page

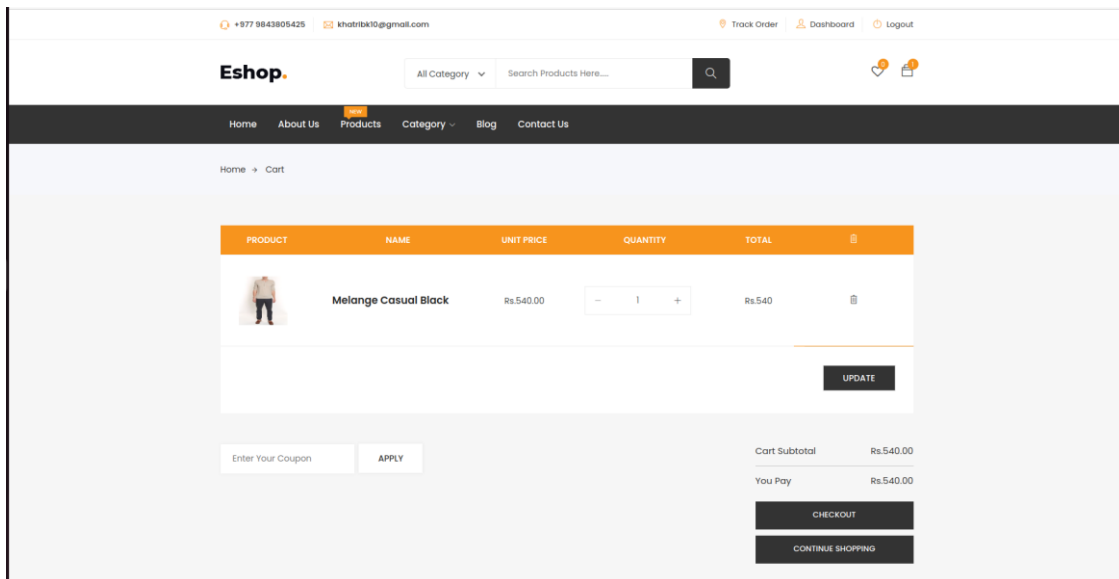


Figure IX: Cart Page

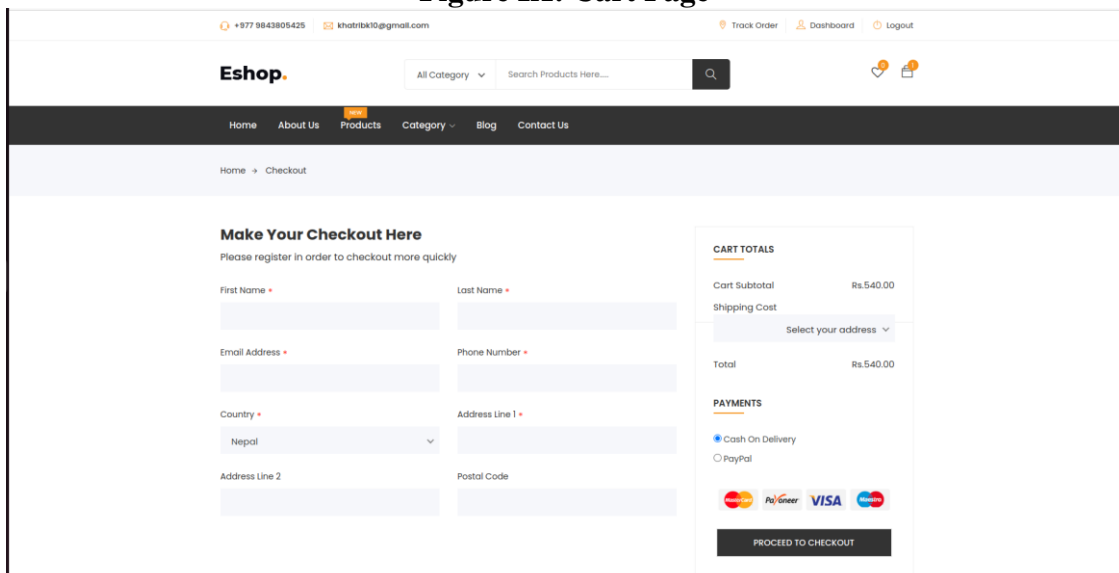


Figure X: Checkout Page

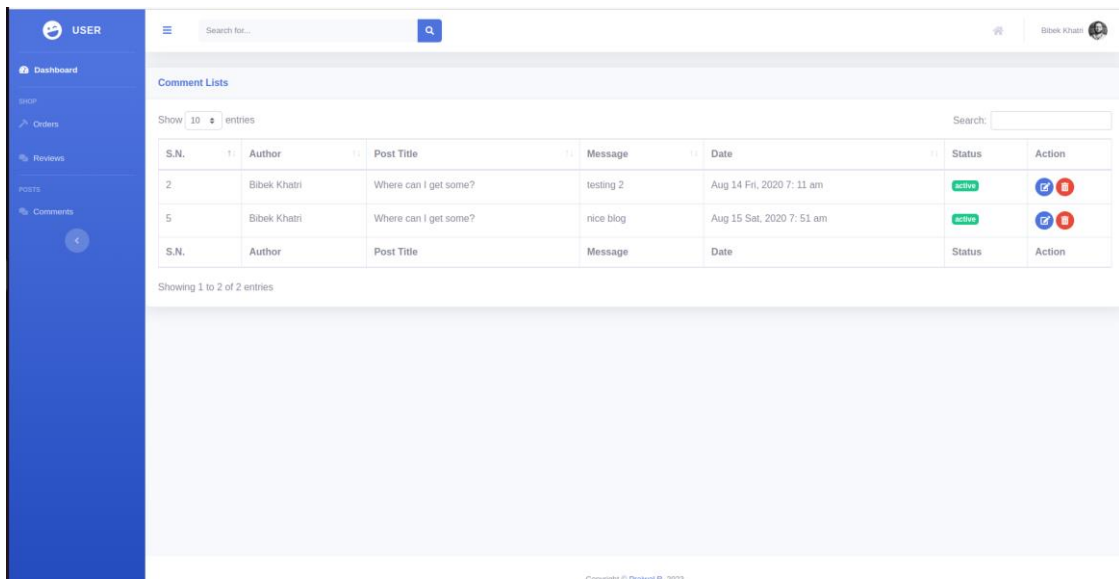


Figure XI: User Dashboard Page

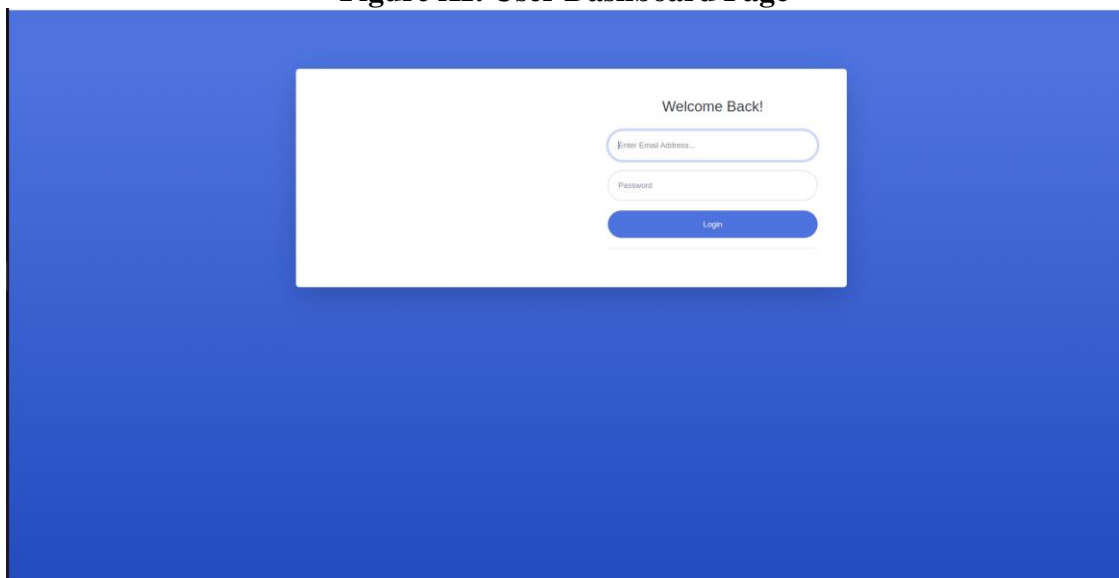


Figure XII: Admin Login Page

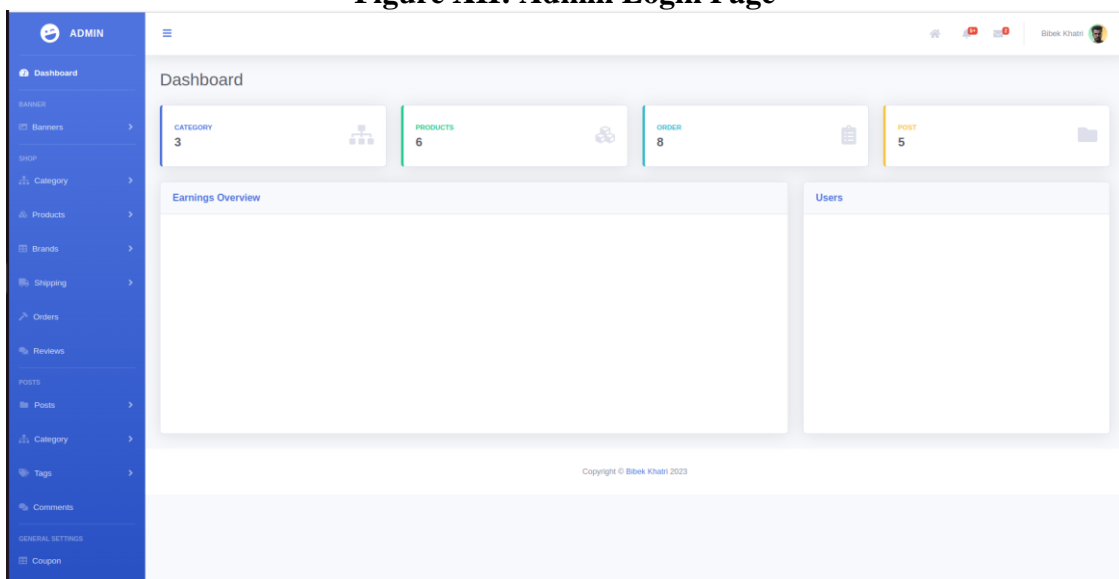


Figure XIII: Admin Dashboard

ADMIN

Dashboard

SALES

- Banners

SHOP

- Category
- Products
- Brands
- Shipping
- Orders
- Reviews

POSTS

- Posts
- Category
- Tags
- Comments

GENERAL SETTINGS

- Coupon

Add Category

Title *

Enter title

Summary

Write short description.....

Is Parent

☒ Yes

Photo

Upload Photo

Status *

Active

Reset **Submit**

Figure XIV: Add Category

ADMIN

Dashboard

SALES

- Banners

SHOP

- Category
- Products
- Brands
- Shipping
- Orders
- Reviews

POSTS

- Posts
- Category
- Tags
- Comments

GENERAL SETTINGS

- Coupon

Category Lists **+ Add Category**

Show 10 entries Search:

| S.N. | Title | Slug | Is Parent | Parent Category | Photo | Status | Action |
|------|-----------------|----------------|-----------|-----------------|-------|--------|--------|
| 1 | Men's Fashion | mens-fashion | Yes | | | active | |
| 2 | Women's Fashion | womens-fashion | Yes | | | active | |
| 3 | Kid's | kids | Yes | | | active | |
| S.N. | Title | Slug | Is Parent | Parent Category | Photo | Status | Action |

Showing 1 to 3 of 3 entries

Figure XV: List Category

