

**SARONG:FOLK ART AND CRAFTS MULTI VENDOR ECOMMERCE STORE**

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Bachelor of Science in Computer Science and Engineering

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## APPROVAL

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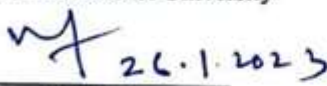
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## DECLARATION

We hereby declare that this project has been done by us under the supervision of **Nishat Sultana, Lecturer, Department of CSE** and co-supervision of **Asma Mariam, Lecturer, Department of CSE, Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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## **ABSTRACT**

Bangladesh is a nation that is home to various traditional cultures and associated artifacts. With these basic supplies and tools, Bengali Folk Artists have been producing remarkable works of art for centuries. Most professional artists are based in villages. Jamdani, satranji, metalwork, conch shell, ceramics, woodwork, oyster craft, puppetry, brass-brass craft, bamboo-cane craft, shola craft, etc. are only a few examples of the diverse range of handicrafts. In addition, there are folk paintings, clay plaques, leaf and straw artifacts, Nakshi Kantha, Nakshi Shika, Shital Patti, and more. They are the symbol of our culture and people and will also help us get foreign cash. However, urban people are remote from these crafts, and if someone does buy them, they are not available in the city, and our new generation is also unaware of this heritage, therefore our folk art and craft traditions are vanishing day by day. So we want to make a website where the Artists who can not show or sell their product for the lack of exhibition ,can show their art to sell on the website easily. On the other hand people who can not buy products as the art and craft products are not available everywhere ,they can just visit our e-commerce website, select their favorite one and get their product easily . Our project's main objective is to protect the existence of the traditional art and craft industries, to provide fair value to the worker and reduce distance between customer and seller. In our system owners of every traditional industry, Transporters ,suppliers and customers will be a registered member of this maintenance system. A consumer may quickly locate the products they need by using the extensive search options. If you work in sales, you may build a robust portfolio by including product images, which will make them easy to search for customers. and similar to your ordinary social media site, you can update your product line. Customers can quickly buy any updated items if they like them. Customers will be introduced to various delivery methods by us. Then they may choose whichever medium they wish to use for their distribution.

## TABLE OF CONTENTS

<b>CONTENT</b>	<b>PAGE</b>
APPROVAL	i
BOARD OF EXAMINERS	i
DECLARATION	ii
ACKNOWLEDGEMENT	iii
<b>ABSTRACT</b>	<b>iv</b>
<b>TABLE OF CONTENTS</b>	
<b>CHAPTER 1</b>	
<b>Introduction</b>	<b>1-6</b>
1.1 Background of the Project:	2
1.2 Objective of Project:	2
1.3 Aim of The Project:	3
1.4 Motivation:	3-4
1.5 Problem Statement:	4
1.6 Research Methodology:	4-5
1.7 Proposed System:	5
1.8 Conclusion:	5-6
1.9 Chapter Layout	6
<b>CHAPTER 2</b>	
<b>Background Study</b>	<b>7-9</b>
2.1 Introduction:	7
2.2 Existing System:	7-8
2.3 Comparative Studies	8
2.4 Challenges	9
2.5 Conclusion	9

## CHAPTER 3

<b>Tools And Technology</b>	<b>9-14</b>
3.1 Introduction	10
3.2 Tools and technology	10-14
3.2.1 HTML	11
3.2.2 CSS	11
3.2.3 Bootstrap	11
3.2.4 JavaScript	11
3.2.5 React JS	11
3.2.6 React Bootstrap	11-12
3.2.7 Material UI	12
3.2.8 React Router	12
3.2.9 React Hook Form	12
3.2.10 React Paginate	12
3.2.11 Express JS	13
3.2.12 Node JS	13-14
3.2.12.1 Why do we use Node JS?	13
3.2.12.2 Basic features of Node JS	13-14
3.2.13 MongoDB	14
3.2.14 Firebase	14

## CHAPTER 4

<b>System Analysis and Design</b>	<b>15-22</b>
4.1 Introduction	15
4.2 Methodology and Development Model	15
4.3 Requirement Collection and Analysis	16
4.4 User Block-diagram:	16
4.5 Flow Chart:	17

4.6 Data Flow Diagram (DFD):	18-20
4.6.1 Context Level Diagram:	18
4.6.2 First level DFD	19
4.6.3 Second Level DFD:	19-20
4.7 Use Case Diagram:	20-21
4.8 ER-Diagram:	22

## **CHAPTER 5**

### **Design, Development, Testing and Implementation 23-43**

5.1 Structure of the Project	23-24
5.2 Implementation of Front-end Design	24-35
5.2.1 Home Page:	24-28
5.2.2 Product Page:	28-30
5.2.3 Product Details Page:	30-31
5.2.4 Add to Cart:	32
5.2.5 Check Out Page:	32-34
5.2.6 Schedule Purchase	35
5.2.7 Login Page:	36
5.2.8 Register Page:	36
5.3 About Page:	37
5.4 Contact Page:	37
5.5 Implementation of Back-end Design:	37-42
5.3.1 Routing:	38
5.3.2 Using middleware:	38-42
5.6 Test methodology:	42-43
5.4.1 Black-Box Testing:	42-43
5.4.2 White Box Testing:	43



## CHAPTER 6

### **Impact on Society, Environment and Sustainability** **45-45**

6.1 Impact on Society : 45

6.2 Impact on Environment: 45

6.3 Ethical Aspects: 45

6.4 Sustainability Plan: 45

## CHAPTER 7

### **Discussion and Conclusion** **46-46**

7.1 Conclusion: 46

7.2 Scope for further development: 46

### **Reference** **47-48**

## LIST OF FIGURES

FIGURES	PAGE NO
Figure 4.2 Software Development Life Cycle (Agile Model)	15
Figure 4.4: Block diagram of User	16
Figure 4.5: Flow Chart of Online Shopping System	17
Figure 4.6.1 Context Level Diagram	18
Figure 4.6.2: First Level of DFD	19
Figure 4.6.3 Second Level of DFD	20
Figure 4.7: Use case diagram	21

Figure 4.8: ER-Diagram	22
Figure 5.2.1.1: Home page banner section.	25
Figure 5.2.1.2: Home page on sale section.	26
Figure 5.2.1.3: Home page on the sale section	26
Figure 5.2.1.4: Home page on categories section	27
Figure 5.2.1.5: Home page on Features & Best Sellers section	27
Figure 5.2.1.6: Home page on Our Partners & Footer section	28
Figure 5.2.2.1 Categories page top section	28
Figure 5.2.2.2: Categories selection section	29
Figure 5.2.2.3: Industry Product Page	29
Figure 5.2.2.4: Industry Product Page	30
Figure 5.2.3.1: Product details page	30
Figure 5.2.3.2: Product review section	31
Figure 5.2.3.3: Product review count section	31
Figure 5.2.4.1: Add to cart page	32
Figure 5.2.5.1: Checkout page	33
Figure 5.2.5.2: Payment Page	33
Figure 5.2.5.3: SSLcommerz Redirect OTP Page	34
Figure 5.2.5.4 Payment Success	34
Figure 5.2.6: Schedule Purchase	35
Figure 5.2.7: Login Page	36
Figure 5.2.8: Register Page	36

Figure 5.3.1: About Section	37
Figure 5.4.1: Contact Page	37
Figure 5.5.1: Seller Sharee Page	38
Figure 5.5.2: Upload Sharee (Seller)	39
Figure 5.5.3: Sharee update (Seller)	39
Figure 5.5.4: Shree Delete (Seller)	40
Figure 5.5.5: My Potter Page (Seller)	40
Figure 5.5.6: Potter Upload (Seller)	41
Figure 5.5.7: Customer Order Page (Seller)	41
Figure 5.5.8: Customer Order Delete (Seller)	42
Figure 5.5.9: Customer order overview (Seller Page)	42
Figure 5.5.10: Customer and Seller Overview (Admin Page)	43

# CHAPTER 1

## Introduction

Folk Art and Crafts traditional arts and crafts evolving over time through the age-old folk practices. Folk art materials are very common. A variety of artifacts are made from locally obtained clay, wood, cloth, yarn, shell, conch, reed, bamboo, cane, horn etc. Precious materials like gold, silver, brass, ivory etc. are also used. Folk art tools are also very common. Folk artists of Bengal have been creating extraordinary art for ages with these simple materials and equipment. Most of the professional artists involved in this industry live in villages. Blacksmith, Potter, Carpenter, Patua, Sonaru, Kansaru, Shankhari, Weaver, Charu and Karu artists are traditionally engaged in various arts as a profession. These handicrafts are also their means of livelihood. Alpana and Nakshi Kantha artists are ordinary women of the household; They have no separate identity as artists. The vast repertoire of handicrafts includes Jamdani, satranji, metalwork, conch shell, pottery, woodwork, oyster craft, puppetry, brass-brass craft, bamboo-cane craft, shola craft etc. Besides, Nakshi Kantha, Nakshi Shika, Shital Patti, clay plaques, leaf and straw objects, folk paintings etc. are the signs of our people and crafts.

But people who live in the city are far away from those craft and someone also buys those craft but they are not available in the city area and our new generation are also unknown to this tradition so we are losing our Folk art and Craft tradition day by day. Preservation and expansion of folk arts is the responsibility of all of us. If we can express our feelings through folk art, then it will also help in building heart-to-heart relations from country to country. Not only that, on the one hand, as our folk arts will expand, the country will benefit by earning foreign currency. Nowadays people have phones. 98% of people have phones in our country. And 80% of people are smartphone users. Almost every user uses the internet now trending right. These days, we use mobile laptops for searching websites on a regular basis. If these craft are available on the website So if anyone wants to grab these craft it becomes very easy and available to get this. We make a website which can solve this problem and can help to save our tradition and our Folk Art and Crafts tradition will always be updated to our new generation.

E-commerce, commonly known as a virtual financial markets or an online brokerage firm, the search and sale of products or services using the Internet. We are devoted to e-commerce multi-

vendor shopping, a web-based virtual shopping gadget. This gadget is meant to make shopping easy and convenient. This is a multi-vendor website where merchants may market their items. It may be accessible to both mobile and web apps. This gadget is generally developed for contemporary clients, small enterprises / brands, and priority purchasers [1].

### **1.1 Background of the project:**

Bangladesh is a country with several traditional cultures and related possessions. Among them, the Handloom industry is a popular one. The handloom industry in Bangladesh has a brilliant past , a problematic present , and a hazy future due to a variety of internal and external variables at work behind the scenes[2]. Bangladesh's handloom sector has around 0.183 million handloom units, 0.505 million handlooms, and over 1 million handloom weavers, with approximately 50% of the workforce being female. Because of several issues and restrictions, Bangladesh's oldest and most important cottage industry is at risk of extinction. According to the survey , there are around 183512 handloom weaving units in Bangladesh, each having approximately 505556 looms. The total operating looms are 311851 , accounting for 61.7 percent of all looms ,with the remaining 193705 looms being non-operational[3].

Thus we are losing our other Folk Art and Crafts traditional things. Some of the causes for closures in this sector include a lack of cash, a shortage of raw materials, insufficient technology, a weak marketing strategy and so on. So we are living in a developing country. Everything is turned into a web application. If people can get these traditional things in the computer,tab or mobile they become very interested to buy these arts and crafts ,and the people behind this work get the valid value for their work .Thus we can save our tradition and also can help to give those workers their proper value.That's why we intend to build a Multi vendor eCommerce application. The platform is designed and built with the idea that it should be user accessible, that finding should be simple, that it should have a high-quality and light appearance, and that customer ease is provided. The Interface of the framework is made considering that it should be magnificent, fascinating, from the beginning, simple to understand and clear as crystal. In these cases, we study various difficulties and attempt to devise a solution for the problem.

## **1.2 Objectives of project:**

We have established a few goals to attain our objectives. This will be much more straightforward.

The goal is shown following :

- Protect the existence of the Folk Art and Crafts traditional industry.
- Efforts to provide fair value to the workers.
- Reducing the distance between the consumer and the seller.
- Introduce our tradition to our new generation.
- Make a platform where sellers can sell their work and be able to maintain a consistent and suitable supply of handcraft.
- Introducing users to new forms of eCommerce.

## **1.3 Aim of the projects:**

We are intending to give this support all throughout the country. In an ideal world, it will work flawlessly.

- An easy and useful e-commerce system.
- Provide authentic Folk Art and Crafts products to consumers.
- Sustainable virtual market is provided to industry owners and customers.
- Reduce the method of increasing the prices of the brokers.
- Implement schedule purchase.
- Saving time and making available the product throughout the world.

## **1.4 Motivation:**

Handloom has been an integral part of Bengali culture since its inception. As far as their Business with yarn, all the dreams surround this yarn. The yarn is their soul; we are talking about those dream craftsmen of the yarn waving. The local languages involved in the weaving industry are called “Zola”. They work from 7 am to 4 or 5 pm every day, but sadly they do not get the fair value of their hard work. On the other hand, this weaving industry is decreasing day by day. They need help to take over their business. We know that Weaving is one of the traditional industries of

Bangladesh. The famous Jamdani saree which is made in Tangail, Dhaka. Currently, the Jamdani sarees are not able to preserve heritage. This Jamdani saree is one of the luxury products, because its market value is around 3 to 4 thousand taka, but a weaver earns only 130 takas for woven a weaving sari. Industry owners sell these sarees for between 500 and 600 takas. The price of that saree market is 4 to 5 thousand taka. Our pottery business has also symbolized our identity and way of life. This clay-based cottage economy is primarily focused on local resources and manual techniques, and it plays an important role in creating jobs for both craftsmen and non-artisans. Insufficient capital, a lack of raw material sources, a drop in demand, the employment of old-fashioned techniques, and the pursuit of other jobs for more profit, among other factors, are identified as the primary reasons for the slow decline of traditional pottery manufacture. Despite the fact that it is a very creative labor, potters are not receiving much attention and, in most cases, have no opportunity to exhibit their work. That's why many potters are now changing their occupation and most of them said that they have no dream about this profession. So they need help to show art so that people can admire their work so we can uphold our culture.

### **1.5 Problem Statement**

Bangladeshi art is a type of visual arts practiced throughout the country that is now known as Bangladesh. The most significant types of Bangladeshi art include photography, architecture, sculpture, weaving, and painting. This Bangladeshi art has a long history that dates back more than two thousand years and is still practiced now. But with the increasing urbanization this practice of art is decreasing. In most of the cases this art is not available among the large number of people. We have taken the first step in developing an application to create a network of users who are interested with theses art.

### **1.6 Research methodology**

**Data Collection:** Techniques for gathering information come in a variety of types and sizes. There are two ways that can be implemented. The first is the core information collection framework, and the second is the Second Phase Data Gathering framework.

- Primary data was gathered through interviews and group discussions based on open-ended questions from potters, Zola's and workers who have been practicing art craft from generation to generation. The survey was conducted using basic random sampling. We go

to Tangail Tat Polly to collect data and other sample units were chosen from separate Bangladeshi villages. The information gathered by investigating traditional art and craft production processes and facilities, finance, daily and social life, the business culture, and restraints associated to traditional arts forms the foundation for interpreting village worker livelihood and hardship. Interviews were done with potters who were interested in the topic and offered to give part of their time through home and workplace visits.

- Secondary data is information gathered from sources outside of the primary data. It is available online, in books, and in general literature. We search on google and we search for research papers on this topic. Secondary data is less important and easier to gather than primary data. Both systems are still required for analysis.

### **1.7 Proposed system**

We propose a web-based multi-vendor ecommerce platform to help buyers find the folk art & crafts items they need. The admin will be a registered member of SARONG multi-vendor ecommerce system on behalf of the industry owner, verified seller, and customers. There will be advanced search tools to help customers discover the things they need. If you are a seller, you may establish a rich portfolio by including product images so that buyers can discover them quickly. And much like any other social platform you may update your items and customers will like and purchase them right away. We will introduce clients to various delivery systems. Then they may choose any medium they wish to deliver. We will implement very useful features schedule purchase for both customer and vendor sellers which are not now available in our ordinary ecommerce.

### **1.8 Conclusion:**

After successfully completing the project the old tradition of our country will be restored. The workers will get a price. The distance between the owner and customer will be reduced and suppliers may market their items in a user-friendly way. Customers obtain consistent product quality, information, and pricing, and sellers may offer their items from anywhere in Bangladesh. Physical gatherings are not required to purchase or sell goods.



## 1.9 Chapter Layout

- ❖ Chapter 1 depicted an introduction to the project, including its introduction, purpose, aims and proposals.
- ❖ Chapter 2 will have “Background” including an introduction, related work, an issue, a study summary and obstacles.
- ❖ Chapter 3 will cover Tools and Technology.
- ❖ Chapter 4 will cover System Analysis and Design.
- ❖ Chapter 5 will discuss Design, Development, Testing and Implementation.
- ❖ Chapter 6 will go through Impact on Society, Environment and Sustainability.
- ❖ Chapter 7 will go through the summary and conclusion, as well as show examples of future efforts.

## **CHAPTER 2**

### **Background Study**

#### **2.1 Introduction:**

We now buy folk art and crafts from the local region. When we travel to that place to buy gadgets, we must first find and purchase gadgets. We have to travel to numerous locations to locate the genuine merchandise. It takes us a long time to look for a product in a certain location. Moreover, many markets lack real products. Furthermore, the price of the product at the shop is generally significantly higher. In this situation, everyone will gather numerous types of Folk art and craft from our "Ecommerce website" platform at an affordable price.

#### **2.2 Existing system:**

Our project is differing from all others because the motive to make a platform for our traditional art and craft selling and buying is different from all others applications. But as our project is based on e-commerce there are some existing similar e-commerce platforms.

Alibaba.com is one of them. Alibaba.com is a well-known global b2b ecommerce service company that is part of the Alibaba Group. On April 4, 1999, Jack Ma established it. This business-to-business platform offers services for both suppliers and buyers, such as online B2B commerce, trade assurance, data analytics, digital media, and so on. Over time, Alibaba.com has grown into one of the world's top mobile commerce and e-commerce marketplaces after establishing a tiny platform for exporters and manufacturers to do worldwide business. Alibaba.com, which overcame a number of obstacles before becoming a typical example of a b2b firm, is frequently cited as a great example of a b2b e-commerce business. Currently, one of the biggest international internet markets is Alibaba.com. The e-commerce platform is incredibly effective for contacting major suppliers and locating items in bulk for international buyers<sup>3</sup>. Manufacturers, wholesalers, and merchants who want to sell their goods internationally may connect with more than 26 million active customers in more than 200 nations [4].

Daraz Bangladesh has received recognition as the top E-commerce brand in Bangladesh and the 13th most valuable brand overall in 2021. Daraz got this esteemed honor for the year 2021 in the 13th iteration of the Best Brand Award, which was presented by Bangladesh Brand Forum in

collaboration with Nielsen Bangladesh [5]. Daraz gives you a huge selection of items with fantastic deals and quick delivery. You may buy groceries, technology, clothing, household goods, and much more on Daraz. Products that are real. Browse and save.

Launched in 2021, Monarch Mart Limited is a dedicated marketplace ecommerce business that provides a wide range of goods, including clothing, electronics, cellphones, computer & accessory items, health, and hygiene products. Monarch Mart Ltd is committed to "Changing Experience" by providing outstanding customer service and satisfaction in order to enable consumers to receive hassle-free product delivery at the place that is closest to them throughout Bangladesh. Customers may also order our items via bKash, Nagad, and Upay as well as Cash on Delivery, Online Payments, and free returns and prompt refunds [6].

A handloom saree retailer online is called Bengal Looms India. The Bengal Looms India website serves as a source of affordable Pure Handloom Banarasi Sarees, Tussar Silk, Khadi Silk, and Cotton Sarees. They purchase all of our goods, various yarns, and raw materials from tiny weavers and producers. Our main market has historically been Kolkata, but they have realized that the six yards' inherent elegance has a lot of potential for worldwide appeal and are making it available to people in all states, nations, and continents. Each product's major source of inspiration is the artists' enjoyment of these exquisite weaves. The contemporary sari has undergone several changes, yet the craftsmen are still not well known. Every sari you see on Bengal Looms India has a weaver who introduces you to the history of the fabric.

They want to provide you everything that makes an ethnic outfit amazing, including yarn, fabric, and accessories [7].

### **2.3 Comparative Studies:**

There are many e-commerce websites in our nation, but we are developing a platform for traditional goods. We will be able to realize our vision for our e-commerce site and our dream with the help of our e-commerce service. We want to employ a business-oriented strategy in upcoming business agreements. Weaving, pottery, and other ancient industries must all be preserved. Our primary concern is taking care of our clients. The gap between the buyer and the vendor will be shortened by this project. We agreed to take on this project since e-commerce is becoming more and more significant to individuals throughout the world. The purpose of this endeavor was to improve upon my prior work experience and do a better job.

#### **2.4 Challenges:**

There will be some challenges we may have to face. Normally the traditional industry owners are from village areas and they are not always educated. They will not understand the benefits of ecommerce. So we have to advertise the website to make people aware about the benefits of using this platform. So there will be some accountability. Also, there will be challenges in Teamwork.

#### **2.5 Conclusion:**

We have gotten from the study that there are many e-commerce websites but none of them are working in the traditional folk art and craft industry. We are the first working on improving and saving our art and craft and culture of our country. Through our e-commerce, workers can show their art and can sell them and customers who are interested in art can buy authentic products.

## CHAPTER 3

# Tools and Technology

### 3.1 Introduction:

Technologies employ a wide range of tools and programming languages that are likely to be used to create dynamic, fully functional websites and apps. On the front-end, we use. We built a stunning dynamic website using React JS, React Bootstrap, Material UI, React Router, React Hook Form, React Paginate, etc. We will utilize this website on both a PC and a mobile device because it may have a responsive style. Through Node JS, MongoDB, and Firebase, our online shop is always evolving. We'll utilize MongoDB as a database to store all of our data, and Node JS will be used to get a single record for our website.

### 3.2 Tools and Technology:

- HTML5
- CSS3
- Bootstrap
- JavaScript
- React JS
- React Bootstrap
- Material UI
- React Router
- React Hook Form
- React Paginate
- Express Js
- Node Js
- MongoDB
- Firebase
- IDE: VS Code, MongoDB atlas

### **3.2.1 HTML**

Everybody is aware that HTML is a markup language that we employ to create the Hyper Markup Language, a markup language that makes great use of markup tags in order to access server information. HTML names are used to represent HTML records. Exceptional report material is produced by each HTML tag.

### **3.2.2 CSS**

Falling Templates, sometimes known as CSS, is a template language that is used to convey the basic semantics for capturing typefaces in HTML. CSS is an easy way to customize a web archive's look.

### **3.2.3 Bootstrap**

A robust, feature-rich frontend toolkit is Bootstrap. Bootstrap is used to design a task easily. Bootstrap plays an essential role in making our front-end work easy and responsive.

### **3.2.4 JavaScript**

Making interactive web pages is possible with JavaScript, a text-based computer language used both on the client-side and server-side. JavaScript adds interactive aspects to online sites that keep users interested, whereas HTML and CSS are languages that provide web pages with structure and design.

### **3.2.5 React JS**

Facebook created the open-source React.js framework and library for JavaScript. In comparison to using pure JavaScript, it is used to rapidly and effectively create interactive user interfaces and online applications. Currently, react.js is a popular library.

### **3.2.6 React Bootstrap**

In essence, the React-Bootstrap integration eliminates the intermediary to produce a more seamless front-end development experience. The components in this architecture may be designed in a way that gives developers more flexibility over how they look and work. The Bootstrap stylesheet

remains at the center of the React-Bootstrap system. React-Bootstrap is thus compatible with a large number of current Bootstrap themes.

### **3.2.7 Material UI**

Rapid prototyping, increased software development velocity, and the quick creation of user interfaces are all goals of the Material-UI framework.

### **3.2.8 React Router**

A common library for routing in React is called React Router. It enables altering the browser URL, allowing switching between views of various React application components, and maintaining UI synchronization with the URL. To further understand how the React Router functions, let's build a straightforward React application. Three sections will make up the application: a home section, an about section, and a contacts section. The React Router will be used to move between these components. [10]

### **3.2.9 React Hook Form**

A library called React Hook Form makes it easier to validate forms in React. Developers just need to create a little bit of code because it has no additional dependencies and is simple to use, requiring less code than other form libraries. React Hook Form's effortless connection with UI frameworks is another fantastic advantage because the majority of libraries accept the ref property. [11]

### **3.2.10 React Paginate**

React JS's pagination feature enables apps to display data across several pages. Instead of viewing the content, you may browse through the pages to see it. For instance, a customer may place a single purchase for 20 goods and then proceed to order each one individually until the page limit of 20 items per page is reached. Because React JS pagination doesn't call for any backend modifications, it is often implemented on the front end. [12]

### 3.2.11 Express JS

A node JS web application framework called Express offers a variety of capabilities for creating both online and mobile applications. A single page, multipage, or hybrid web application can be created with it.

### 3.2.12 Node JS

An open source, cross-platform runtime environment called Node.js is used to create networking and server-side applications. Applications for Node.js may be created in JavaScript and run on Linux, OS X, and Microsoft Windows using the Node.js runtime. [13]

#### 3.2.12.1 Why do we use Node JS?

- Speed is where Node.js excels.
- Win for Node.js with Ubiquity.
- If you want to win with data streaming, go to Node.js.
- Database queries favor Node.js.
- With Node.js, developing real-time web apps is simple.
- One codebase for real-time web applications, Node.js.
- As a proxy server, Node.js comes to the rescue.
- Node.js: The Key to Boosting Productivity
- Effective tooling for Node.js using NPM
- Hosting services for Node.js deployments [17]

#### 3.2.12.2 Basic features of Node JS

- **Easy:** Node.js is rather simple to learn. Beginners in web development frequently choose it. Starting is fairly simple because of the abundance of tutorials and the vast community.
- **Scalable:** It offers enormous application scalability. Due to its single-threaded nature, Node.js can efficiently handle a large number of connections at once.
- **Speed:** Node.js becomes much quicker and more effective thanks to non-blocking thread execution.
- **Packages:** There are several Node.js packages that are open-source that can make your work easier. Currently, the NPM ecosystem has more than a million packages.



- **Strong Backend:** Node.js is fast since it is written in C and C++, and it also provides capabilities like networking support.
- **Multi-platform:** You may use Node.js to build SaaS websites, desktop applications, and even mobile applications thanks to cross-platform compatibility.
- **Maintainable:** Since JavaScript can be used to control both the frontend and the backend, Node.js is a simple choice for developers. [16]

### 3.2.13 MongoDB

An open-source document-oriented database called MongoDB is made to hold a lot of data and provide you a lot of flexibility when working with it. It falls within the NoSQL (Not Only SQL) database category since MongoDB does not store or retrieve data in the form of tables. [14]

### 3.2.14 Firebase

Developers may create iOS, Android, and Web applications using Google Firebase, a software platform powered by Google. Tools for tracking statistics, reporting and resolving app issues, and developing marketing and product experiments are all available through Firebase. As well as improving the sign-in and onboarding experience for users, Firebase Authentication makes it simple for developers to create secure authentication solutions. With support for phone authentication, email and password accounts, Google, Facebook, GitHub, Twitter, and more, this feature provides a comprehensive identity solution. [15]

## Chapter 4

# System Analysis and Design

### 4.1 Introduction

Systems Analysis and Design is a methodology for developing high-quality automation systems, combining information and technology. The process includes the processes of planning, analysis, design, implementation, and maintenance. It covers both the development procedure and prospective system upkeep duties. The fundamental SAD technique is the waterfall model, which is relatively easy to implement by adhering to the model's steps.

### 4.2 Methodology and Development Model

Due to its linear sequential requirements, which require that each segment be finished before moving on to the next, the Agile Model is one of the most often utilized versions of the Structures Development Life Cycle (SDLC). To ensure we were on the right road, we analyzed what really transpired at each task level. [9]

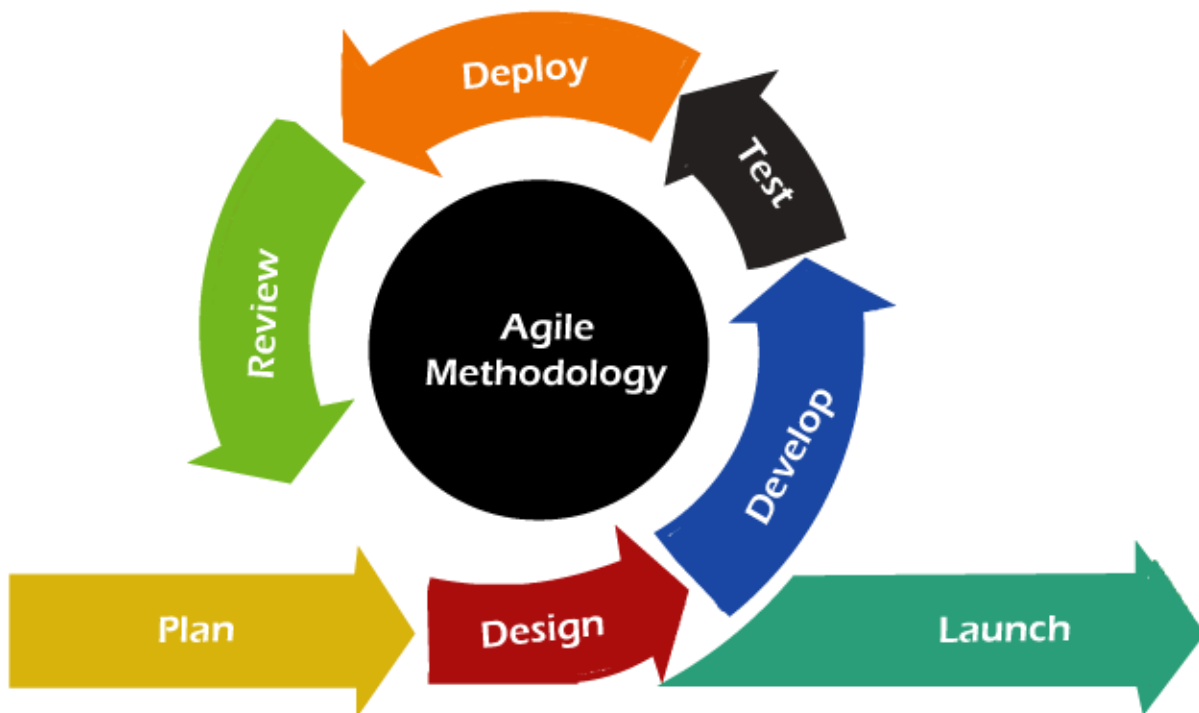


Figure 4.2 Software Development Life Cycle (Agile Model)

### 4.3 Requirement Collection and Analysis

The requirements analysis process includes this step. It includes the identification, documentation, analysis, validation, and management of requirements for new projects or products, with the understanding that different stakeholders may have different requirements as well. Every kind of expedition starts off by acquiring supplies. In addition to controlling necessities, project control should acquire necessities. Mission control is ineffective without the necessary components. A mission should accidentally encounter risk if the necessary conditions for the solution are not radical knowledge. In that case, there can be disputes. This is why it is the team's responsibility to gather supplies. That must be accomplished as soon as feasible.

### 4.4 User Block-diagram:

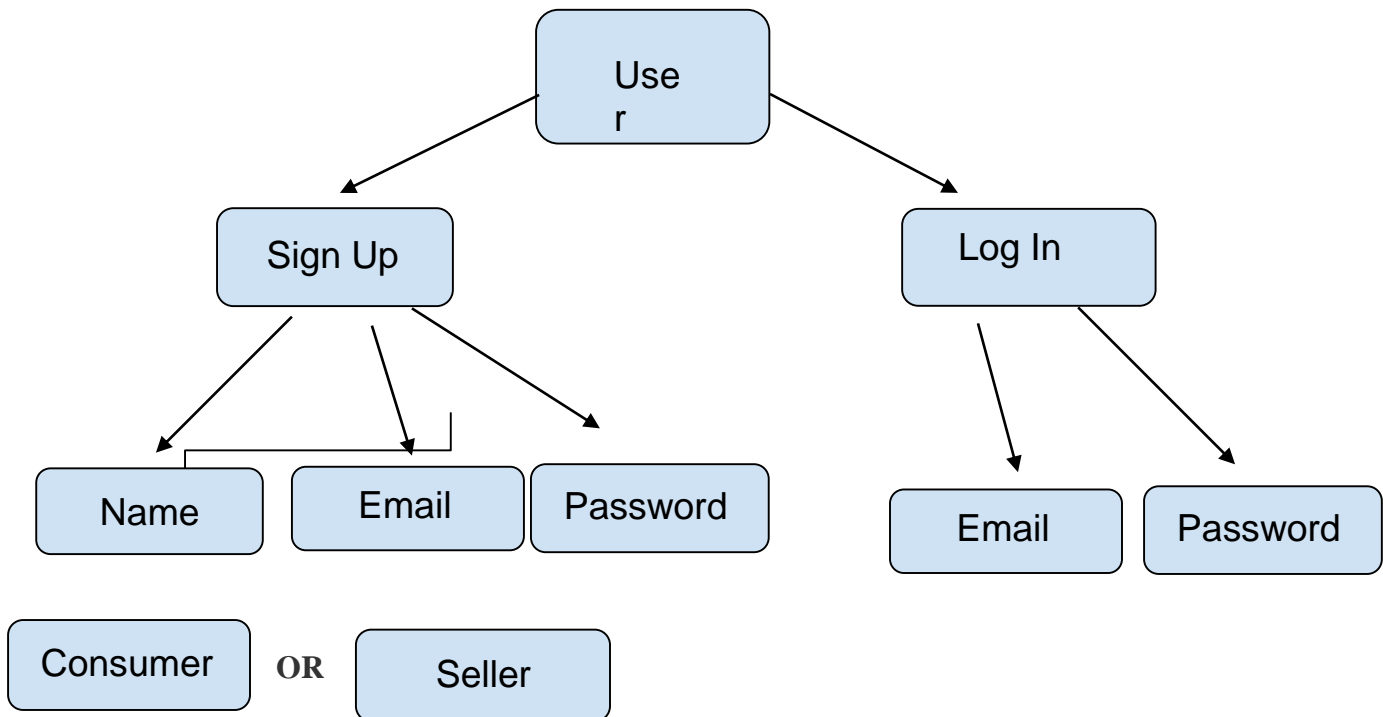


Figure 4.4: Block diagram of User

#### 4.5 Flow Chart:

Figure 4.5 depicts the procedure for adding, editing, and checking out items in a shopping cart. If the visitor does not already have an account, they must create one before they can log in. The customer can then proceed with paying for the item.

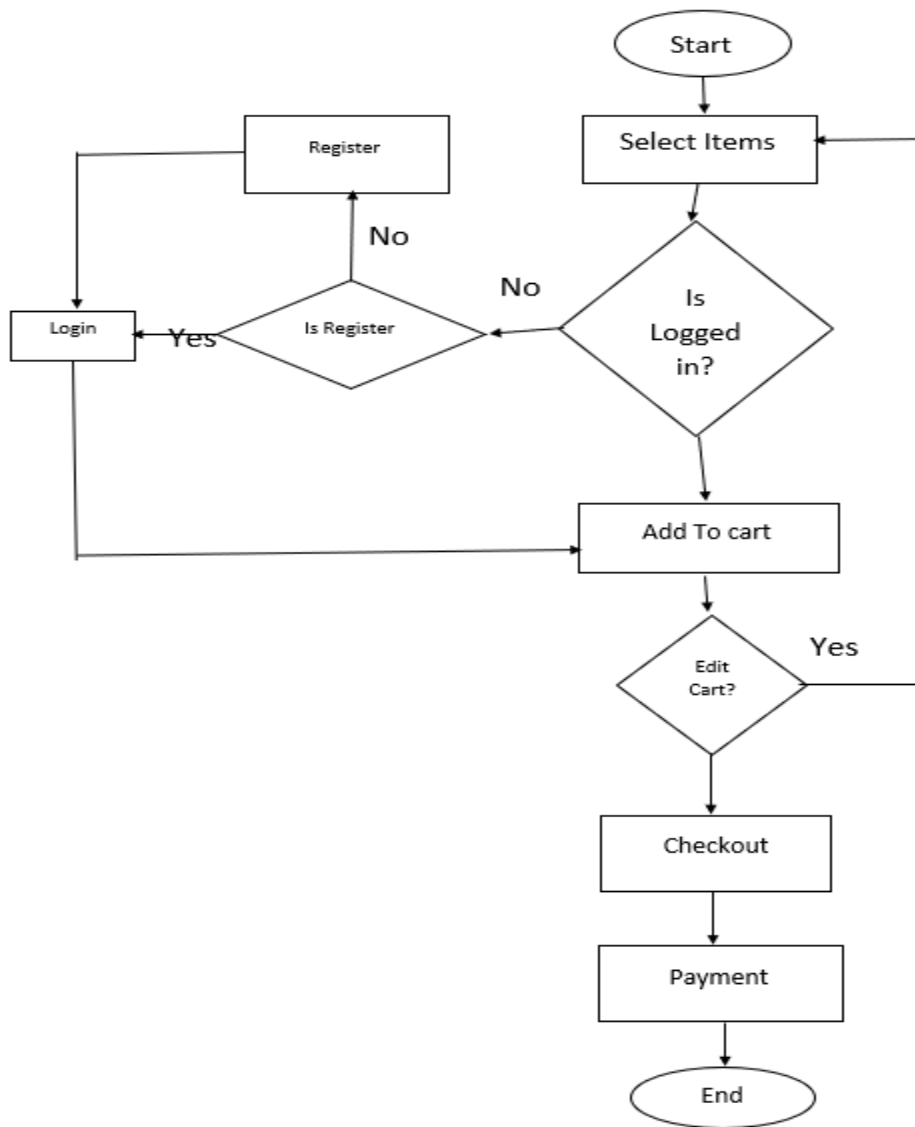


Figure 4.5: Flow Chart of Online Shopping System

#### 4.6 Data Flow Diagram (DFD):

An online shopping cart system's Data Flow Diagram (DFD) is a visual depiction of the "flow" of data that passes through the system, simulating some parts of the process. DFD is a stage before explaining the system in depth. Its purpose is to generate an overview of the system. To illustrate data processing and structured design, utilize DFD.

##### 4.6.1 Context Level Diagram:

An internal software system's interactions with external entities are depicted in a context diagram. Context diagrams are high-level diagrams that don't go into great depth to show the system's complex internal workings. Instead, they provide a concise, understandable, and transparent blueprint of the entire system. The primary system overview is shown in this graphic.

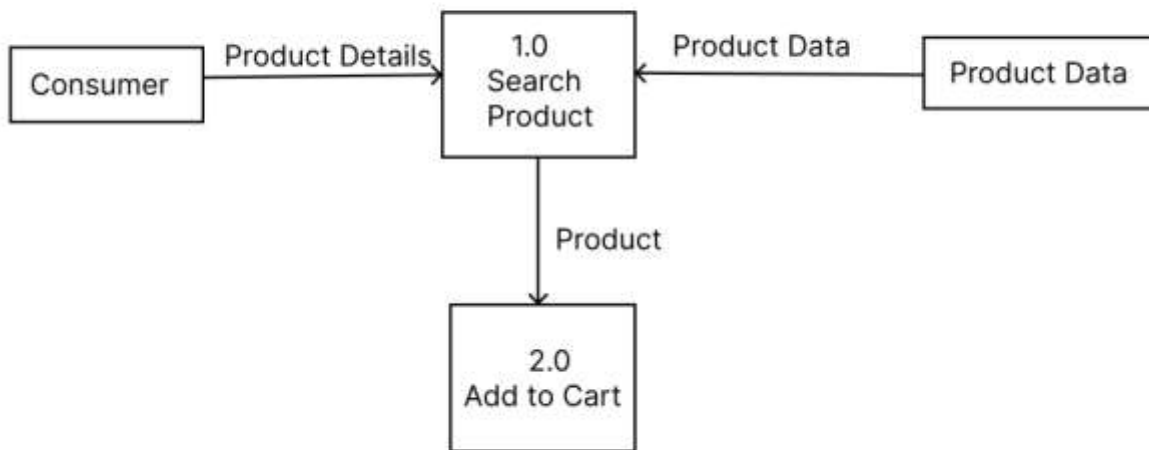


Figure 4.6.1 Context Level Diagram

#### 4.6.2 First level DFD

The first level of DFD demonstrates how consumers may conduct a Process 1.0 product search. Product information is pulled from the product database during the search. The chosen item can then be added to the Process 2.0 shopping cart by the user.

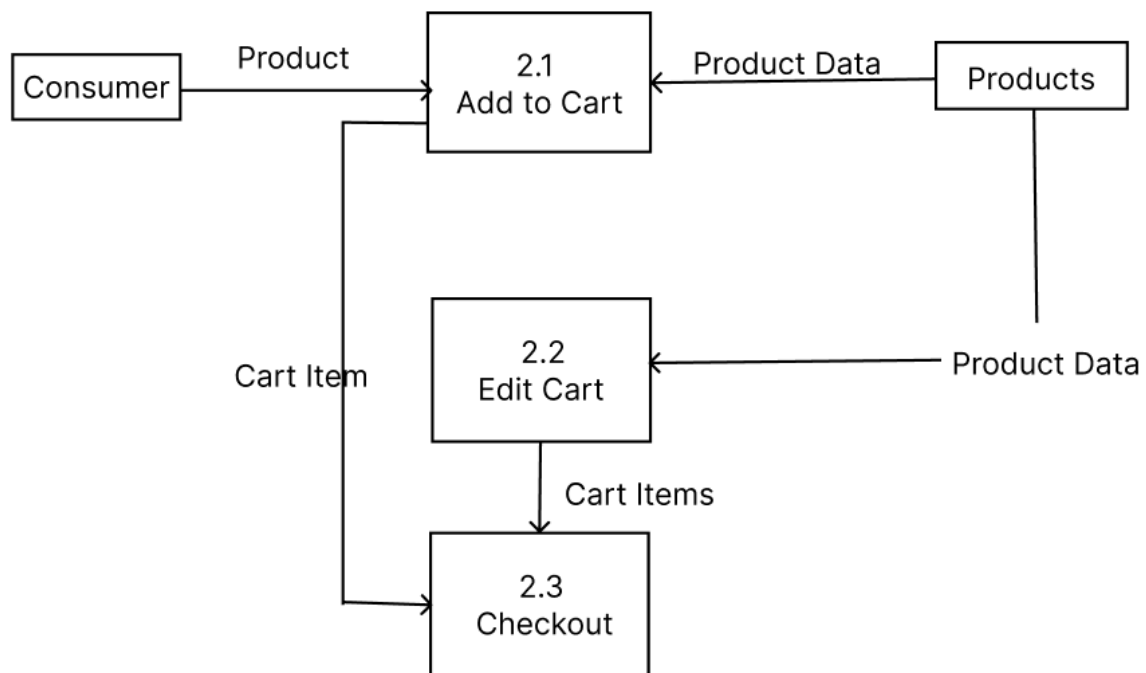


Figure 4.6.2: First Level of DFD

#### 4.6.3 Second Level DFD:

The whole system that takes place during the procedure is shown in the diagram's second elevation. It is shown as follows:

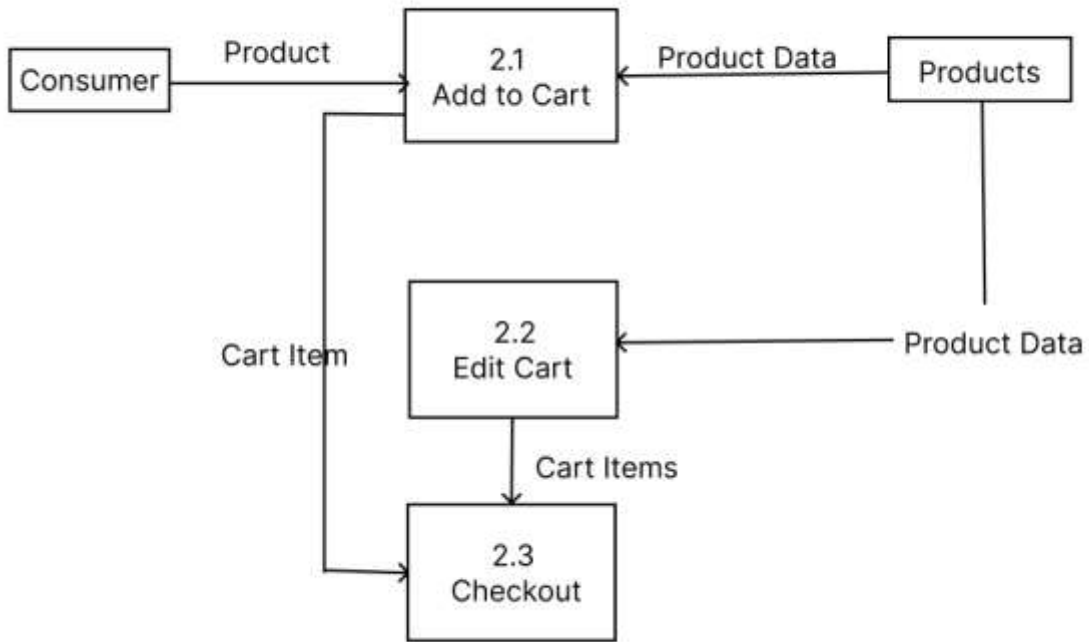


Figure 4.6.3 Second Level of DFD

#### 4.7 Use Case Diagram:

When testing is required in graphical spelling to benefit from the case entertainer’s engagement with the framework, use case models are crucial. A designer has to have extensive knowledge of the client, use cases, and connections between them in order to create a usage case graph. There are a few use cases and entertainers in our project that provide a substantial amount of framework perspective.

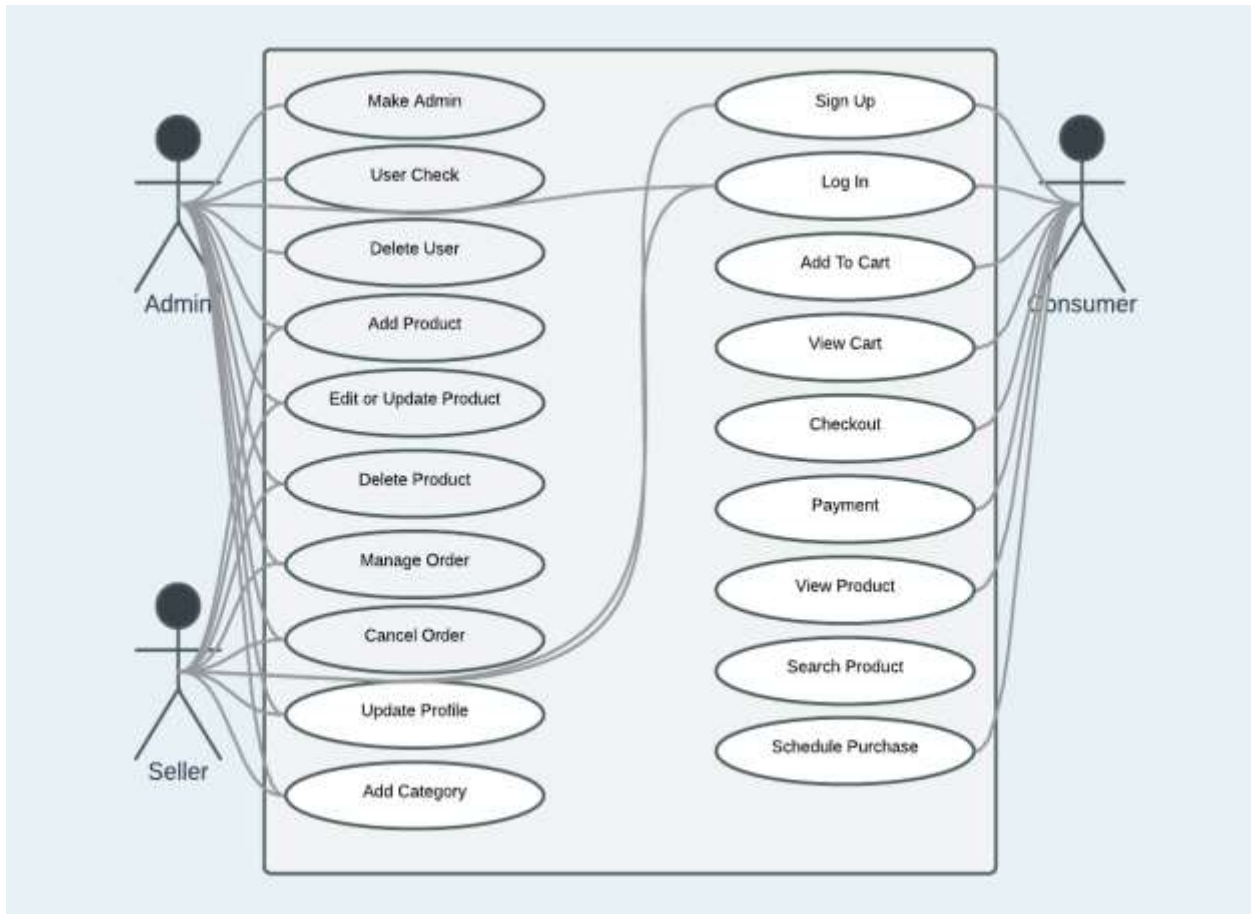


Figure 4.7: Use case diagram



## 4.8 ER-Diagram:

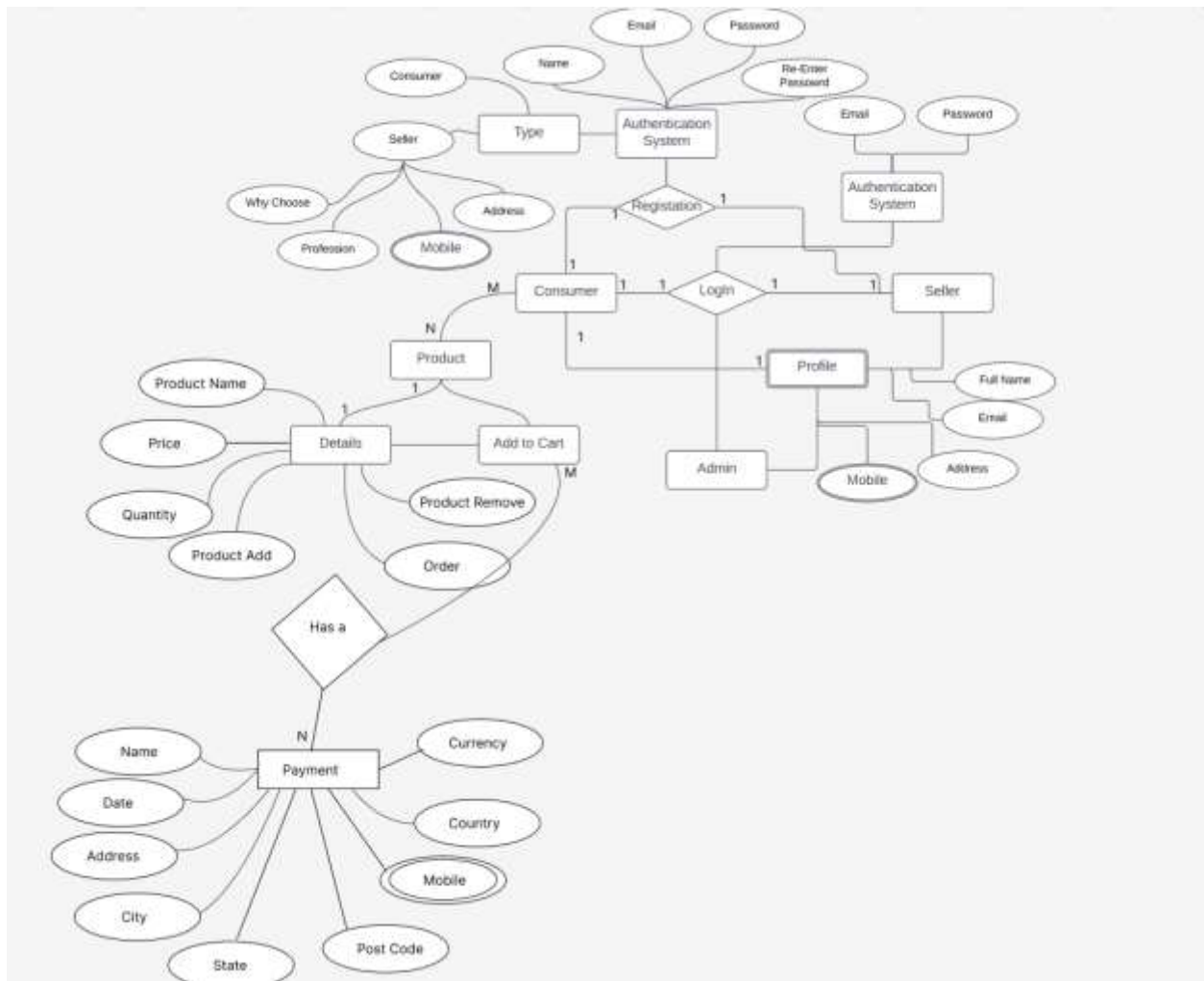


Figure 4.8: ER-Diagram

## Chapter 5

# Design, Development, Testing and Implementation

### 5.1 Structure of the Project

#### 5.1.1 Before Login

- Login
- Register
- All Categories
- Product
- About
- Contact
- Product Details

#### After Users Login

- My Profile
  - Edit Profile
  - Change Password
- Buy Products
  - Buy Products
  - Payments
- My cart
  - Remove Cart
- Checkout
- Logout

#### After Seller Login

- Buy Product
- Order
- User Order
  - Approved
  - Canceled
  - Pending

- Add Product
  - Add Product
  - Update Product
  - Delete Product

### **After Admin login**

- Add Product
  - Add Product
  - Edit Product
  - Delete Product
- Add Admin
- User Order
  - Approved
  - Canceled
  - Pending

## **5.2 Implementation of Front-end Design**

Front-end web development is the graphical user interface, where users transferring data may browse and interact with it via a mechanized link. The utility's UI's front-end configuration is ready. For front-end design in our project, HTML, CSS, Bootstrap, and ReactJs technologies are used. To make our website user-friendly, we use certain sections. The review feature was added to our website with users in mind. The front quit plan setup is the most important programming change.

### **5.2.1 Home Page :**

- 1) Users can access our website's homepage by typing or hitting our website's URL.
- 2) You may access the All Categories, Collection, Product, Contact, Order summary, Dashboard, and login from the Nav Section Home.
- 3) But once logged in to our website, individuals may view their Order summary and Dashboard.

- 4) After logging in, the user's name and avatar are displayed. There is a dropdown menu available here. The user has access to and control over his profile.
- 5) Bottom of Navbar Slider Section The slider in this section showcases our premium and recently added products.
- 6) After the Slider Section, begin with the Offer Section here.
- 7) Starting here is the Sale Section after the Offers Section. The most recent product update or the most rated product will be shown above the product.
- 8) Start of our category's After Sale-Section. Users can view the products here depending on categories.
- 9) Our Features Product Section begins after the category Section. then display the best-sellers, Fashion, and Our-Partners sections.
- 10) Just as there is a facility to like pictures on Facebook, there is a facility to like any product on our website.
- 11) Our website has a coupon code system and if someone uses the coupon code then there will be a discount based on it.
- 12) Our website's footers are located at the bottom. Here, you may find details about Our Office, how to get in touch with us, social media networks, quick links, etc. Users and suppliers can easily contact us for business purposes.



Figure 5.2.1.1: Home page banner section

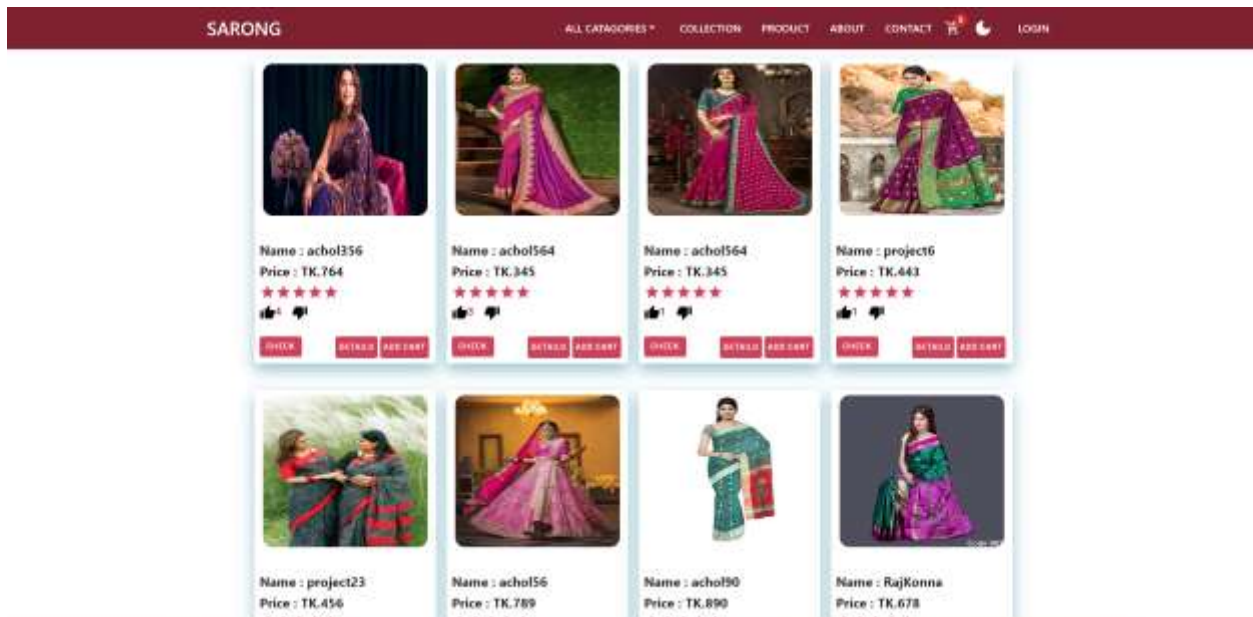


Figure 5.2.1.2: Home page on sale section

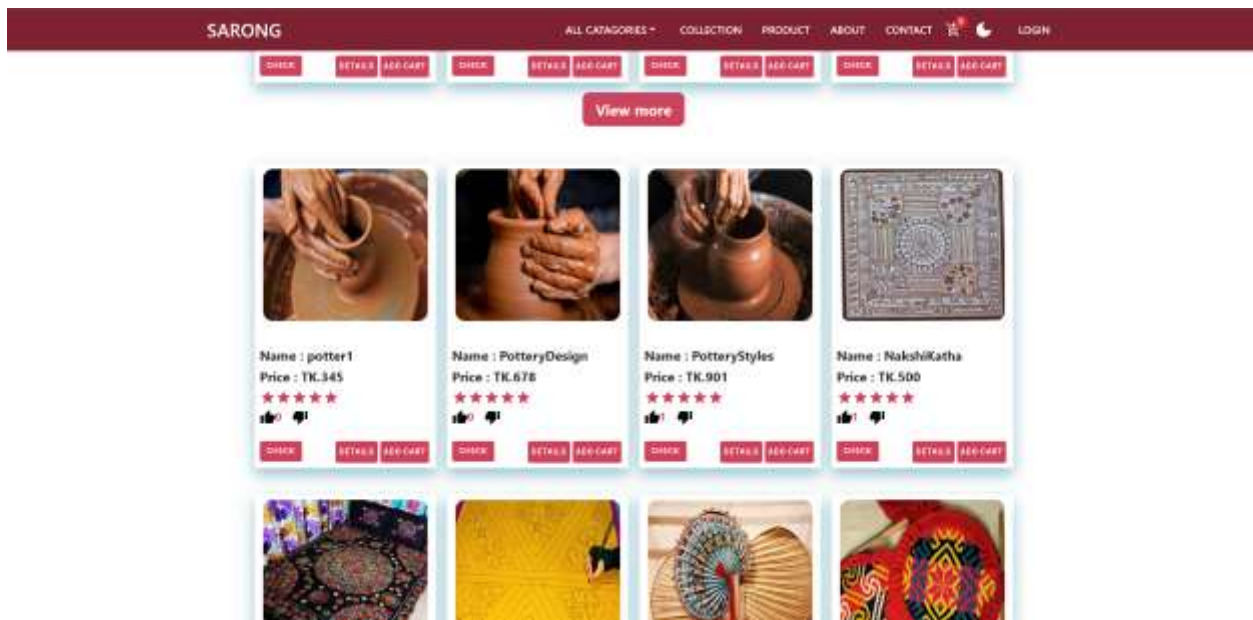


Figure 5.2.1.3: Home page on the sale section

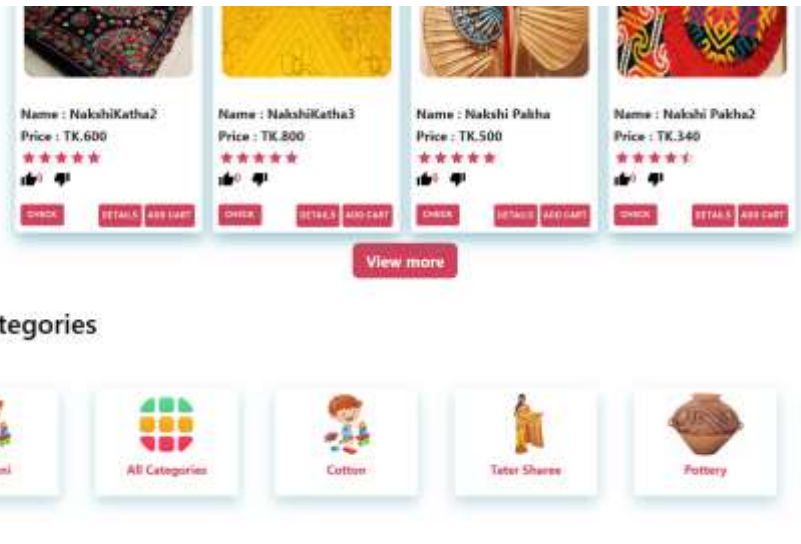


Figure 5.2.1.4: Home page on categories section

Features Product



Best Sellers



Figure 5.2.1.5 : Home page on Features & Best Sellers section



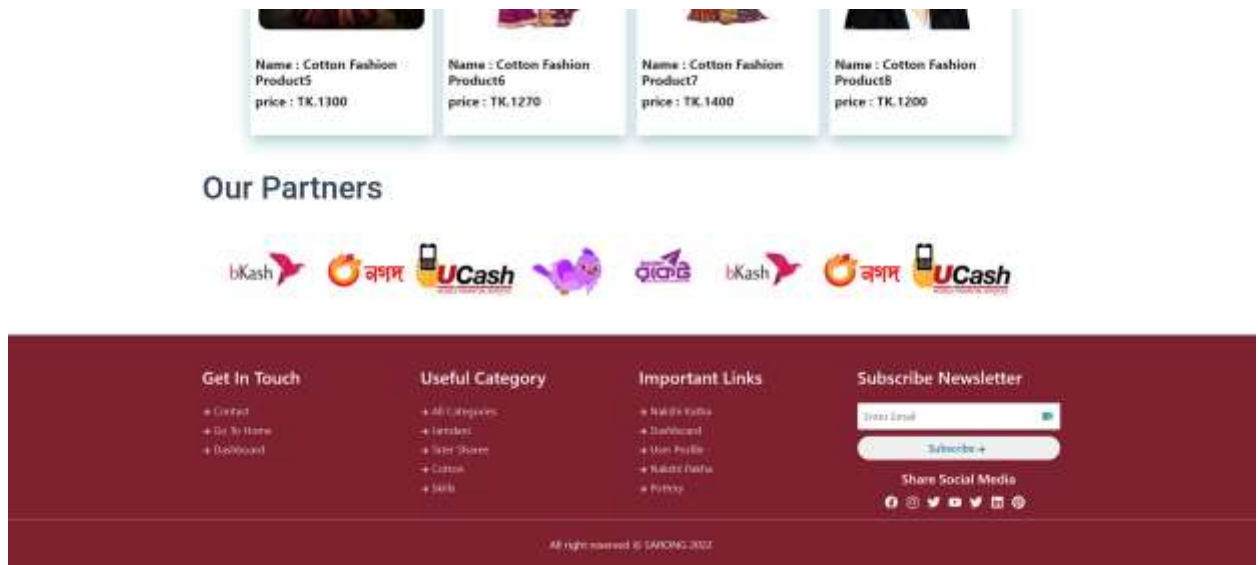


Figure 5.2.1.6: Home page on Our Partners & Footer section

## 5.2.2 All Categories Product Page:

1. On our online store, users may view every item. He has the ability to view product details, check out, and add items to his cart.
2. There are all brands and categories here. Users Have Access to All Brands and Categories of Products

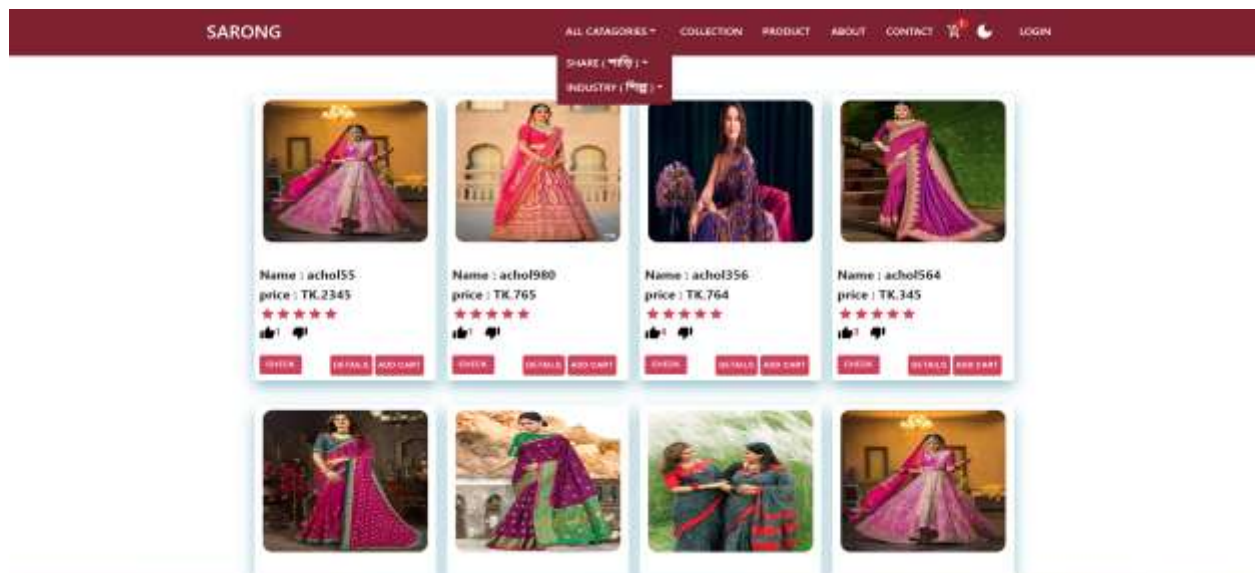


Figure 5.2.2.1 Categories page top section

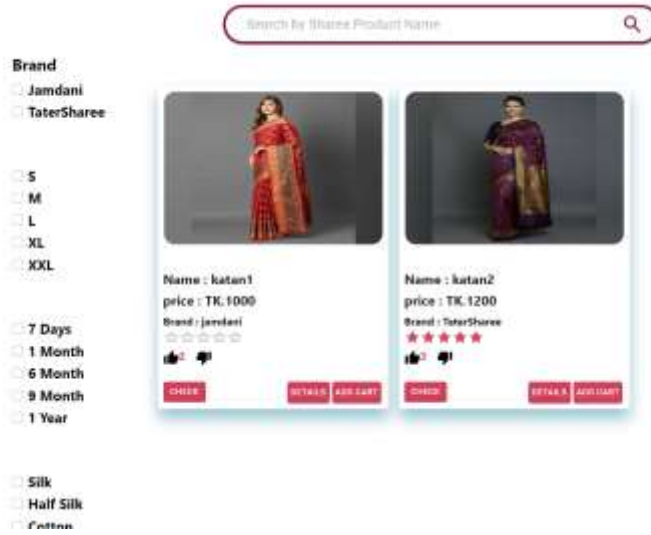


Figure 5.2.2.2: Categories selection section

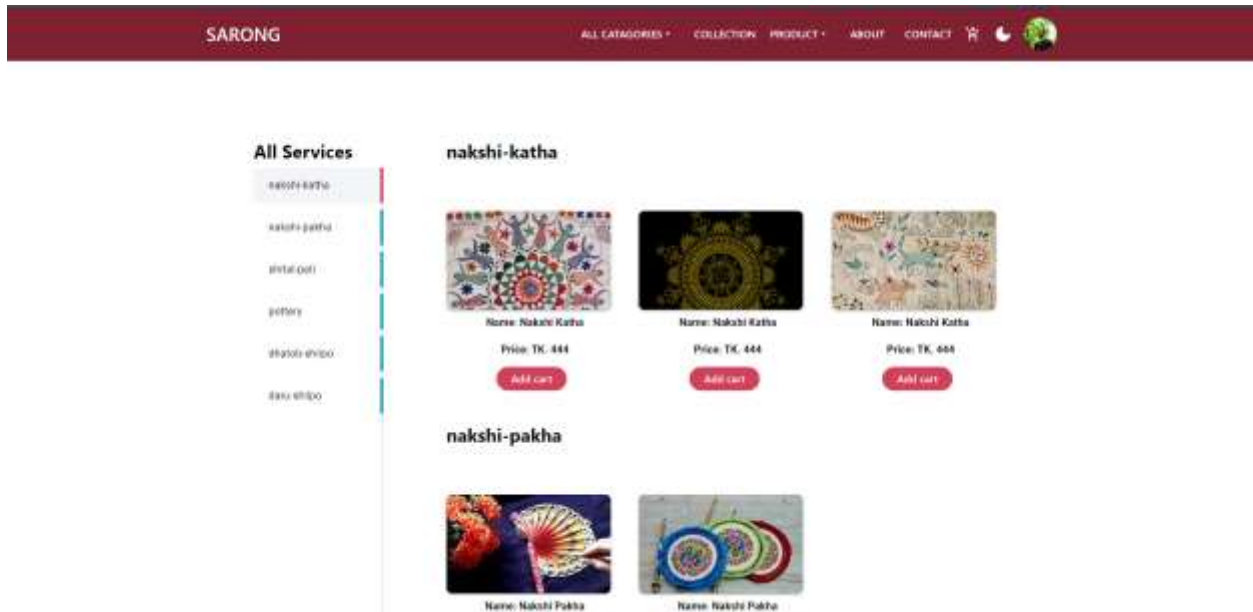


Figure 5.2.2.3: Industry Product Page



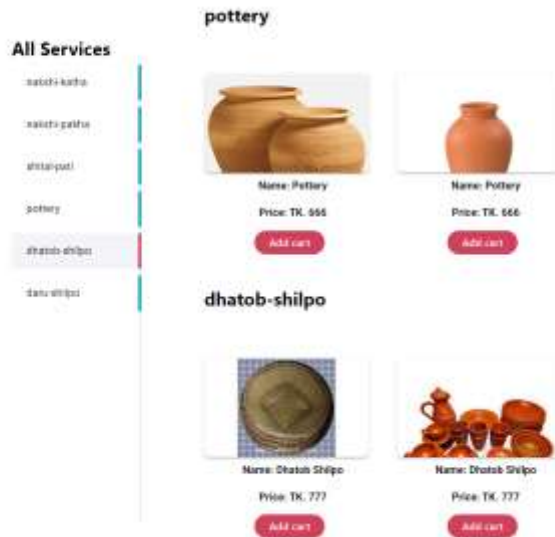


Figure 5.2.2.4: Industry Product Page

### 5.2.3 Product Details Page:

1. Users can view a product's specifications, cost, and availability when they click on it. They can also add items to their shopping carts. Users can also submit their own reviews.

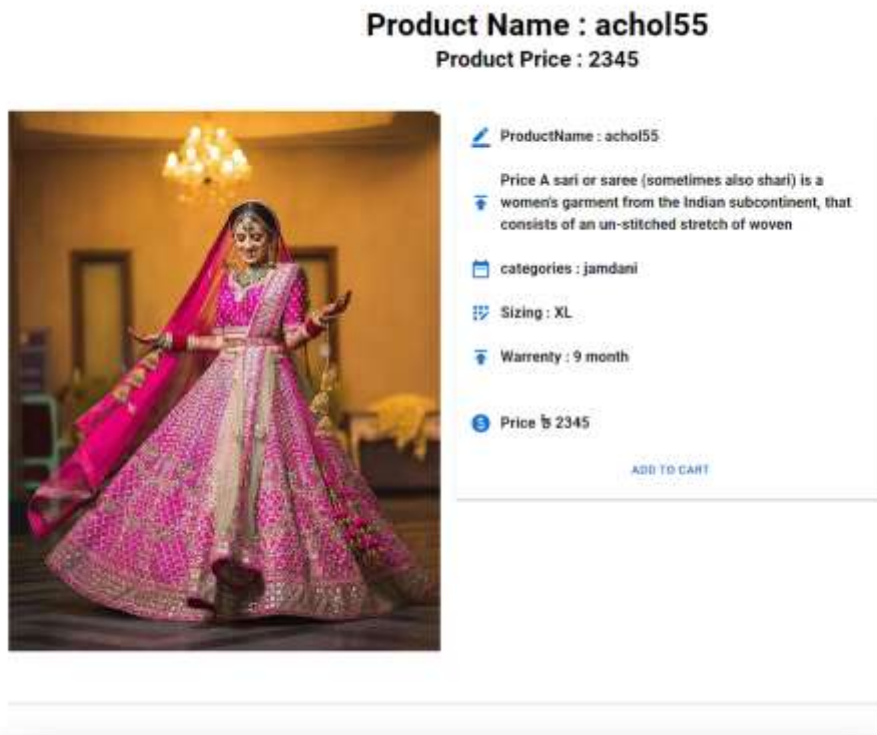


Figure 5.2.3.1: Product details page

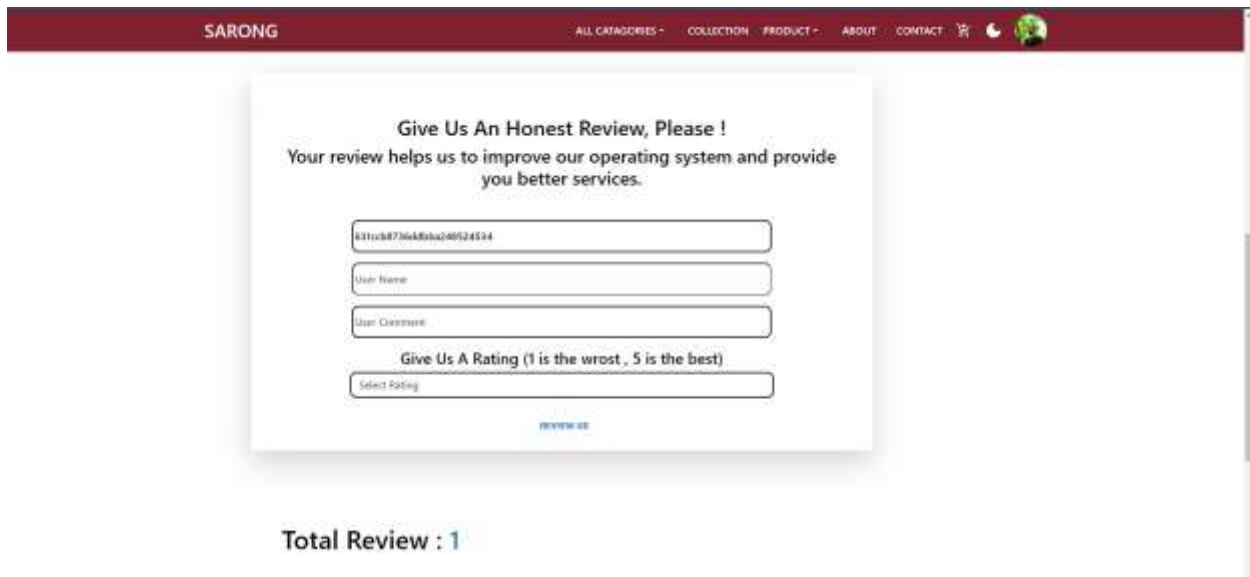


Figure 5.2.3.2: Product review section

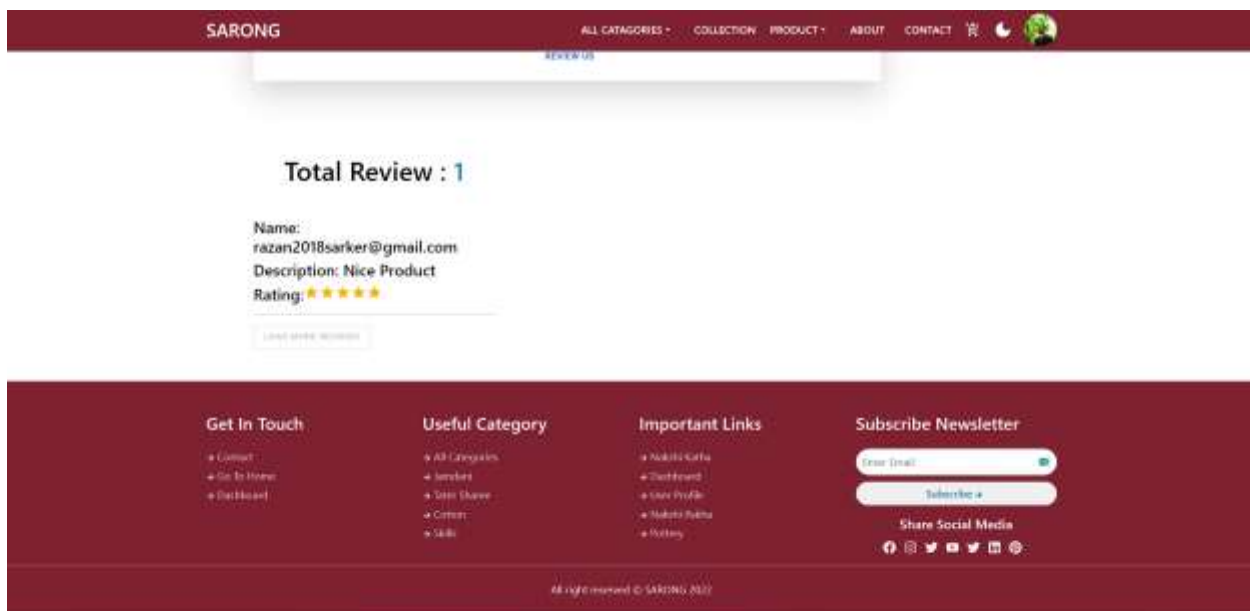


Figure 5.2.3.3: Product review count section

### 5.2.4 Add to Cart:

1. Users can view products that have been added to their shopping carts. It is only visible to logged-in users of the website.
2. The product title, image, quantity, unit price, subtotal price, shipping cost, tax, and total price are all displayed here for users to see.
3. Users can also take products out of their shopping carts.
4. Users can order things right away if they want to.

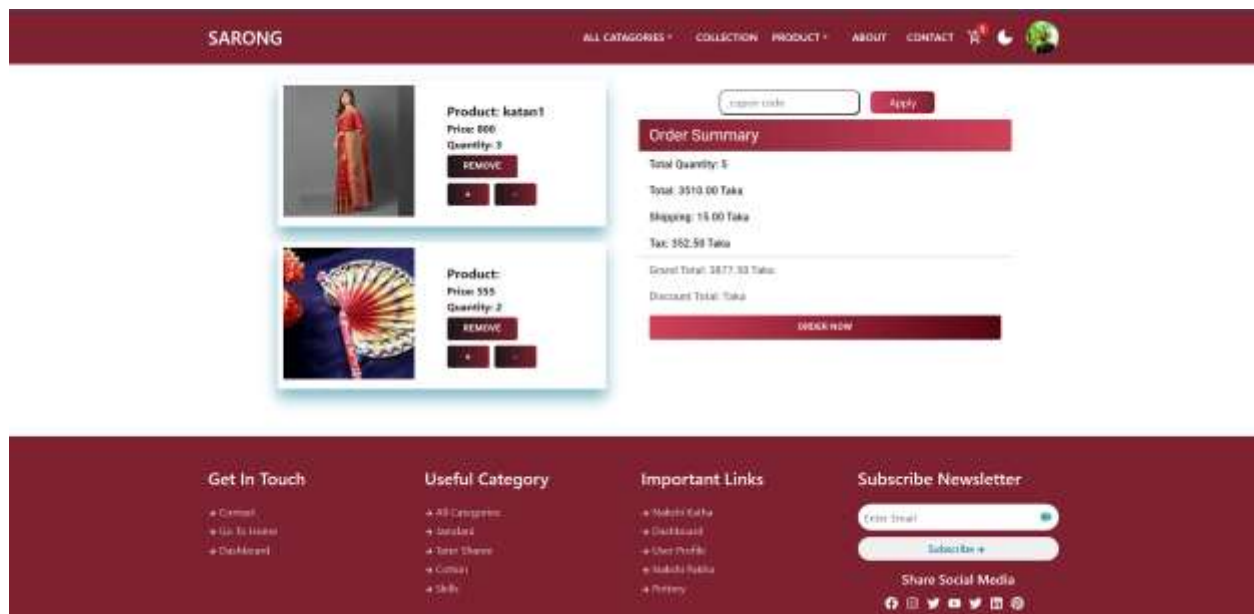


Figure 5.2.4.1: Add to cart page

### 5.2.5 Check Out Page:

1. If a user is logged into our website, they can access it.
2. He or she can view the details of the item they are interested in purchasing as well as the mailing address below.
3. Full Name, email, and date information for the authentic user are immediately filled in. He must next provide his shipping information as well as his Address, City, Post Code, Currency, Country, State, and Phone.
4. Customers have the option of paying with cash at delivery, bkaash payment, or rocket payment.

5. Users must have received the transaction ID if they use Rocket or Bikash as their payment method.
6. Users can then order the things they want.

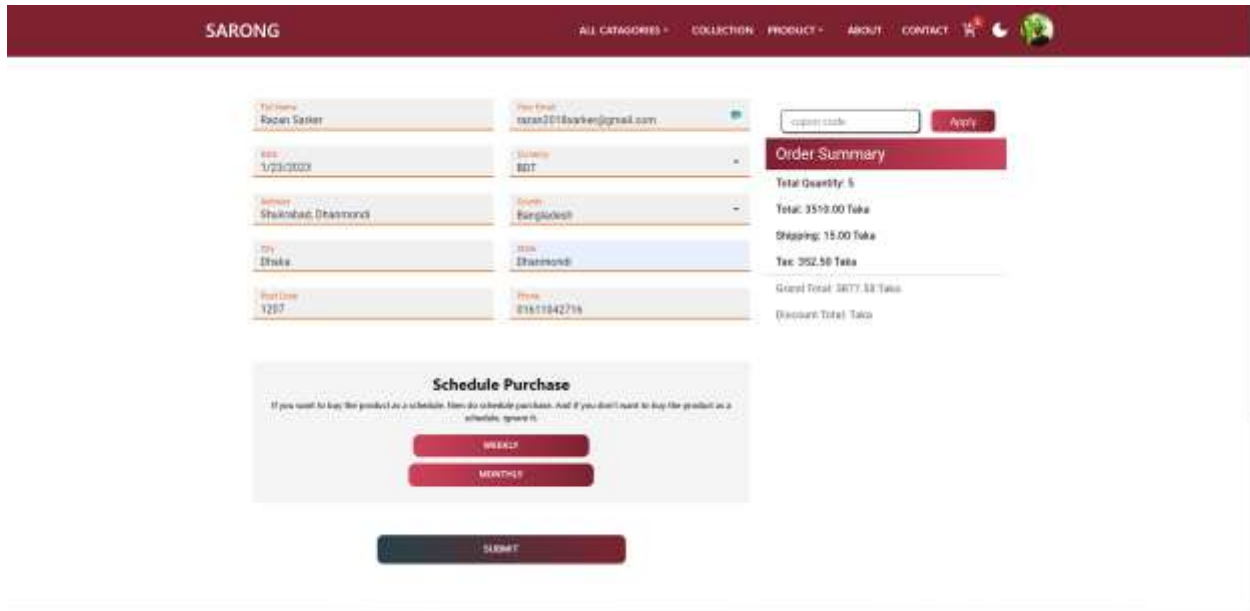


Figure 5.2.5.1: Checkout page

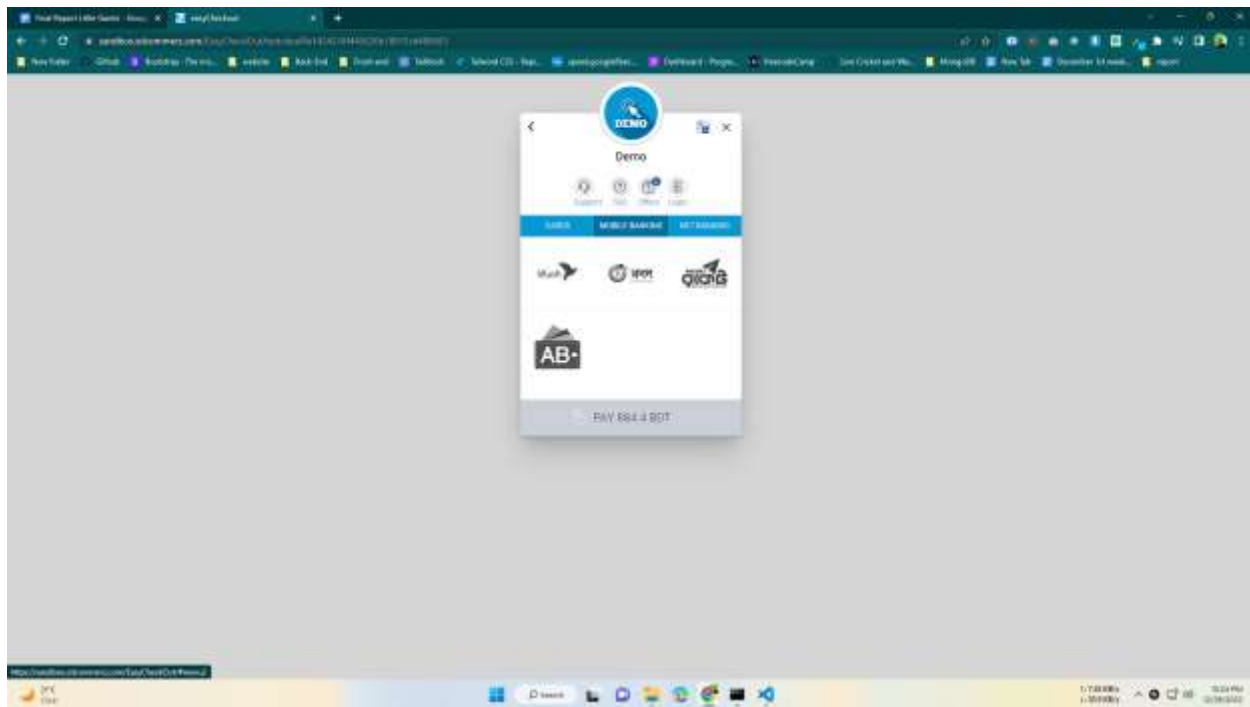


Figure 5.2.5.2: Payment Page



Figure 5.2.5.3: SSLCommerz Redirect OTP Page

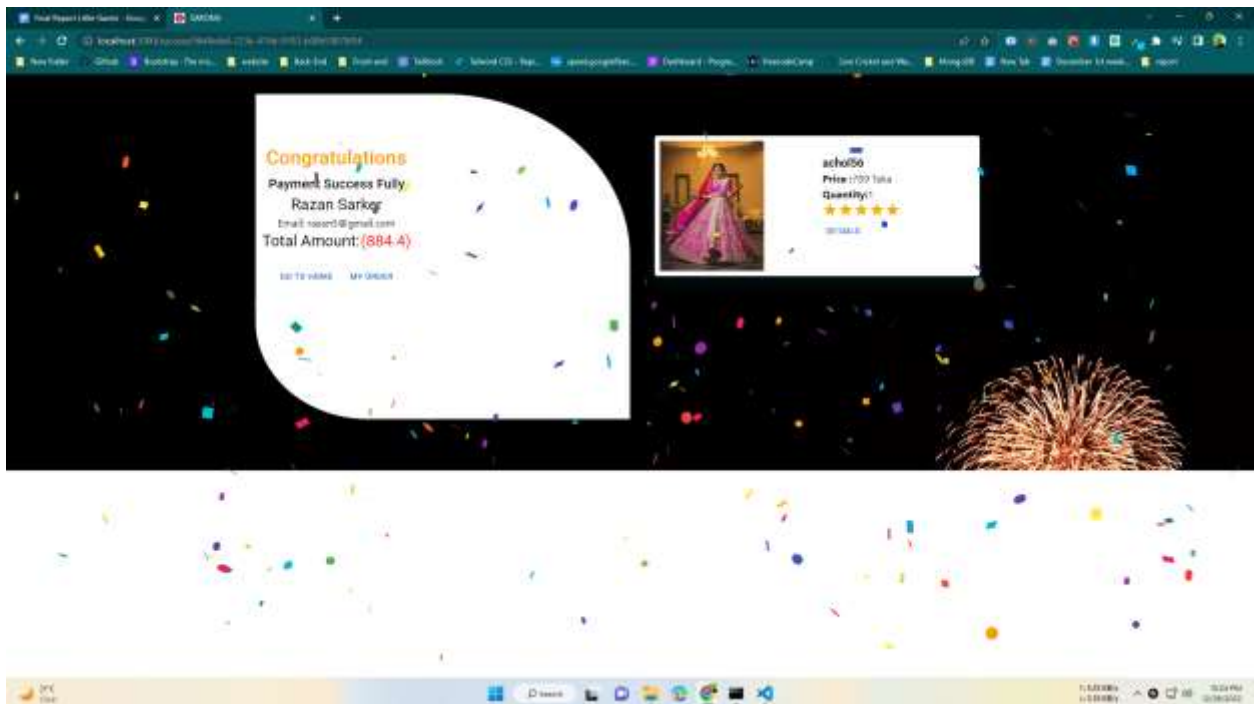


Figure 5.2.5.4 Payment Success

### 5.2.6 Schedule Purchase:

Lots of consumers need products on a continuous basis. They need to go to a website and order the products regularly which sometimes creates hassle to the consumer. We implement schedule purchase to solve this problem. There are two options for schedule purchase monthly and weekly. So our consumer can order the products on a monthly or weekly basis with the help of scheduled purchase and the product will be delivered to the consumer on a selected date and selected option(monthly or weekly). We do not see this feature on any e-commerce site. This feature is completely unique and will be very helpful for ecommerce sites in recent days.

**Schedule Purchase**

If you want to buy the product as a schedule, then do schedule purchase. And if you don't want to buy the product as a schedule, ignore it.

WEEKLY

MONTHLY

Figure 5.2.6: Schedule Purchase

## 5.2.7 Login Page:

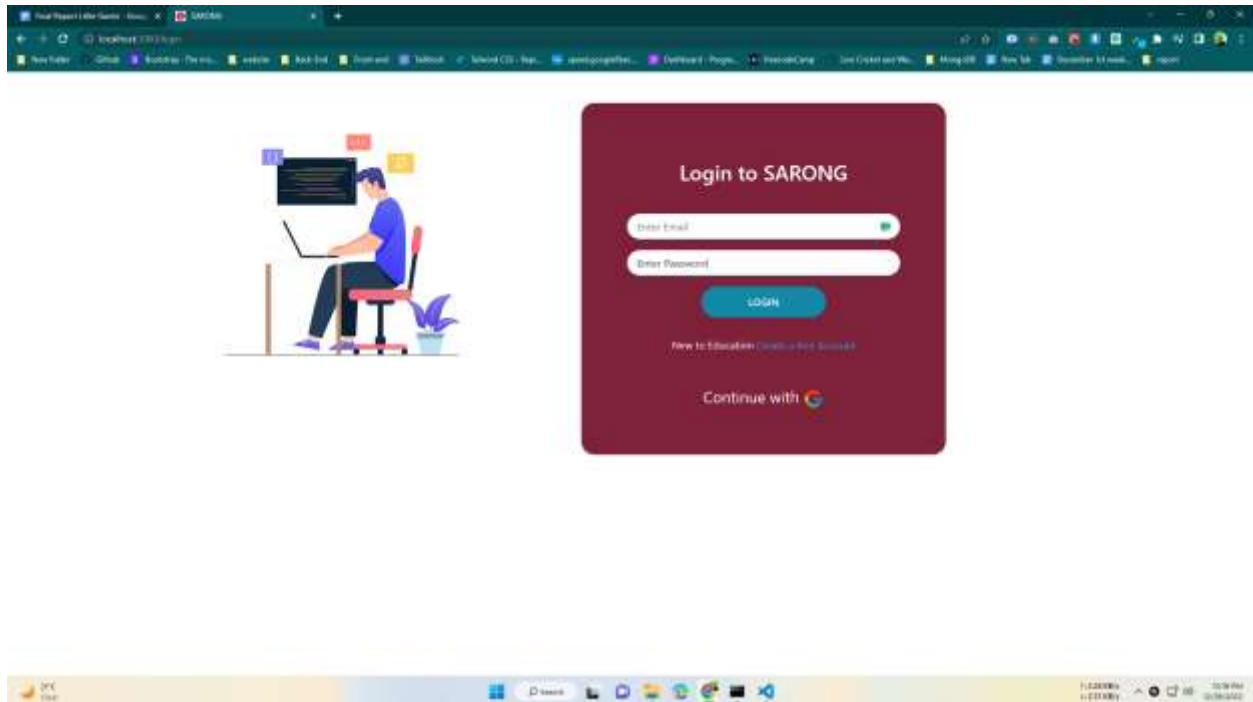


Figure 5.2.7: Login Page

## 5.2.8 Register Page:

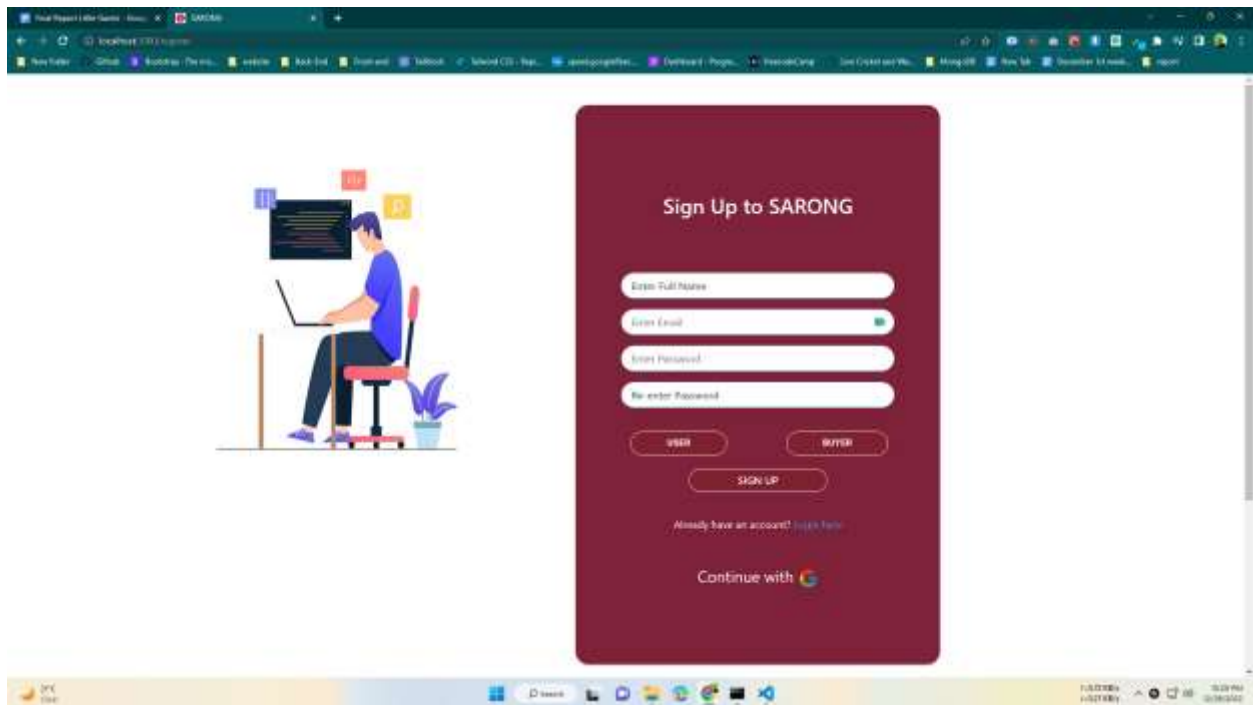


Figure 5.2.8: Register Page

### 5.3 About Page:

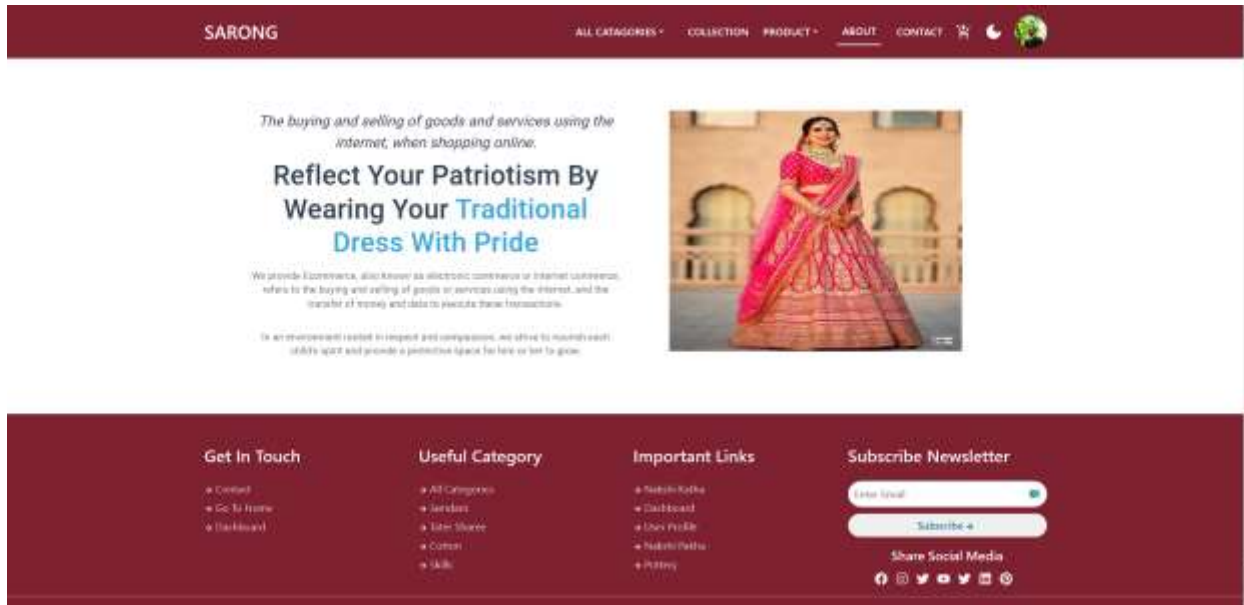


Figure 5.3.1: About Section

### 5.4 Contact Page:

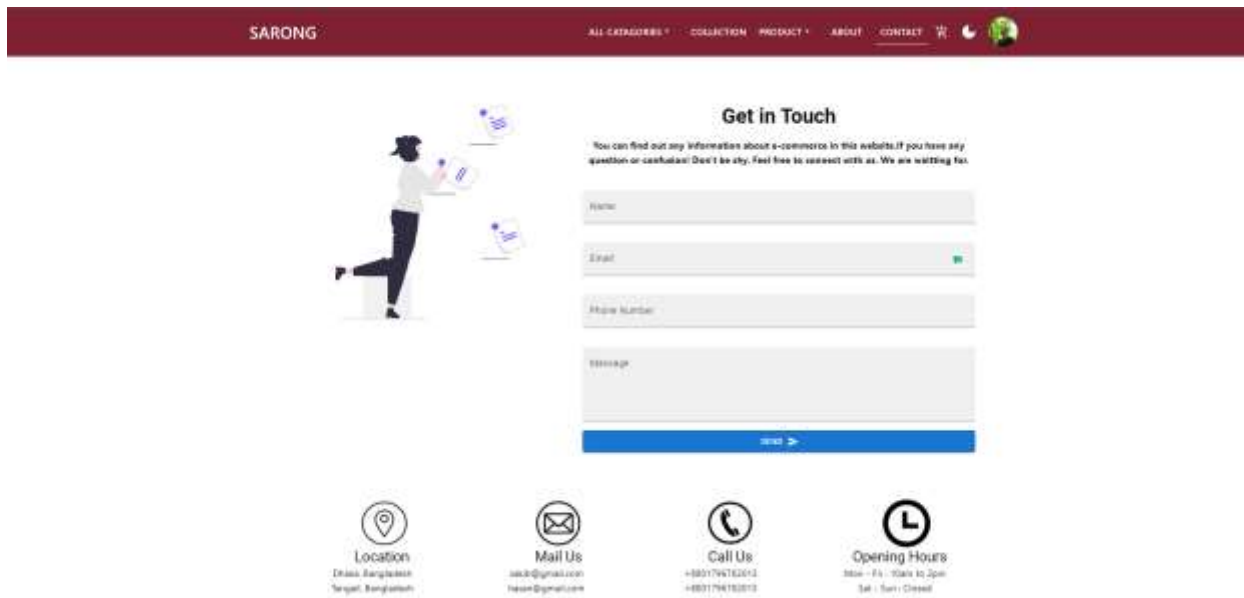


Figure 5.4.1: Contact Page

### 5.5 Implementation of Back-end Design:

Space is provided for staff, software, and databases in back-end design. In reality, it creates code that could be more obvious and direct. The whole structure of programming hinges on this crucial component. They are likewise referred to as worker-side programming. Backend web



enhancements often use languages such as Express JS, Node JS, MongoDB, and Google Firebase.

### 5.5.1 Routing:

Routing describes how URI endpoints in an application react to client requests. An instance of the express class has a route method attached to it derived from one HTTP method.

### 5.5.2 Using middleware:

Express is a web framework for routing and middleware with only the following minimum functionality: In essence, an Express application is a collection of middleware function calls. Various types of middleware are used in our project, such as Cors, jwt tokens, etc.

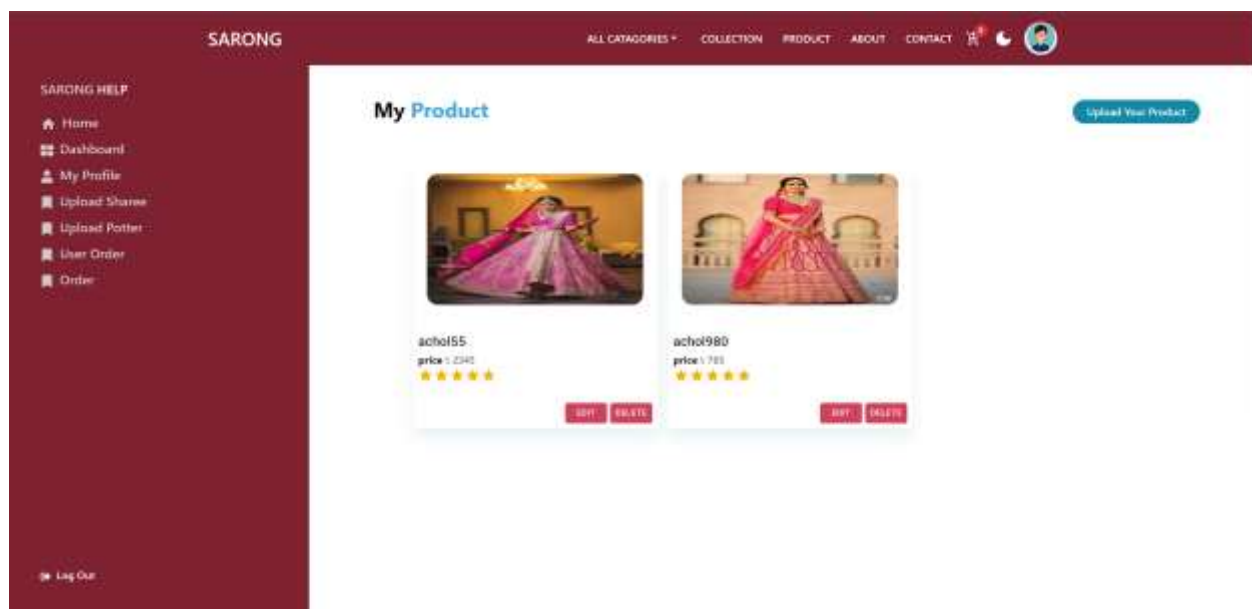


Figure 5.5.1: Seller Sharee Page

The screenshot shows the 'Add Your Share' form within the SARONG application. The form is contained in a dark red box with a white title. It features the following elements:

- Product Name:** A white text input field.
- Product Price:** A white text input field.
- Weight:** A white text input field.
- Size:** A white text input field with a placeholder example: 'Size example : S/M/L/XL/XXL'.
- Gender:** A white text input field.
- URL:** A white text input field with a placeholder example: 'Jember/yourShare/idk/fff idk/ccton/atan/issue'.
- Share Name:** A white text input field.
- Description:** A white text input field.
- Warning:** A small text message: 'Warning example : 1 month/6 month/9 month'.
- Rating:** A text input field with the prompt 'Give us a Rating (1 is the worst, 5 is the best)' and a 'Select Rating' button.

The left sidebar contains navigation options: Home, Dashboard, My Profile, Upload Sharee, Upload Pottery, User Order, and Order. The top navigation bar includes: ALL CATEGORIES, COLLECTION, PRODUCT, ABOUT, CONTACT, and user profile icons.

Figure 5.5.2: Upload Sharee (Seller)

The screenshot shows the 'Update product' form within the SARONG application. The form is contained in a dark red box with a white title. It features the following elements:

- Product ID:** A white text input field containing the value 'ackel000'.
- Price:** A white text input field containing the value '785'.
- Update Button:** A blue button labeled 'UPDATE PRODUCT'.

The left sidebar and top navigation bar are identical to the previous screenshot.

Figure 5.5.3: Sharee update (Seller)

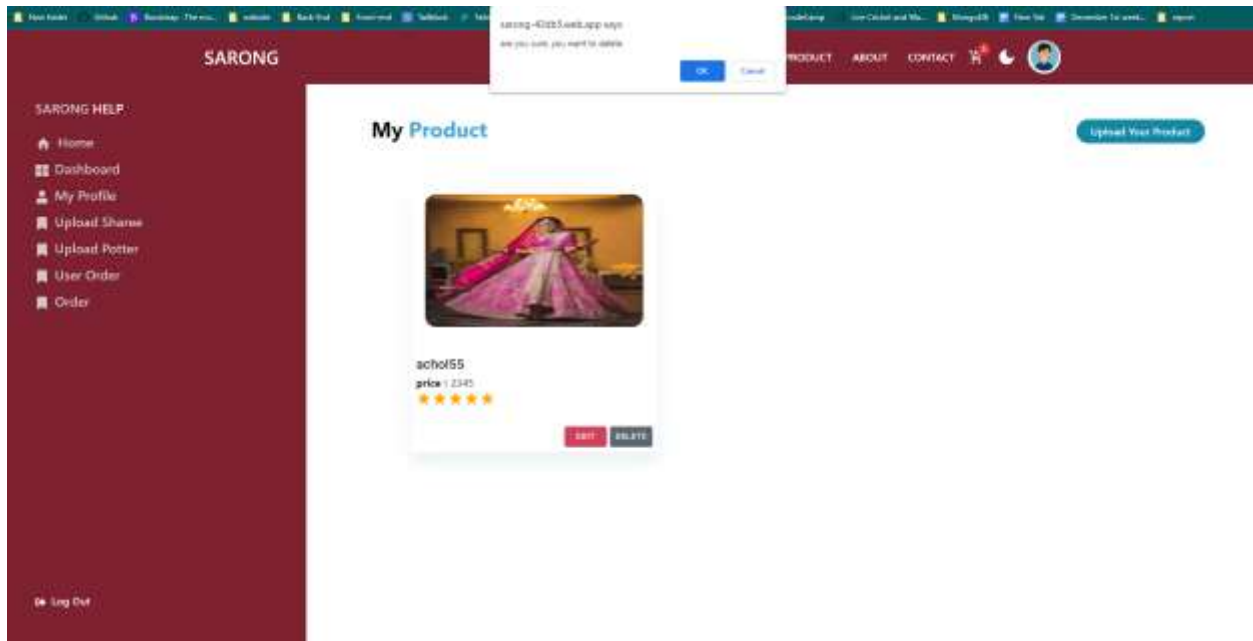


Figure 5.5.4: Shree Delete (Seller)

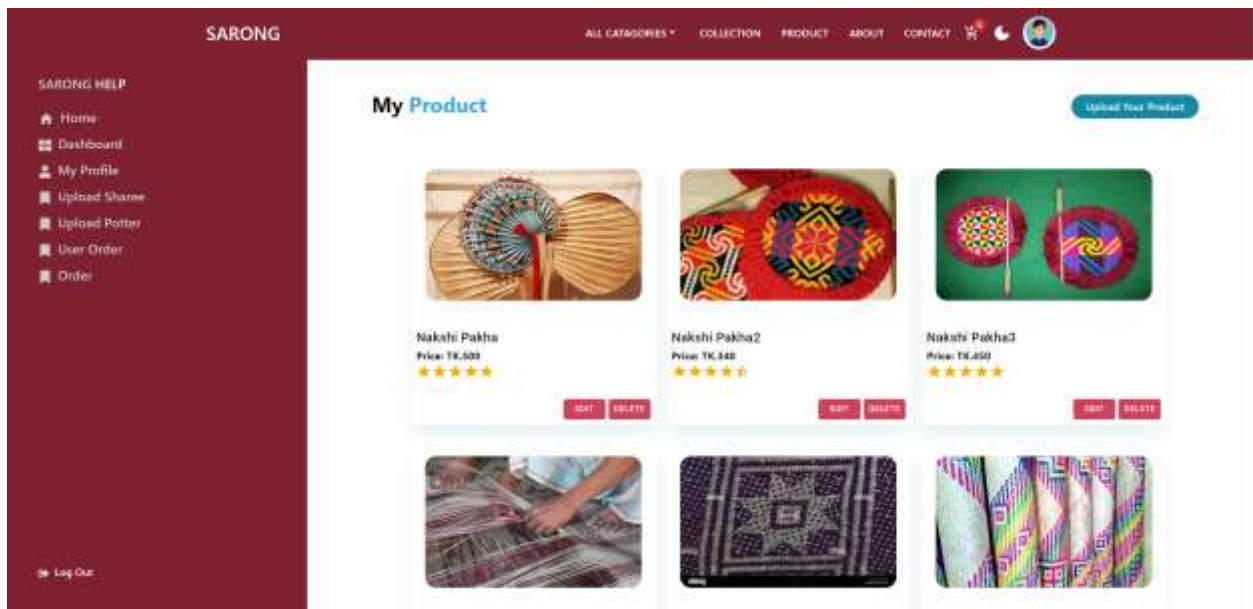


Figure 5.5.5: My Potter Page (Seller)

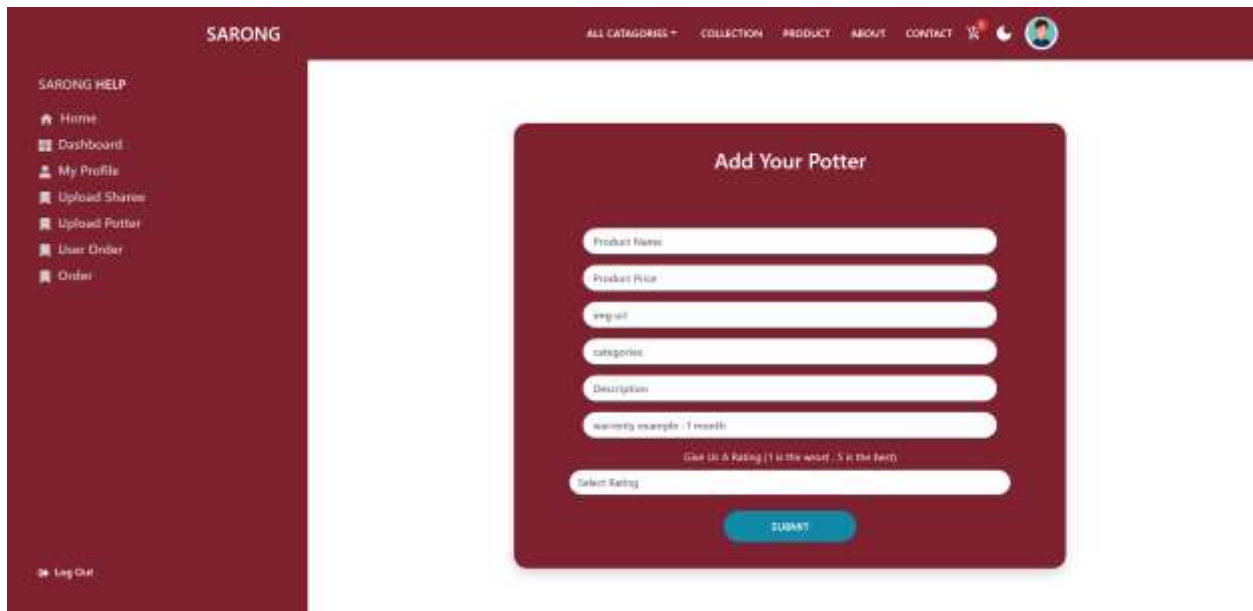


Figure 5.5.6: Potter Upload (Seller)

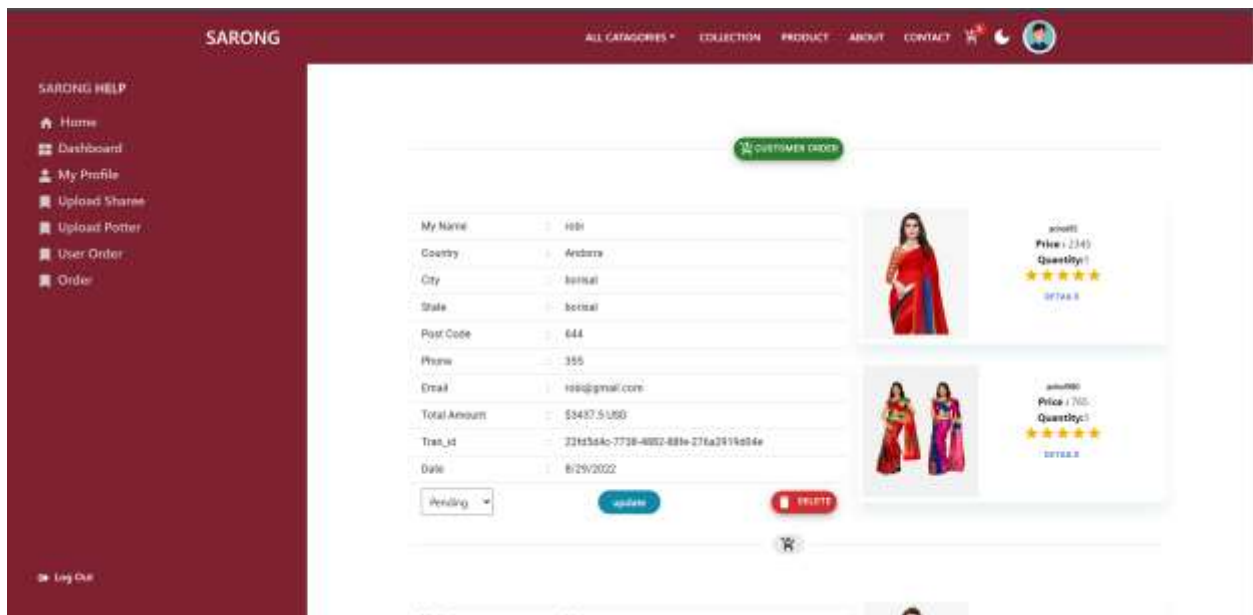


Figure 5.5.7: Customer Order Page (Seller)

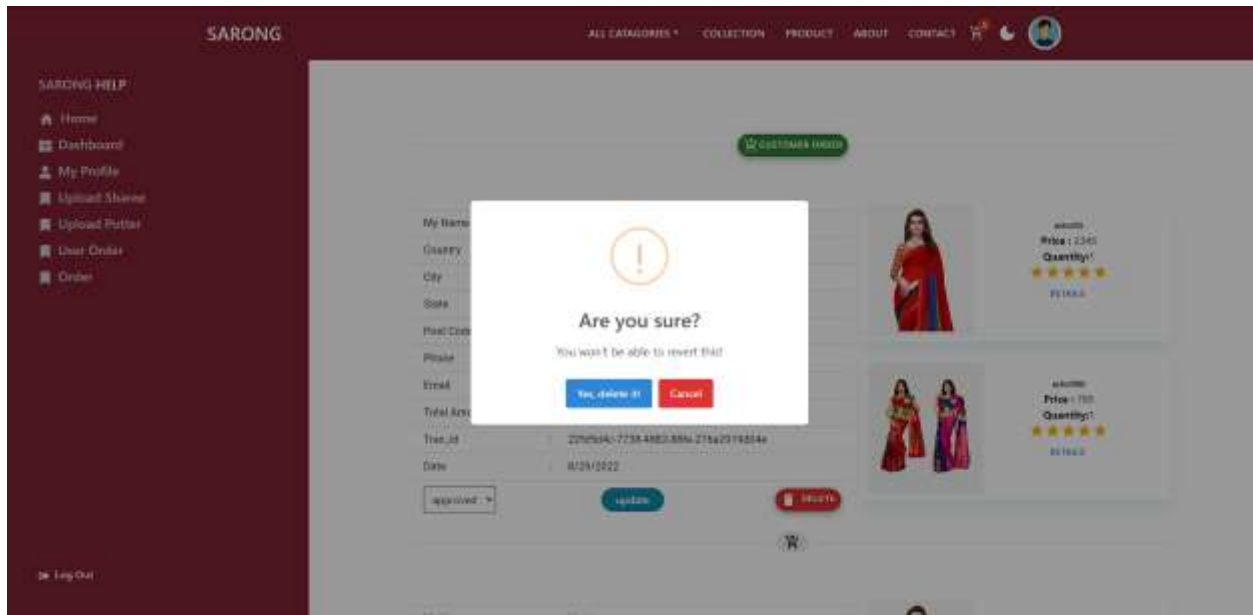


Figure 5.5.8: Customer Order Delete (Seller)

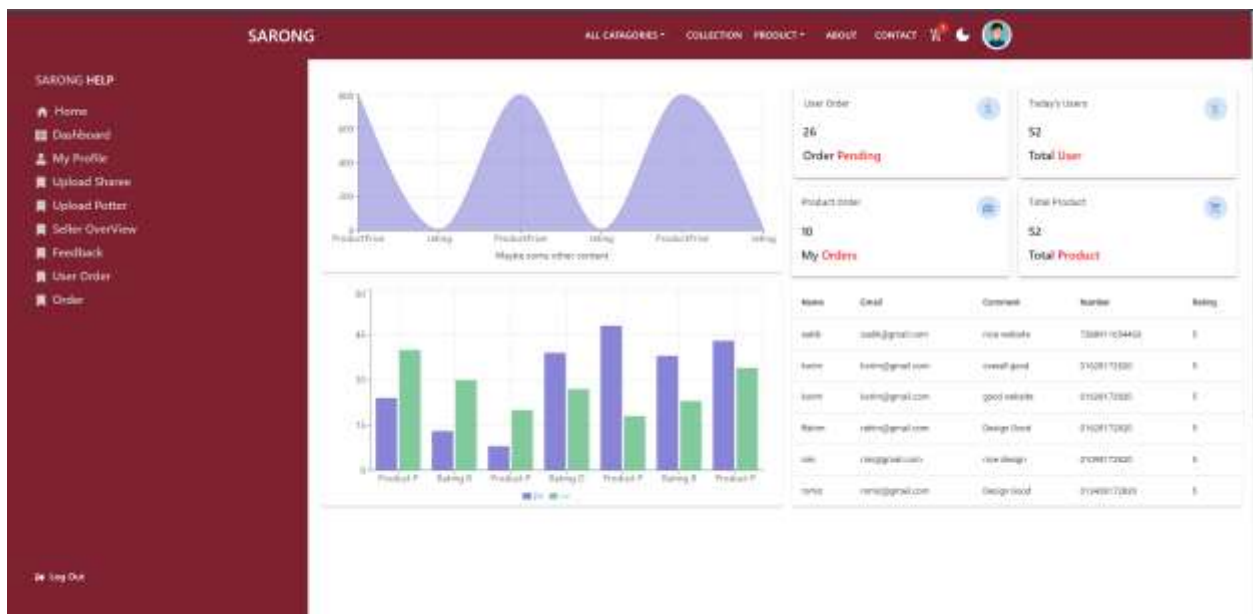


Figure 5.5.9: Customer order overview (Seller Page)

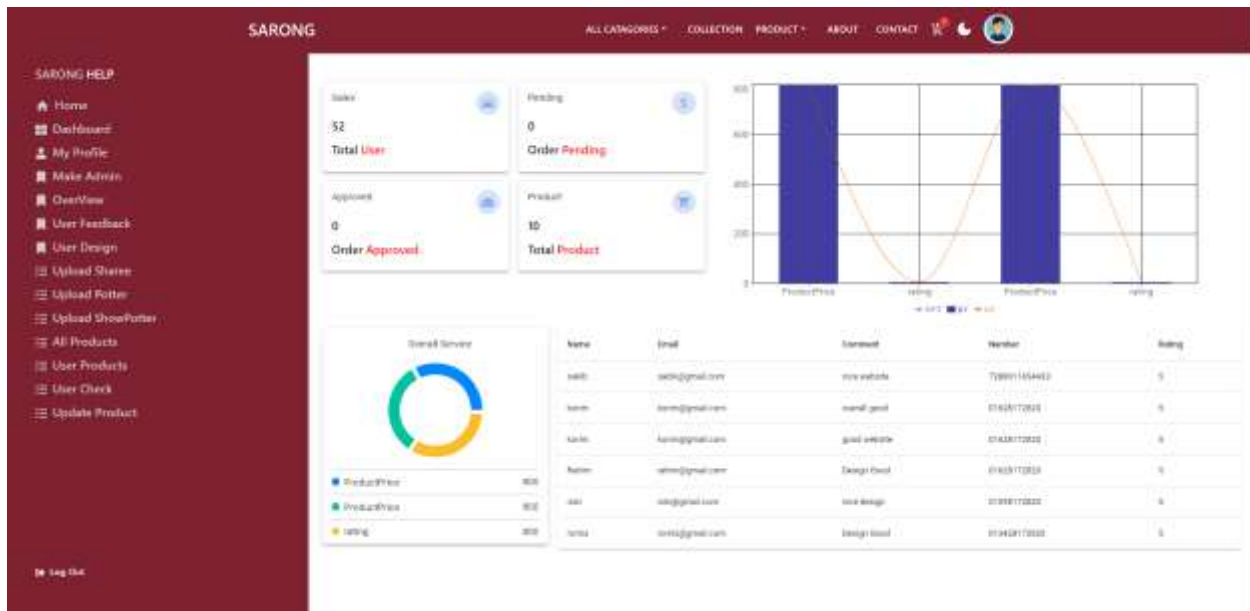


Figure 5.5.10: Customer and Seller Overview (Admin Page)

## 5.6 Test methodology:

In actuality, certain tests' physical setups and techniques are structures. For this attempt, Black-box testing and White-box testing have been chosen as the two tests. Different business endeavors must pass these requirements.

### 5.6.1 Black-Box Testing:

Black-box testing is a technique for evaluating the functionality of software applications without having access to their underlying code structure, implementation specifics, or internal routes. Black Box Testing is totally based on software requirements and standards and primarily concentrates on the input and output of software programs. Additionally, called behavioral testing.

This method looks for errors in the categories that go with it:

- **Functional testing:** Software testers conduct this form of “black box” testing, which relates to a system’s functional requirements.
- **Non-functional testing:** This kind of black box testing focuses on non-functional criteria, including performance, scalability, and usability, rather than testing for a specific capability.

- **Regression testing:** Regression testing is carried out following code upgrades, fixes, or any other system maintenance to ensure that the new code has not negatively impacted the old code.

### **5.6.2 White Box Testing:**

White box testing is a testing technique that looks at how software is organized internally, how it is coded, and how it is designed. Its goals are to confirm input-output functioning and to improve design, usability, and security. Since code is visible to testers during this sort of testing, white box testing is also referred to as “clear box testing,” “open box testing,” “transparent box testing,” “code-based testing,” and “glass box testing.”

The following aspects of the software code are tested during white box testing:

- Intra-company security gaps.
- Paths in the coding processes that are broken or poorly organized.
- The way particular inputs are sent through the code.
- Anticipated result.
- Conditional loops capabilities.
- Independent testing of each statement, object, and function.

## CHAPTER 6

### Impact on Society, Environment and Sustainability

#### 6.1 Impact on Society:

Our society will be impacted by our system to some extent. Because our website is a social platform with useful features like an online library, a job board, and event planning. To collect authentic traditional products people had to visit particular area possibilities, but we offer all of those options on just one page. It will thus benefit and have an influence on our existing society.

#### 6.2 Impact on Environment:

We are all aware that a lot of processing power is required to store data. With so much computing power, more data centers are required. Carbon emissions from websites are crucial for the environment. We just have a few viewers. So anticipate that we will be able to regulate our carbon emissions and prevent environmental pollution.

#### 6.3 Ethical Aspects:

We recognize that player anonymity, privacy, and secrecy were the most often mentioned moral concerns. With these ideas in mind, we worked on our website. Our guests will receive a high-quality solution from us. We'll make sure the solution we offer satisfies our guests.

#### 6.4 Sustainability Plan:

We have a unique sustainability strategy. We take great effort while designing our website to ensure that it fulfills its function while having a minimal negative effect on our consumers. We put a lot of effort into ensuring that our three pillars of sustainability—economic viability, environmental preservation, and social equality.



## Chapter 7

# Discussion and Conclusion

### **7.1 Conclusion:**

In terms of micro- and macroeconomic implications, the Folk art and Craft sector provides significant advantages to the Bangladesh economy. It is critical to reducing poverty, increasing employment, and increasing household income and consumption in the country. But this Folk art and craft are made in some particular areas of our country. So sometimes it becomes tough for the worker to show their product throughout the country. If we can make it available on e-commerce platforms our Folk art and Craft industry will get more benefit. As in today's rapidly evolving technological world, everything brings us closer. The main reasons for this are because it is free and open-source. People who are far away from traditional areas can just search on this e-commerce website and get their favorite product.

To summarize the project description: Node.js, Express.js and MongoDB projects are built on user needs specifications and a study of current systems, providing you the ability to adapt to future expansions. The complex features of today's software necessitate a commensurate software development strategy. This e-commerce software is a React, CSS, Bootstrap, and JavaScript ecommerce web project. When it comes to projects, it includes all of the essential features.

### **7.2 Scope for further development:**

Verification of the seller is implemented manually by the admin. We want to implement seller verification in automation. We want to make a secure platform for the user. For user satisfaction if the seller gets a report for not selling authentic product the seller will be banned after a time. In the future we want to move to web 3.0. Though web 3.0 is still in the works and we don't know what it will look like, we may predict a few concepts. Web 3.0 should be decentralized, trustless, permission less, and interoperable in theory. On paper, these four traits would assure the safety of everyone's data and token compensation for network membership and content development. Features will be updated up to date always. We want to integrate schedule purchase in a schedule algorithm instead of a calendar system.

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