# COURSEWORK 2: E-COMMERCE WEBSITE

# FINAL SUBMISSION



# CST2120: WEB APPLCATIONS AND DATABASES

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# Project Description

The aim of this project was to create a fully functional e-commerce website using Mongodb as the database and server-side scripting(php).

The user can register and login on the website and the data will be stored in the database.

Navigating across the webpages, the user will have access to various information like the newest products, the best-selling products and the sales that are being offered by the shop.

The website aims to be as much user-friendly as possible and the user can get every required information he needs at the tip of his hands.

On the product page, the user will have every detail of the product like the colors available, the price (before and after discount if any) and also specific descriptions about the products.

For the purchasing of the product, a basket will be generated, and the user can edit his orders according to his wish, increasing quantity or removing a product itself.

Once the user proceeds with the checkout, he/she shall fill a form asking for specific details like address, phone number ...etc. of the user and this will be stored in the customer table.

The logged in user has the option to view his past orders if any and also gets the recommendation for other products.

In the product page the user can sort the products according to different criteria depending on his needs.

Screenshots of different pages:
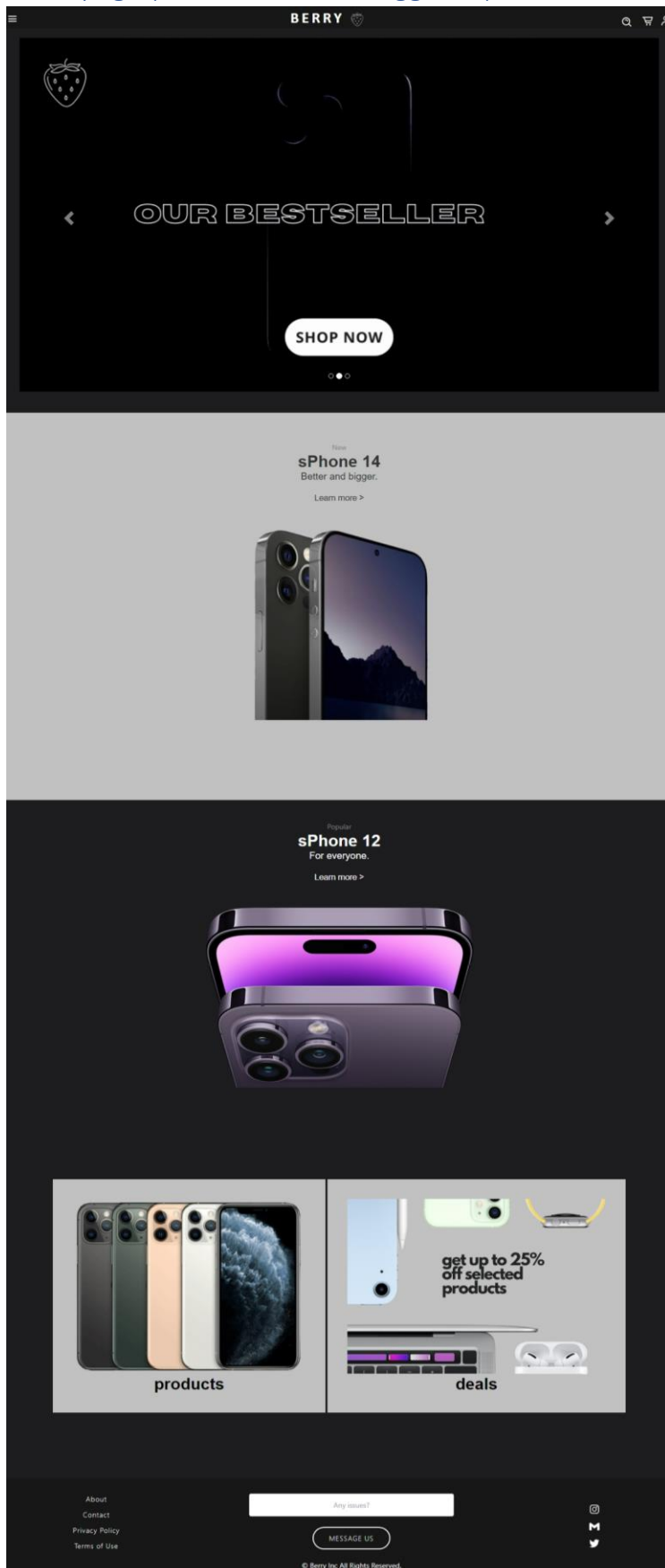
## Homepage (when user is not logged in):



*Figure 1:Homepage1*

## Nav bar when user is not logged in:



*Figure 2:Navigation bar 1*

Here the user icon is kept blank since no user is logged in.
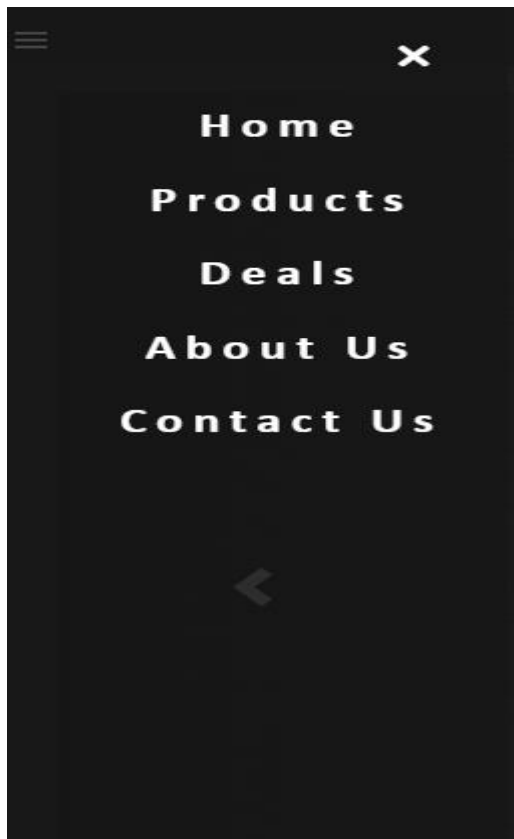
## Side nav bar:



*Figure 3:Side Nav bar*

Here the user have access to different options across the website.
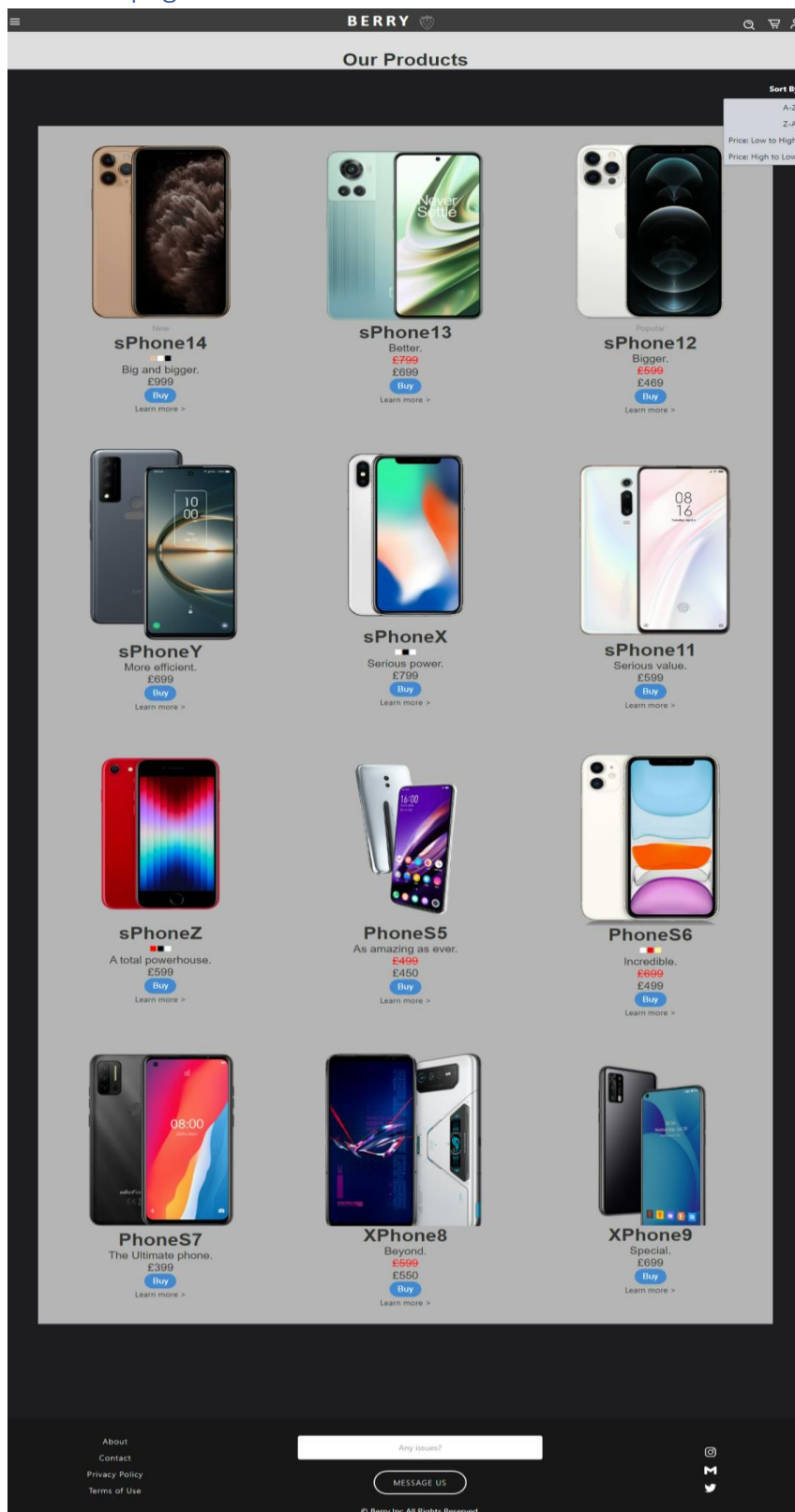
Products page:



*Figure 4:Product page*

The product page offers the user a brief overview of the products, the price, the deals and also the products which are available in different colours.

## Product description pages (with similar products -> using similar keywords in the description and tags)
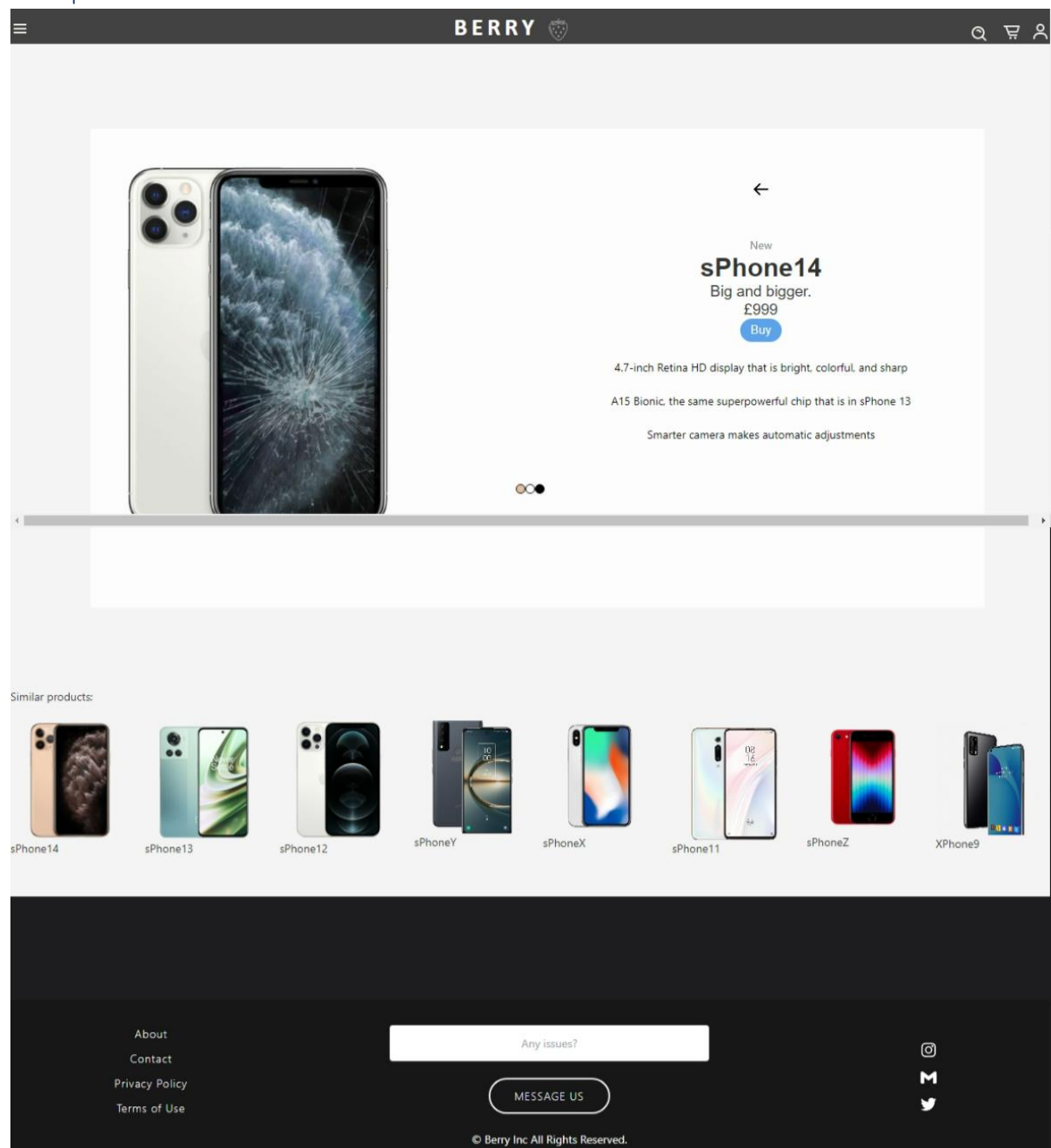
## Example 1:



*Figure 5:product description 1*

This page provides the user with specific details about the product like the screen size, processor, memory and so on. Also it generates similar products for the user to be able to compare and find which products suits the best.
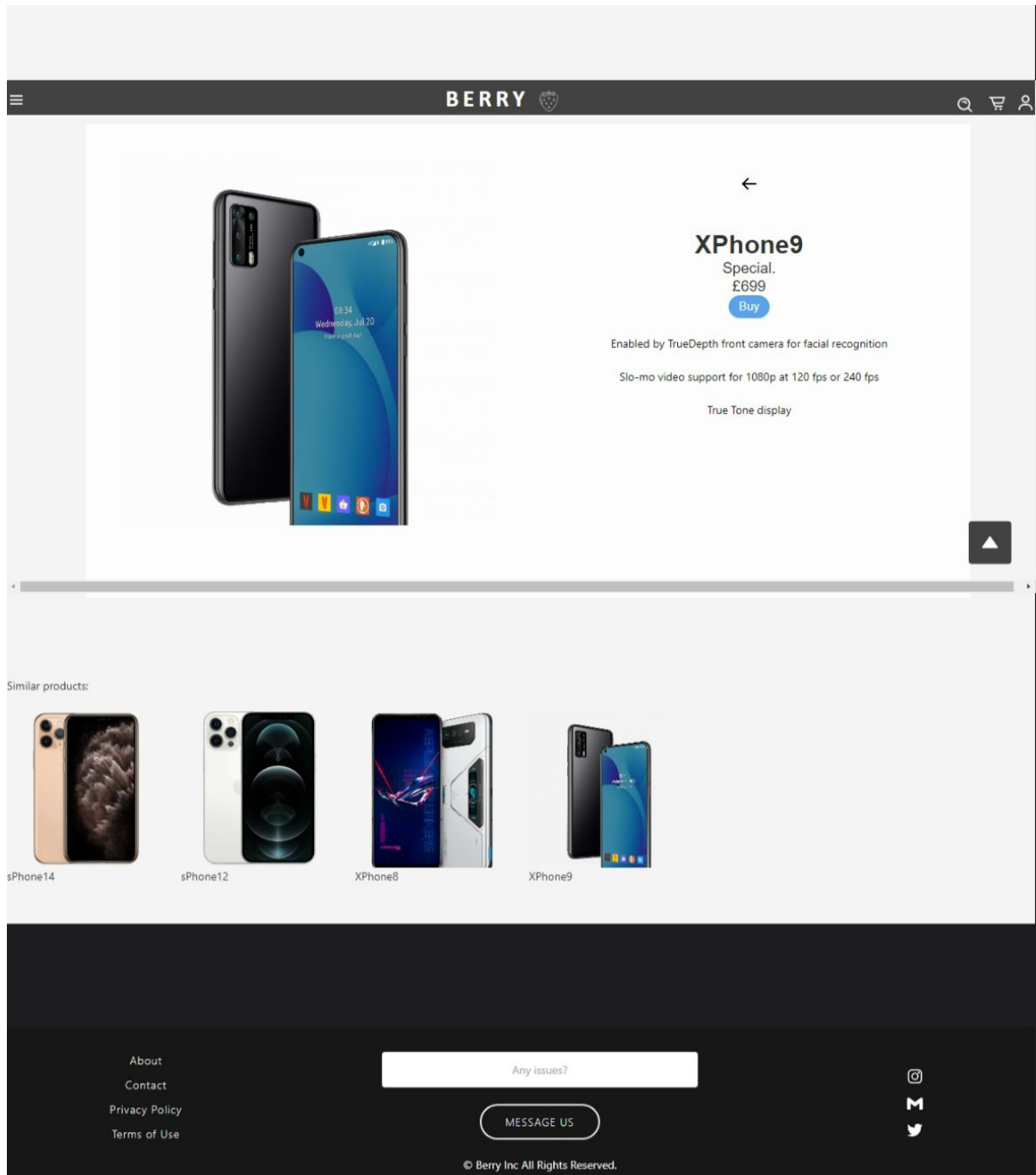
Example 2:



*Figure 6:product description 2*

Deals page:



*Figure 7: Sales page*

Here the user has all the different products which are currently on sale.
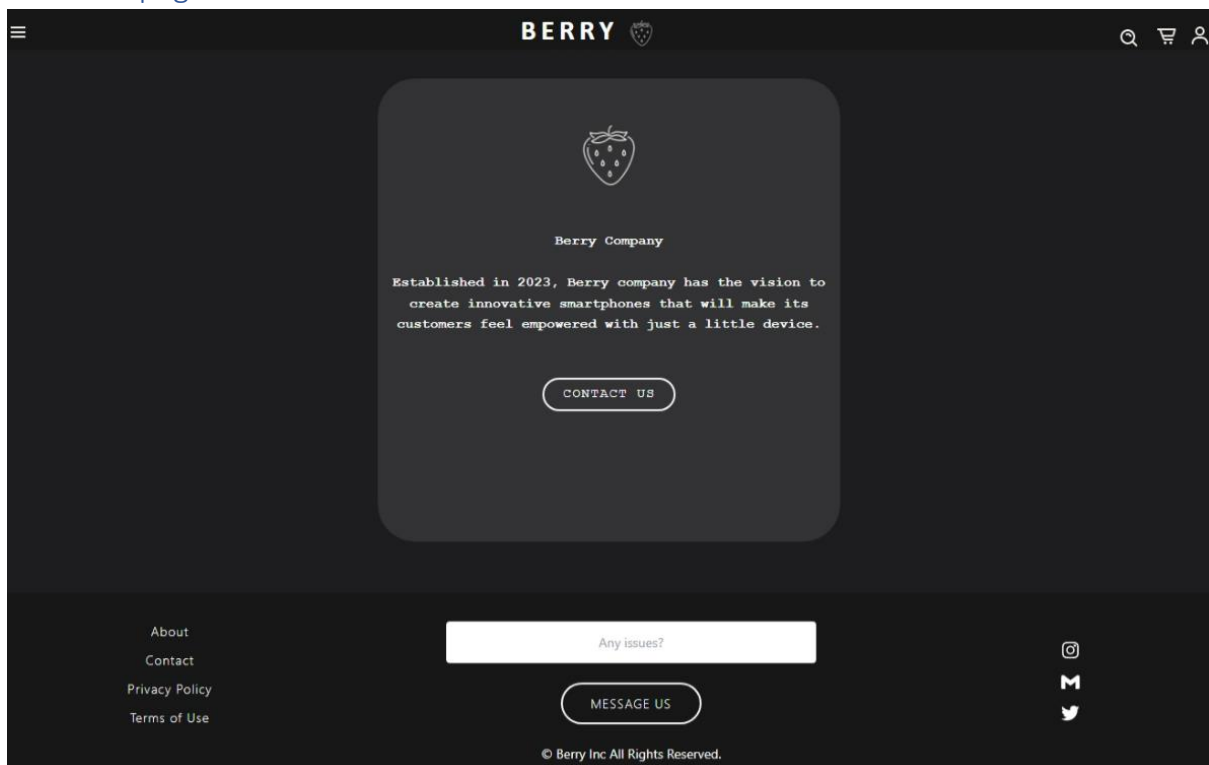
## About us page:



*Figure 8: About Us page*

## Search functionality:



*Figure 9: Search bar*
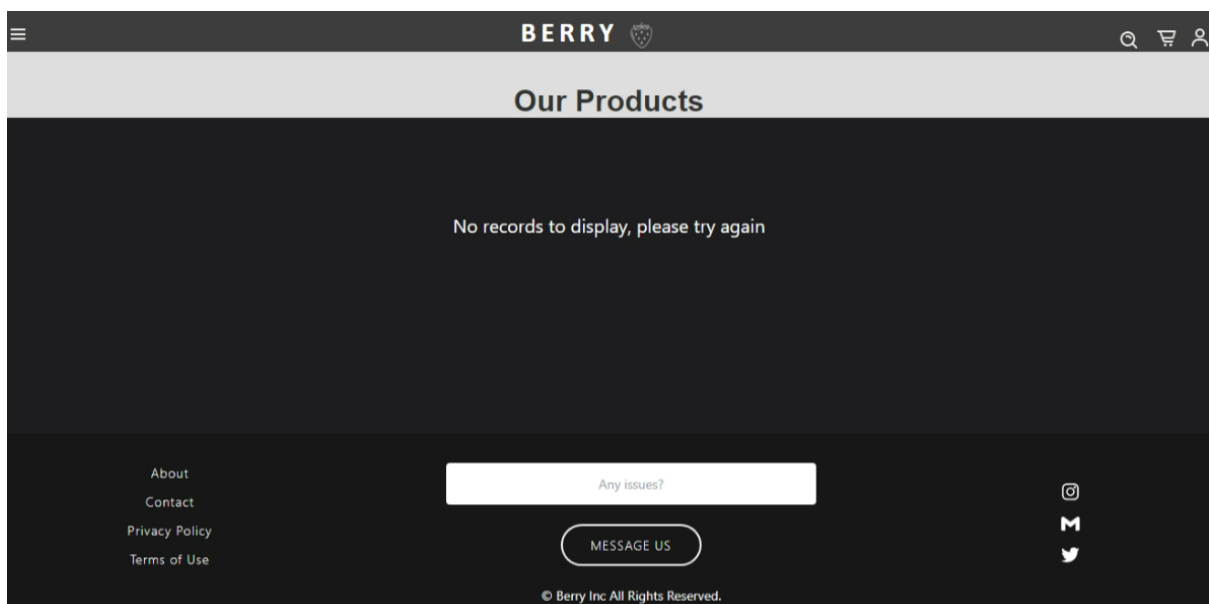
## If no results:



*Figure 10: Displaying results from search 1*

If results, display results:



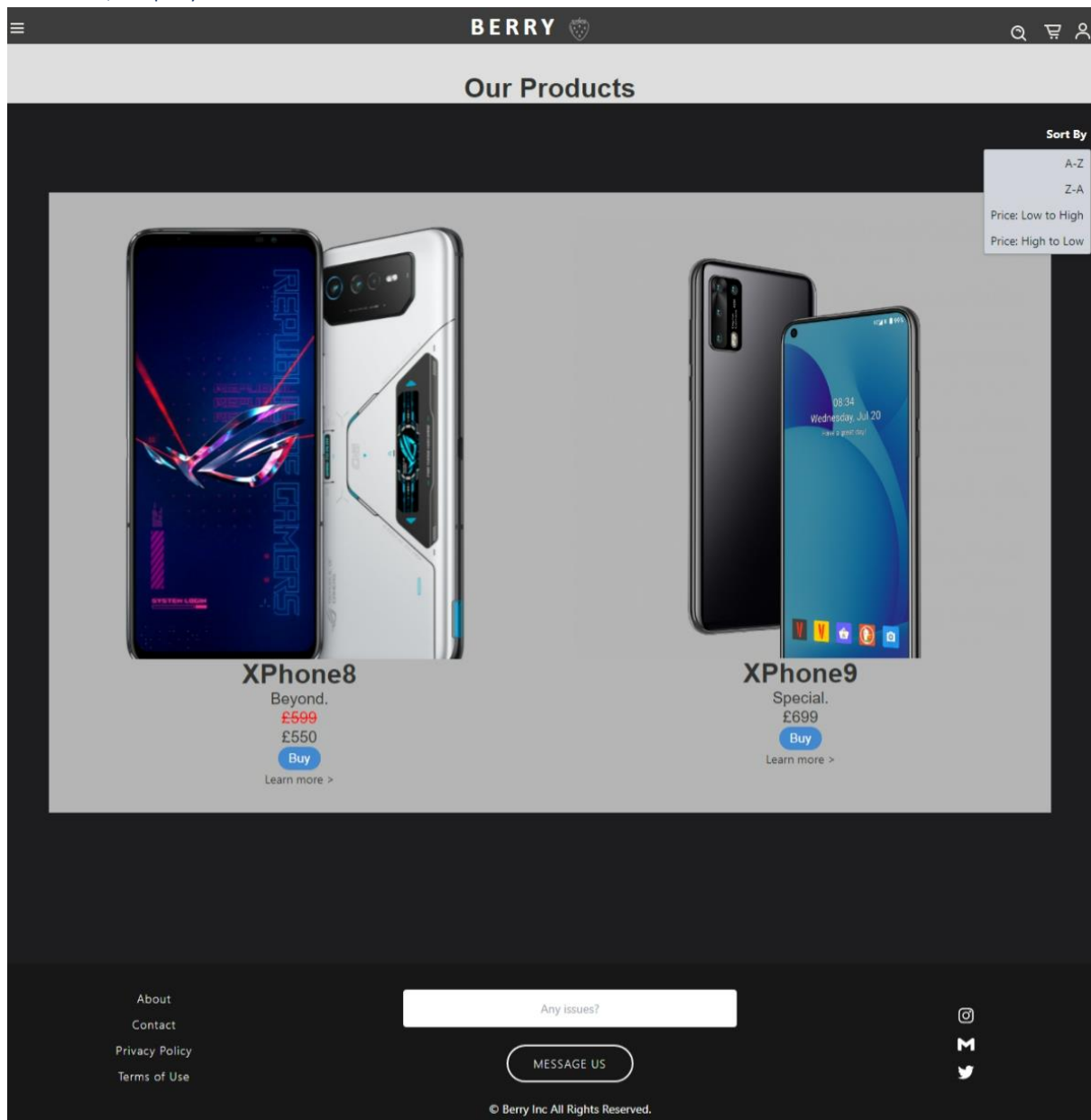*Figure 11: display results 2*

## Login menu:



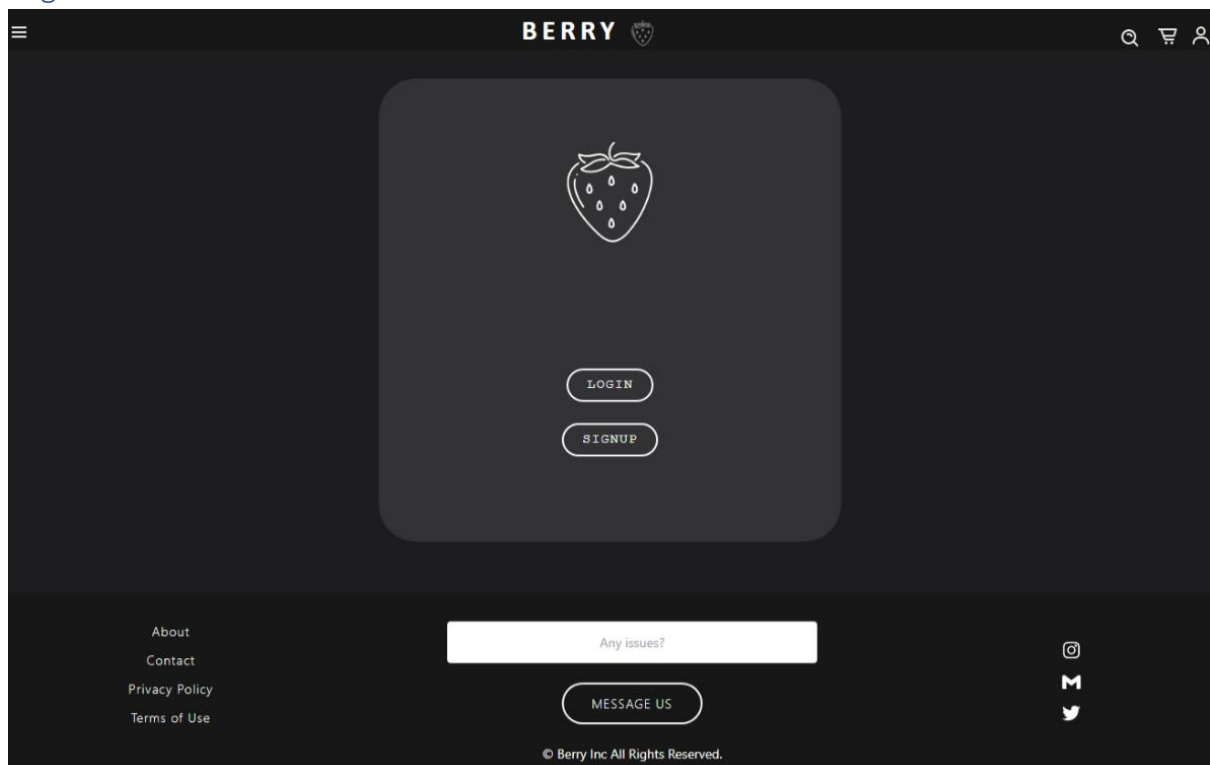*Figure 12: Login menu*

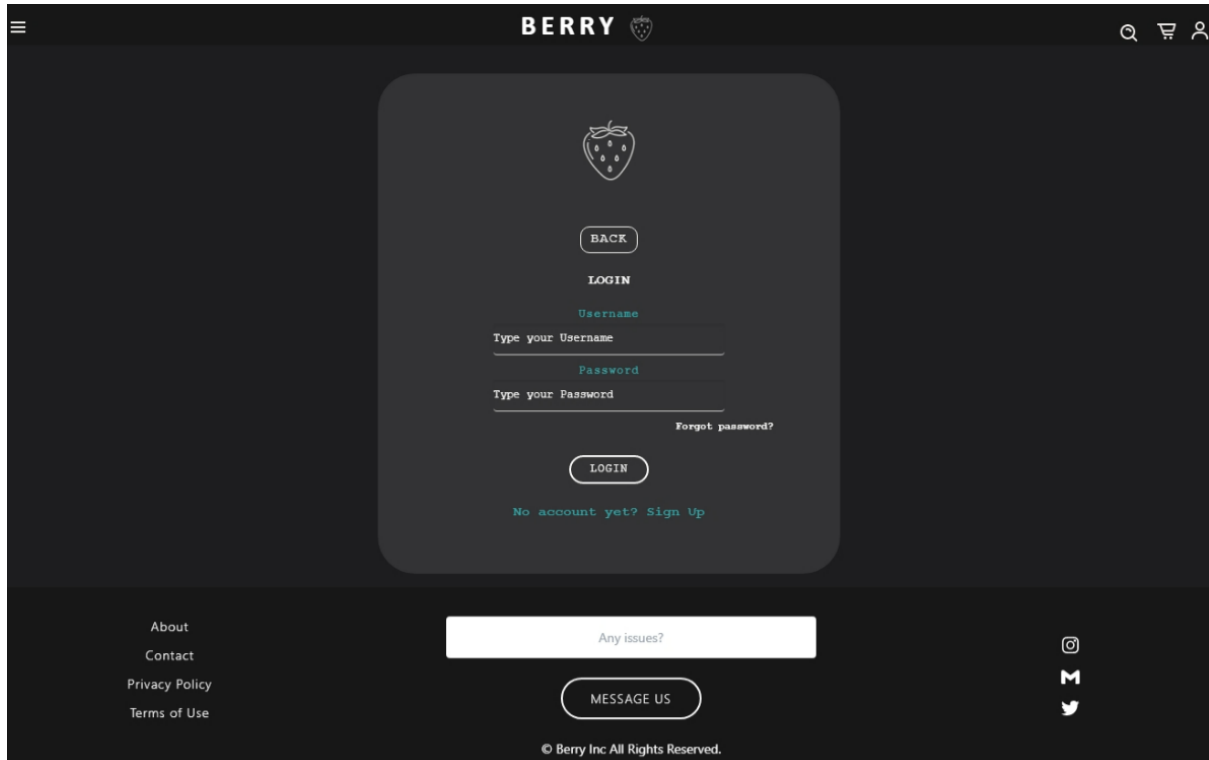For first time user: Sign Up

Else choose login.

Signup page:



*Figure 13: Sign Up page 1*



*Figure 14: Sign Up page 2*

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Login page:



*Figure 15: Login page*

Forgot password page:



*Figure 16: Forgot password page*

## Nav bar when user is logged in:



*Figure 17: Navigation bar when logged in*

## User with profile picture:



*Figure 18: Profile picture of user*

## User without profile picture:



*Figure 19: User with no profile picture*

## When hover on user's profile pic:
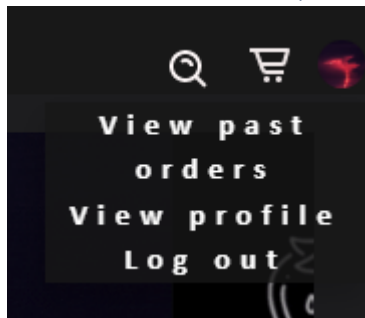


*Figure 20: hovering on user icon*

View past order page: take order from database.
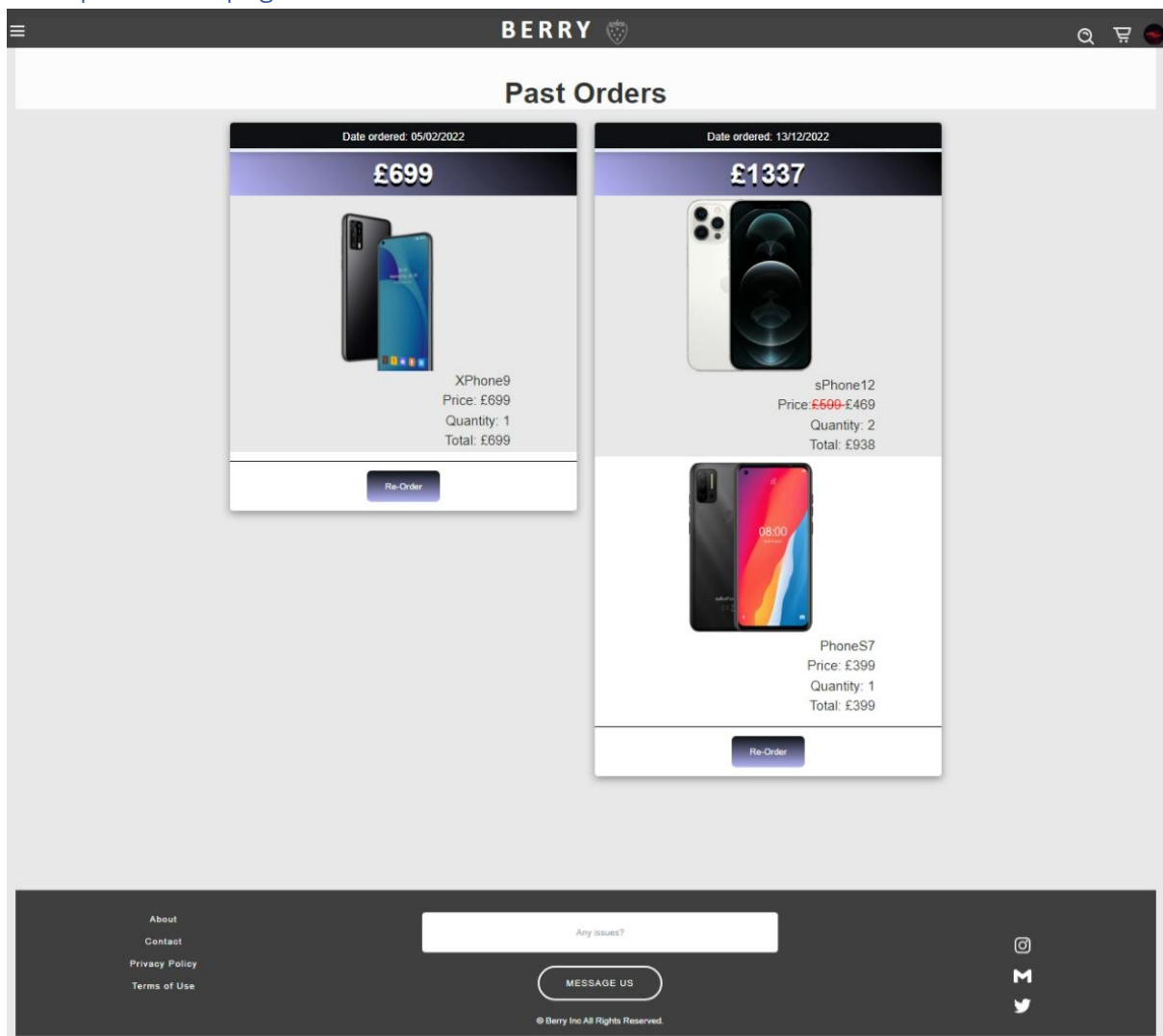


*Figure 21: view past orders*

Reorder function:
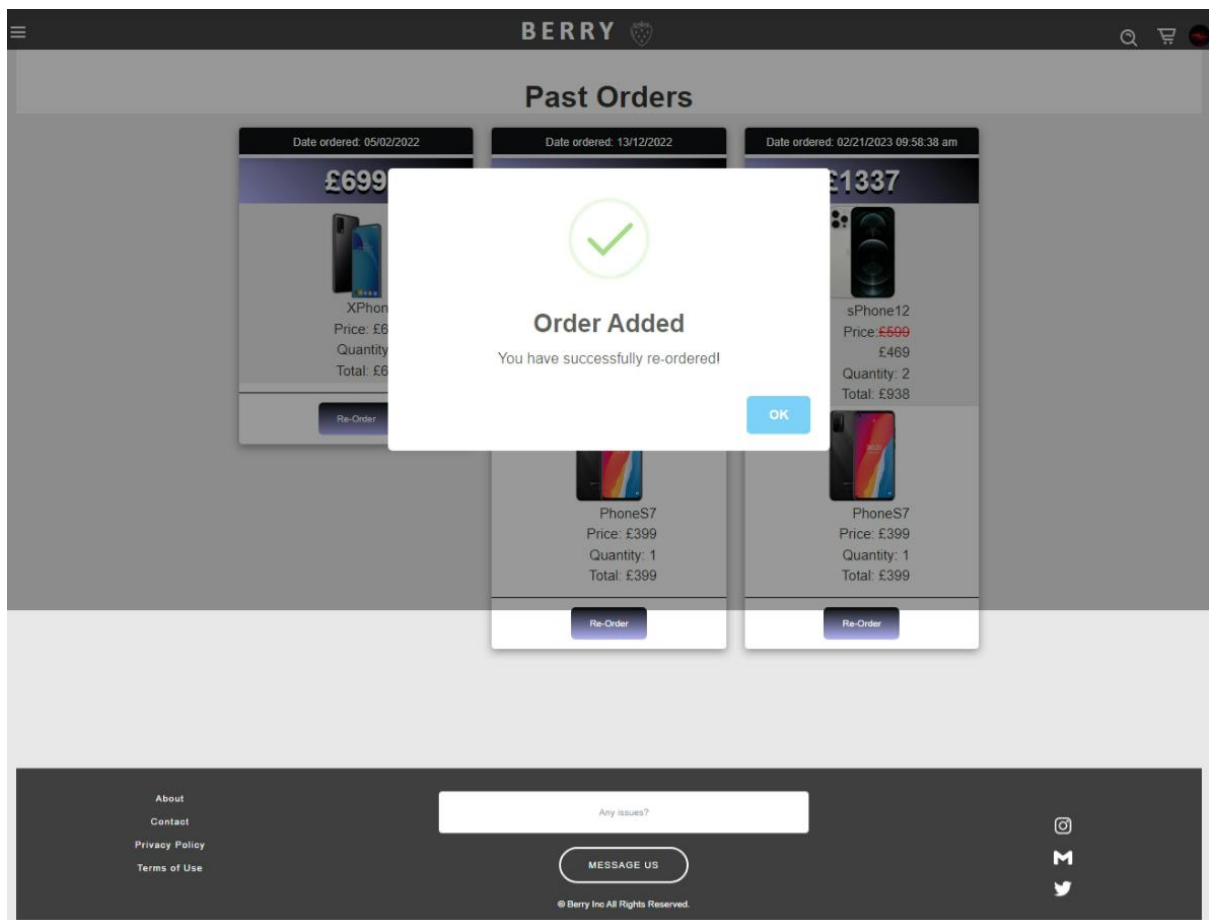


*Figure 22: Adding another order*

Adds the order in database and takes the current date:
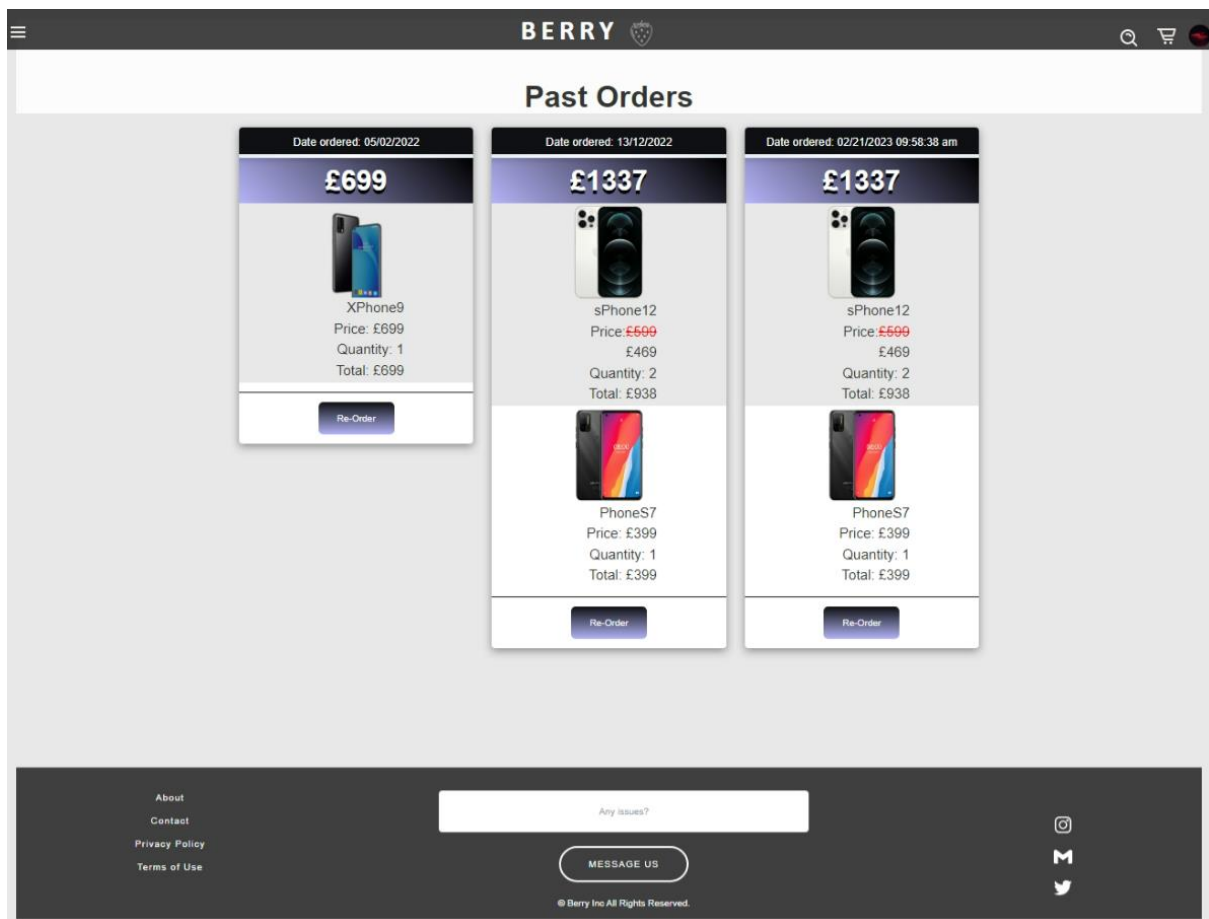
*Figure 23: Updating order*

## View profile page:
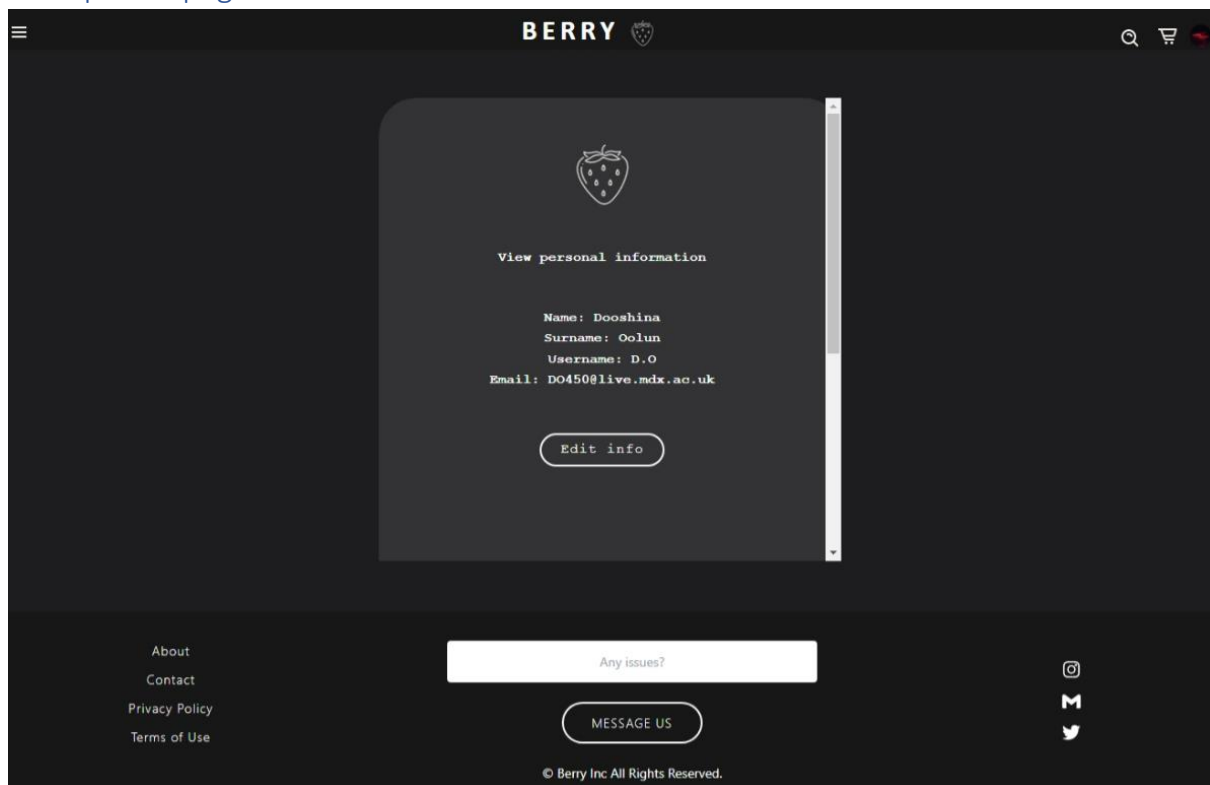


*Figure 24:View profile details*

## Edit info:
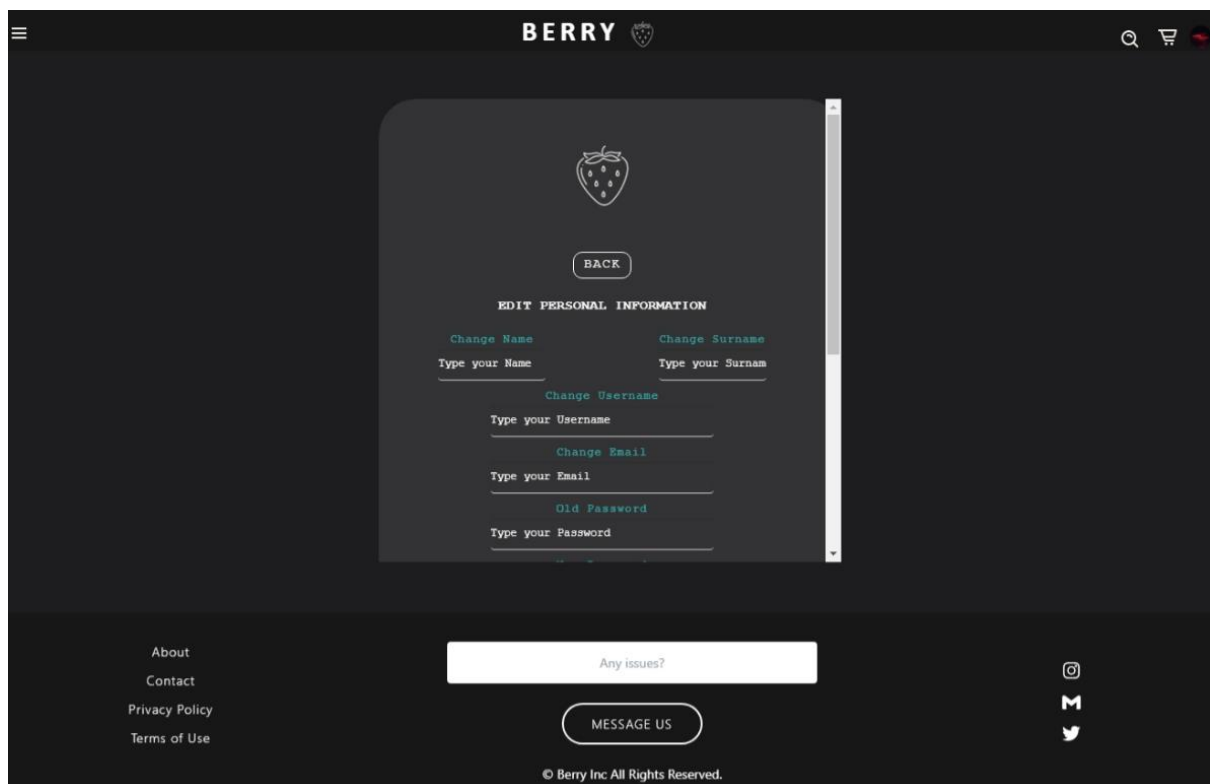


*Figure 25: Editing info of the user 1*

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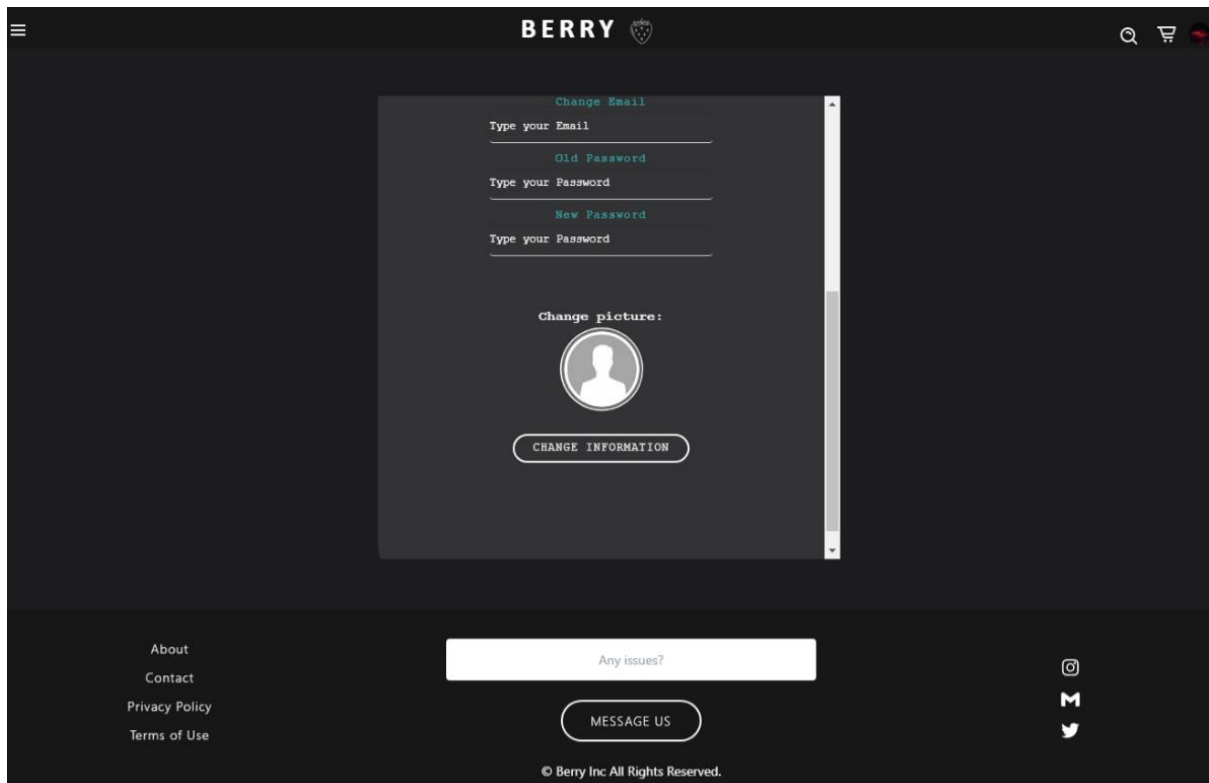
*Figure 26: Editing info of user 2*

## Cart:
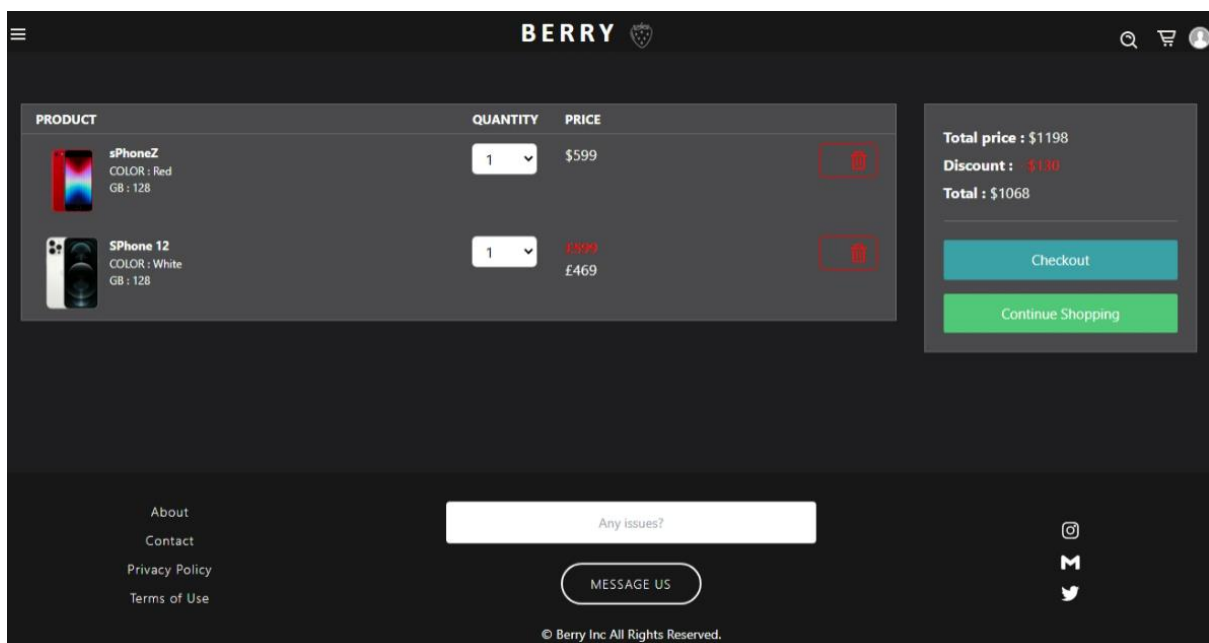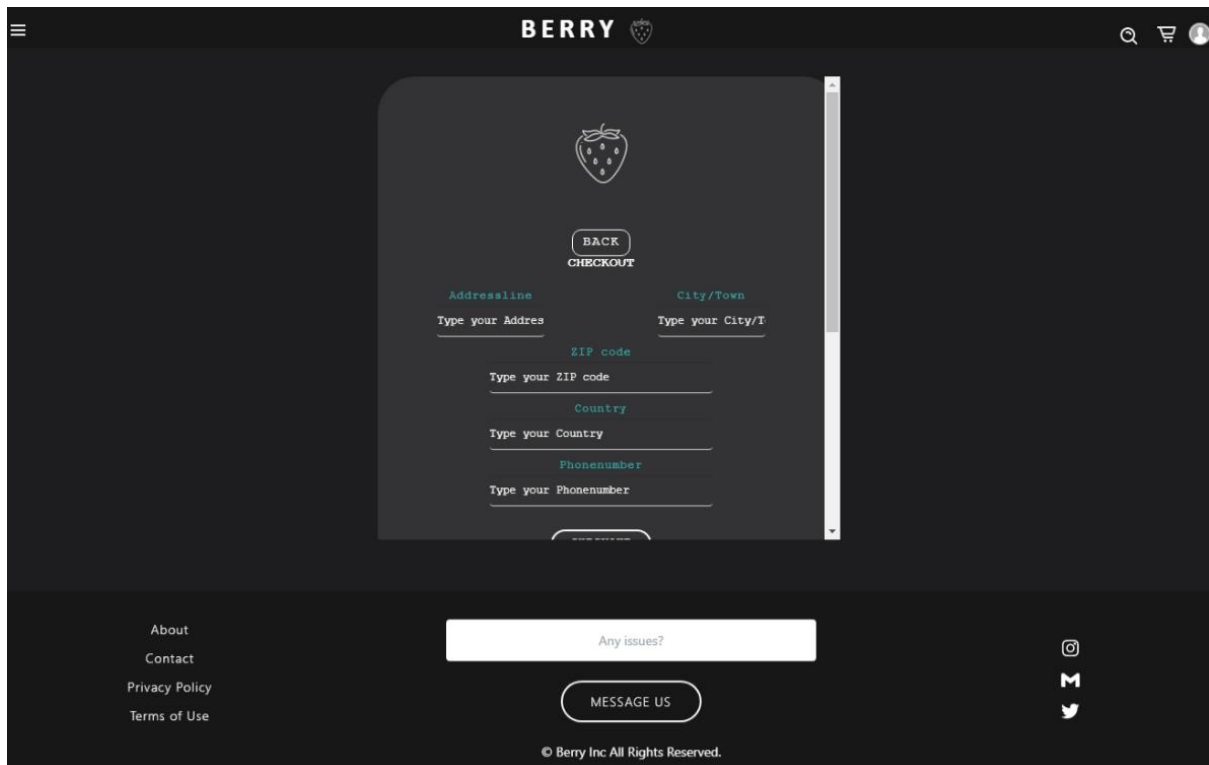


*Figure 27: Cart page*

Gets product details from products page and displays in basket.

## Checkout



*Figure 28: Checkout1*



*Figure 29: Checkout2*

## Privacy policy page:
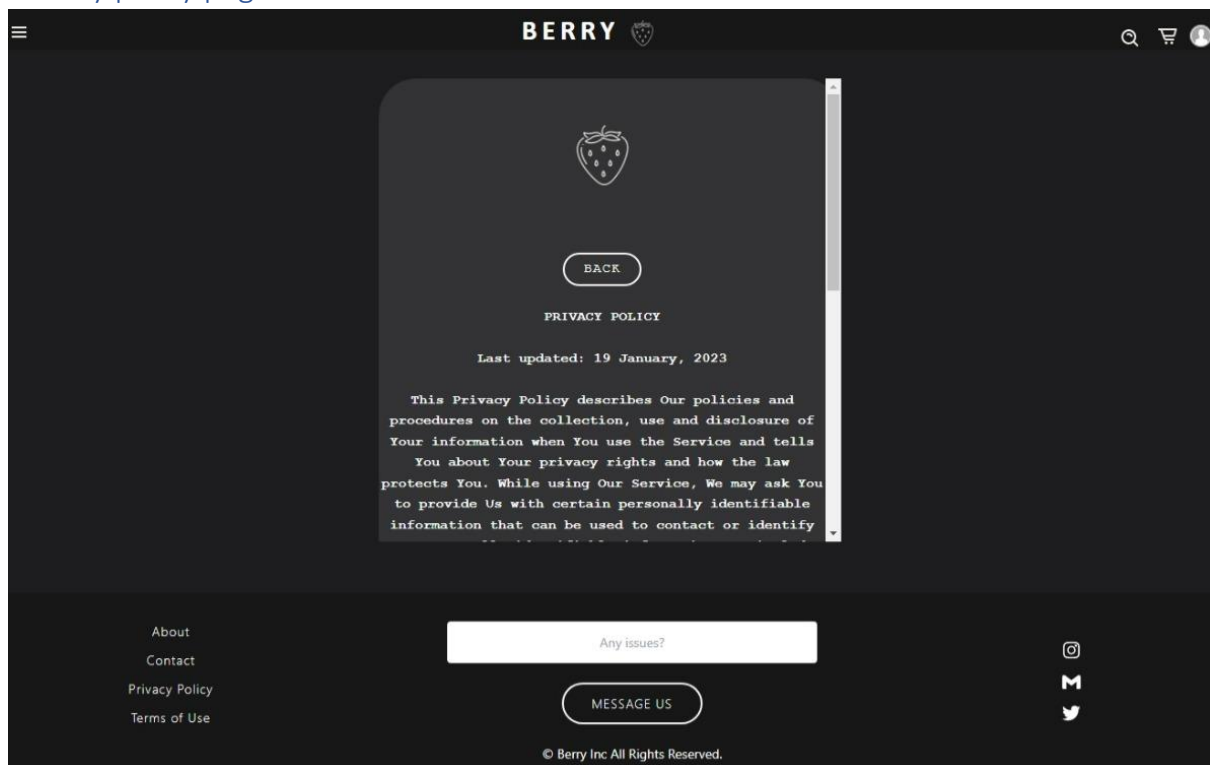


*Figure 30: Privacy policy*

## Terms of Use page:
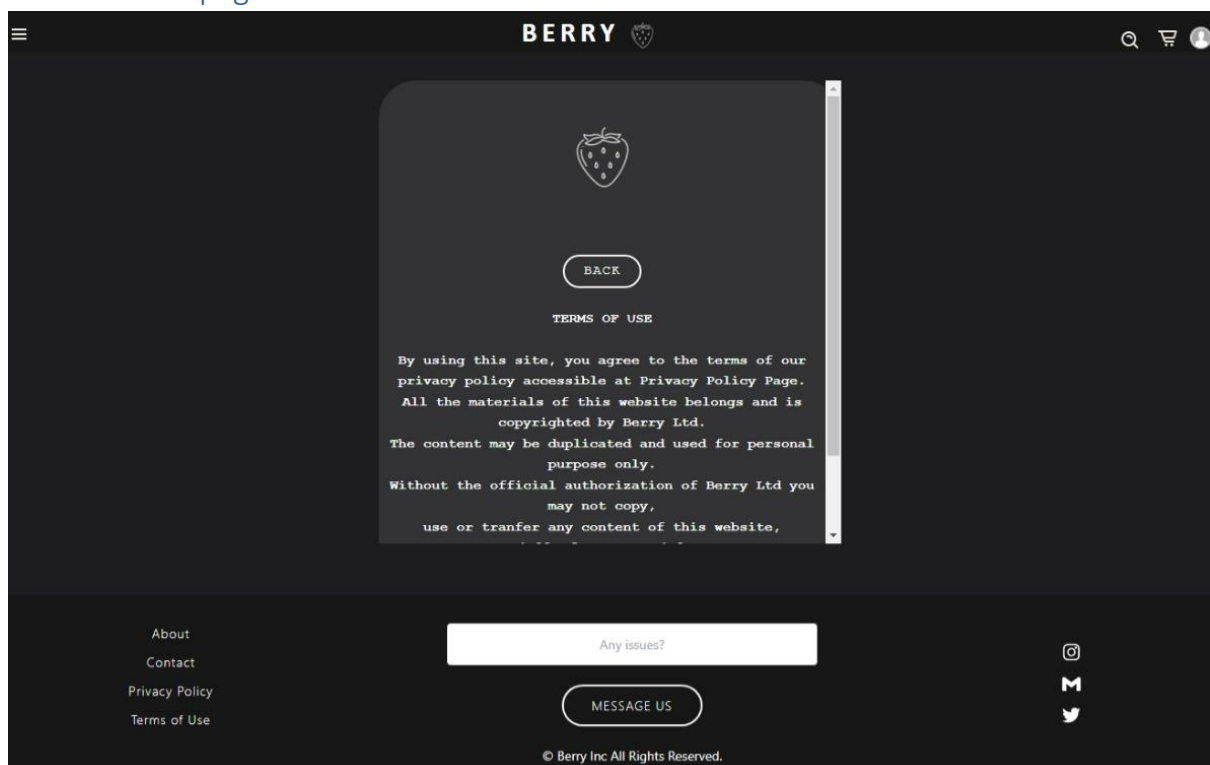


*Figure 31: Terms of Use Page*

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## Recommendation page (when logged in):
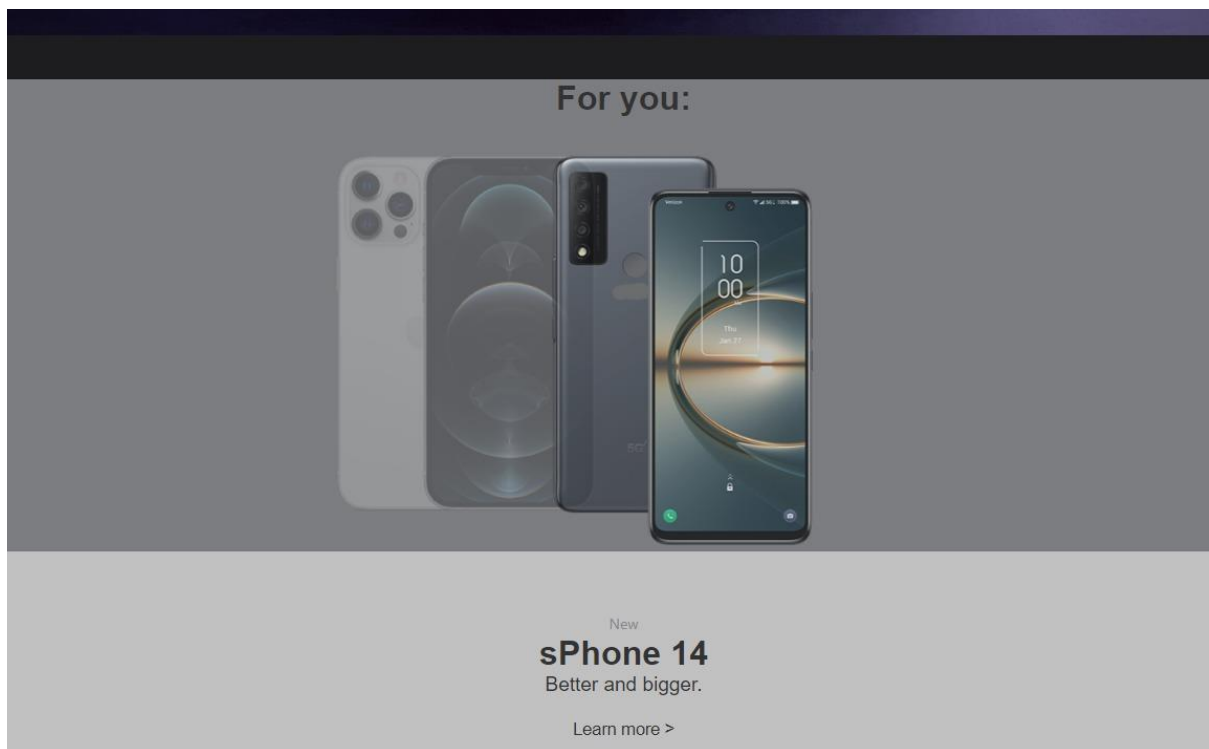


*Figure 32: Recommendation page*

Recommendation: displayed on homepage only when a user is logged in and only when the user previously searched for a product or visited a product description page

## Screenshots of CMS:

## Log in CMS:
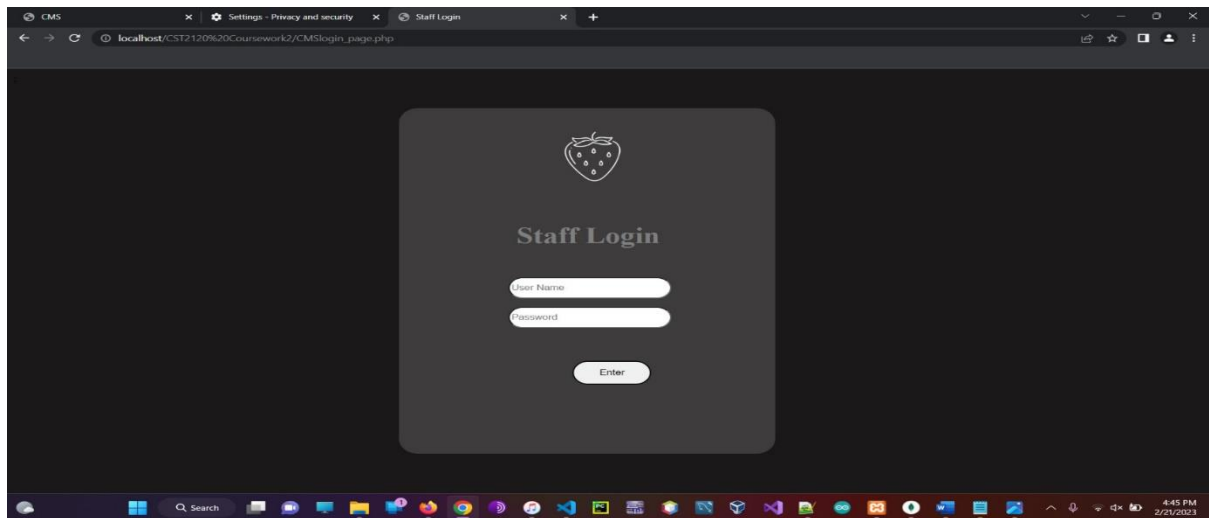
*Figure 33: Staff login CMS*

## Dashboard of CMS:
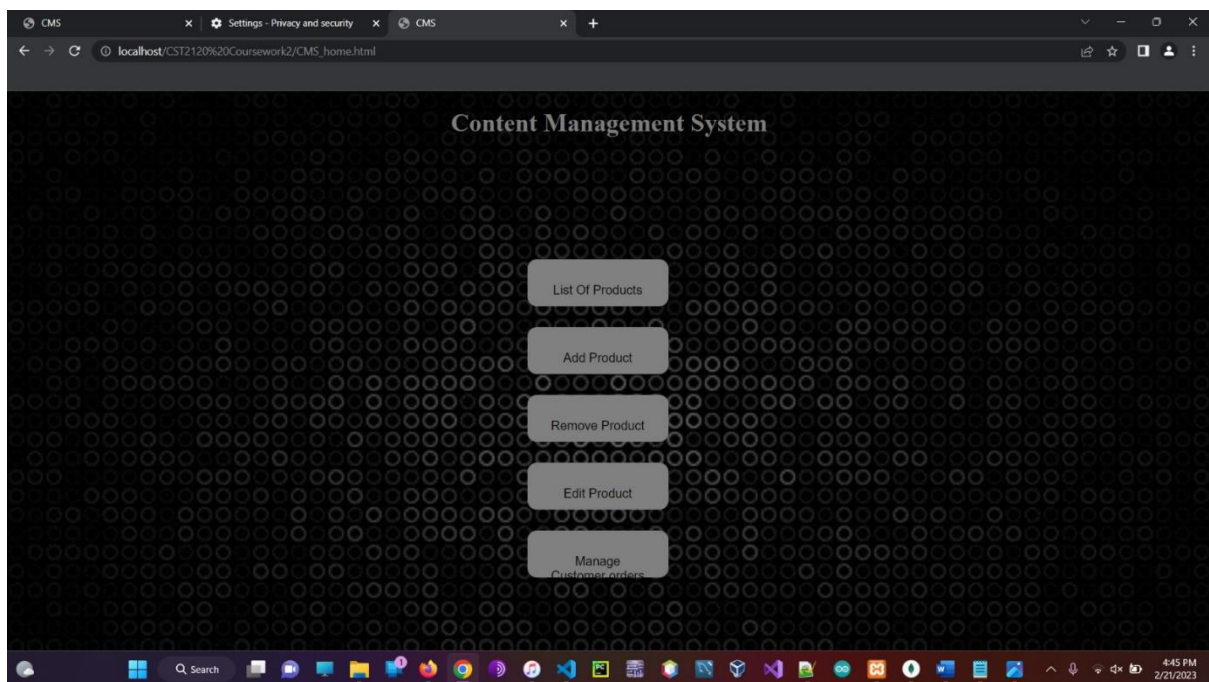


*Figure 34: Dashboard CMS*

The staff can choose among these options according to the task required.

# Listing of Products in CMS:



*Figure 35: Product list 1*



*Figure 36: Product list 2*

*Figure 37: Product list 3*

| A005 | sPhoneX | Ceramic Shield front, tougher than any smartphone glass | Surgical-grade stainless steel | Water resistant to a depth of 6 meters for up to 30 minutes | | £799 | 5 | | | Serious power. | 1 | white | blac |
| B001 | sPhone11 | Compatible with MagSafe cases, wallets, wireless chargers, and more | Aerospace-grade aluminum | 2778-by-1284-pixel resolution at 458 ppi | | £599 | 10 | | | Serious value. | **Warning**: Undefined array key "diffcolors" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **132** | **Warning**: Undefined array key "color1" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **135** | War "col C:\x Cou on li |
| B002 | sPhoneZ | 6.1-inch (diagonal) all-screen OLED display | ProMotion technology with adaptive refresh rates up to 120Hz | 2,000,000:1 contrast ratio (typical) | | £599 | 9 | | | A total powerhouse. | 1 | red | blac |
| B003 | PhoneS5 | Rated IP68 (maximum depth of 6 meters up to 30 minutes) | 6-core CPU with 2 performance and 4 efficiency cores | 16-core Neural Engine | | £450 | 10 | 1 | £499 | As amazing as ever. | **Warning**: Undefined array key "diffcolors" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **132** | **Warning**: Undefined array key "color1" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **135** | War "col C:\x Cou on li |
| B004 | PhoneS6 | Second-generation sensor-shift optical image stabilization | Portrait mode with advanced bokeh and Depth Control | HDR video recording with Dolby Vision up to 4K at 60 fps | | £499 | 6 | 1 | £699 | Incredible. | 1 | white | red |



*Figure 38: Product list 4*

| | | OLED display | refresh rates up to 120Hz | (typical) | | | | | | powerhouse. | | | |
| B003 | PhoneS5 | Rated IP68 (maximum depth of 6 meters up to 30 minutes) | 6-core CPU with 2 performance and 4 efficiency cores | 16-core Neural Engine | | £450 | 10 | 1 | £499 | As amazing as ever. | **Warning**: Undefined array key "diffcolors" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **132** | **Warning**: Undefined array key "color1" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **135** | War "col C:\x Cou on li |
| B004 | PhoneS6 | Second-generation sensor-shift optical image stabilization | Portrait mode with advanced bokeh and Depth Control | HDR video recording with Dolby Vision up to 4K at 60 fps | | £499 | 6 | 1 | £699 | Incredible. | 1 | white | red |
| B005 | PhoneS7 | 4K video recording at 24 fps, 25 fps, 30 fps, or 60 fps | Cinematic mode for recording videos with shallow depth of field | Time-lapse video with stabilization | | £399 | 10 | | | The Ultimate phone. | **Warning**: Undefined array key "diffcolors" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **132** | **Warning**: Undefined array key "color1" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **135** | War "col C:\x Cou on li |
| C001 | XPhone8 | Second-generation sensor-shift optical image stabilization for video | HDR video recording with Dolby Vision up to 4K at 60 fps | Ultra Wideband chip for spatial awareness | | £550 | 10 | 1 | £599 | Beyond. | **Warning**: Undefined array key "diffcolors" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **132** | **Warning**: Undefined array key "color1" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **135** | War "col C:\x Cou on li |
| C002 | XPhone9 | Enabled by TrueDepth front camera for facial recognition | Slo-mo video support for 1080p at 120 fps or 240 fps | True Tone display | | £699 | 7 | | | Special. | **Warning**: Undefined array key "diffcolors" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **132** | **Warning**: Undefined array key "color1" in **C:\xampp\php\www\CST2120 Coursework2\CMS_list.php** on line **135** | War "col C:\x Cou on li |

*Figure 39: Product list 5*

It displays the list of products to the staff.

## Add Products Page:



*Figure 40: Adding Product*

The staff needs to fill in all the information of the products being added.

## Remove Products Page:



*Figure 41: Remove Product*

## Edit Product Page:



*Figure 42: Edit Product1*

*Figure 43: Edit Product2*

## Managing Customer Orders:



*Figure 44: Viewing and deleting order*

## 1) Social Engineering attack:

A berry shop employee receives an email from an individual who is impersonating the company's name without authorization. The email tells the employee that he needs to enter again his account name and password as there is an issue with his account. As a result, the employee's account will be stolen and the attacker might have access to the company's important information such as the customers' personal information. To prevent such attacks, Berry Shop has educated its employees that it will never ask by email to its employees to enter their accounts' details.

## 2)DOS – Network Flooding attack:

A DOS Network flooding attack makes Berry Shop's server crash by sending it lots of information. As a result, the company's legitimate users, the employees and the customers, will be able to access to Berry Shops' website. To prevent such kind of attack, Berry Shop performs a network vulnerability audit.

## 3)NoSQL Injection attack:

An attacker injects a code into commands for the Berry Shop database. As a result, the attacker might log in as an administrator which means that he will have an admin access to the database and can delete all the data. To prevent such kind such attack, Berry Shop checks with the server-side scripting language, PHP, if the website is receiving malicious inputs.

## 4)Rootkits recording keystrokes of users:

An attacker used a backdoor to install malicious software on Berry Shop's computer. As a result, the attacker will be able to record the keystrokes of the users, which he will help him to get login name and passwords of users. To prevent this, the Berry Shop will have to use firewalls, so that they block access to ports and prevent the software from communicating with the internet on certain ports.

## Privacy Issues

## 1)Tor:

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One of Berry Shop customers uses Tor browser to protect his privacy. The problem is that Tor does not provide any protection against privacy issues when he logins on the website to make an order. To prevent such kind of issue, the user must use Tor only to watch the contents of the website as a privacy protection and when he needs to order something he will have to login.

2)Credit Cards:

Most of Berry Shop's customers use credit cards to purchase a product. The problem is that every purchase that they make will be tracked. To prevent this, it is recommended that the customers purchase products using Bitcoin which is decentralized and will give them some privacy.

3)Cookies:

The Berry Shop is using cookies for tracking without the consent of their customers. As a result, this is illegal and will affect the customers' privacy. To prevent such issues, the shop asks its customers permission before tracking and will try to minimize the storing of customers' data for their privacy.

# Legal Issues

1)Personal Data:

The Berry Shop asks its customers to enter their statement of account when registering an account on the website. This is something irrelevant to the shop and might be illegal. As a result, the customers will lose their privacy and the company might get some penalties from the Information Commissioner. To prevent this, the Berry Shop will have to refer to the Information Commissioner's Office criteria for personal data before asking customers to enter any personal data.

2)Liability for Illegal Content:

One of the Berry Shop customers uploads an inappropriate profile picture which is not accepted by the law. As a result, the company might get held responsible for storing illegal data from customers. To prevent this, as soon as the company is aware that a customer has uploaded illegal information, the company must take actions immediately.

3)Transfer of data abroad:

Berry Shop is sending its customers' data in Australia. This is something illegal to move personal data from the EU to a non-EU country and Australia has inadequate data protection laws. To prevent this, the company must send its data to other EU countries if needed or if certain conditions are met, they can send it to a non-EU country.