



**Middlesex  
University  
Mauritius**

# Coursework 2 Final Submission Report

E-commerce Website:  
AnVen Pharma

Module Name: Web Application and Database  
Module Code: CST 2120  
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Due Date: 18<sup>th</sup> February 2022

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## 1. Group Contribution Details:

### 1.1- Group member details:

	STUDENT 1	STUDENT 2	STUDENT 3
<b>NAME:</b>	Anmol Vishvas	Joshua Nyamekye Adade Ayoola	Mary cindy Wangari
<b>STUDENT NUMBER:</b>	M00734701	M00751032	M00748016

### 1.2- Contribution details:

Task	Marks Available	Marks Awarded	Comments	Anmol Contribution	Joshua Contributio	Cindy Contribution	Contribution Check
Basket	5	0		1	0	0	Ok
Checkout and confirmation	5	0		1	0	0	Ok
Search functionality	5	0		1	0	0	Ok
Sorting of products by price etc.	5	0		1	0	0	Ok
Storage of customer details.	3	0		1	0	0	Ok
Editing of customer details.	3	0		0.8	0.2	0	Ok
Viewing of past orders.	4	0		1	0	0	Ok
Customer tracking	5	0		1	0	0	Ok
Customer recommendation	5	0		1	0	0	Ok
CMS staff login	2	0		1	0	0	Ok
CMS viewing products	2	0		0.8	0.2	0	Ok
CMS adding products	2	0		0.8	0.2	0	Ok
CMS editing products	2	0		0.5	0.5	0	Ok
CMS view and delete customer orders	2	0		0.7	0.3	0	Ok
Simple AJAX	4	0		0.8	0.2	0	Ok
Complex AJAX	6	0		0.8	0.2	0	Ok
JavaScript code quality	2.5	0		0.5	0.5	0	Ok
PHP code quality	2.5	0		0.8	0.2	0	Ok
Database dump	5	0		1	0	0	Ok
Final report project description	5	0		1	0	0	Ok
Final report security/privacy/legal	5	0		1	0	0	Ok
<b>TOTAL:</b>	<b>80</b>	<b>0</b>					
<b>MARKS CONTRIBUTED:</b>				<b>0</b>	<b>0</b>	<b>0</b>	

### 1.3- Status of the project and contribution of members:

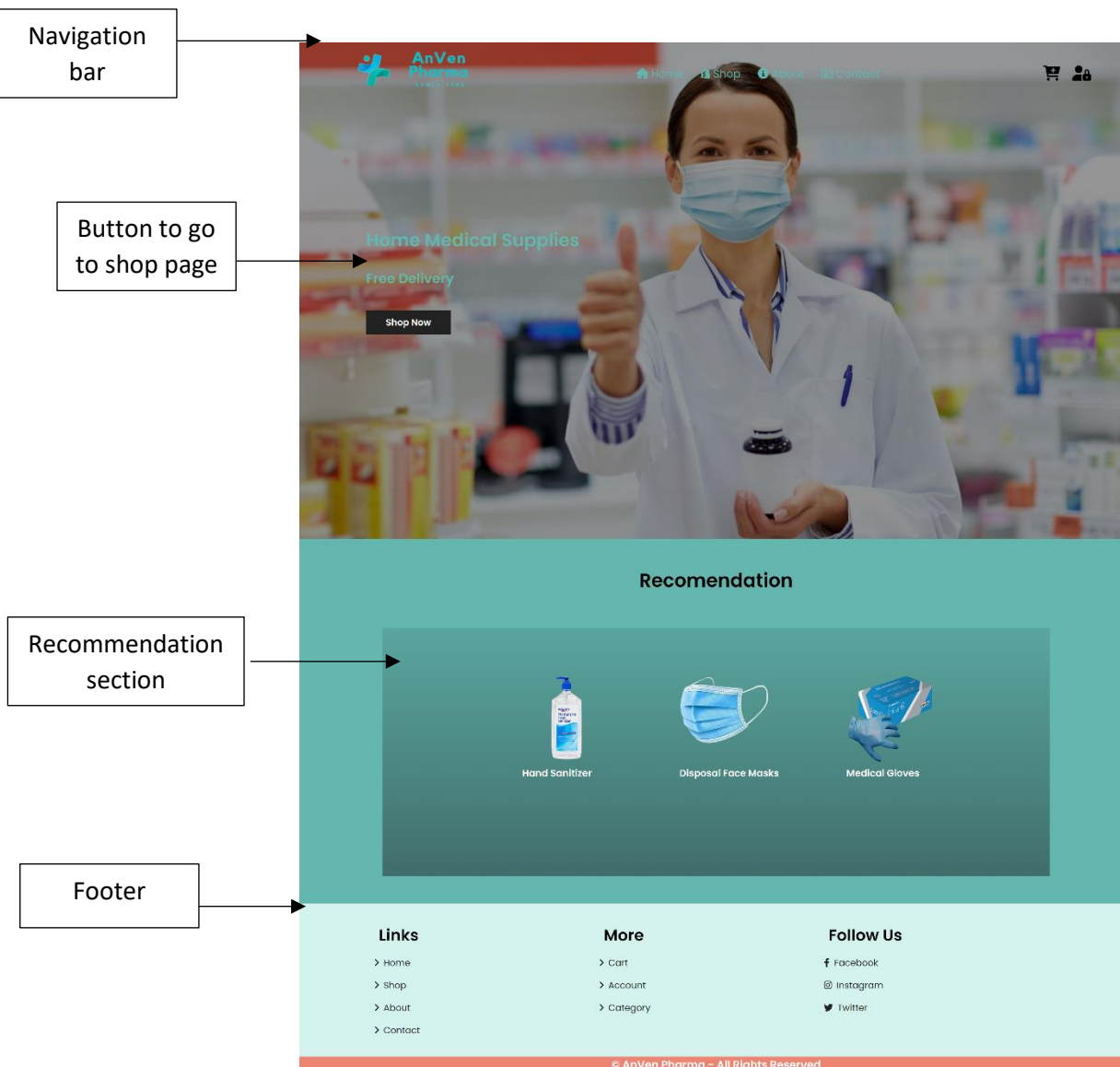
		Tasks	Completed by
<b>FRONT END</b>	<b>Customer Website</b>	Home page	Anmol
		Shop page	Anmol
		cart feature in shop page	Anmol
		search feature in shop page	Anmol
		about page	Anmol
		contact page	Anmol
		shopping cart page	Anmol
		checkout confirmation page	Anmol
		login	Anmol
		registration	Anmol
		logout	Anmol
		account page	Anmol and Joshua
		view past order page	Anmol
	<b>CMS</b>	login	Anmol
		add staff form	Anmol and Joshua
		view staff	Anmol
		edit staff	Joshua
		delete staff	Joshua
		add product page	Anmol and Joshua
		view product page	Anmol
		edit product page	Anmol and Joshua
		view orders	Anmol
		view customers	Anmol
<b>BACKEND</b>	<b>Customer Website</b>	basket	Anmol
		checkout and confirmation	Anmol
		search functionality	Anmol
		sorting of products by price	Anmol
		storage of customer details	Anmol
		edit customer details	Anmol
		viewing past of orders	Anmol
		customer tracking and recommendation	Anmol
		Javascript to send request and validations	Anmol
		Display products using AJAX	Anmol
		logout using AJAX	Anmol
	<b>CMS</b>	staff login	Anmol
		view products	Anmol
		adding products	Anmol and Joshua
		edit products	Anmol
		view and delete customer order	Anmol and Joshua
	<b>Report</b>		Anmol
	<b>Dumb database</b>		Anmol
	<b>Database Design</b>		Anmol

## 2. Brief of the Coursework

AnVen Pharma is a drugstore e-commerce website that allows users to purchase from the comfort of their own homes by visiting the site and picking the products they require. It was designed to be user-friendly for both customers and employees. It's an online pharmacy that sells antibiotics, antidepressants, anticonvulsants, and analgesics, among other things. For this submission, we used MongoDB as database.

## 3. Customer Website

### 3.1- Home page



*AnVen Pharma - Home Page* Figure 1

The website's homepage is depicted in *Figure 1*. It has a navigation bar that is visible on all the pages. We can see in *figure 2* that the navigation has a background at some point. A function was implemented to alter the background color of the navigation bar as soon as we scroll down in the window. The navigation bar allows a customer to navigate between the pages **Home**, **Shop**, **About**, and **Contact**, as well as icons to go between the pages **Shopping cart** and **Login /Registration**. The user will view the recommended products based on their search on the home

page. Finally, in the footer section, there are some navigation links as well as a link to the **Account** webpage.



*Figure 2 AnVen Pharma- Home Page (navigation bar active)*

### 3.2- Shop page/ Product page

The second menu in the navigation bar is depicted in *Figure 3*. A list of product categories, as well as a list of items, is displayed, together with relevant information such as product name, product category, price, and description. *Figure 4* shows how the product image and features are partially obscured by a white background, a shopping cart icon and a 'more details' button to redirect the user to the product details page. Only when the cursor is on that specific box will this functionality appear. This will enable the client to choose the product that he or she wishes to purchase. The "search" input field was added as an exclusive feature to allow the user to search for a specific item. The icon for this feature is in the navigation bar, and when the user clicks on it, the input form appears, as shown in *Figure 5*.

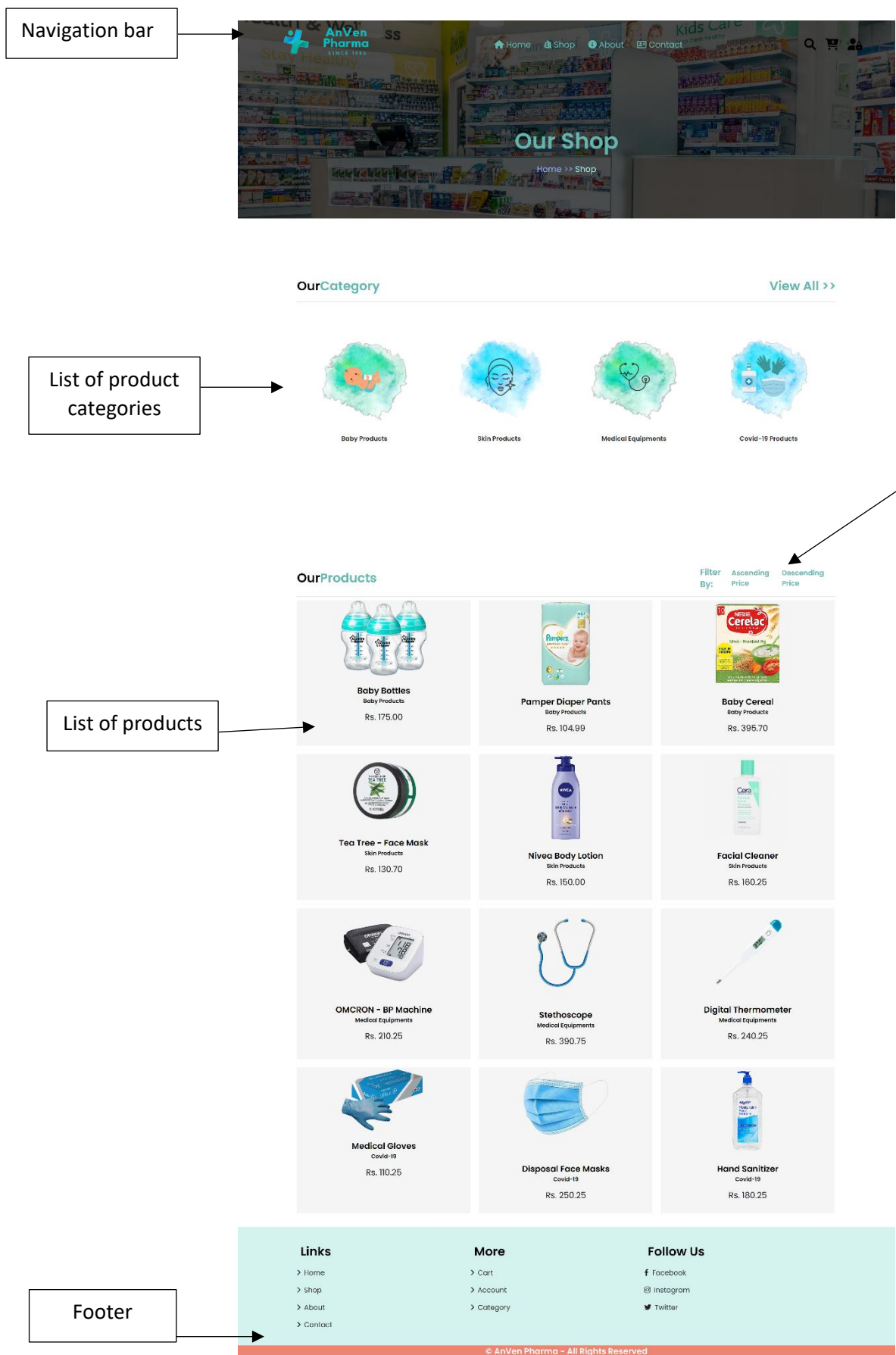


Figure 3 AnVen Pharma - Shop Page



### 3.2-1. Cart feature

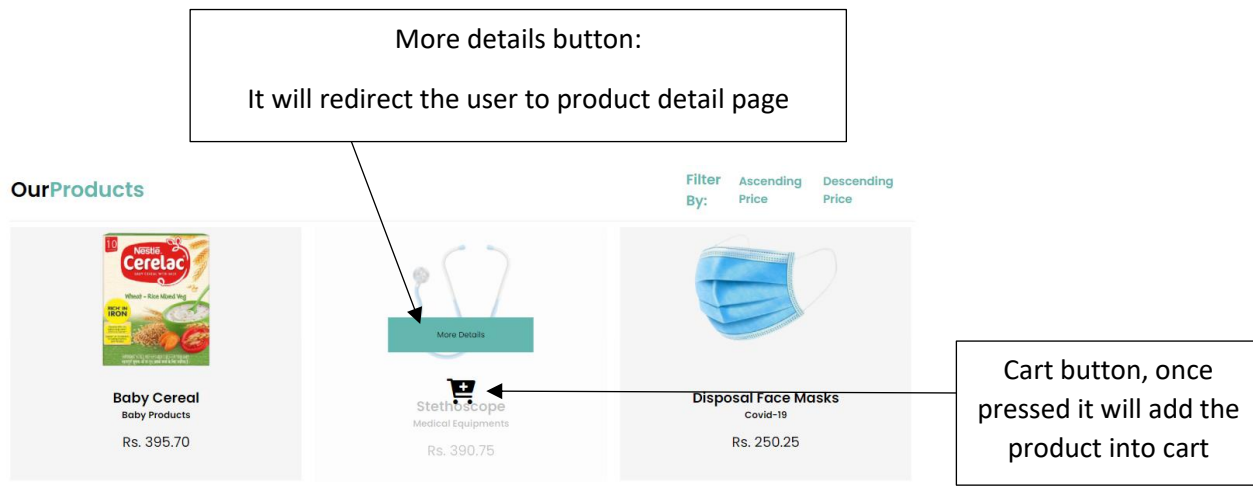


Figure 4 AnVen Pharma - Shop Page - Cart feature

### 3.2-2. Search feature

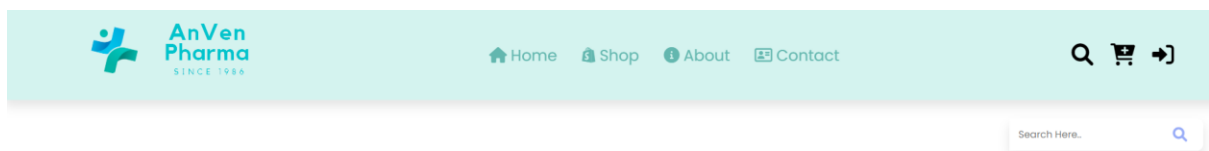


Figure 5 AnVen Pharma - Shop Page - Search feature

### 3.2-3. Display Product Details feature

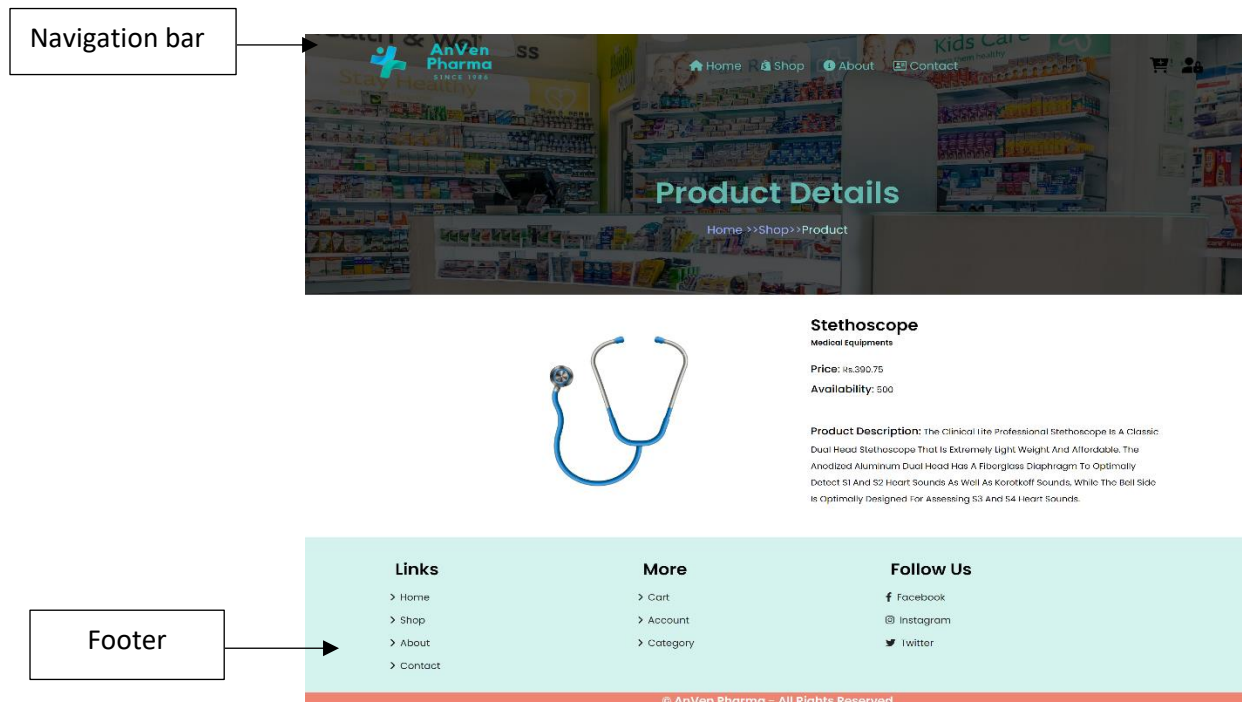


Figure 6 AnVen Pharma – Product Details page

### 3.2-4. Display Product Details feature

#### 3.2-4.1. By Ascending Price

**OurProducts**

Filter By: Ascending Price Descending Price

























 <b>Pamper Diaper Pants</b> Baby Products Rs. 104.99	 <b>Medical Gloves</b> Covid-19 Rs. 110.25	 <b>Tea Tree - Face Mask</b> Skin Products Rs. 130.70
 <b>Nivea Body Lotion</b> Skin Products Rs. 150.00	 <b>Facial Cleaner</b> Skin Products Rs. 160.25	 <b>Baby Bottles</b> Baby Products Rs. 175.00
 <b>Hand Sanitizer</b> Covid-19 Rs. 180.25	 <b>OMRON - BP Machine</b> Medical Equipments Rs. 210.25	 <b>Digital Thermometer</b> Medical Equipments Rs. 240.25
 <b>Disposal Face Masks</b> Covid-19 Rs. 250.25	 <b>Stethoscope</b> Medical Equipments Rs. 390.75	 <b>Baby Cereal</b> Baby Products Rs. 395.70

Figure 7 AnVen Pharma – Product page – Ascending Price filter

#### 3.2-4.2. By Descending Price

**OurProducts**

Filter By: [Ascending Price](#) [Descending Price](#)

 <p><b>Baby Cereal</b> Baby Products Rs. 395.70</p>	 <p><b>Stethoscope</b> Medical Equipments Rs. 390.75</p>	 <p><b>Disposal Face Masks</b> Covid-19 Rs. 250.25</p>
 <p><b>Digital Thermometer</b> Medical Equipments Rs. 240.25</p>	 <p><b>OMRON - BP Machine</b> Medical Equipments Rs. 210.25</p>	 <p><b>Hand Sanitizer</b> Covid-19 Rs. 180.25</p>
 <p><b>Baby Bottles</b> Baby Products Rs. 175.00</p>	 <p><b>Facial Cleaner</b> Skin Products Rs. 160.25</p>	 <p><b>Nivea Body Lotion</b> Skin Products Rs. 150.00</p>
 <p><b>Tea Tree - Face Mask</b> Skin Products Rs. 130.70</p>	 <p><b>Medical Gloves</b> Covid-19 Rs. 110.25</p>	 <p><b>Pamper Diaper Pants</b> Baby Products Rs. 104.99</p>

*Figure 8 AnVen Pharma – Product page – Descending Price filter*

### 3.3- About page

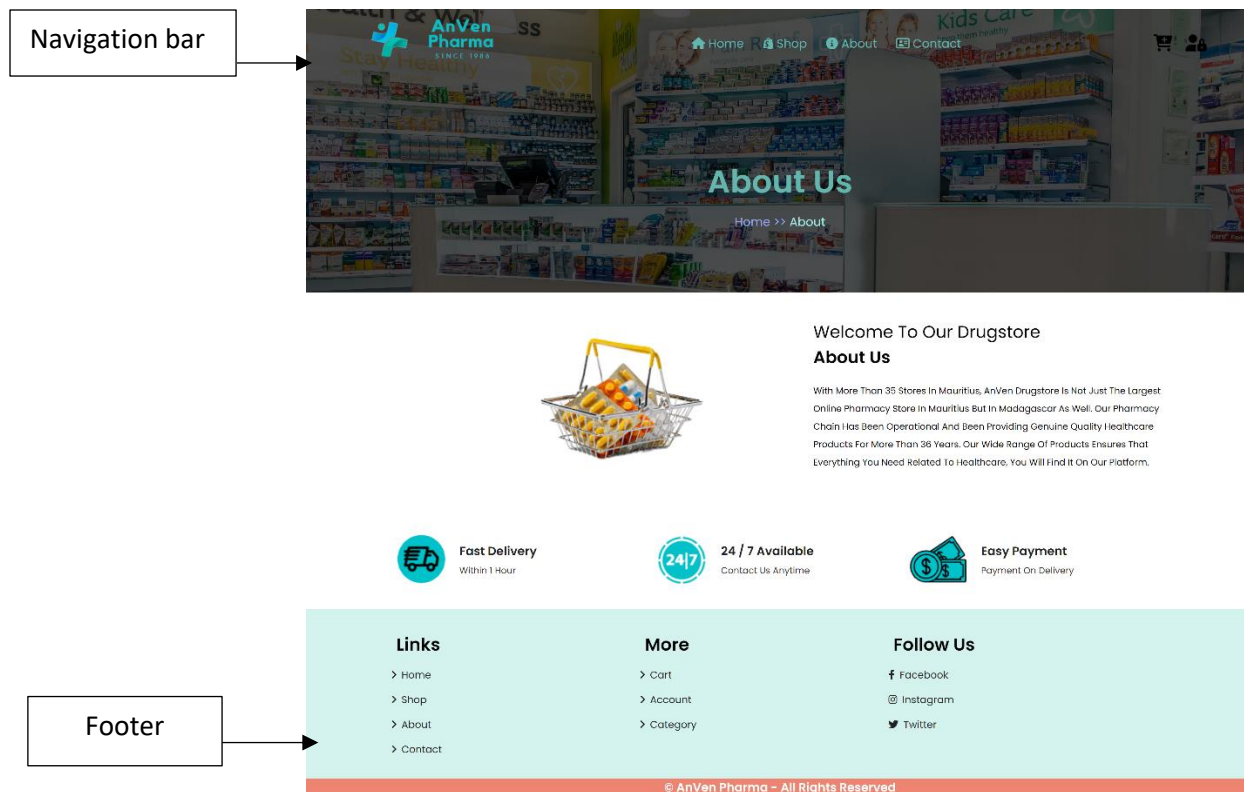


Figure 9 AnVen Pharma - About Page

On this page, the user will get a small brief about the drugstore.

### 3.4- Contact page

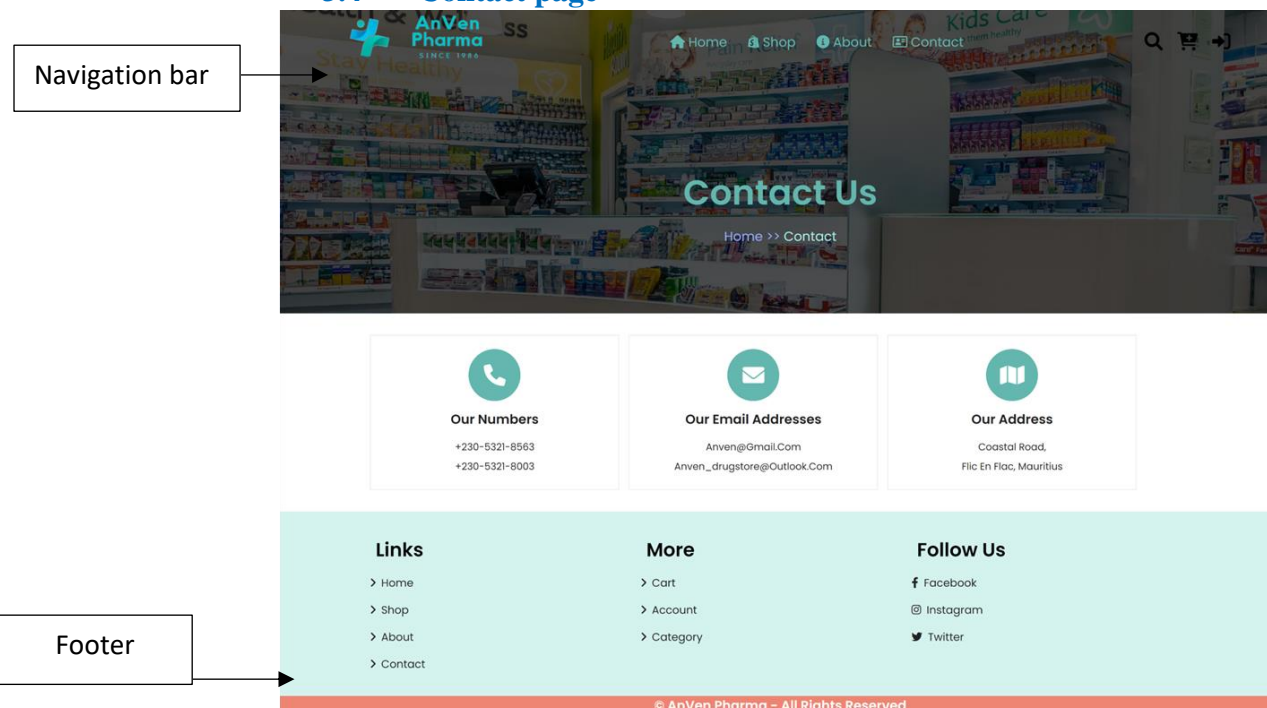


Figure 10 AnVen Pharma - Contact Page

On **Contact** page, the user will be able to get more details about the drugstore such as their contact details, email addresses and location.

### 3.5- Shopping Cart page

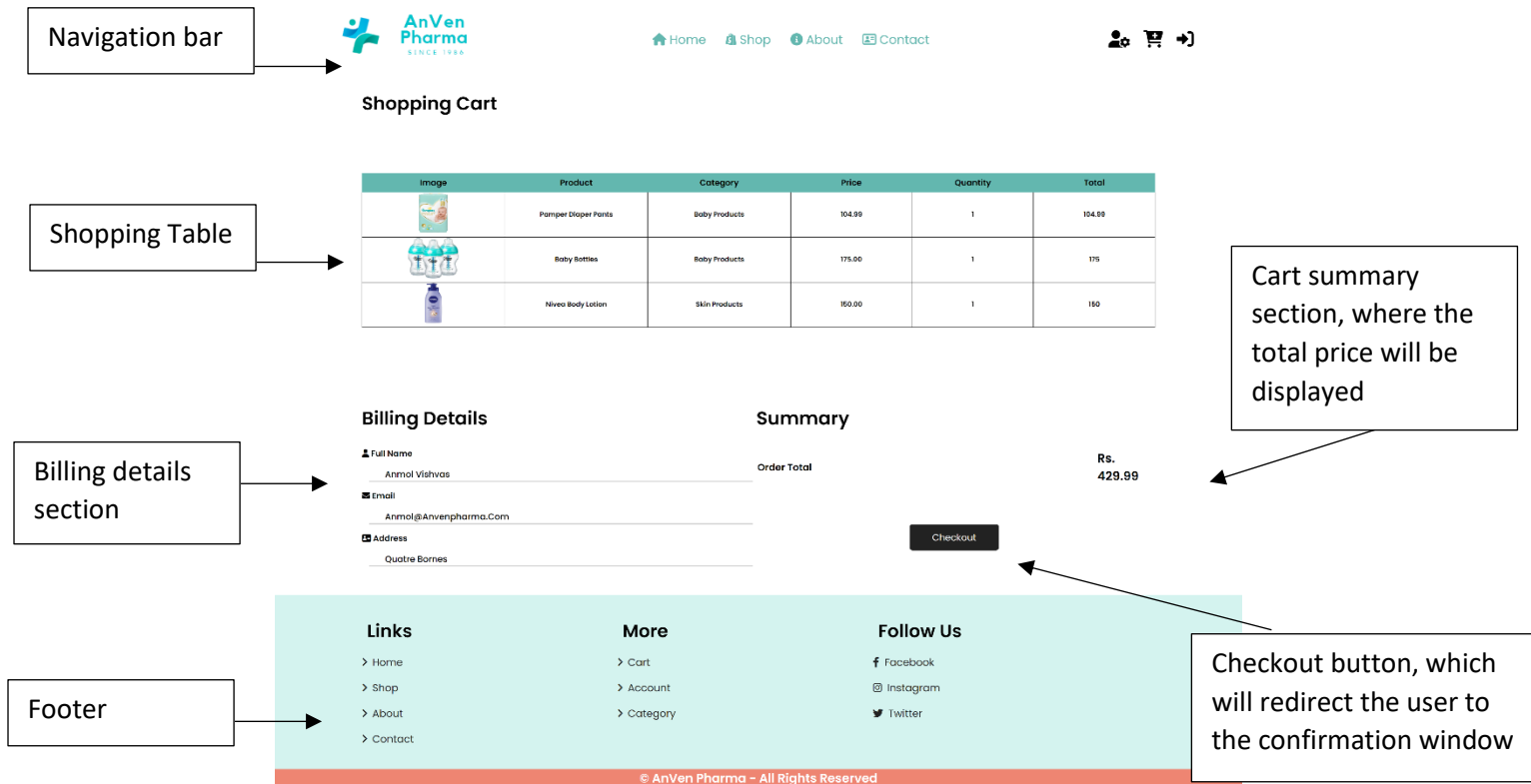


Figure 11 AnVen Pharma - Shopping Cart Page

Even after selecting a single item, the consumer can continue shopping on this website. It shows a list of all the items that the customer has selected. The user will find his details in the billing details section. The billing detail section has a summary section on the right side. The total cost and a button to check out the order are displayed in this section. The checkout button will redirect the user to the confirmation page.

#### 3.5-1. Checkout confirmation page

**Confirm Contact Details**

Full Name:

Phone Number:

Address:

Inputs

Confirm button to proceed checkout and update the database

*Figure 12 AnVen Pharma – Checkout Confirmation Page*

### 3.6- Login and Registration page

#### 3.6-1. Login Form

Navigation bar

Hyperlink to go to the registration form

**Login**

Enter Your Username

Enter Your Password

Don't Have An Account? [Sign Up Now](#)

*Figure 13 AnVen Pharma - Login Form*

The user will be requested to input the credentials that were used to create their account on the login screen, as illustrated in *Figure 13*. The user will be able to browse to the **Shopping Cart** and **Account** page once logged in. If the user does not have an account, there is a hyperlink on the login form that will direct them to the registration form.

### 3.6-1.1. Navigation bar when user have not logged in

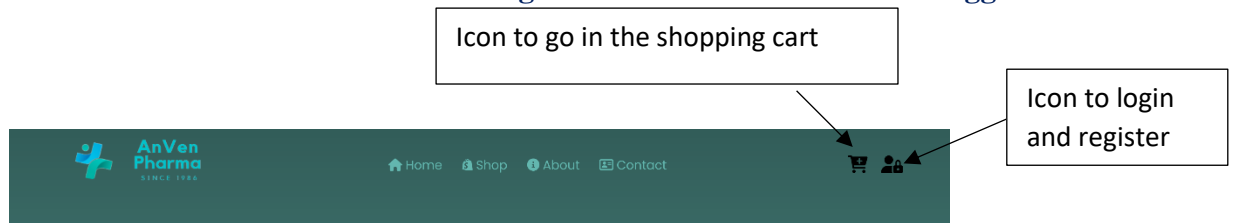


Figure 14 AnVen Pharma – Navigation bar when user have not logged in

### 3.6-1.2. Navigation bar when user have logged in

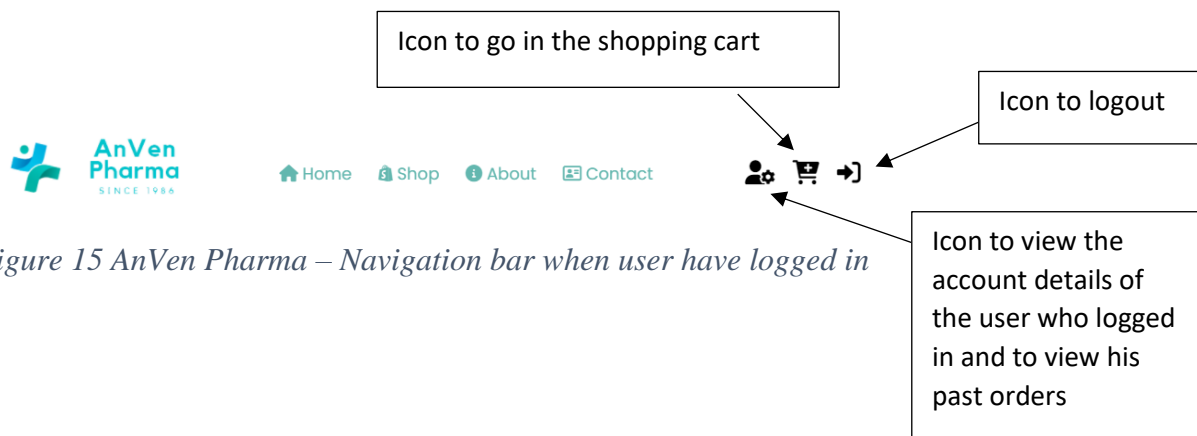


Figure 15 AnVen Pharma – Navigation bar when user have logged in

## 3.6-2. Registration Form

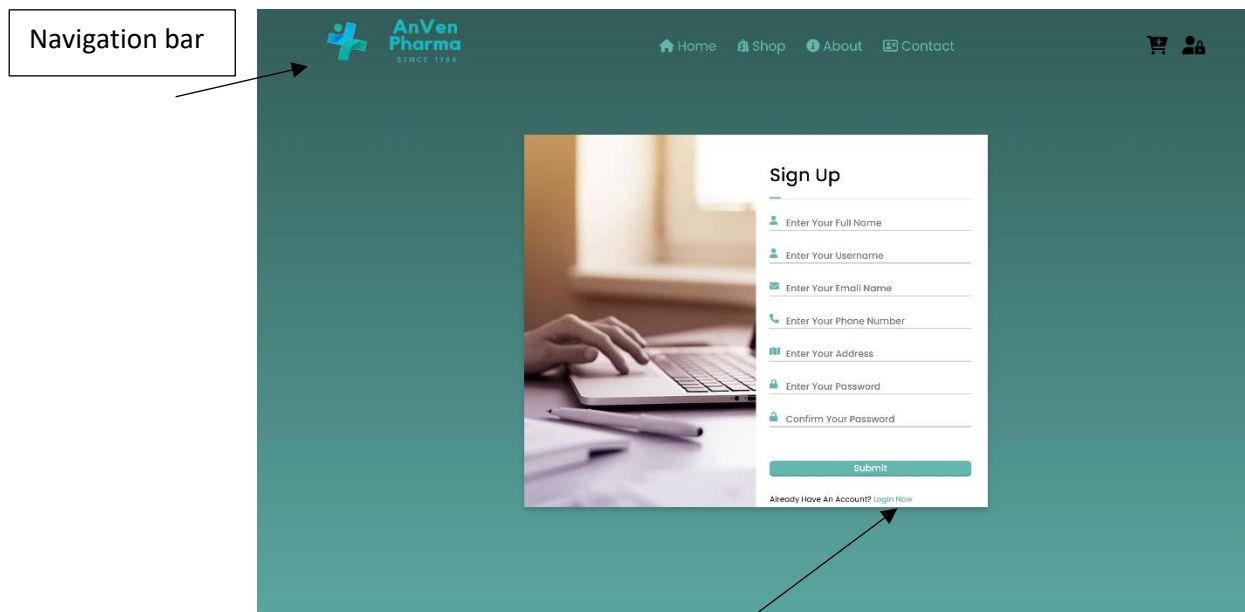


Figure 16 AnVen Pharma – Registration form

The user will be able to provide their credentials into this form, which will be used to log into their account later. It consists of input fields. If the user already has an account, a hyperlink on the registration form will take them to the login page.

### 3.7- Account page

#### 3.7-1. Account Details section

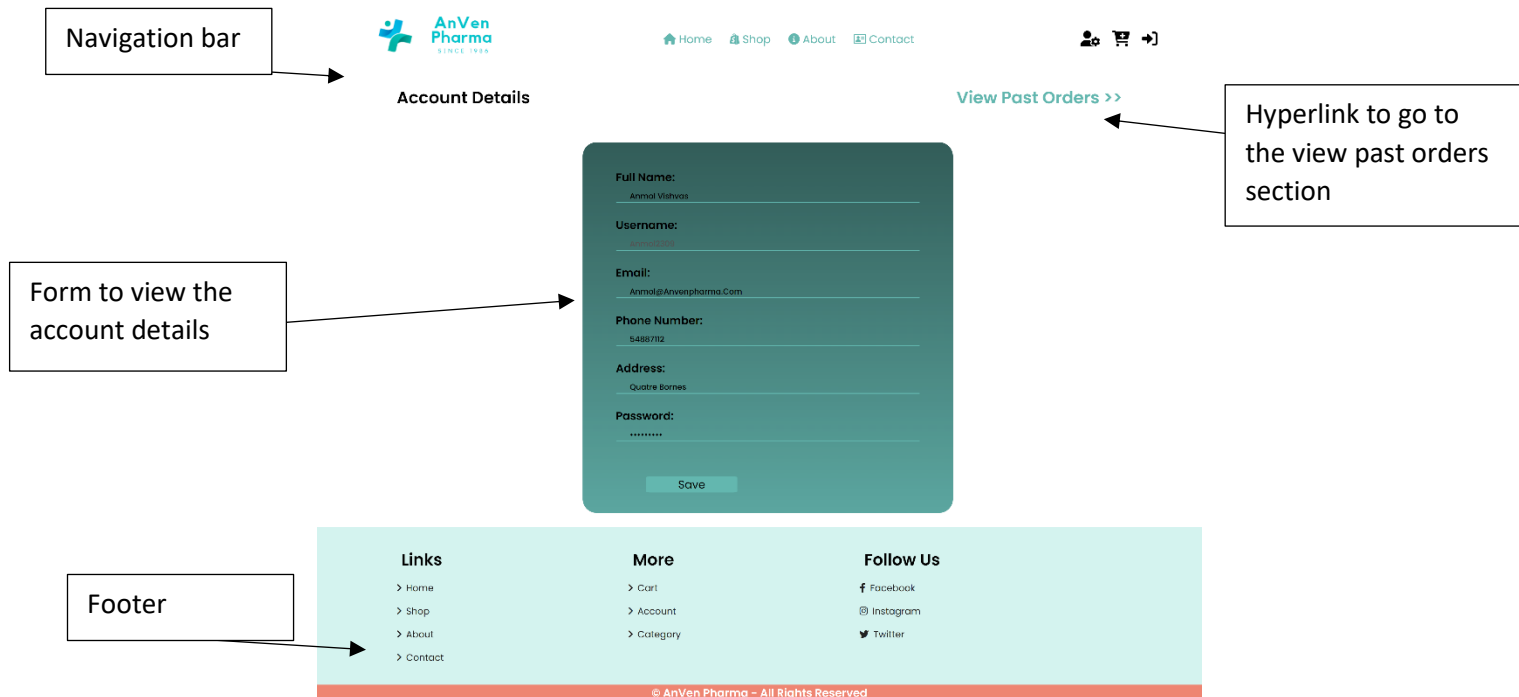


Figure 17 AnVen Pharma - Account Details Page

Figure 17 depicts the Account page, which allows the user to examine and update the credentials entered while registering for this website. Only when you press the 'Save' button will the changes be saved to the database.

#### 3.7-2. View past Orders section





Figure 18 AnVen Pharma - Account Details Page – View Past Orders section

#### 4. CMS Website

Only the staff will have access to this website. Through this website, employees will be able to modify the product database by modifying, deleting, or adding products. They will have access to customer orders, as well as the ability to add new employees and delete orders. **Add Staffs, View Staffs, View Orders, Edit Product, Add Product, View Product, and View Customer** are all options on this website's vertical navigation bar.

##### 4.1- Login page

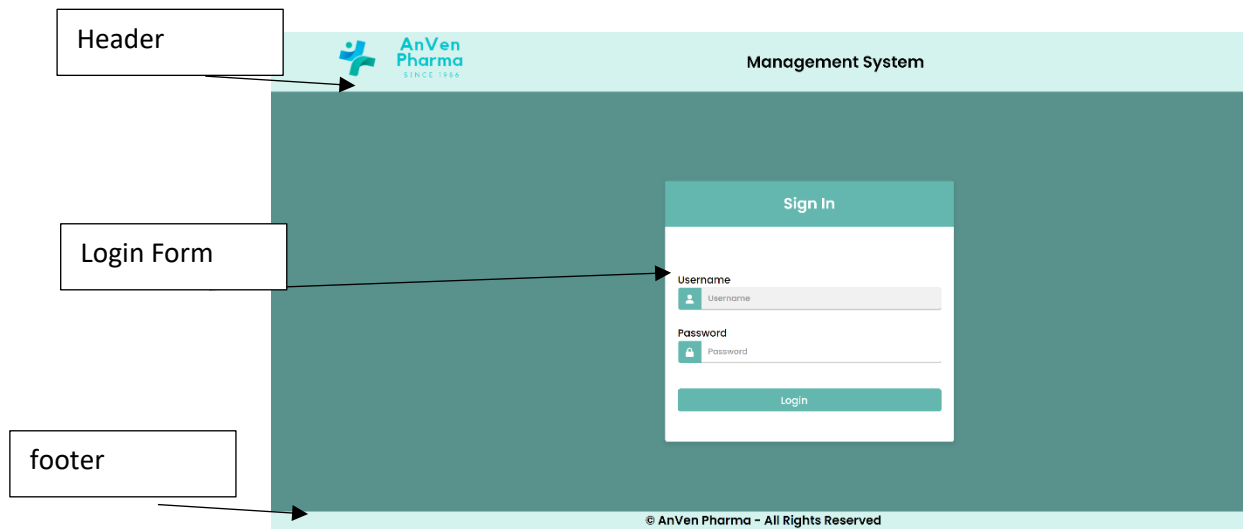


Figure 197 AnVen Pharma - Login Page

Staffs will be able to log on the website by entering their credentials as shown in figure 19.

##### 4.2- Staff section

###### 4.2-1. Add Staff page

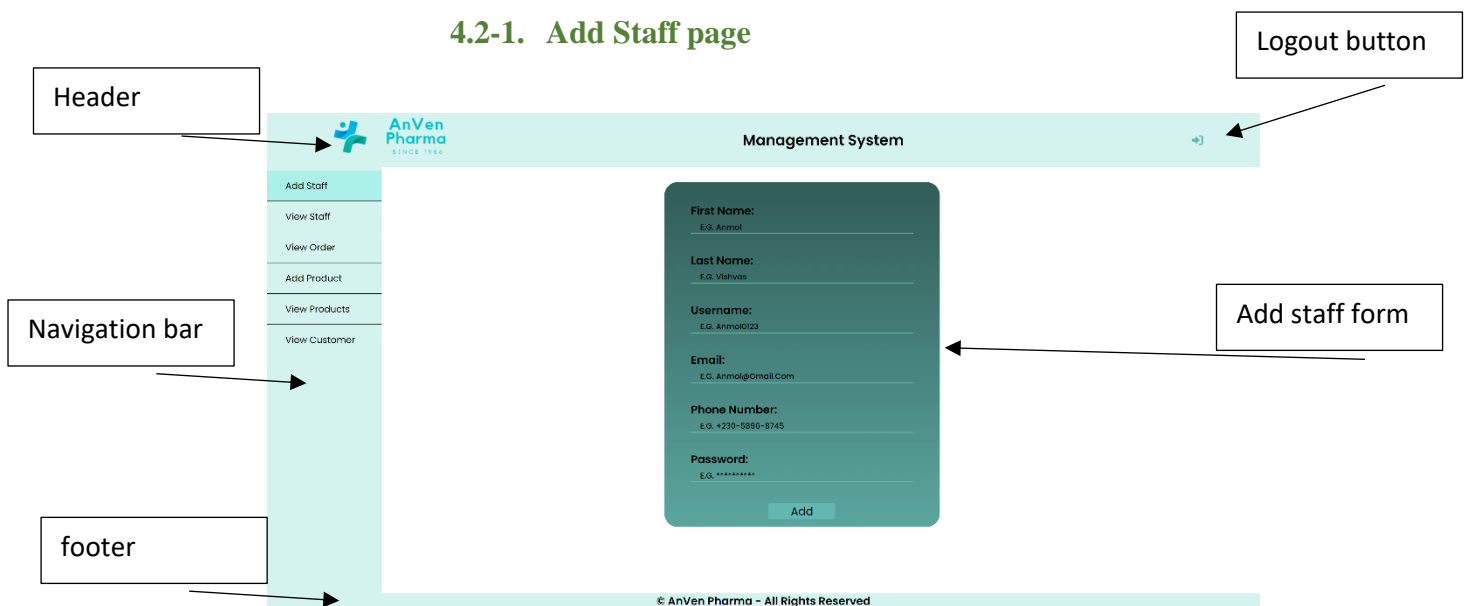


Figure 20 AnVen Pharma - Add Staff Page

On this page, the employee will be able to add a new staff. On this website, we don't have a register section, however another employee who is already registered, is allowed to register a new staff.

#### 4.2-2. View Staff page

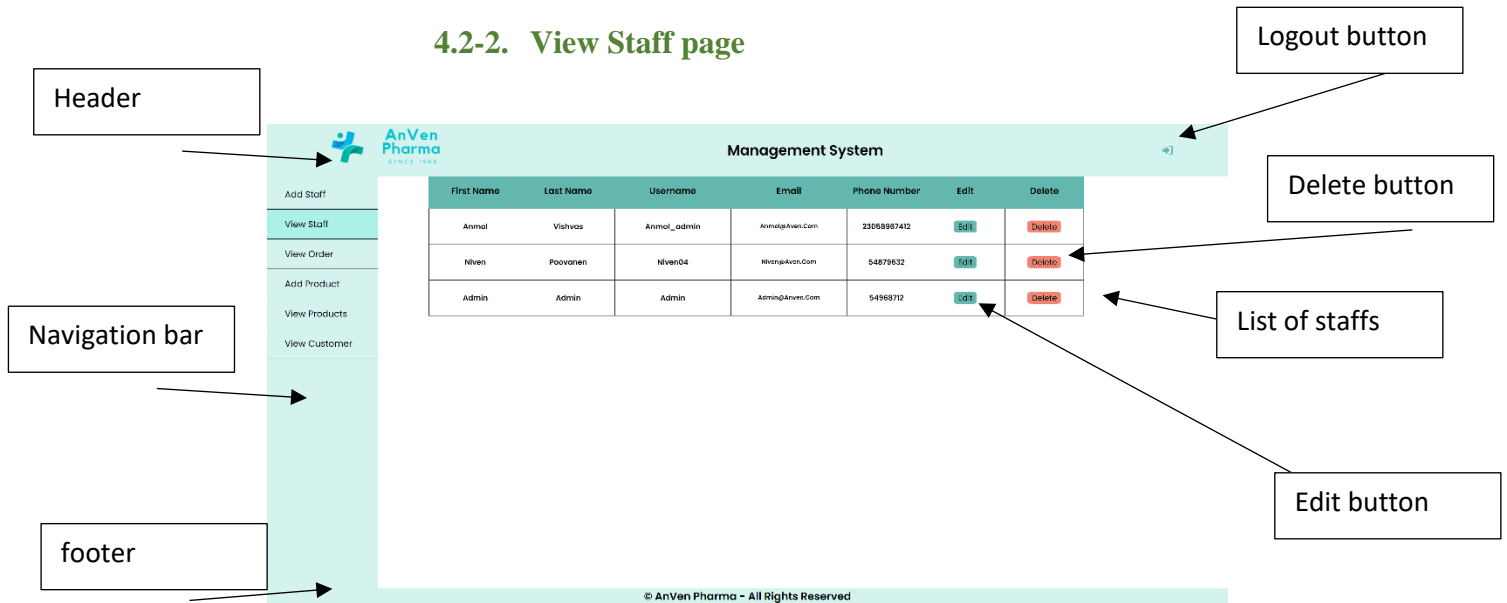


Figure 21 AnVen Pharma - View Staff

On this page, the staff will be able to view all the staff details. They will be allowed to delete a staff or edit staff details. If the user will press on the “edit” button, a form will appear as shown in figure 22, where the user will be able to update the credentials.

#### 4.2-3. Edit Staff page

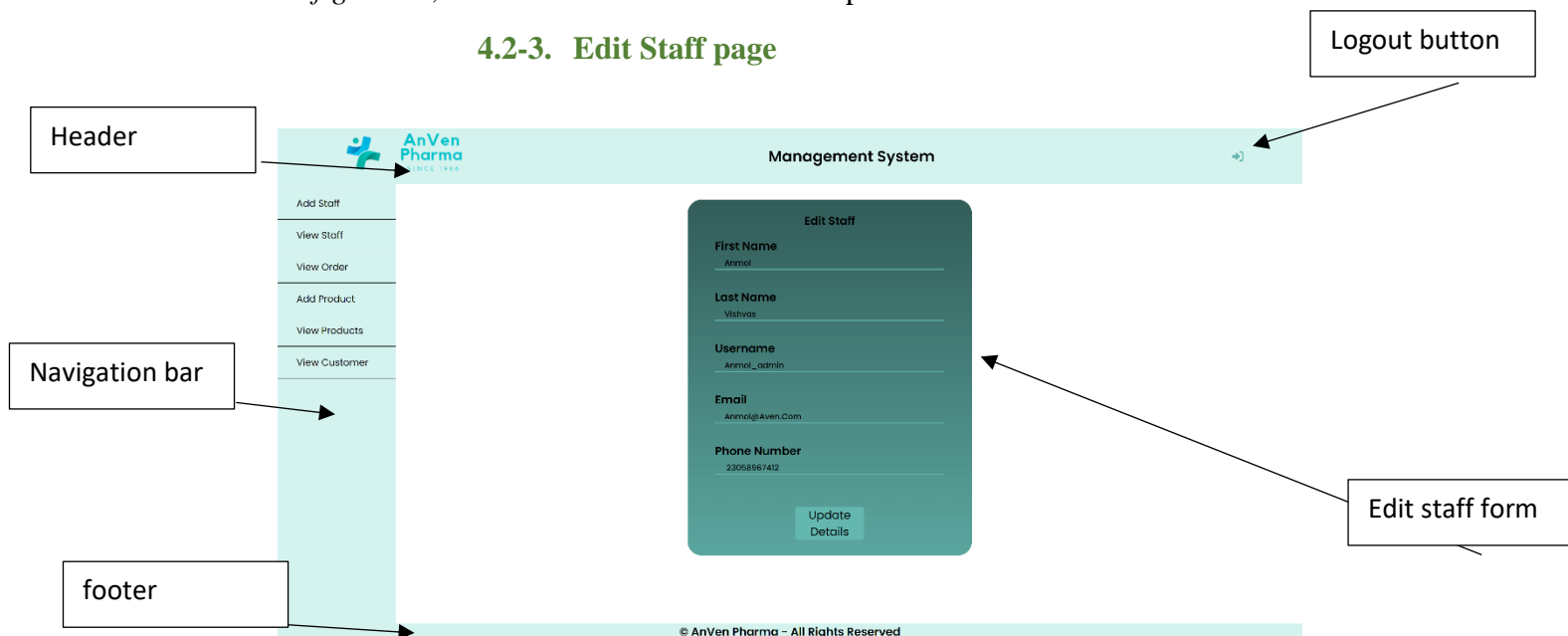


Figure 21 AnVen Pharma - Edit Staff

### 4.3- Product section

#### 4.3-1. Add Product page

Management System

© AnVen Pharma - All Rights Reserved

Add product form

Figure 22 AnVen Pharma – Add Product

#### 4.3-2. View Product page

Management System

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Image	Product	Category	Price	Quantity	Edit
	Baby Bottles	Baby Products	175.00	487	<a href="#">Edit</a>
	Pampers Diaper Pads	Baby Products	104.89	409	<a href="#">Edit</a>
	Baby Cereal	Baby Products	380.70	498	<a href="#">Edit</a>
	Two Trees - Face Mask	Skincare Products	100.70	500	<a href="#">Edit</a>
	Nivea Body Lotion	Skincare Products	150.00	495	<a href="#">Edit</a>
	Facial Cleanser	Skincare Products	180.25	500	<a href="#">Edit</a>
	OMCRON - BP Machine	Medical Equipments	200.25	500	<a href="#">Edit</a>
	Endoscope	Medical Equipments	390.75	500	<a href="#">Edit</a>
	Digital Thermometer	Medical Equipments	240.25	500	<a href="#">Edit</a>
	Medical Gloves	Covid-19	100.25	500	<a href="#">Edit</a>
	Disposable Face Masks	Covid-19	250.25	500	<a href="#">Edit</a>
	Hand Sanitizer	Covid-19	180.25	500	<a href="#">Edit</a>

List of products

Edit button

Figure 23 AnVen Pharma – View Product

Figure 23 shows the “**view product page**”, where staffs will be able to view and edit products. They will be able to edit only the price and quantity as it can be seen in *figure 24*. The edit form will display when the user clicks on the **edit** button.

### 4.3-3. Edit Product page

Management System

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Image:  
Product Name:  
Product Category:  
Price:  
Quantity:

Update Details

Edit product form

Figure 24 AnVen Pharma – Edit Product

## 4.4- Order section

### 4.4-1. View Order page

Management System

© AnVen Pharma - All Rights Reserved

Header

Navigation bar

footer

Logout button

Delete button

List of orders

Date	Customer	Product	Category	Quantity	Total Price	Delete
2022/02/16	Peovanen01	Baby Bottles	Baby Products	1	175	Delete
2022/02/17	Anmol2309	Pampers Diaper Pants	Baby Products	1	104.99	Delete
2022/02/17	Anmol2309	Baby Bottles	Baby Products	1	175	Delete
2022/02/17	Anmol2309	Nivea Body Lotion	Skin Products	1	150	Delete

Figure 25 AnVen Pharma - View Order

The staff can view or delete the customer orders as suitable.

#### 4.5- Customer section

#### 4.5-1. View Customer page

Management System						
Add Staff	CustomerId	Full Name	Username	Email	Phone Number	Address
View Staff	630e750a830a0805a08060216	Aneeka Vishwak	Aneeka12345	Aneeka@anvegharma.com	94037072	Quatre Street
View Order	630e0929830a0805a08060216	Naveen Pavanam	Pavanam01	Pavanam@anvegharma.com	94037072	Aneeka Street
Add Product	630e094070200000a000001	Customer	Customer	Customer@anvegharma.com	94060112	Ric And Ric
View Products	630e097702000000a000001	Joshua	Josh	Josh@anvegharma.com	92059014	Grand Rd
View Customer						

List of all the customers who registered

Figure 26 AnVen Pharma - View Customers

Here the employee will be able to view all the customer details

## 5. Database Design (Mongo db)

Concerning the database design, we used json files for each collection. As collections, we have the “*Customers*” collection, “*Orders*” collection, “*Products*” collection and “*Staffs*” collection. Once json file were written, the files were imported in the *mongodb compass* platform.

### 5.1- List of all the collections

The screenshot shows the MongoDB Compass interface. The left sidebar displays the database structure: Local > AnVen > Customers, Orders, Products, Staffs. The main area shows the 'Collections' tab with a table of collections and their statistics.

Collection Name	Storage size	Documents	Avg. document size	Indexes	Total index size
Customers	20.48 kB	4	176.00 B	1	36.86 kB
Orders	20.48 kB	2	386.00 B	1	36.86 kB
Products	24.58 kB	12	687.00 B	2	73.73 kB
Staffs	20.48 kB	3	162.00 B	1	36.86 kB

Figure 87 AnVen Pharma - Database collections

## 5.2- Order collection

The order collection contains data about the orders of the customers such as date, username, time, total price, product image url, product name, product category, product price and product quantity.

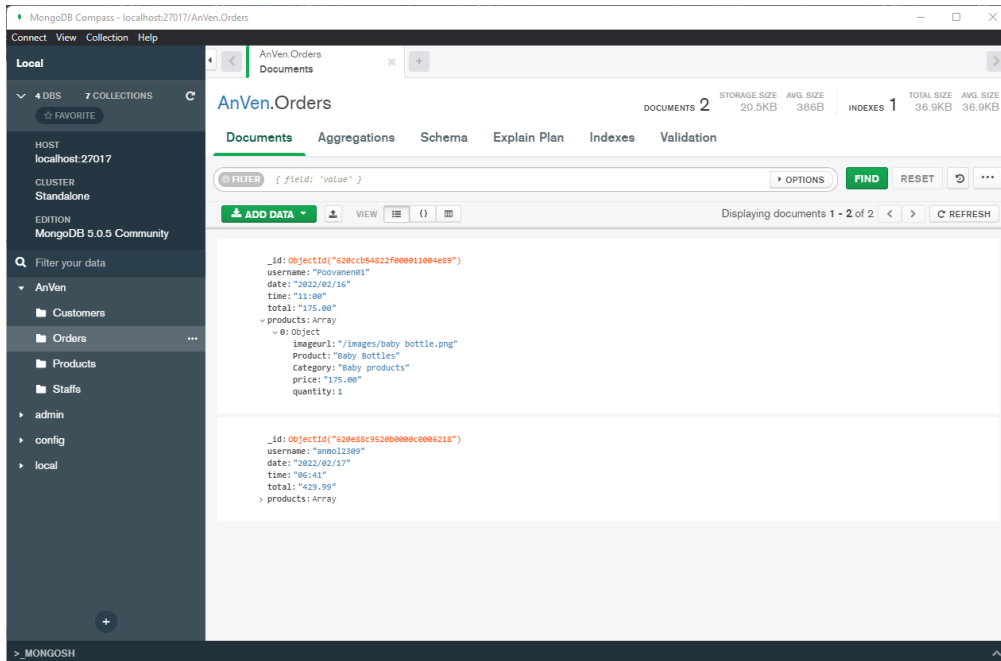


Figure 28 AnVen Pharma - Order Collection

## 5.3- Product collection

The product collection contains data about products in stock, having attributes such as image url, product name, description, category, quantity, details and price. The object ID is allocated by the mongodb, as shown below:

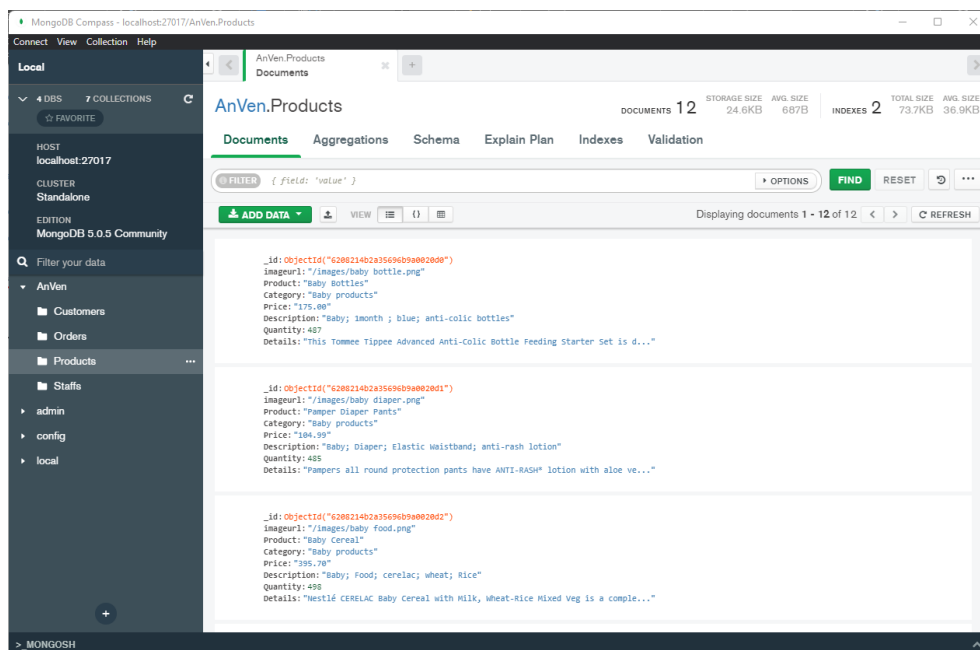


Figure 99 AnVen Pharma - Product Collection

## 5.4- Customer collection

The customer collection contains data about the customers that has created an account in registration page, having attributes such as name, username, email, phone number, address, and password.

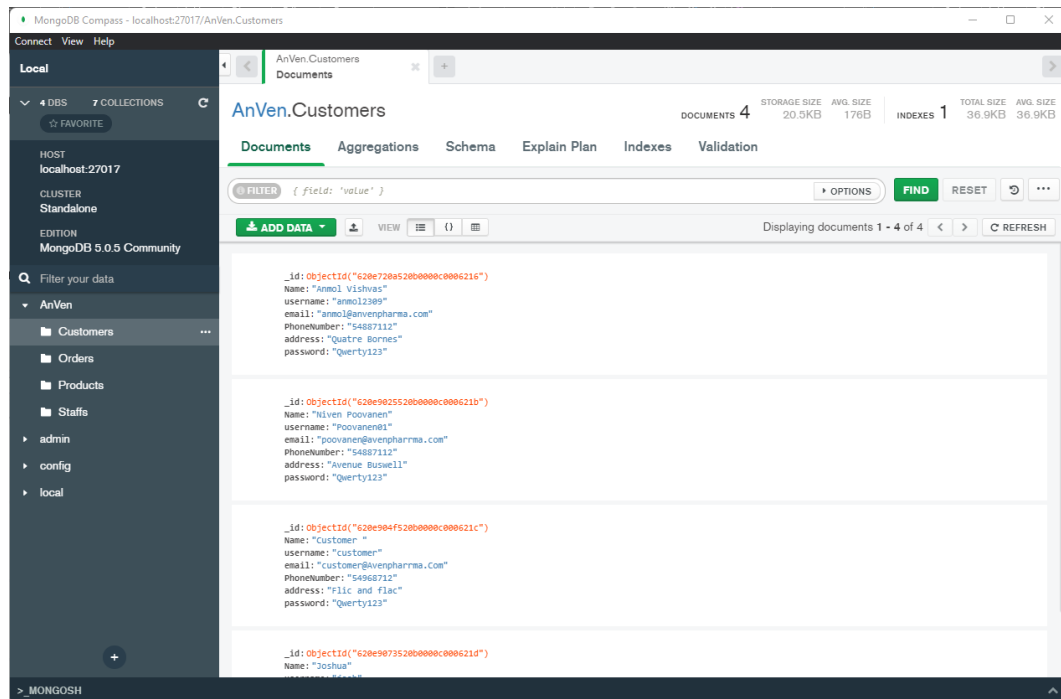


Figure 30 AnVen Pharma - Customer Collection

## 5.5- Staff collection

The staff collection contains data about the employees such as first name, last name, username, email, phone number and password.

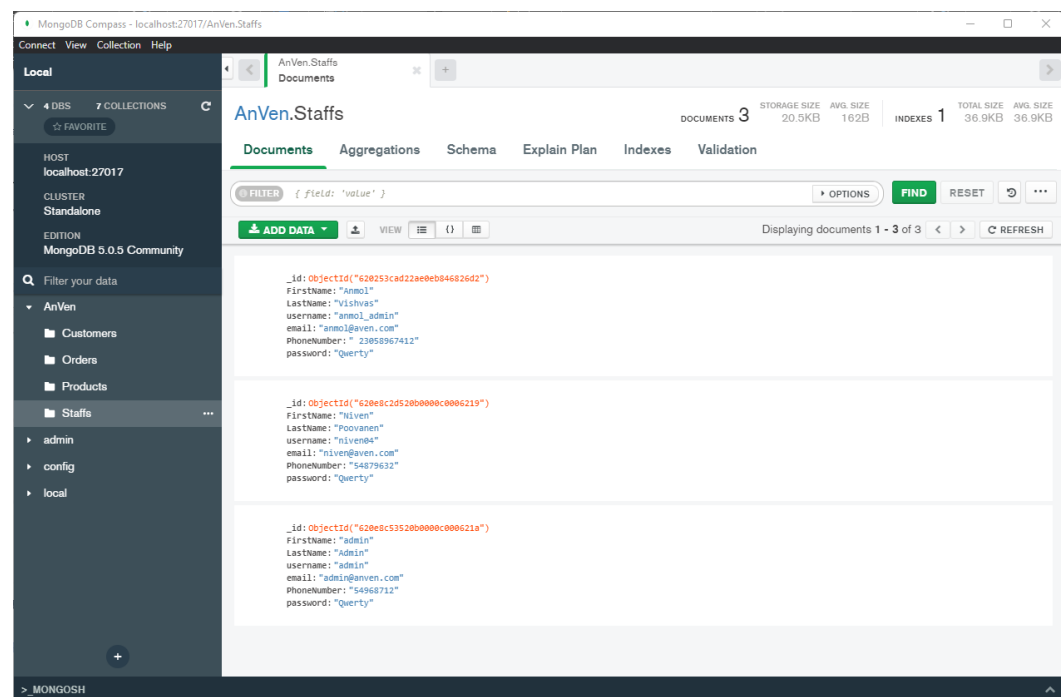


Figure 31 AnVen Pharma - Staff Collection

## **6. Security, Privacy and Legal Issues**

### **6.1- Security**

E-Commerce security refers to the rules that provide secure online transactions. It contains of standards that protect persons who sell and buy goods and services on the internet. By implementing eCommerce security basics, you may earn your clients' trust. Privacy, integrity, authentication, and non-repudiation are examples of such fundamentals.

There are several risks to our online store that we need to prevent from. Hacking, exploitation of personal data, monetary theft, phishing assaults, unprotected supply of services, and credit card fraud are all instances of security threats. (Thuraisingham et al., 1999)

#### **6.1-1. Solution to avoid security issues:**

Users should pay close attention to the password guidelines provided on various websites. Users can create stronger passwords by using a set of characters, symbols, and numbers. They should exercise caution while blocking access to different internet domains. To avoid security breaches, follow the admin panel instructions. (Ecommerce Security: Tips, Tricks & Recommendations (2021), 2022)

### **6.2- Privacy**

Preventing any conduct that leads to the sharing of customers' data with unauthorized third parties falls under the category of privacy. No one else should have access to a customer's personal information or account details except the online merchant they picked.

When merchants provide outsiders access to confidential information, they are committing a breach of confidentiality. Anti-virus, firewall, encryption, and other data protection should be installed at the very least by an internet firm. It will go a long way toward securing clients' credit card and bank information.

#### **6.2-1. Solution to avoid privacy issues:**

Anti-malware/virus software can prevent file or software alteration by detecting and removing infections. This protects data and personal information from malicious software such as worms, viruses, and Trojan horses.

### **6.3- Legal issues**

When developing a website, legal difficulties such as copyright concerns, such as the images used and trademarks, come up. The photographs utilized, the company's brand, and the domain used to publish the website are all legal difficulties in the case of our e-commerce site.

Using content from another company when creating content for an E-Commerce website might be a serious legal issue. This could be the demise of the online business. There are several royalty-free websites that allow you to access their information and images. We can use those websites to generate web content for our company's website. Even if we used protected content unintentionally, the other party could simply sue your company.

#### **6.3-1. Solutions to avoid legal issues:**

Given the ease with which material may be obtained and placed online, avoiding copyright violations based on the usage, display, replication, or handling of materials posted on social media pages or private websites will always be an issue for e-commerce businesses. The federal Digital Millennium Copyright Act of 1998 (DMCA) creates safe harbors for Internet service



providers, which may protect them from such charges. (5 key legal issues surrounding e-commerce, 2022)

#### **6.4- Steps taken to solve security issues:**

- The characters appear hidden when the user types of his password. This eliminates the threat of phishing. This means that if someone is looking at the screen, they will not be able to see the password that the user has entered.
- The session storage is emptied, and the user is signed out when the user closes his tab or browser. As a result, anyone else wanting to access the website on the same device will have to sign in again. This is safe because the prior user doesn't have to worry about his credit card being misused.
- The validation of a user's password is tricky. To create an account, the user must use alphanumeric characters and symbols. This makes the password more secure and difficult for hackers to guess.

## 7. References

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