Tribhuvan University

Faculty of Humanities and Social Sciences

A Project Proposal

On

"Emporium"

Submitted to:

Department of Computer Application

Lumbini ICT College

Gaindakot, Nawalpur

Nepal

Submitted by:

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Department of Computer Application

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Faculty of Humanities and science studies

Lumbini ICT campus

Supervisor's recommendation

We hereby recommend that this project prepared under my supervision by Govinda Parajuli entitled "Emporium" in partial fulfillment of the requirements for the degree of bachelor of computer application is recommended for the final evaluation.

Signature of supervisor

…….

Tribhuvan University

Faculty of humanities and social studies

Lumbini ICT Campus

LETTER OF APPROVAL

This is to certify that this project by Govinda Parajuli entitled “Online Emporium” in partial fulfillment of the requirements for the degree of bachelor in computer application has been evaluated. In our opinion, it is satisfactory in the scope and quality as a project for the required degree.

SIGNATURE of Supervisor	**SIGNATURE of** **HOD/coordinator Mod Nath** **Acharya**
SIGNATURE of internal examiner	**SIGNATURE of external examiner**

Abstract

Within the world is digitalizing day by day in a rapid way where people want all thing can be done from home or at the time they want.

The “” has been developed in order to reduce the time for the user where they can request the book from anywhere. Beside this the new program will help both the user and admin in the case of data redundancy. The application gives mistakes message if the user or admin enter the invalid information. Basic information of client is required in order to use this system.

Acknowledgement

Firstly, I would like to express my deep gratitude to the Department of Bachelor in Computer Applications, Lumbini ICT College for providing the necessary resource and guideline to come up with this project. I would like to thank Head of Department and all the concerned faculty member of the department. My special thanks to supervisor Prakash Chhetri for his insightful advice, motivating suggestions, invaluable guidance, help and support in successful completion of this project and also for his constant encouragement and advice throughout my Project Development. I express my deep gratitude to Mr. Sudip Parajuli for his regular support, co-operation and coordination. Special thanks also go to all the teaching and nonteaching staff as well as colleagues, who have been assisting in the project directly as well as indirectly by reviewing and suggesting the improvements. Last but not the least, my cordial thank goes to Lumbini ICT College Administration who motivated us to go ahead with this project.

Contents

Chapter One: Introduction

1.1 Introduction

E-commerce, or electronic commerce, refers to the buying and selling of products or services over the internet. It has become a popular way for businesses to reach a wider audience and increase sales by providing customers with the convenience of shopping from the comfort of their own homes. E-commerce allows businesses to create online stores, display their products or services, accept payments, and handle shipping and delivery. Customers can browse and purchase products or services through a website or mobile app, and often have access to reviews, ratings, and other helpful information to aid in their decision-making. E-commerce has become an essential part of the modern business landscape, and businesses of all sizes can benefit from incorporating e-commerce strategies into their overall sales and marketing plans.

1.1 Statements Of Problems

- Poor Website Performance
- Mobile Optimization
- Limited Payment Options
- Lack of Personalization
- Shipping and Fulfillment
- Customer Service
- Cybersecurity
- Competition

1.2 Objectives

Nowadays, many applications are building rapidly. The people are getting more digitalized faster than it expected. So, various company have started to do the different task digitally because most of them are demanding through the internet. Serving information system users requires a powerful, dependable information technology infrastructure. Even the small store had been digitalizing there shop and increasing their selling rates. Absolutely, the rapid

digitalization of businesses and the increasing reliance on technology have reshaped the way companies operate and interact with customers. Embracing digital solutions and building a strong information technology infrastructure can offer several benefits to businesses, including:

- Increase Sales
- Reach a Wider Audience
- Enhance Customer Experience
- Improve Operational Efficiency
- Gather Data and Insights
- Offer Customization and Personalization
- Increase Brand Awareness
- Digital Marketing
- Artificial Intelligence and Automation

1.3 Scope

- Limited Product Catalog: A small e-commerce website offers a focused selection of products or services within a specific niche or target market.
- Essential Features Only: The website provides essential e-commerce features such as a shopping cart, secure payment processing, and order management.
- User-Friendly Interface: The website is designed with a simple and intuitive user interface for easy navigation and a seamless shopping experience..
- Customer Support: Contact information or a simple customer support system is available to address customer inquiries and concerns.
- Customer Accounts: Customers can create accounts to access order history and receive personalized recommendations.

- Security Measures: Basic security measures, like SSL certificates, are implemented to safeguard customer data and transactions.

- Local and Global Reach: The website caters to a local audience while having the potential to expand its reach globally in the future.
- Scalability Consideration: The website is built with the potential for scalability and growth in mind to accommodate future expansion.

1.4 Limitations

Everything has both good sides and bad sides. In this system, we have tried our best to make least limitation in order to run the application smoothly. While opening the application sometimes it may get slow or even crash in the computer so it could require an engineer in order to maintain to use the system start again. While it is on internet, it might be threat for any unwanted login activity or the hackers could reach it and damage our system. Hence, the system should be checked regularly by the admin to see if the external threats are there or not accordingly.

1.5 Report Organization

Chapter 1: Introduction about the project, Problem statements, Objectives, Scope and Limitations of the project.

Chapter 2: Background Study and Literature review, describes the existing system at the present time. It compares between our system and the existing system.

Chapter 3: System Analysis and Design, describes how the system is been designed and what is the feasibility of this system in real world 3

Chapter 4: Implementation and Testing has been described here how and where the code has been implemented. Interface design and testing work flows of the system has been presented.

Chapter 5: Conclusion marks an end to the document by submitting up the entire project and also opening the door for research in improved developed system. Lesson learns and future recommendation is also included in this chapter.

Chapter 2: Background Study And Literature Review

2.1Background Study

E-commerce applications have witnessed tremendous growth in recent years, primarily due to the increasing popularity of online shopping. The widespread use of smartphones and other mobile devices has significantly contributed to the accessibility and convenience of e-commerce for consumers. As a result, the e-commerce industry has experienced exponential growth and has become an integral part of the modern economy.

Online shopping has revolutionized the way we buy products and services. Thanks to e-commerce applications, we can now shop from the comfort of our homes or on the go using our smartphones and other devices. These apps create virtual stores where businesses can showcase their products, just like physical retail stores, but with the added advantage of reaching a global audience.

One of the key strengths of e-commerce applications lies in their user-friendly interfaces and intuitive navigation. They are designed to provide a seamless and hassle-free shopping experience for users. With a few taps or clicks, customers can easily find the products they desire and complete their purchases securely and efficiently. E-commerce apps prioritize the security of payment information, ensuring that customers can shop with peace of mind.

One of the most appealing features of e-commerce applications is their ability to offer personalized recommendations. By analyzing user behavior and past purchases, these apps can suggest products that align with individual preferences, making the shopping experience more tailored and enjoyable. Additionally, customer reviews and ratings provide valuable insights into product quality and customer satisfaction, helping users make informed decisions before making a purchase.

Despite the immense advantages they bring, developing and maintaining e-commerce applications is not without its challenges. One of the primary concerns is cybersecurity

threats. As the volume of online transactions increases, so does the risk of data breaches and cyberattacks. Companies must invest in robust security measures to safeguard customer data and protect against potential threats.

Another critical aspect is the continuous need for updates and maintenance to provide the best user experience. E-commerce applications must adapt to evolving technology and user expectations, necessitating regular updates and improvements. Ensuring the app's responsiveness, compatibility with various devices, and seamless functionality requires a dedicated development team.

Nevertheless, the benefits of e-commerce applications far outweigh the challenges. They have become indispensable tools for businesses seeking to expand their customer base and boost sales. With the continuous advancement of technology and the increasing adoption of online shopping, e-commerce applications will continue to play a pivotal role in the digital landscape.

As we move forward, the integration of innovative technologies like artificial intelligence and machine learning is likely to further enhance the capabilities of e-commerce applications. These technologies can further improve personalization, automate customer support, and optimize product recommendations, leading to even higher customer satisfaction and increased sales.

The future of e-commerce applications holds tremendous potential for growth and innovation. As consumers increasingly embrace online shopping, businesses must leverage these applications to stay competitive and relevant. E-commerce will continue to reshape the retail landscape, offering exciting opportunities for businesses to thrive in the digital age.

In conclusion, e-commerce applications have ushered in a new era of shopping convenience and accessibility. They empower businesses to reach a wider audience and offer customers a seamless shopping experience. With ongoing advancements in technology and an evolving consumer landscape, e-commerce applications will undoubtedly remain at the forefront of the retail industry for years to come. So, let's embrace the digital revolution and get ready to

explore an ever-expanding world of online shopping right at our fingertips.

2.2 Literature Review

The rapid growth of e-commerce applications in recent years has revolutionized online shopping, making it convenient and accessible for consumers worldwide. With user-friendly interfaces, seamless navigation, and personalized product recommendations, these apps offer a superior shopping experience. However, the industry faces challenges, particularly concerning cybersecurity threats, demanding robust security measures to safeguard customer data. Continual development and the integration of cutting-edge technologies like artificial intelligence and machine learning present promising opportunities for further enhancing e-commerce apps and meeting evolving consumer expectations. As businesses embrace this digital revolution, e-commerce applications are poised to remain indispensable tools for reaching a global audience and thriving in the competitive online marketplace.

The e-commerce industry in Nepal has been experiencing significant growth in recent years, driven by factors such as increased internet penetration, smartphone adoption, and changing consumer preferences. As more people gain access to the internet, online shopping has become increasingly popular and convenient for Nepalese consumers. E-commerce applications have played a crucial role in facilitating this trend by providing virtual stores where businesses can showcase their products and services to a broader audience.

As a small e-commerce system ,our platform can play a vital role in providing consumers with a convenient and accessible way to shop online.

The literature review demonstrates that the strengths of these applications, such as user-friendly interfaces, personalized recommendations, and secure transactions, have fueled their rapid growth. However, it also emphasizes the importance of addressing challenges like cybersecurity threats and continuous development to maintain competitiveness in the e-commerce market.

Chapter 3: System Analysis And Design

3.1 System Analysis

A Software model is a useful portrayal of an item or framework. To manage a project efficiently, the manager or development team must choose the software development methodology that will work best for the project at hand. All methodologies have different strengths and weaknesses and exist for different reasons. Some of the software development life cycle models are

- Waterfall Model
- Prototyping Model
- Iterative Model
- Spiral Model
- Agile Model

In this software development process, I am going to use Waterfall model which is the oldest and most straightforward of the structured SDLC methodologies. In this model after finishing one phase, then only moving to the next. No going back. Each stage relieson information from the previous stage and has its own project plan. Waterfall is easy to understand and simple to manage.

Here, we are using this model because this is small project and requirement are already identified so it would be the best to use in this type of project.

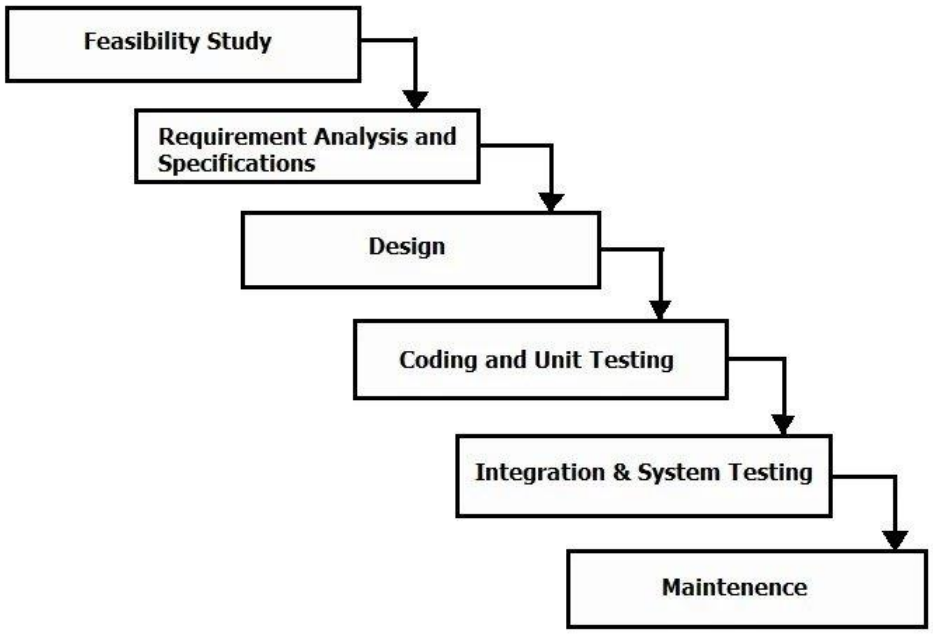

Figure 1 Waterfall Model

3.1.1 Requirement Analysis

Any changes that may occur throughout the project stages should be handled with clarity and care. Any potential changes would be looked over, discussed and determined if the time allotted the construction of the project can allow such a change-that is it is agreed between the team and the stakeholder. Requirement management will occur throughout the project process flow as change under any circumstances. The main aim of review is data collection. I carefully structured the data collection by physically and digitally that gather both qualitative and quantitative about the existing system and the required system to the users. Interview was also conducted by both types i.e., open-ended and close-ended interview from where we get the required thins in order to develop the system. I work closely with the business owners to identify their goals and objectives for the e-commerce platform. Understand the target market, product categories, sales targets, and expansion plans to align the platform with the business strategy.

By conducting a thorough requirement analysis, i can ensure that the e-commerce platform meets the needs of all stakeholders, provides an excellent user experience, and aligns with the business goals and industry standards.

I. Functional Requirement

Requirement analysis is a software engineering technique that is composed of the various tasks that determines the need or conditions that are to be met for a few altered products, taking into consideration the possible conflicting requirements of various users. Functional requirement are those requirements that are used to illustrate the internal working nature of the system and explanation of each subsystems functional requirement of the system are described below briefly.

- Registration System: The system should allow the new users and admin to register so they can get access to the system.
- Login System: After login only, they can fully get to use the system.
- View Products: Both users and admin can view the products available in the system.
- Profile: Both admin and user can view their own profile and update it.
- Update Passwords: Both admin and user can manage their passwords.
- View Status: Both can view whether the order is approved or not.
- Notification: Order notification can be seen both by user and admin.

The other things which can be done by admin and user are represented in use case diagram the above mentions features are basic things which can be done by both admins and the users.

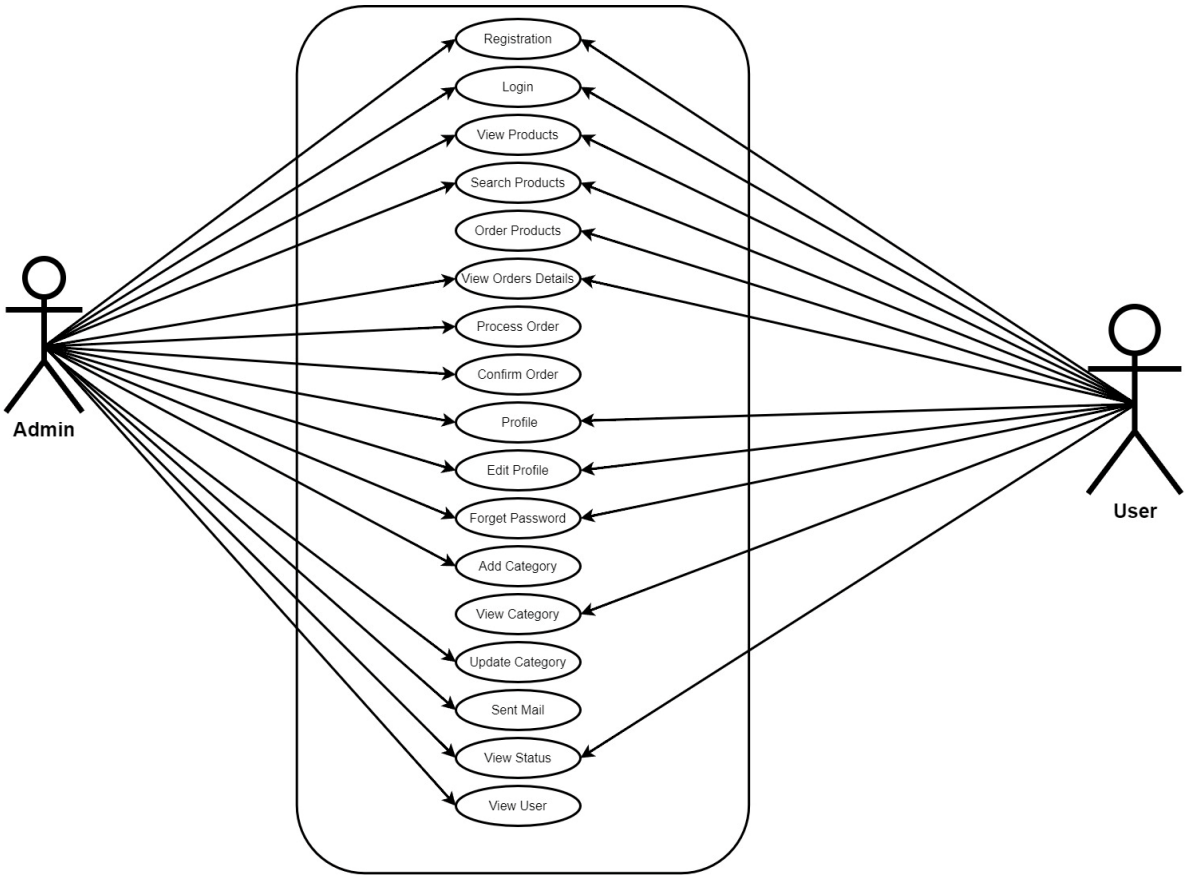

Figure 2 Use Case Diagram For Emporium

II. Non-Functional Requirements

Non-Functional Requirements are the constraints or the requirements imposed on the system. They specify the quality attribute of the software. Non-Functional Requirements deal with issues like scalability, maintainability, performance, portability, security, reliability, and many more.

➢ **Maintainability:** Maintainability refers to the ease with which you can repair, improve and understand software code. In the software life, the maintenance is an essential part so daily maintenance helps to fix the different bugs arising in the modern era

➢ **Security:** The subsystem should provide a high level of security and integrity of the data held by the system, only authorized personnel of the company can gain access to the company's secured page on the system; and only users with valid password and username can login to view user's page.

➢ **Portability:** Defines how a system or its element can be launched on one environment or

another. It usually includes hardware, software, or other usage platform specification. Put simply, it establishes how well actions performed via one platform are run on another. Also, it prescribes how well system elements may be accessed and may interact from two different environments.

➢ **Performance:** The website's load time should not be more than two second for users. If it takes more time then the user will get bored so it should be performed accurately and fast.

➢ **Scalability:** Software scalability is an attribute of a tool or a system to increase its capacity and functionalities based on its users' demand. Scalable software can remain stable while adapting to changes, upgrades, overhauls, and resource reduction.

3.1.2 Feasibility Study

Feasibility is defined as the practical extent to which a project can be performed successfully. To evaluate feasibility, a feasibility study is performed, which determines whether the solution considered to accomplish the requirements is practical and workable in the software. I studied the feasibility of the software in context of a Online Shopping . After analyzing the Online Website, we made the web portal feasible according to the environment of it. The feasibility study is to serve as a decision document and it must answer three key questions.

i. What could be the easy way to do that task for both librarian and the users?
ii. ii. Whether the software will meet organizational requirements or not?
iii. iii. What is recommended?

For our project, we performed following feasibility study:

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

1. Technical Feasibility

In Technical Feasibility current resources both hardware software along with required technology are analyzed/assessed to develop project. Since technical feasibility centers on the existing computer system i.e., Hardware, Software etc. Along with this, feasibility study also analyzes technical skills and capabilities of technical team, existing technology can be used or not, maintenance and up-

gradation is easy or not for chosen technology etc. Here, I require SQL database management and PHP environment with LARAVEL framework which are easily available with extensive development through the colleges and web portals.

2. Operational Feasibility

In Operational Feasibility degree of providing service to requirements is analyzed along with how much easy product will be to operate and maintenance after deployment. Along with these other operational scopes are determining usability of product, determining suggested solution by software development team is acceptable or not etc... Anyway, this project had no possibility of rejection from any stake holders because it was able to provide a very simple and familiar user interface to the users.

3. Schedule Feasibility

In Schedule Feasibility Study mainly timelines/deadlines are analyzed for proposed project which includes how many times teams will take to complete final project which has a great impact on the organization as purpose of project may fail if it can't be completed on time. Here, in the project the requirement of the system is already fixed and cannot be changed, we managed the perfect time period for project by analyzing and discussing with experts, and all things shows that our time is feasible and have scheduled time in right way.

4. Economic Feasibility

In Economic Feasibility study cost and benefit of the project is analyzed. Means under this feasibility study a detail analysis is carried out what will be cost of the project for development which includes all required cost for final development like hardware and software resource required, design and development cost and operational cost and so on. As our system utilizes free software such as HTML, CSS, JS, and MYSQL, which will not 10 generate any cost also the application doesn't spend much more money so our system is economically feasible. Moreover, this is a college project here we will not check whether it is beneficial to us or not.

5. Legal Feasibility

In Legal Feasibility study project is analyzed in legality point of view. This includes analyzing barriers of legal implementation of project, data protection acts or social media laws, project certificate, license, copyright etc. In this project legal view is not taken that seriously because it is only for the educational purpose not for the economic purposes but the books studied, and the system overviewed are mentioned in the references.

3.1.3 Data Modeling (ER-Diagram)

An Entity Relationship (ER) Diagram is a type of flowchart that illustrates how "entities" such as

people, objects or concepts relate to each other within a system. It is the basic design upon which a database is built. ER diagrams specify what data we will store: the entities and their attributes. They, also show how entities relate to other entities. The main components of E-R model are: entity set and relationship set.

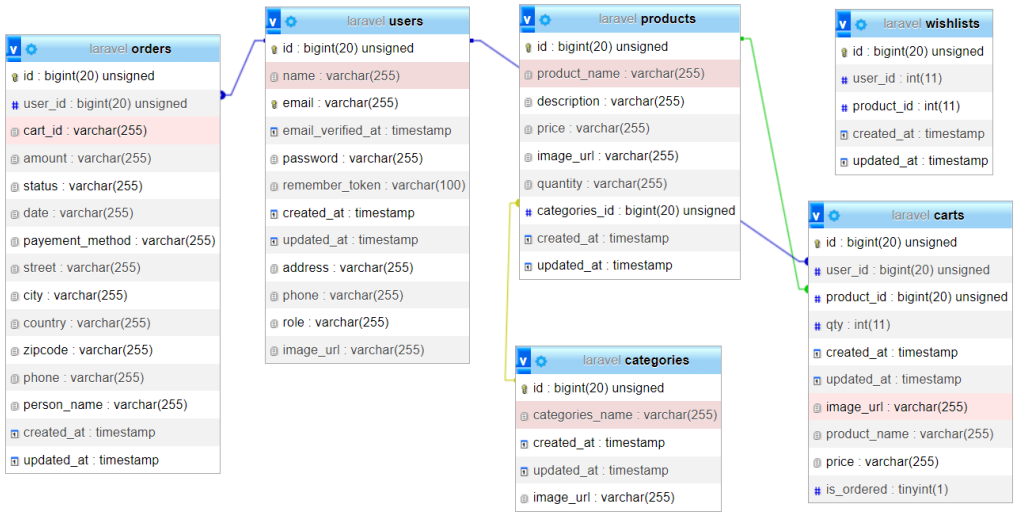

Figure 3: Entity Relationship Diagram

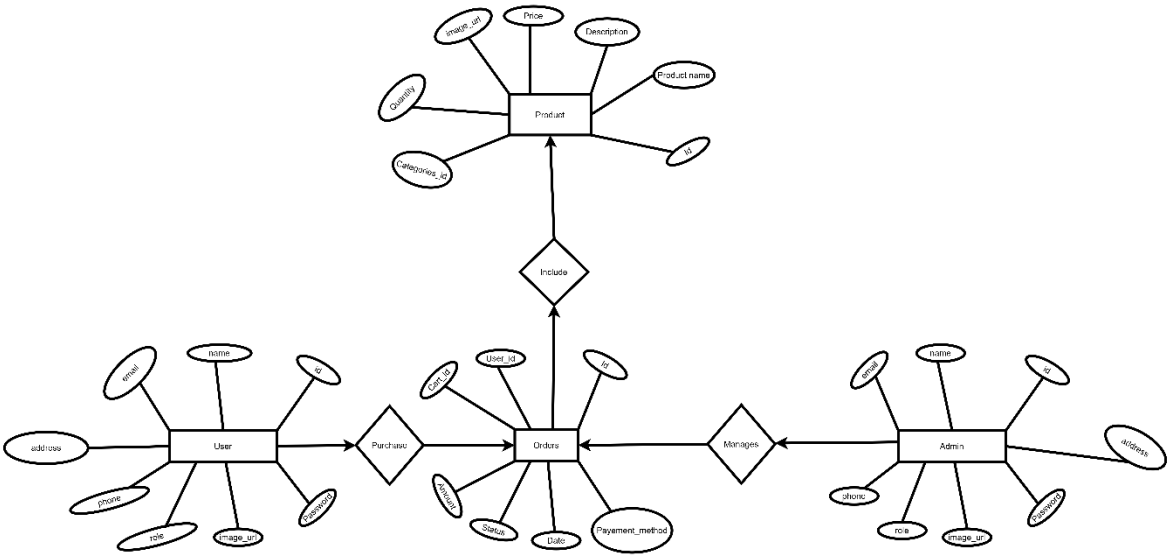

Figure 4:Database Model of Emporium

3.1.4 Process Modeling (DFD)

It is a diagrammatic representation of the data objects of the system. DFD is a way to show the how the data is processed in the system, it shows how data moves at different stages in the system.

Data Flow Diagram serves two purposes:

- To provide annunciation of how data are transformed as they move through the system.
- To depict the functions that transforms the data flow.

DFDs are an excellent mechanism for communicating with the customer during requirement analysis and are widely used for the representation of external and top-level internal design specification. In the later situations, DFDs are quite valuable for subsystem, files and links. The DFD methodology is quite effective, especially when the required design is unclear. In the process, many levels of DFDs are created depending upon the level of details needed.

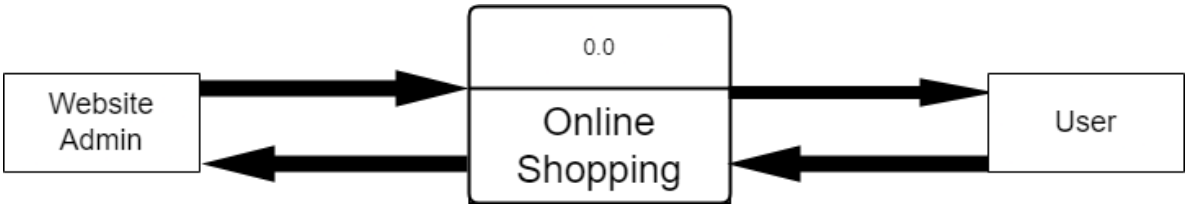

Figure 5: DFD level 0 of Emporium

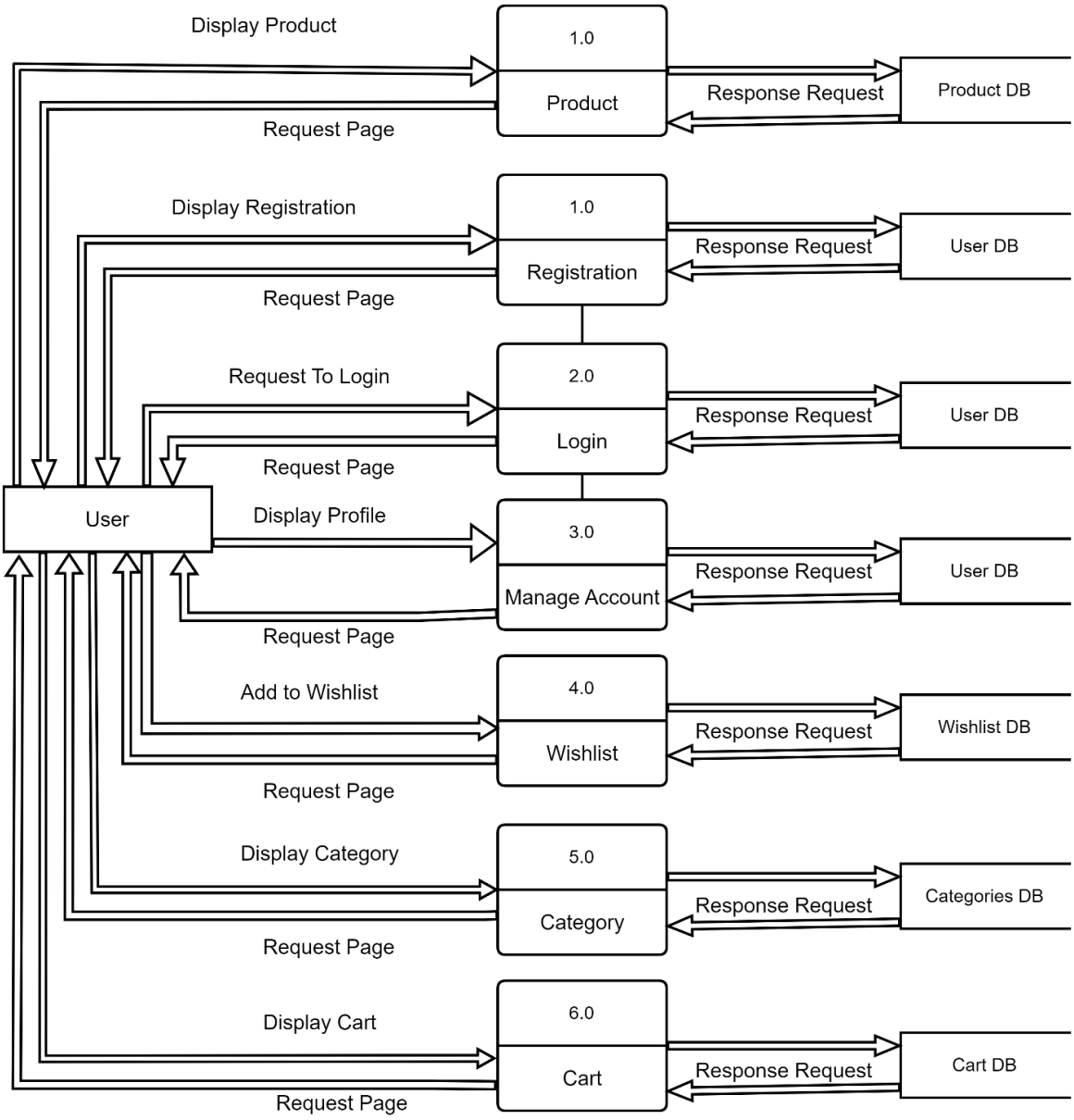

Figure 6:DFD level 1 of user side Emporium

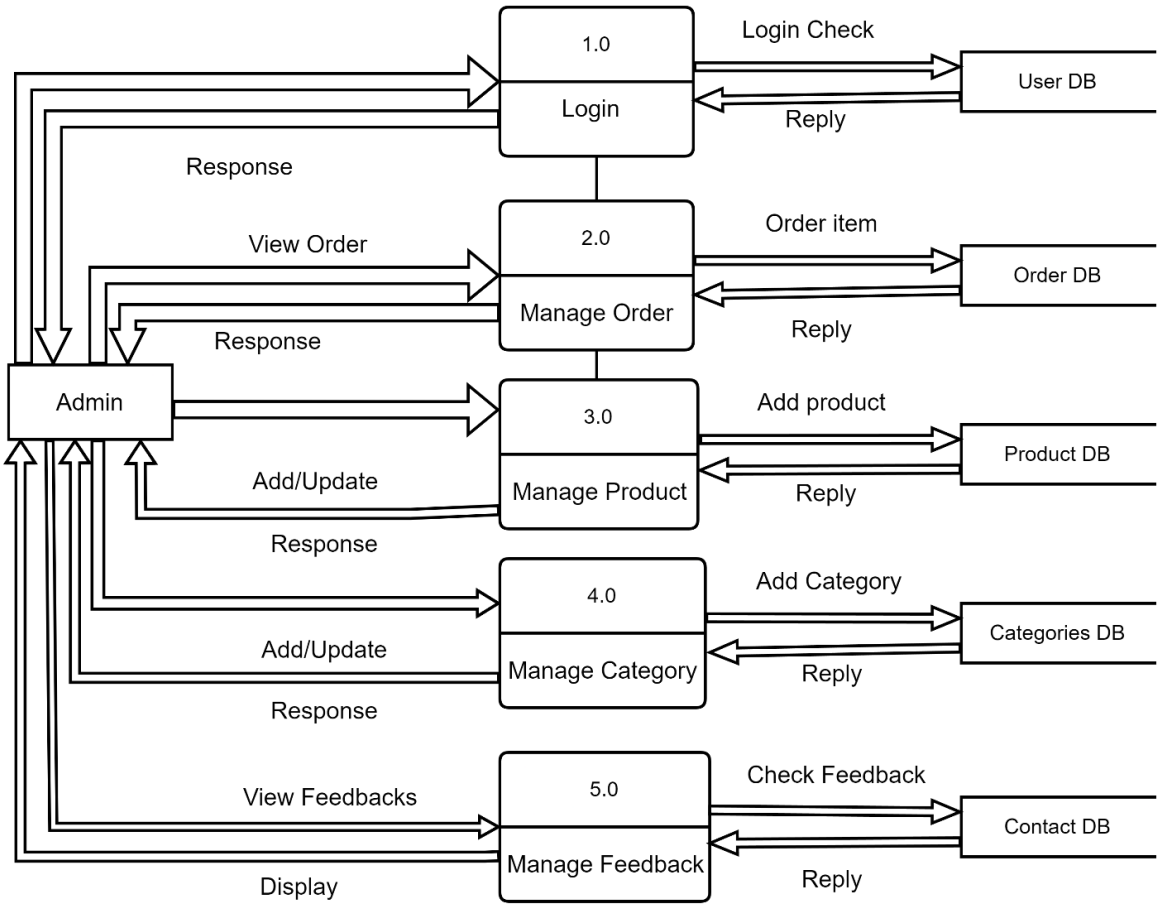

Figure 7:DFD level 1 of Admin side Emporium

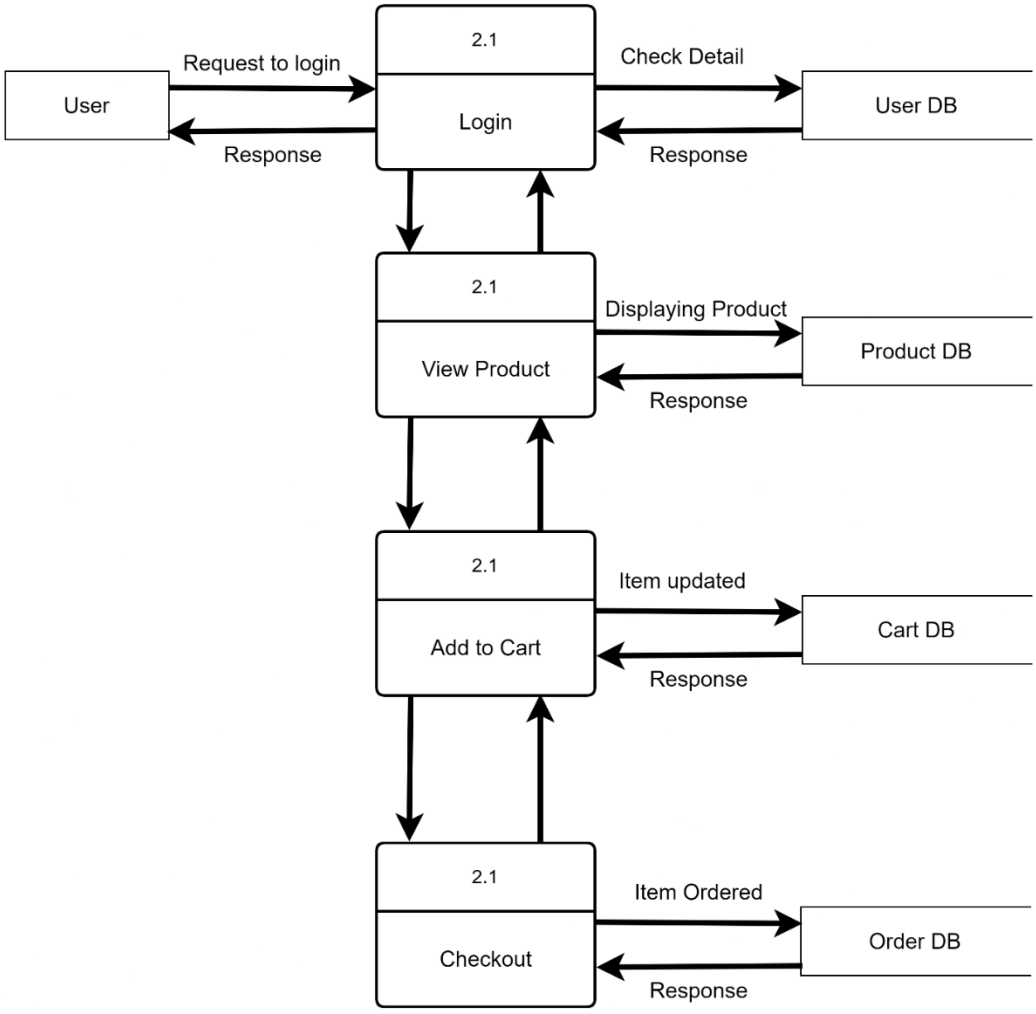

Figure 8:DFD level 2 of User side Emporium

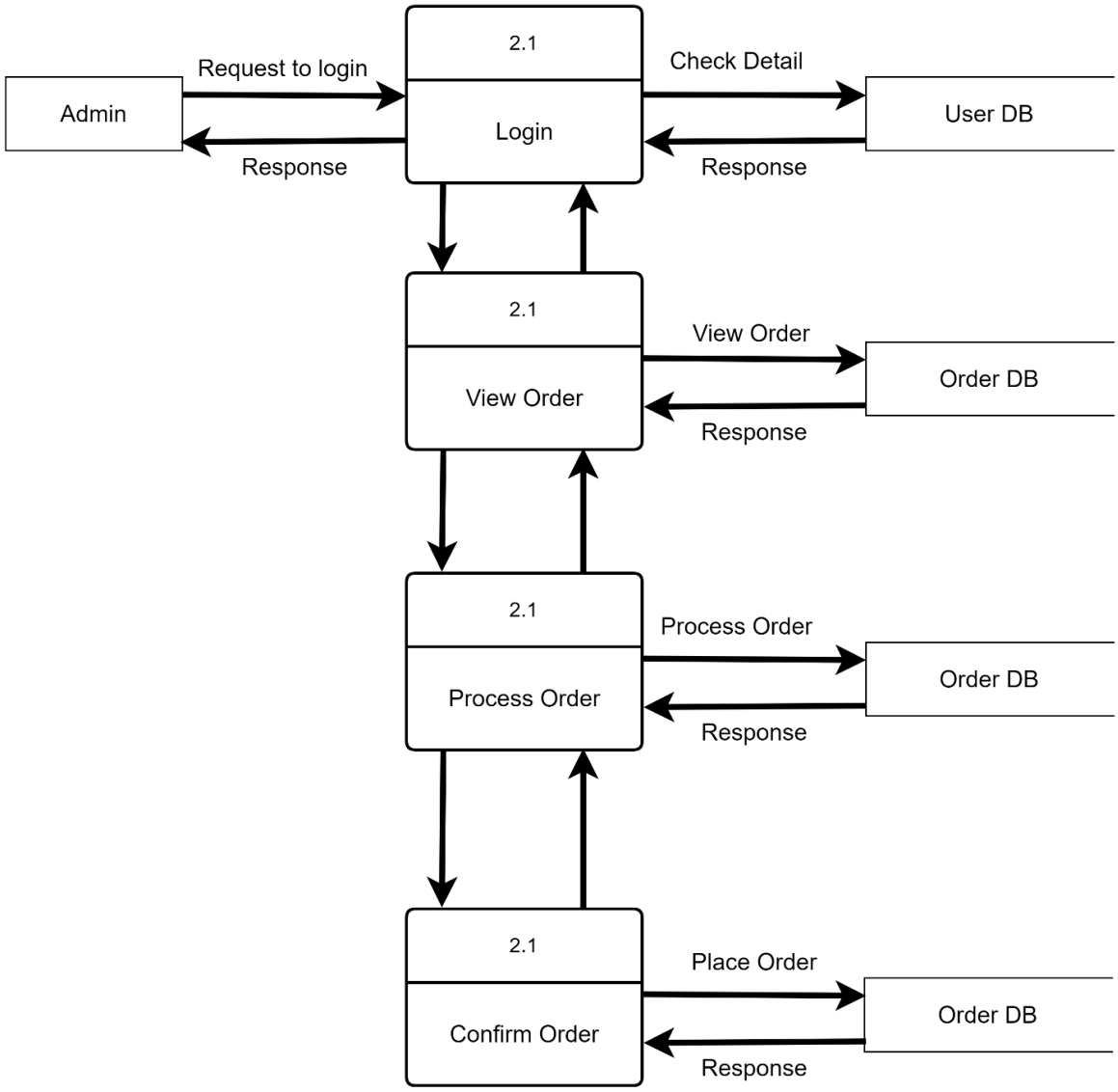

Figure 9:DFD level 2 of Admin side Emporium

3.2 System Design

System design is the process of designing the elements of a system such as the architecture, modules and components, the different interfaces of those components and the data that goes through that system design is important because it provides an avenue for solutions in the system through the various tasks involved in doing the designing.

3.2.1 Interface Design

- **Landing Page**

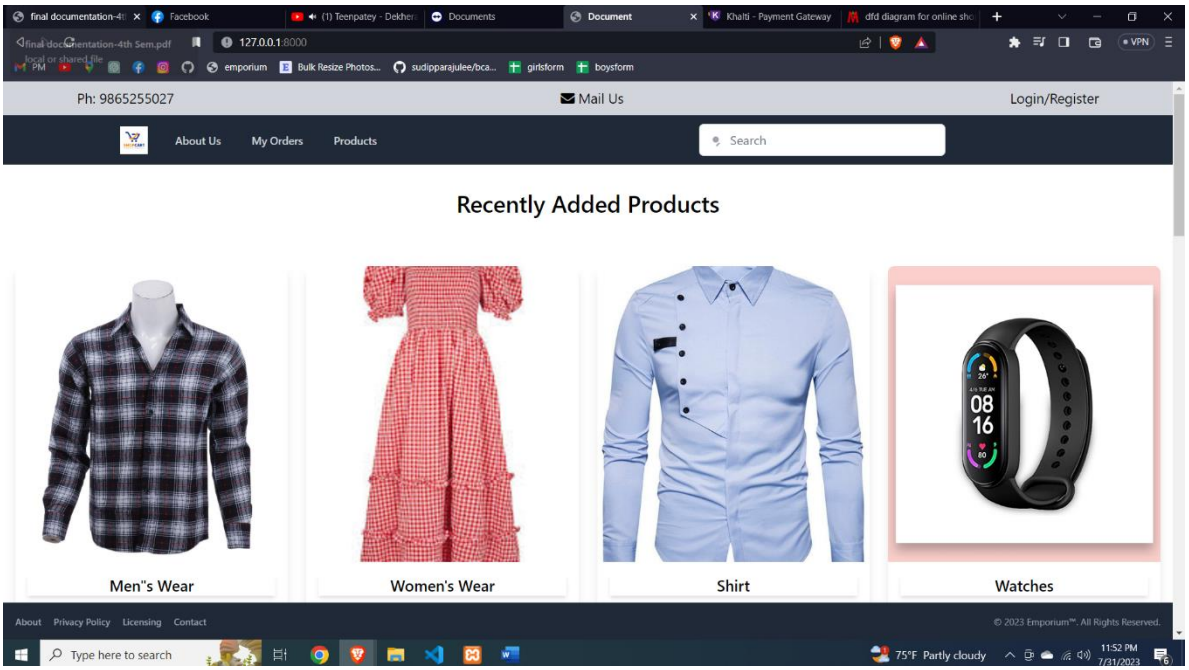

Figure 10: Landing Page

- **Login Page**

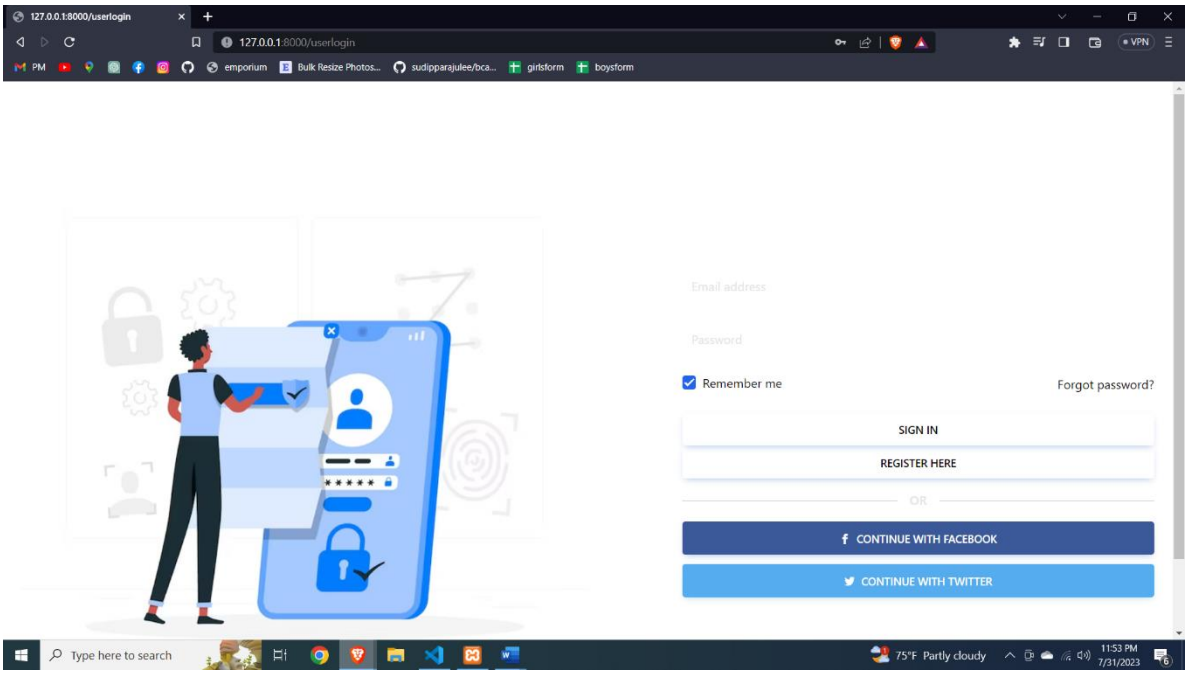

Figure 11: Login Page

- **Registration Page**

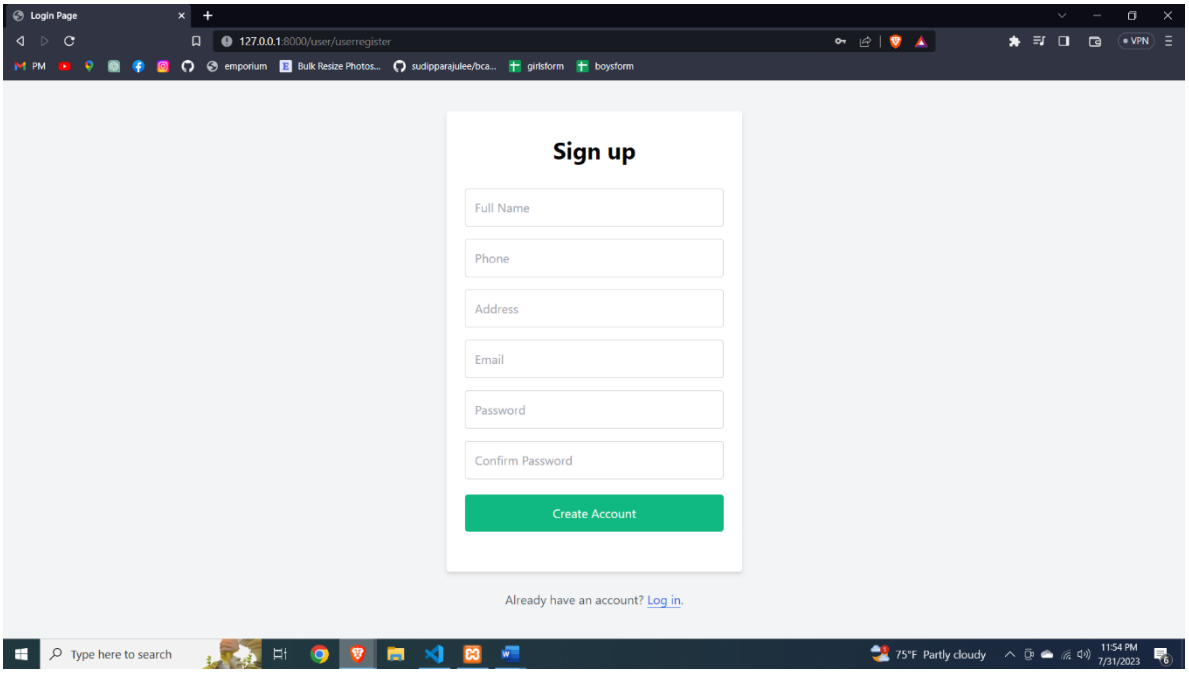

Figure 12: Registration Page

- **Dashboard Page**

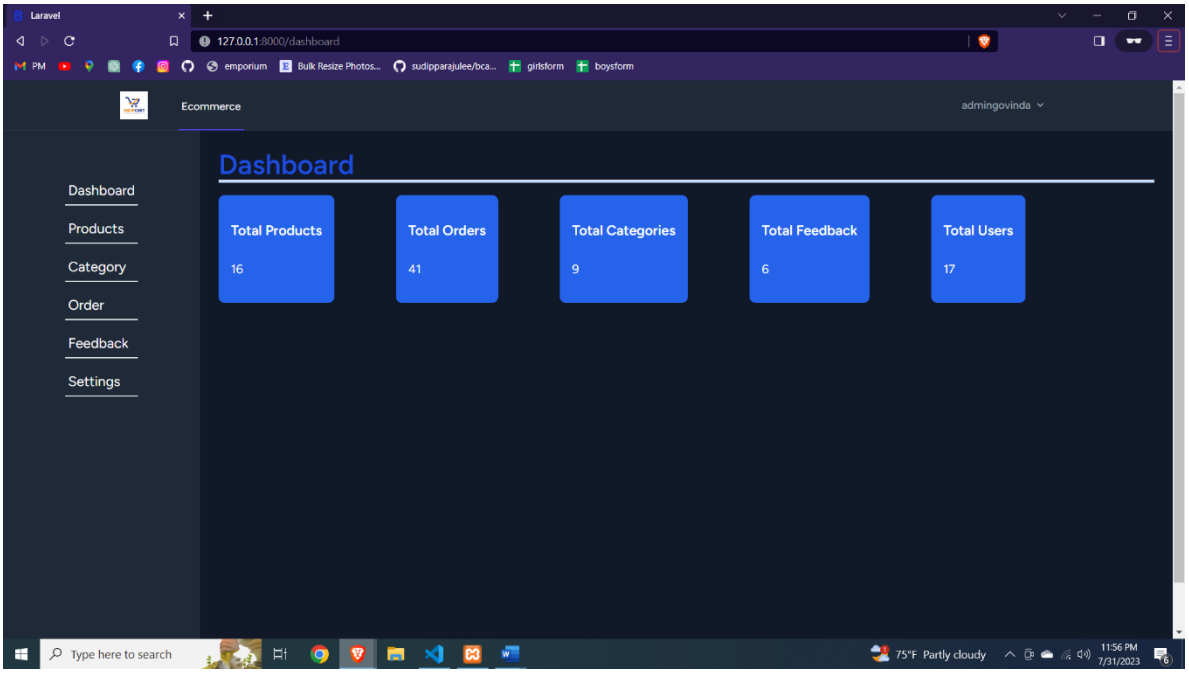

Figure 13: Dashboard Page

- **Product Page**

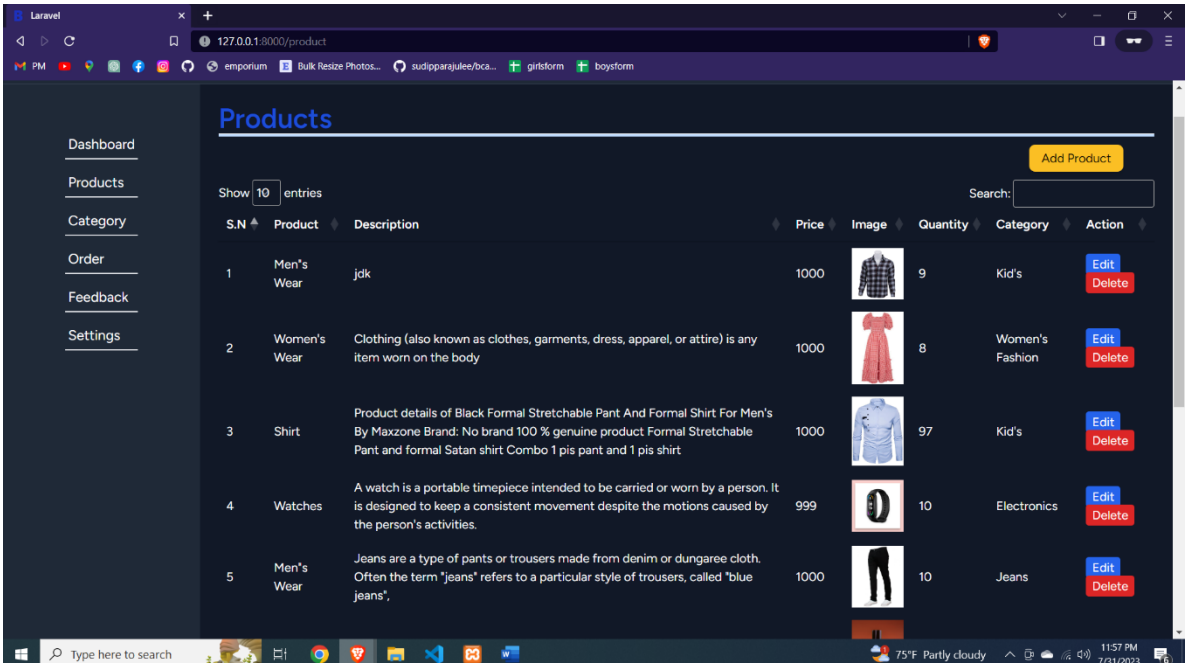

Figure 14: Admin Product page

- **Contact Page**

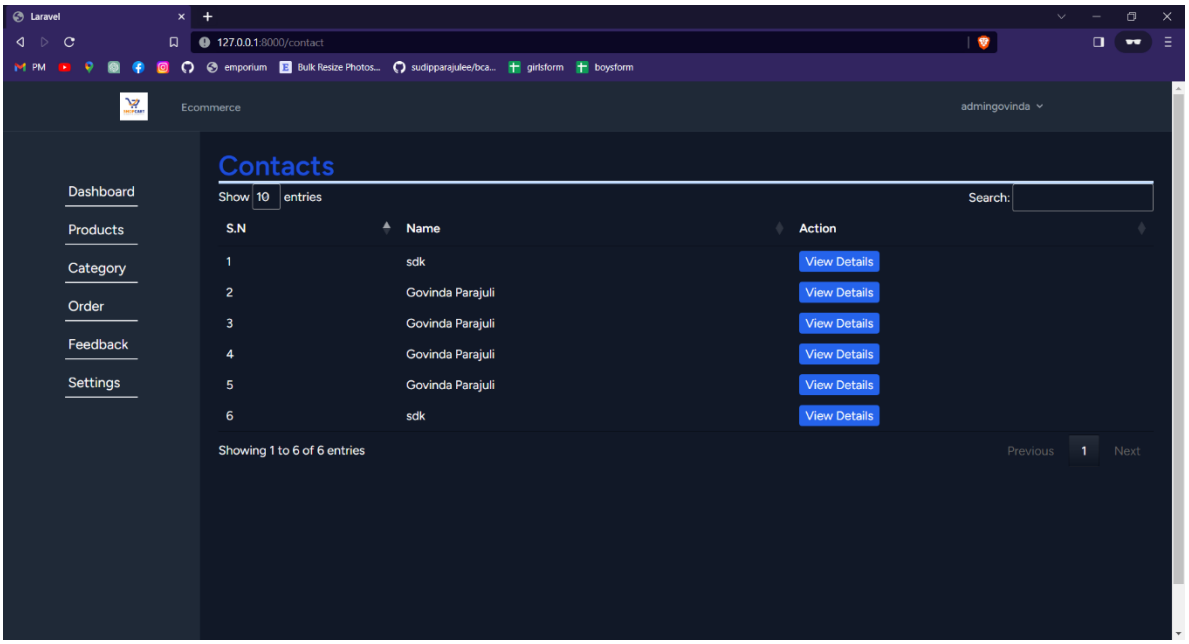

Figure 15: Admin Contact Page

- **Order Details Page**

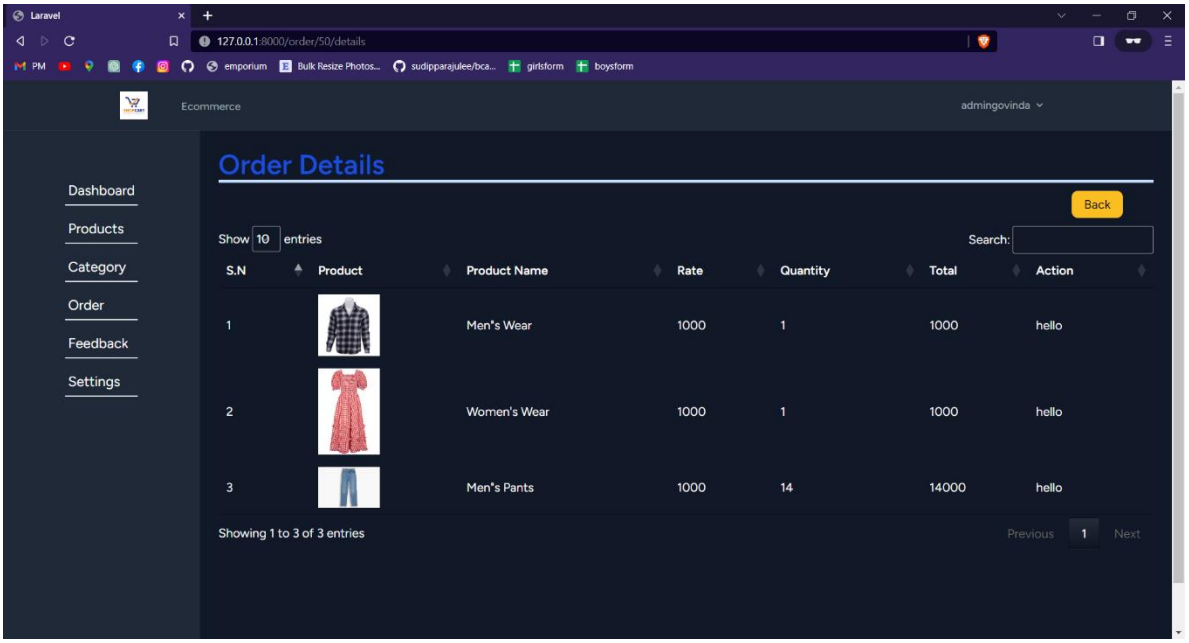

Figure 16: Admin Order Detail Page

- **Categories Page**

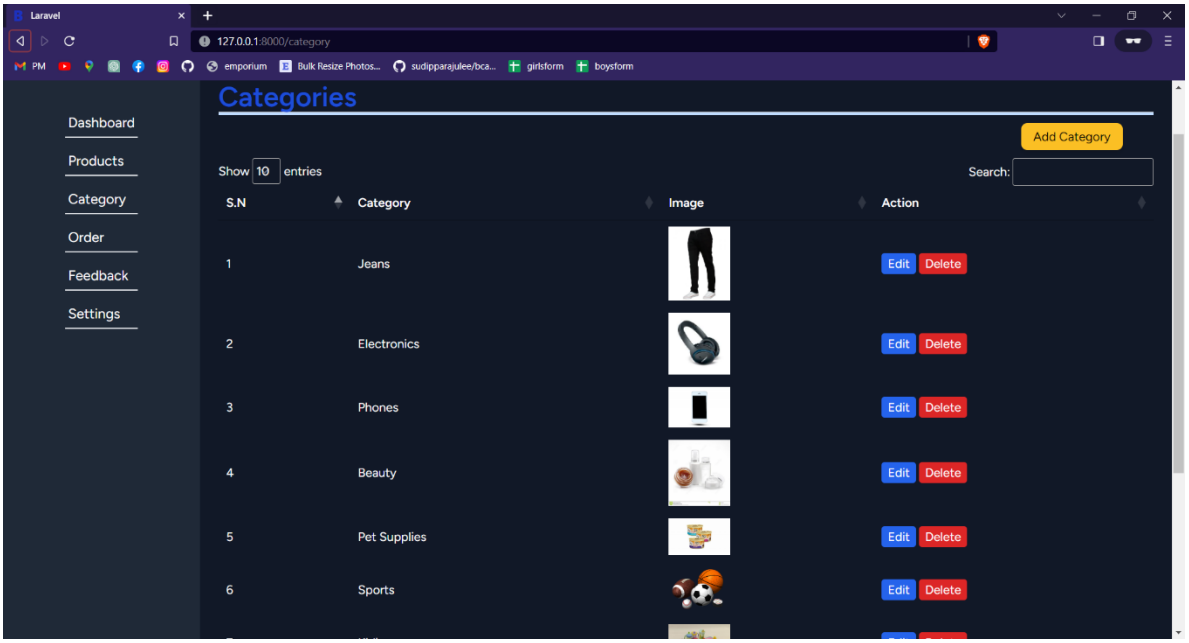

Figure 17: Admin Categories Page

- **Payment Page**

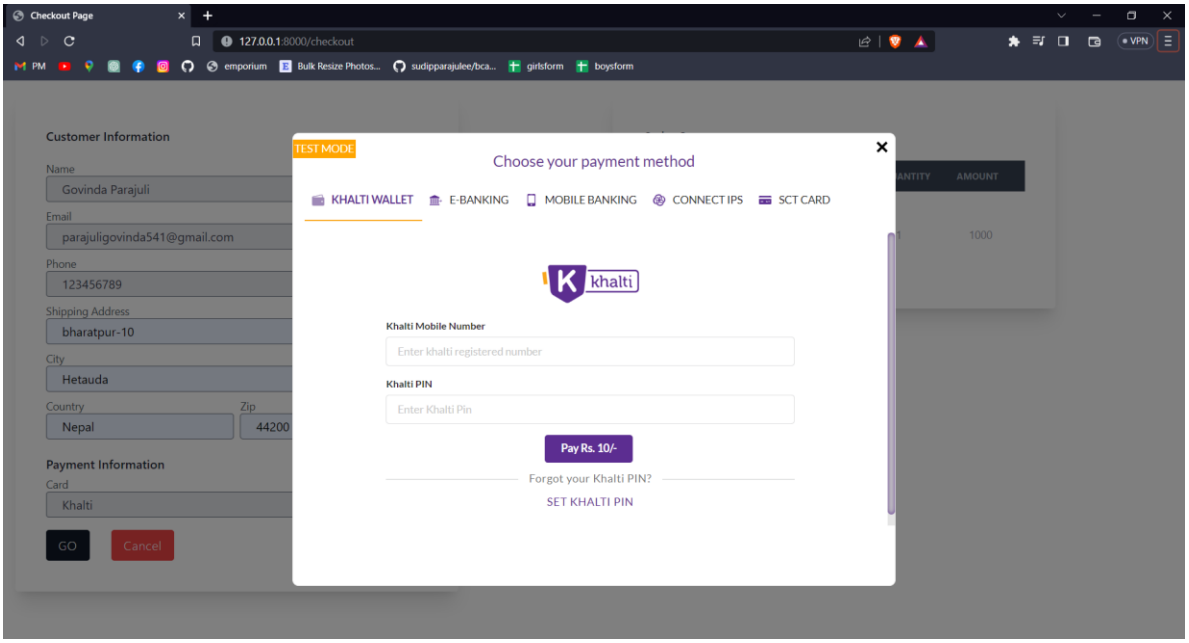

Figure 18: Payement Page

- **Checkout Page**

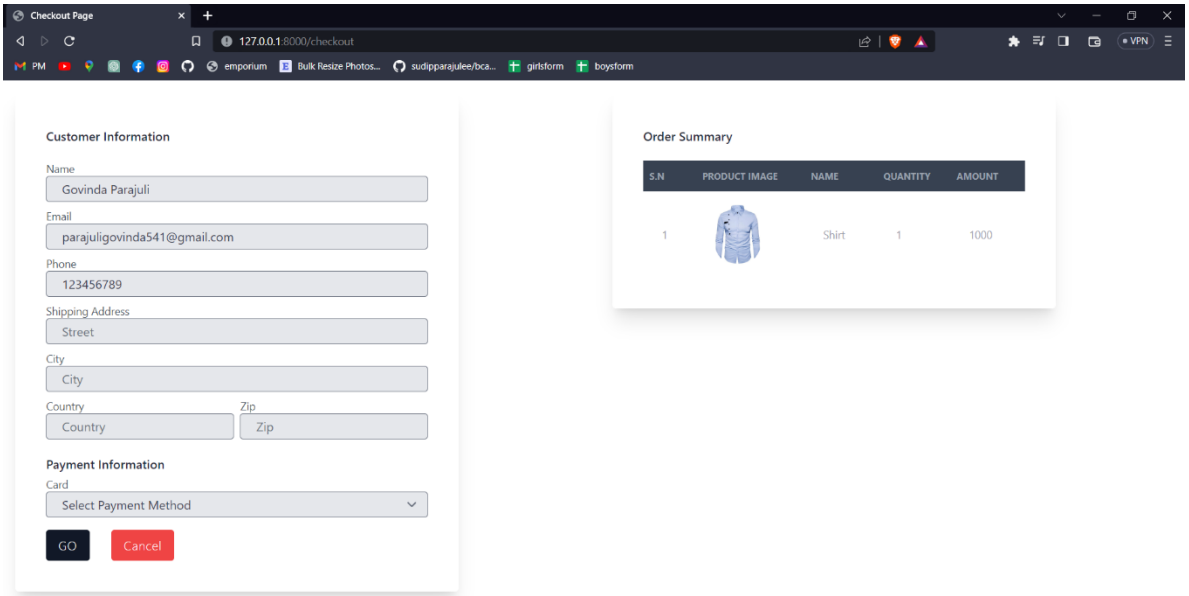

Figure 19: Checkout Page

- **MyCart Page**

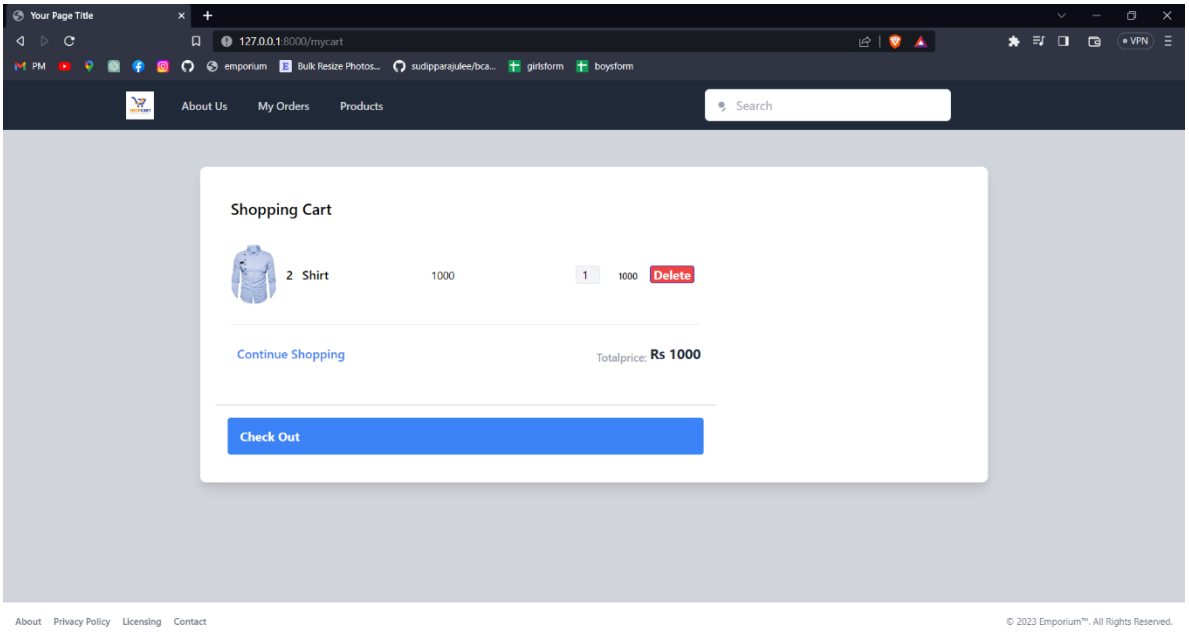

Figure 20: My Cart Page

- **Product Page**

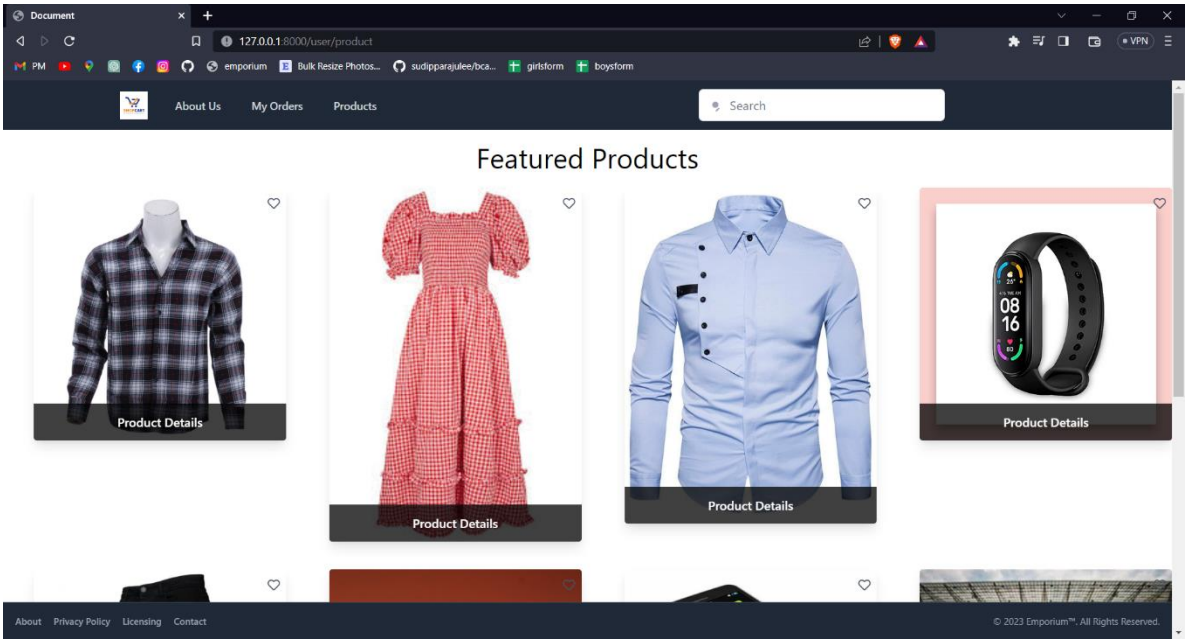

Figure 21: Product Page

- **Ordered Item Page**

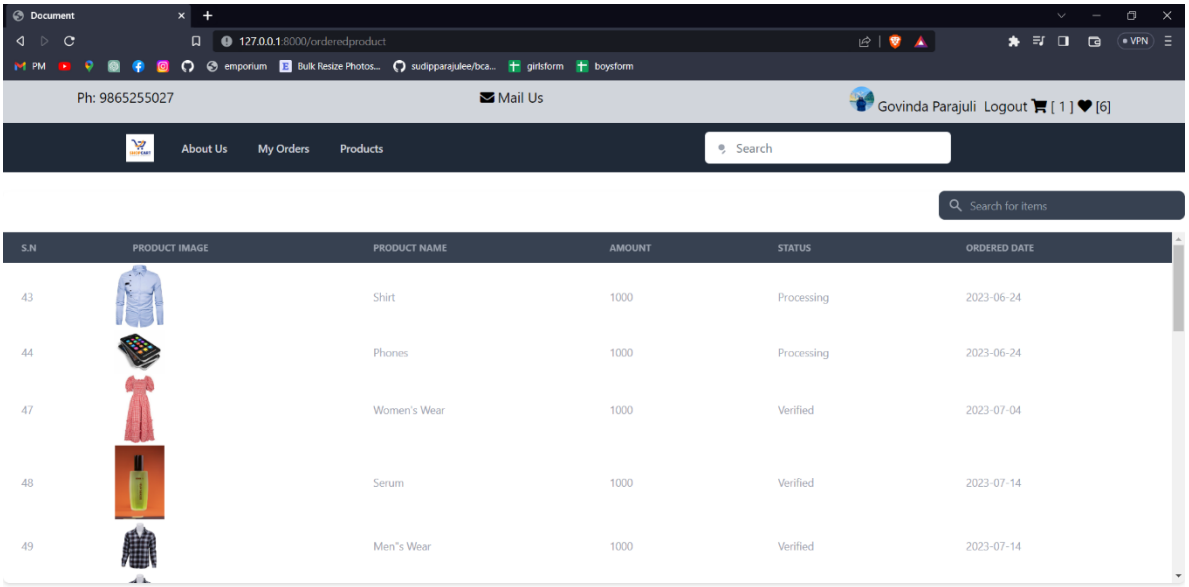

Figure 22:Ordered Item

- **About Page**

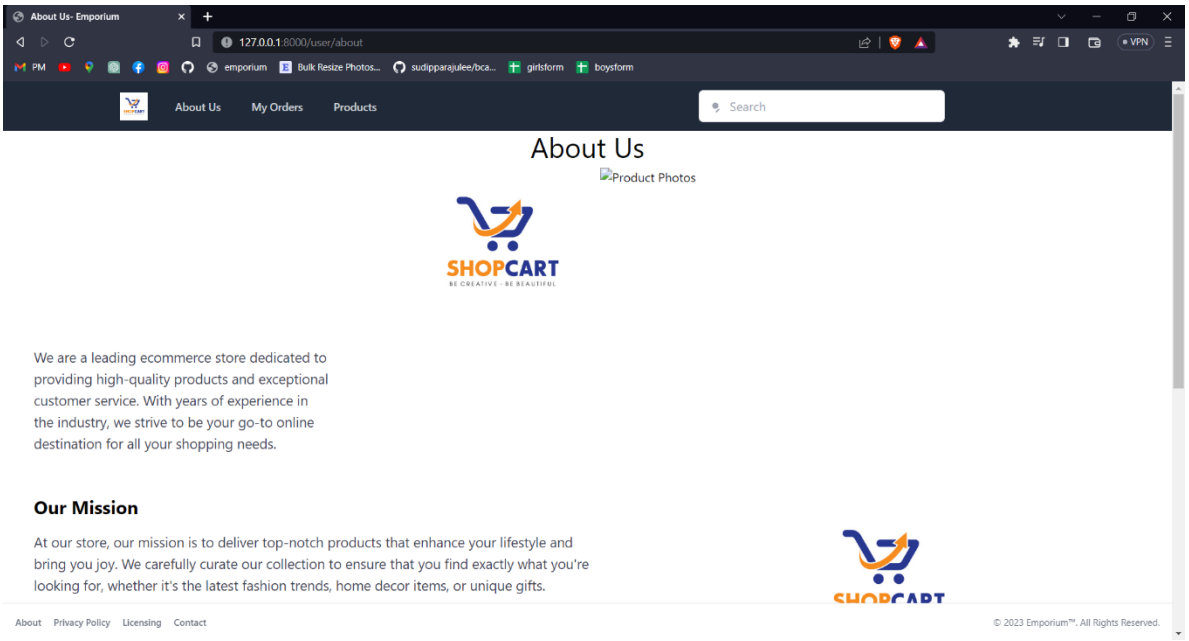

Figure 23:About Us Page

- **Wishlist Product Page**

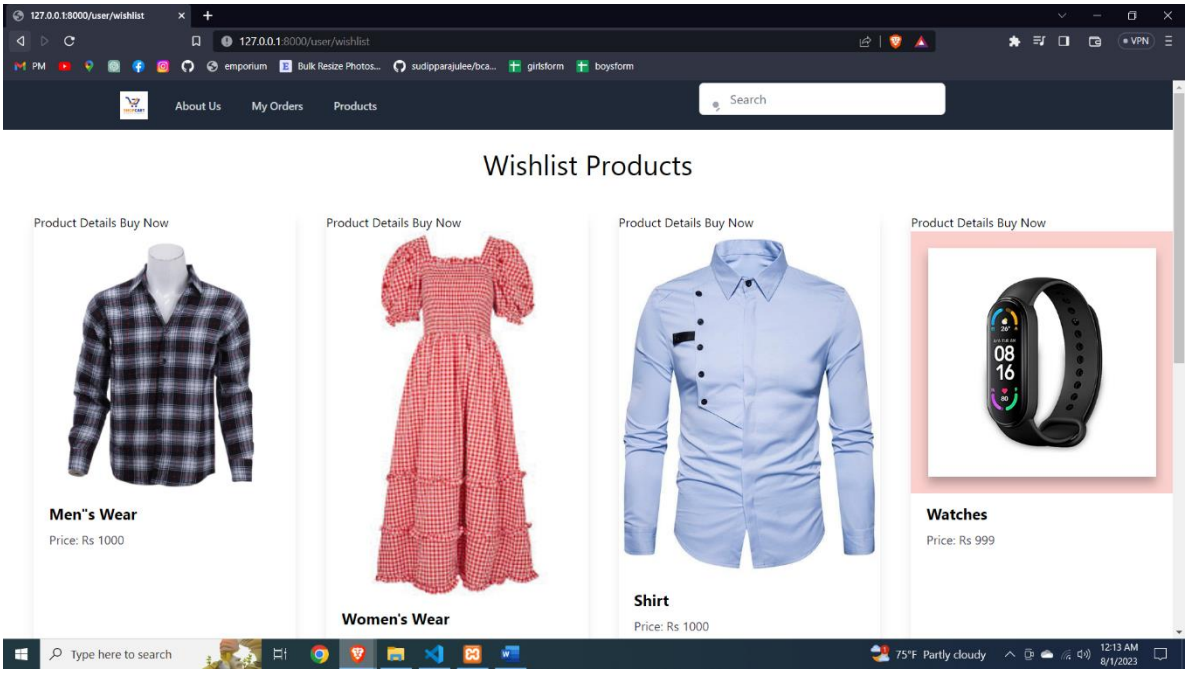

Figure 24: Wishlist Page

- **Edit Profile Page**

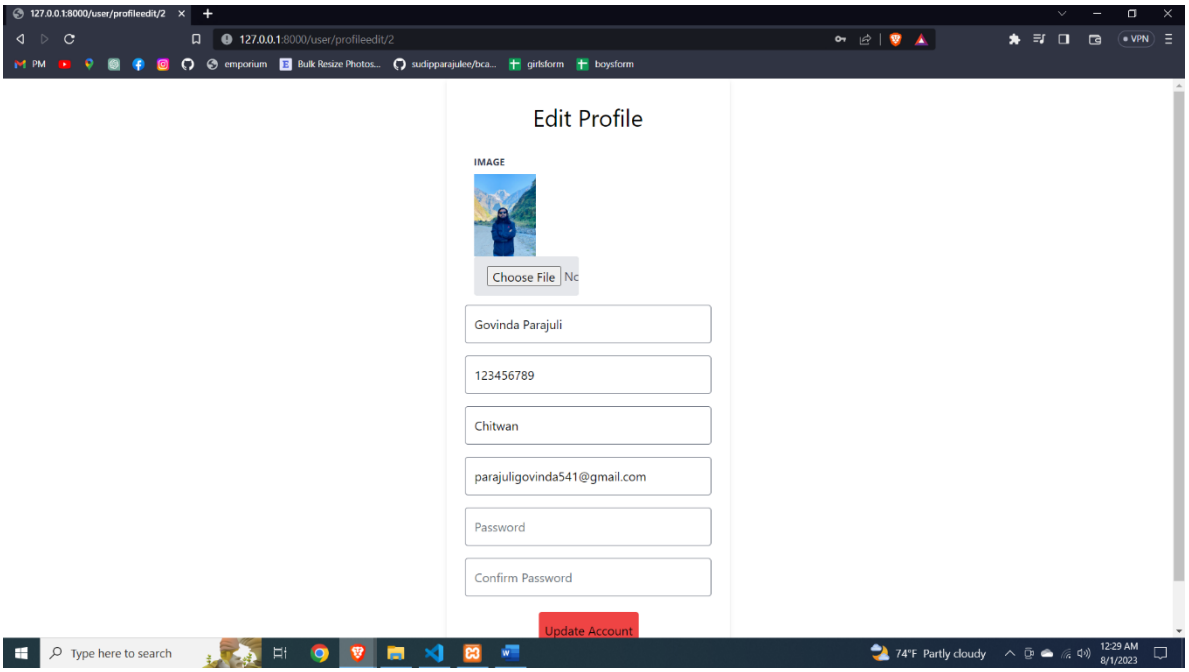

Figure 25: Edit Profile Page

Chapter Four: Implementation and Testing

4.1Implementation

It is the process in which how the project is done what are the tools, software to use in creating a such a software.

For the implementation of our project, we used the following technology:

4.1.1 Tools Used

Back End Tools

A backend tools is used for designing, building, and maintaining the server-side of web applications. Some common backend languages are Ruby, PHP, Java, Net, and Python. These programming languages often run-on frameworks that simplify the web development process.

- PHP: PHP, an acronym for Hypertext Preprocessor, is a server-side scripting language and is one of the most widely used programming languages for backend web development. We can validate this statement by letting you know that platforms like Wikipedia, WordPress, Facebook, and many others are relying on PHP. This particular language is preferred for web development because of various prominent reasons such as cross-platform compatibility, OOPs features, easy integration with HTML, CSS, JavaScript, etc., huge community support, better flexibility & security, and many more. In addition, the language is quite easy to learn and use. Furthermore, there are various renowned PHP frameworks out there such as Laravel, Symfony, CodeIgniter, etc. that you can consider.
- MySQL: MySQL is another open-source relational database management system that is widely used for web-based applications. It is a fast and high-performance database that provides better scalability, usability, and reliability. Also, MySQL provides cross-platform compatibility, strong indexing support, SSL support for secured connections, powerful data encryption and accuracy, built-in replication support, and various other features. Meanwhile, MySQL can work on various distinct operating systems and is compatible with many popular languages like PHP, Java, etc. Let us tell you this as well that this particular framework, MySQL, is used by various renowned websites like Flickr, Twitter, Facebook, Drupal, Joomla, and many others.
- XAMPP SERVER: XAMPP is a free and open-source cross-platform web server solution stack package developed by Apache consisting mainly of the Apache HTTP Server, MariaDB database and interpreters for scripts written in the PHP and Perl programming languages.

Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server possible. The use of XAMPP is to test the clients or your website before uploading it to the remote web server. This XAMPP server software gives you a suitable environment for testing MYSQL, PHP, Apache, and Perl projects on the local computer.

- Laravel: Laravel is an open-source PHP web application framework known for its simplicity and elegance in building modern web applications. It follows the Model-View-Controller (MVC) architectural pattern, offering features like expressive syntax, a robust routing system, an ORM called Eloquent, and Blade templating engine for dynamic views. Laravel's ecosystem includes a wide range of community-contributed packages, and it integrates smoothly with Composer for managing dependencies. With a strong emphasis on security and regular updates, Laravel provides developers with a productive and secure environment to create scalable and maintainable web applications.

  Overall, Laravel's comprehensive feature set, active community, and emphasis on developer productivity make it a top choice for creating modern web applications.

Front End Tools

The part of a website that the user interacts with directly is termed the front end. It is also referred to as the 'client side' of the application. It includes everything that users experience directly: text colors and styles, images, graphs and tables, buttons, colors, and navigation menu. HTML, CSS, and JavaScript are the languages used for Front End development. The front-end portion is built by using some languages which are discussed below:

- HTML: HTML stands for Hypertext Markup Language. It is used to design the front-end portion of web pages using a markup language. HTML is the combination of Hypertext and Markup language. Hypertext defines the link between the web pages. The markup language is used to define the text documentation within the tag which defines the structure of web pages.
- CSS: Cascading Style Sheets fondly referred to as CSS is a simply designed language intended to simplify the process of making web pages presentable. CSS allows you to apply styles to web pages. More importantly, CSS enables you to do this independent of the HTML that makes up each web page.
- JavaScript: JavaScript is a famous scripting language used to create magic on the sites to

make the site interactive for the user. It is used to enhancing the functionality of a website to running cool games and web-based software

- Bootstrap: Bootstrap is an HTML, CSS & JS Library that focuses on simplifying the development of informative web pages. The primary purpose of adding it to a web project is to apply Bootstrap's choices of color, size, font and layout to that project. As such, the primary factor is whether the developers in charge find those choices to their liking. Once added to a project, Bootstrap provides basic style definitions for all HTML elements. The result is a uniform appearance for prose, tables and form elements across web browsers. In addition, developers can take advantage of CSS classes defined in Bootstrap to further customize the appearance of their contents.
-
- Tailwind CSS: Tailwind CSS is a utility-first CSS framework that simplifies UI development by offering an extensive library of utility classes. With its utility-first approach, developers can easily apply styles directly to HTML elements using pre-defined classes for common CSS properties like margins, padding, typography, and more. The framework also supports responsive design and is highly customizable, allowing users to tailor the default settings, add custom utility classes, or remove unused styles to optimize the final CSS file. Additionally, Tailwind CSS accommodates both utility classes and reusable components, making it a versatile choice for rapidly building modern and responsive user interfaces.

4.2 Testing

Software testing is the process of evaluating and verifying that a software product or application does what it is supposed to do. The benefits of testing include preventing bugs, reducing development costs and improving performance. The project is broken down into several modules and configured as necessary per requirements. Testing is performed after completion of each module and after their integration also. Here we have performed unit testing:

Chapter Four: Time Plan

Weeks / Activities	1	2	3	4	5	6	7	8	9	10	11	12
System Analysis	1 W											
System Design		2 W										
Coding and Implementation				7W								
Testing										3W		
Documentation												