

CST2120 – COURSEWORK 2 – FINAL REPORT

SECURITY, PRIVACY AND LEGAL ISSUES

Security, privacy and legal issues must be analyzed and efficiently prepared against when running an e-commerce website that handles vulnerable and important customer information. These issues can potentially pose varying levels of risk that can threaten commercial websites. The listed issues can be applied to our e-commerce clothing website as it would handle vulnerable customer data such as names, addresses and bank details.

Firstly, one security issue that could arise is a social engineering attack, which can be briefly described as the manipulation of people into obtaining confidential information. For example, establishing trust with a victim by impersonating a worker of the company, and asking questions specifically aimed at gathering important personal data. Phone numbers, bank details and passwords can easily be obtained by this method. This issue could be prevented by training employees on security protocols and identifying which information is sensitive and evaluating its exposure to breakdowns in security. Another security issue that could arise is a denial-of-service attack, whereby the perpetrator stops a system from functioning, and temporarily unavailable by overloading the machine. A firewall could be used to deny traffic from attackers, or a more secure method would be application front-end hardware, which analyses data packets and identifies them as dangerous.

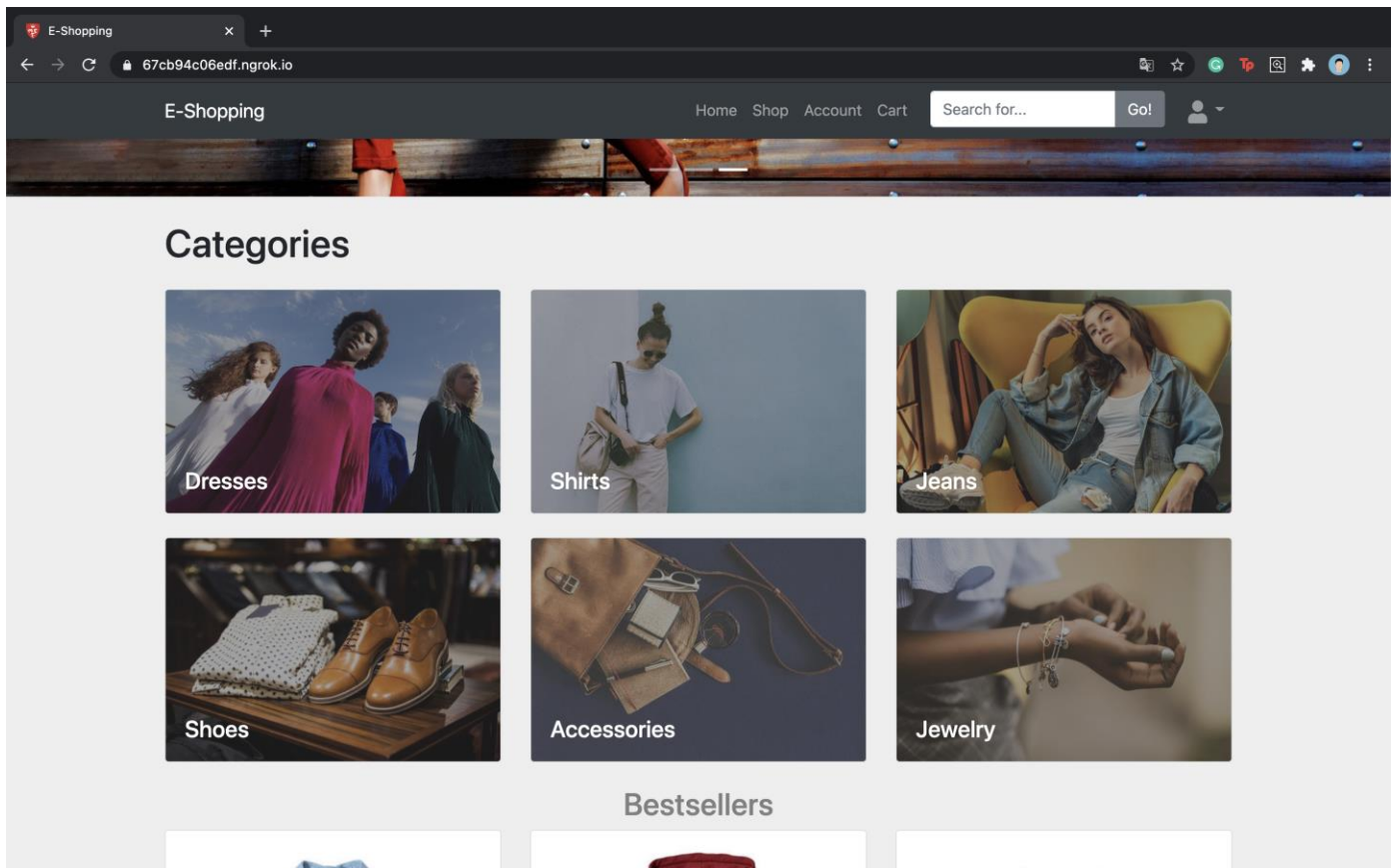
A privacy issue that could arise is a cash and credit card breach. Every purchase made by a customer, along with the location the payment was made, has a possibility of being tracked. A loss of money, an exposure of home addresses and emails, can ultimately lead to a dangerous breach of privacy that results in a potentially large loss of money. Steps that can be taken to prevent this could be a firewall installation, testing security controls on a frequent basis, as well as minimizing customer data by storing as little information as possible. This increases their privacy and provides damage control in case a security breach occurs. Another privacy issue that could arise could stem from the use of cloud storage. When relying on a third-party to store data, you're giving partial responsibility of your data to someone else. This data can be accessed by employees and potentially be shared without the customers knowledge. Data leakage can cause serious problems for both the customer and the organization involved. In order to prevent this, educating employees on proper defense practices, to make sure the data does not find itself in the wrong hands by following security protocols. Cloud encryption and passwords can also add an extra layer of protection.

Lastly, most legal issues have a relation to customer data, which is mainly what an e-commerce website would handle. Following on the topic of cloud services, not having full control over the management of data and the divide of responsibility can lead to legal issues involving data leakage. A legal issue can arise from theft of customer data from the database, which puts a high priority on legal liability of the organization involved. This can lead to identify theft, a huge loss of privacy and potentially harmful impacts on families and businesses, as well as damaging the company's reputation and legal costs that could arise. One way to be better prepared, or even prevent, issues such as these, is for the company to acquire an ISO 27000 certificate, which comprises information security standards when managing sensitive data. As well as this, a contract which specifically handles legal issues by stating who owns the data, backup methods, and cyber risk insurance.

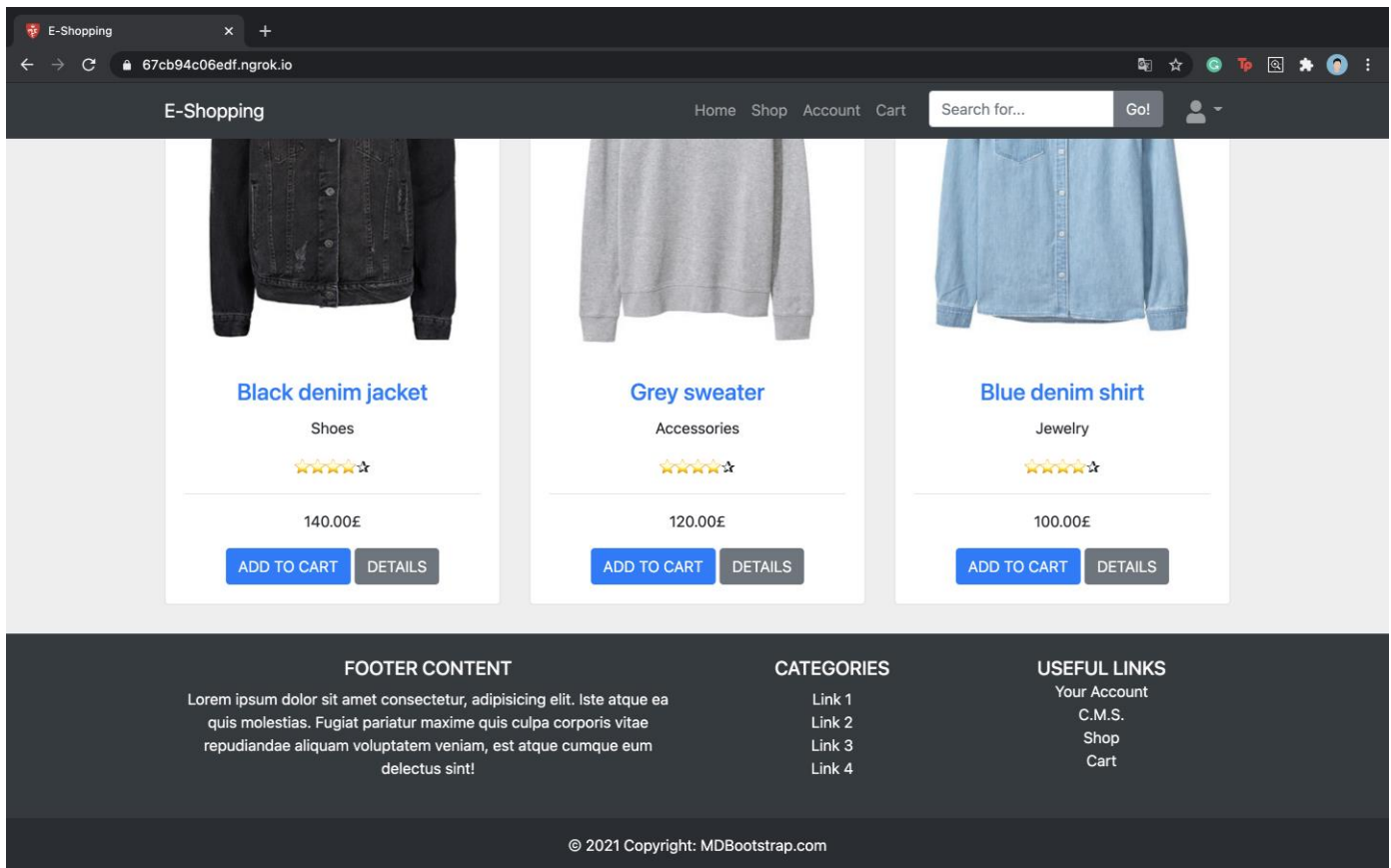
WEBSITE SCREENSHOTS AND SUMMARY

The following screenshots run through the features, displays and interactive sections of the entire project. To briefly describe the project, it is an e-commerce clothing website in which a customer can create an account and log in, browse through categories of items, and purchase them through a process of adding an item to their cart, and checking out. The website has links at the top of the page allowing you to navigate to the store section (where items will be listed), the account section (to sign up to the website), the cart (the user's basket of items), and a drop-down section to log into the website, which can be seen in the first screenshot. As well as this, the CMS created for the purpose of viewing orders, adding stock and managing customer data.

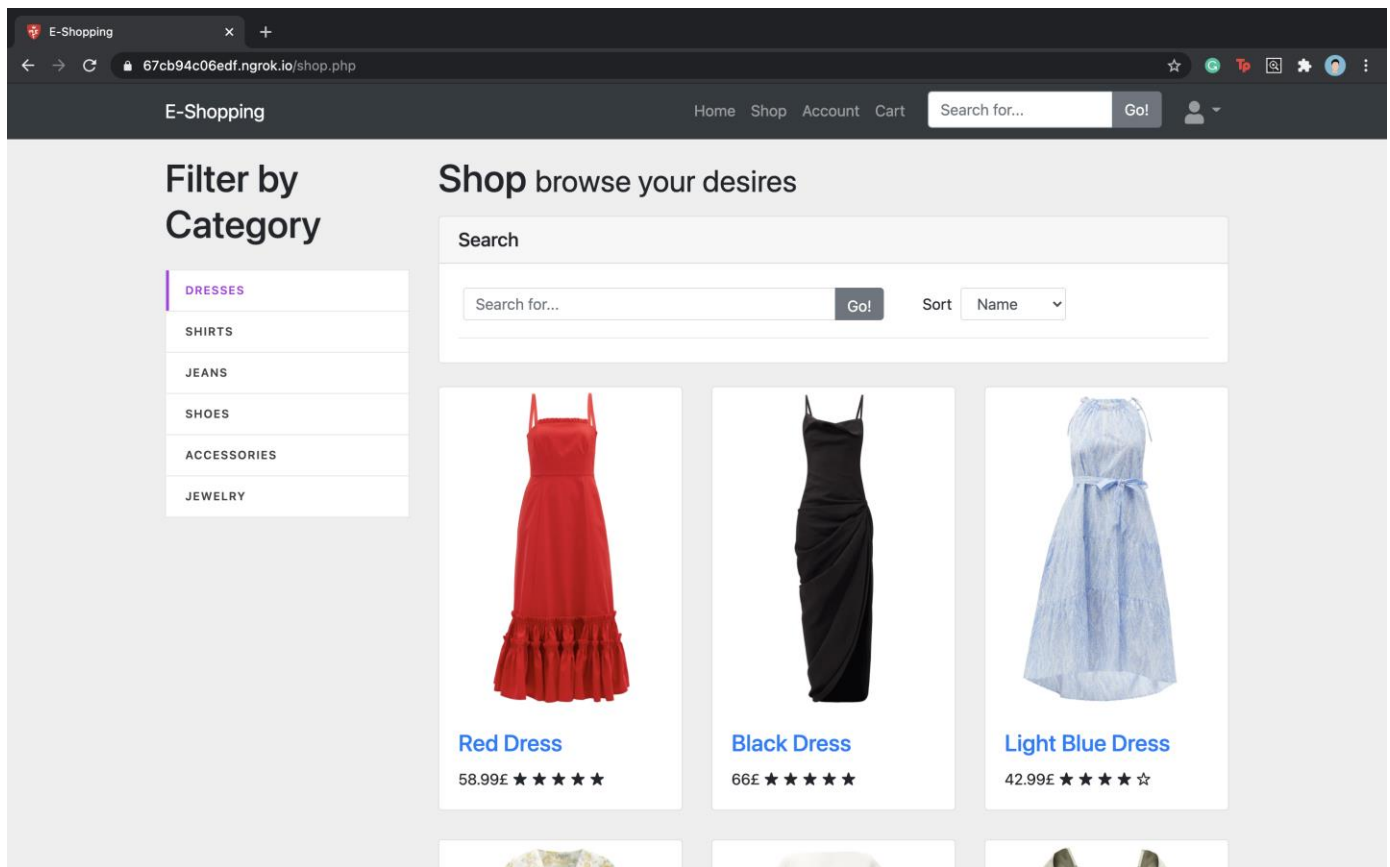
(1) - This screenshot displays the home page, where categories are listed with images and labels for the user to navigate, and below them a 'bestsellers' section, usually shown on various popular clothing websites.



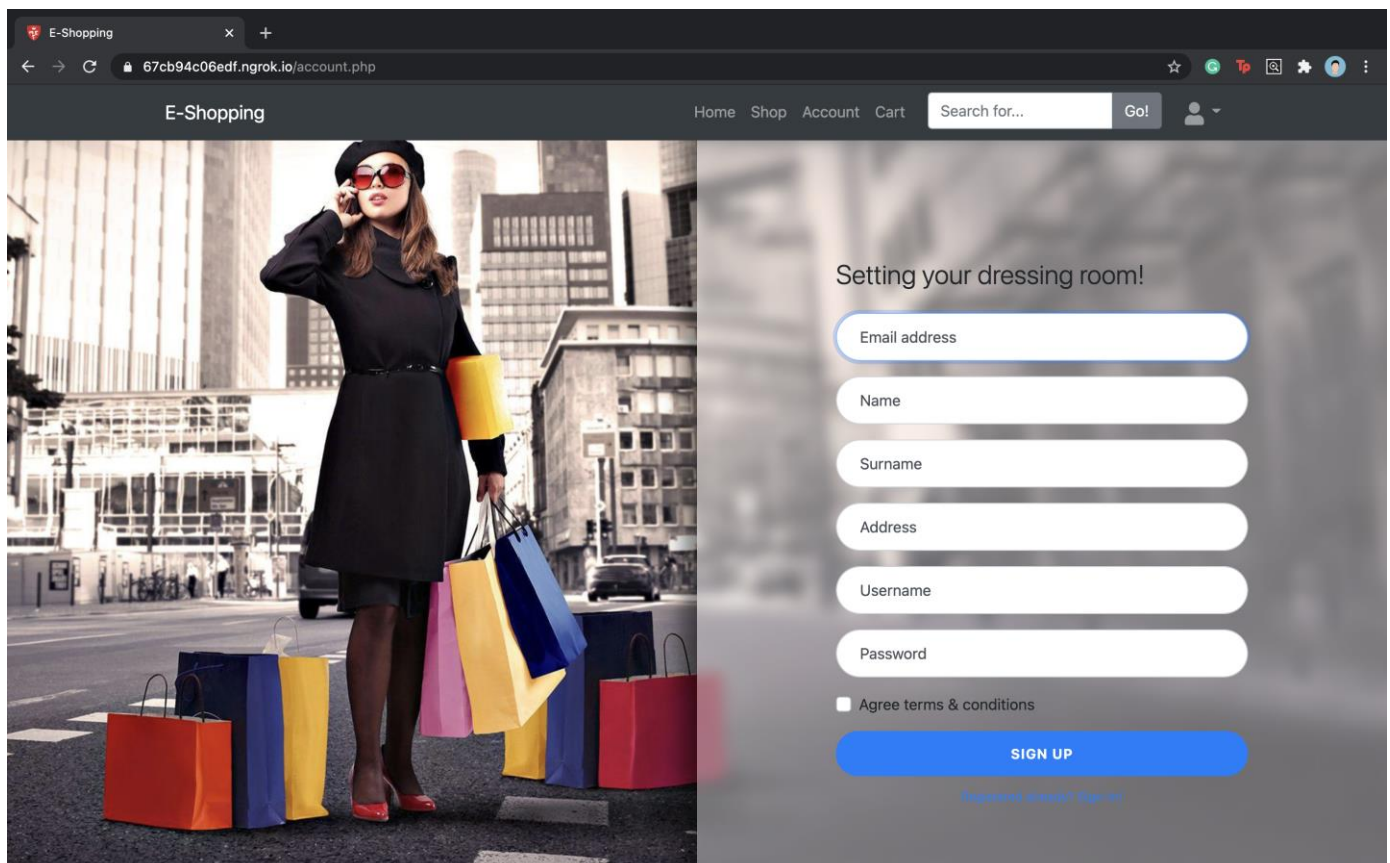
(2) - This screenshot displays the footer, which includes useful links to the account section, the CMS, shop and cart.



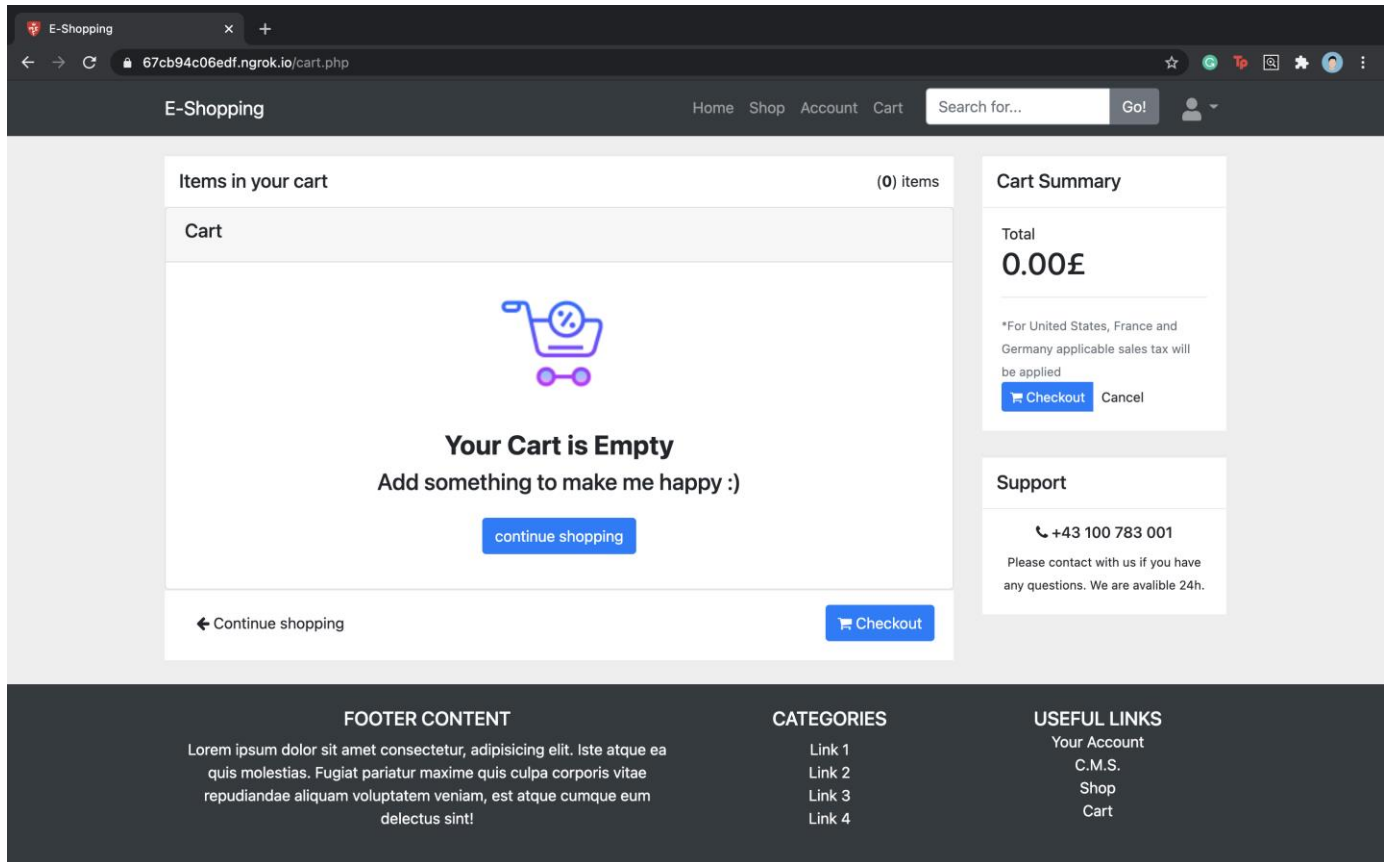
(3) - Following on from that, the 'shop' page, where items are listed and split into categories for the customer to browse. There is also a search bar that filters through whatever keyword a customer enters, this is displayed in full function in screenshots (14) to (19). As well as this, you can sort the items based on name, price and rating.



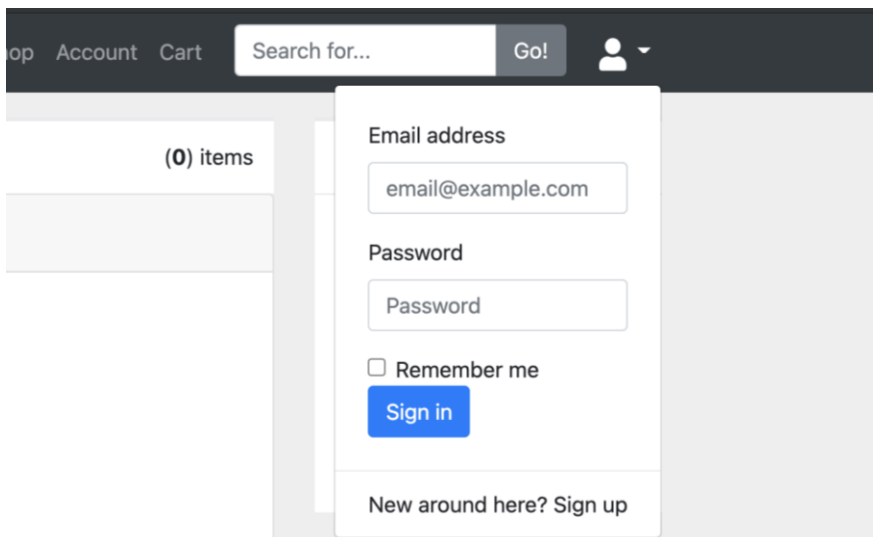
(4) - The 'account' page on the website displays a form for the customer to register and enter their details.



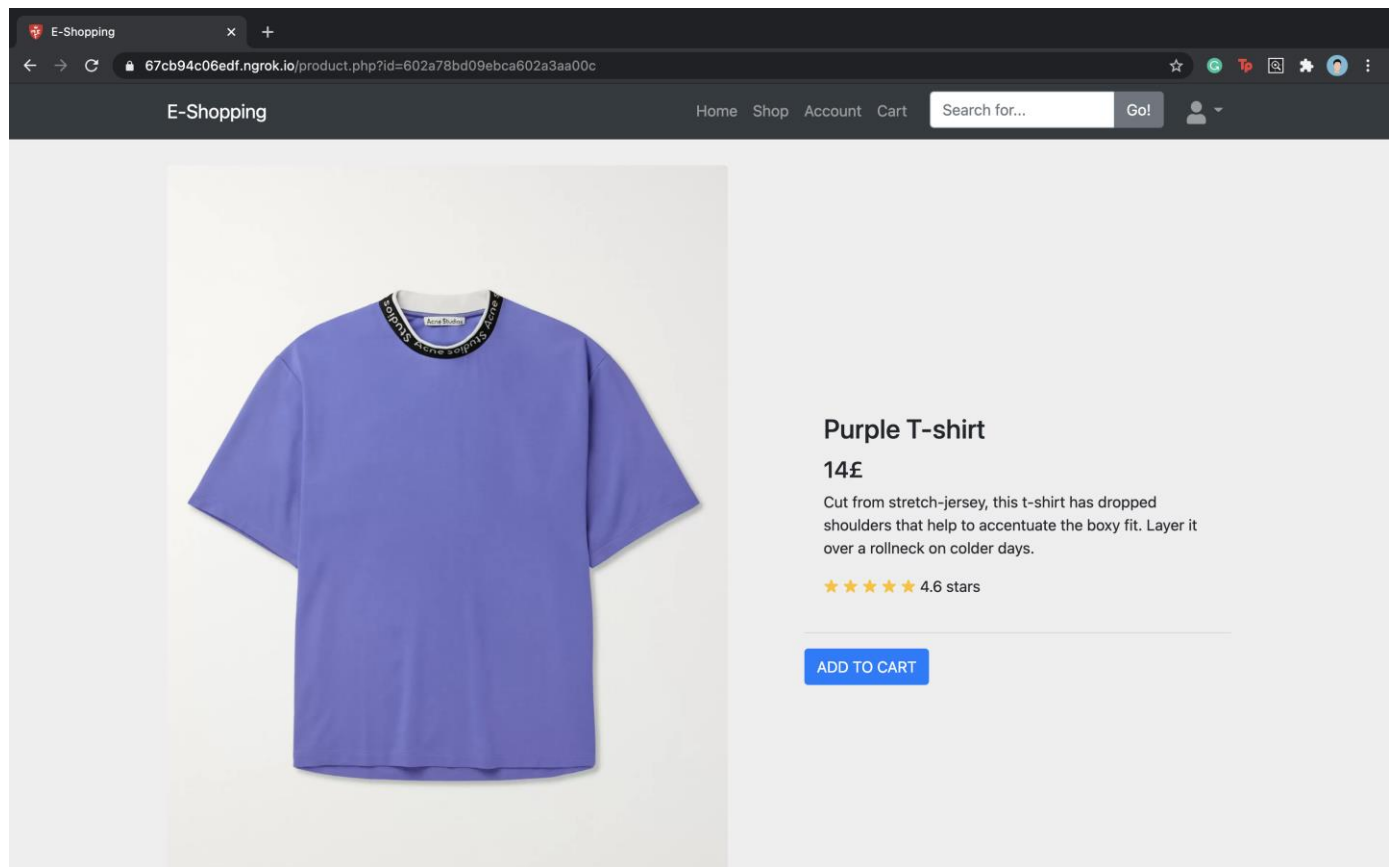
(5) - This screenshot shows the 'cart' page, where the customers items they have added will be displayed, along with their cost and quantity, and the total cost of the whole basket.



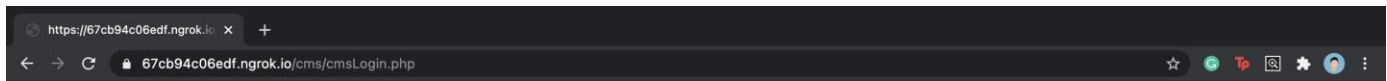
(6) - This screenshot displays the drop-down log-in menu which can be accessed from any page. This allows users to log in with their details.



(7) - This screenshot displays what is seen when a product is clicked on. You can see the name, price and description as well as an 'add to cart' button.



(8) - Navigating to the CMS presents the user with this page, where staff login details can be entered.



Staff Login

(9) - (13) - The CMS allows staff to manage collections of users, products and orders. As you can see, user details containing names, email addresses and balances are listed. Each user's details can be modified with the 'actions' column. The following screenshots present the product collection and the steps that must be taken to add a new item to the database or delete an existing item.













(9)

Manage Users

Collection

Delete

Add New Product

<input type="checkbox"/>	Name	Nickname	Email	Address	Balance	Actions
<input type="checkbox"/>	Francesco	Francy.93	francyccio93@gmail.it	london Quay	397.03£	 
<input type="checkbox"/>	Ale	Ale.96	ale@gmail.com	Rome	397.03£	 
<input type="checkbox"/>	Adam	Ada11	adalat@gmail.com	London	500.00£	 
<input type="checkbox"/>	Dodo	dofra11	dodofra@gmail.com	London	500.00£	 
<input type="checkbox"/>	Daiys	Dasci11	dasysci@gmail.com	Italy	500£	 
<input type="checkbox"/>	James	jam11	eps@gmail.com	London	500£	 

Showing 6 out of 6 entries

Previous12345Next

























(10)

Manage Products

Collection

Delete

Add New Product

<input type="checkbox"/>	Title	Category	Description	Src	Price	Actions
<input type="checkbox"/>	Red hoodie	Shirts	Lorem ipsum dolor sit am...	https://mdbootstrap.com...	22.23£	 
<input type="checkbox"/>	Blue denim shirt	Shirts	Lorem ipsum dolor sit am...	https://mdbootstrap.com...	750.00£	 
<input type="checkbox"/>	Ray Ban	Accessories	The best glass you saw i...	https://assets.ray-ban.co...	99.22£	 
<input type="checkbox"/>	Sapphire & Diamond Earr...	Jewelry	A distinguished pair of e...	https://www.qpjewellers....	399.99£	 
<input type="checkbox"/>	Purple T-shirt	Shirts	Cut from stretch-jersey, t...	https://cache.mrporter.c...	14£	 
<input type="checkbox"/>	Black Sweatshirt	Shirts	This sweater is made fro...	https://images.burton.co...	22.99£	 
<input type="checkbox"/>	Check Flannel Shirt	Shirts	Long sleeved checkered ...	https://gloimg.zafcdn.co...	36.99£	 
<input type="checkbox"/>	Yellow Hoodie	Shirts	Basic long sleeve drawst...	https://res.wmmart.com/...	22.99£	 
<input type="checkbox"/>	Sapphire Necklace	Jewelry	This classic solitaire pen...	https://pics.angara.com/a...	365£	 
<input type="checkbox"/>	Infinity Bracelet	Jewelry	Rhodium plating and whit...	https://asset.swarovski.c...	300£	 
<input type="checkbox"/>	Gold Ring	Jewelry	This classic 14 yellow gol...	https://bnsec.bluenile.co...	180£	 
<input type="checkbox"/>	Blue Alligator Watch	Jewelry	Classic timepiece in etain	https://content.thawagor...	230.65£	 









(11)

Manage Orders

Collection

Delete

Add New Product

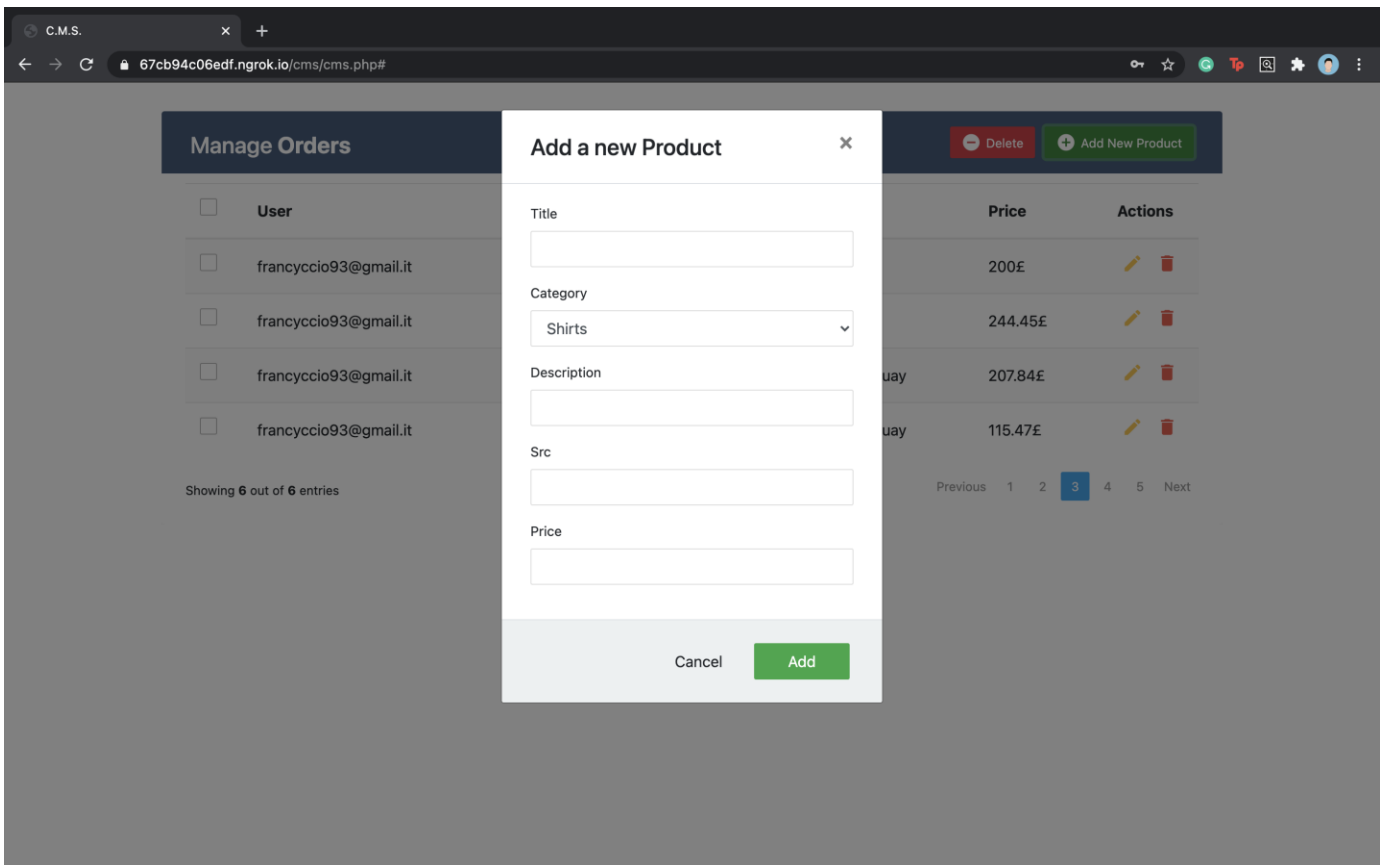
<input type="checkbox"/>	User	Date	Products	Address	Price	Actions
<input type="checkbox"/>	francyccio93@gmail.it	12/12/2020	2	London	200€	 
<input type="checkbox"/>	francyccio93@gmail.it	16/02/2021	2	Italy	244.45€	 
<input type="checkbox"/>	francyccio93@gmail.it	17/02/2021	1	london Quay	207.84€	 
<input type="checkbox"/>	francyccio93@gmail.it	17/02/2021	1	london Quay	115.47€	 

Showing 6 out of 6 entries

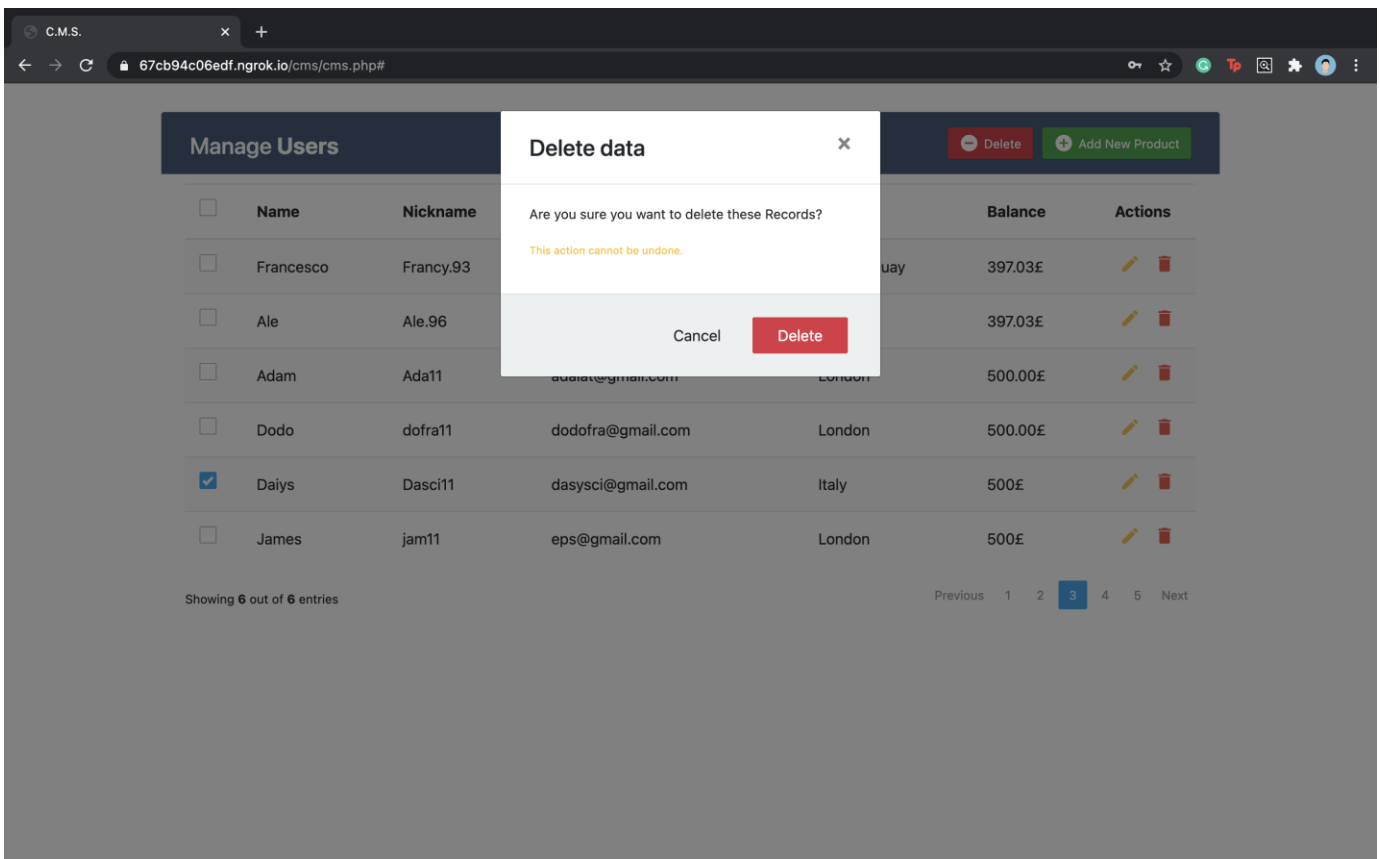
Previous 1 2 3 4 5 Next



(12) - The name of the added item is entered, the category, the description, price and the source of the image.



(13)

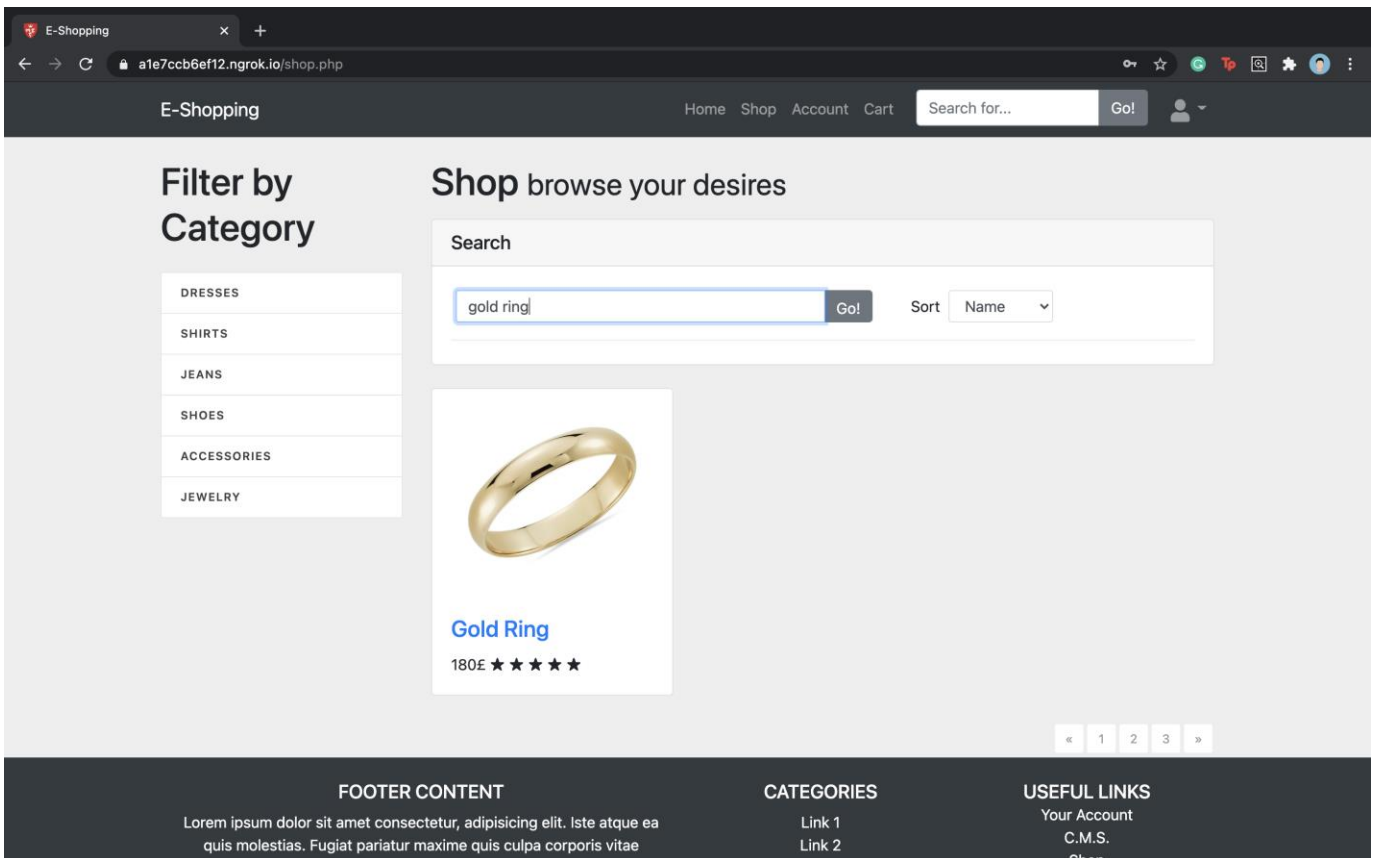


(14) - (19) - The following screenshots run through the process of logging into an account and going through the steps taken to order an item. Firstly, (14) displays my user profile. You can see my details under 'profile settings', as well as my current balance of £100, and my ID. This information can be updated through the CMS or even through the 'update profile' button. Screenshot (15) shows me entering 'gold ring' in the search bar on the store page, which brings up the gold ring item along with its price and rating. Screenshot (16) shows myself adding another item to my cart, followed by a confirmation message. In (17) I have navigated to my cart, which shows the item I have just added, along with the total cost of my cart and the option to checkout. I also have the option to remove it if necessary. (18) shows the confirmation message once I have checked out, and finally in screenshot (19) I have returned to my profile to show that the price has been deducted from my current balance, and the item is now listed on the 'orders list', along with the date it was placed.

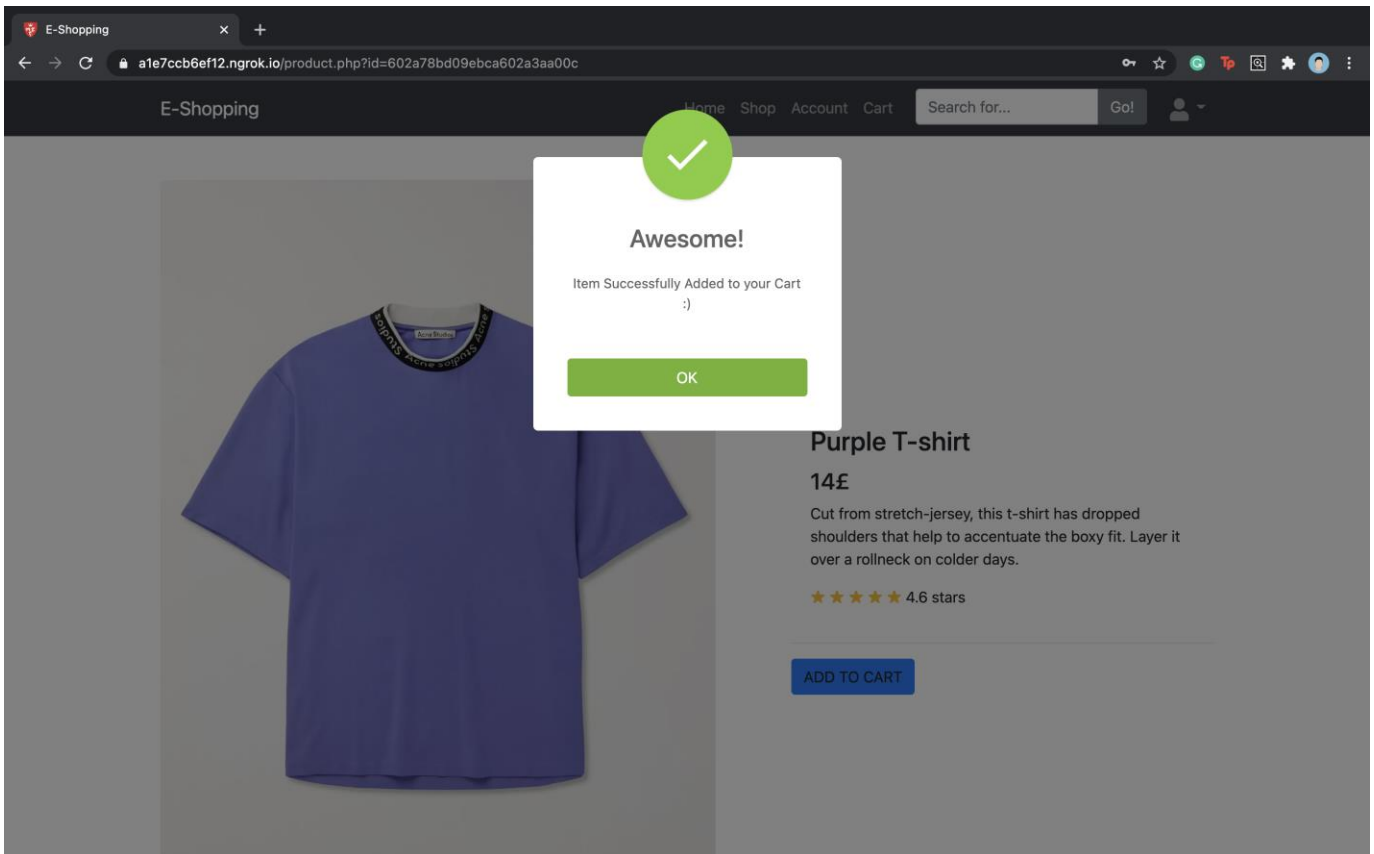
(14)

The screenshot shows a web browser window with the URL `a1e7ccb6ef12.ngrok.io/account.php`. The page title is "E-Shopping". The navigation bar includes links for "Home", "Shop", "Account", and "Cart", along with a search bar and a "Go!" button. The main content area displays the user's profile settings. On the left, there is a profile card for "adam latif" with a balance of "100€" and an ID. Below the card are links for "ORDERS LIST" and "PROFILE SETTINGS". The right side of the page contains form fields for "First Name" (adam), "Last Name" (latif), "E-mail Address" (adam@me.com), "Username" (adamlatif), "Address" (home), and "New Password" (masked with dots). There is a checkbox for "Subscribe me to Newsletter" and an "Update Profile" button. The footer section is divided into three columns: "FOOTER CONTENT" with placeholder text, "CATEGORIES" with links 1 through 4, and "USEFUL LINKS" with links for "Your Account", "C.M.S.", "Shop", and "Cart". The footer also includes a copyright notice: "© 2021 Copyright: MDBootstrap.com".

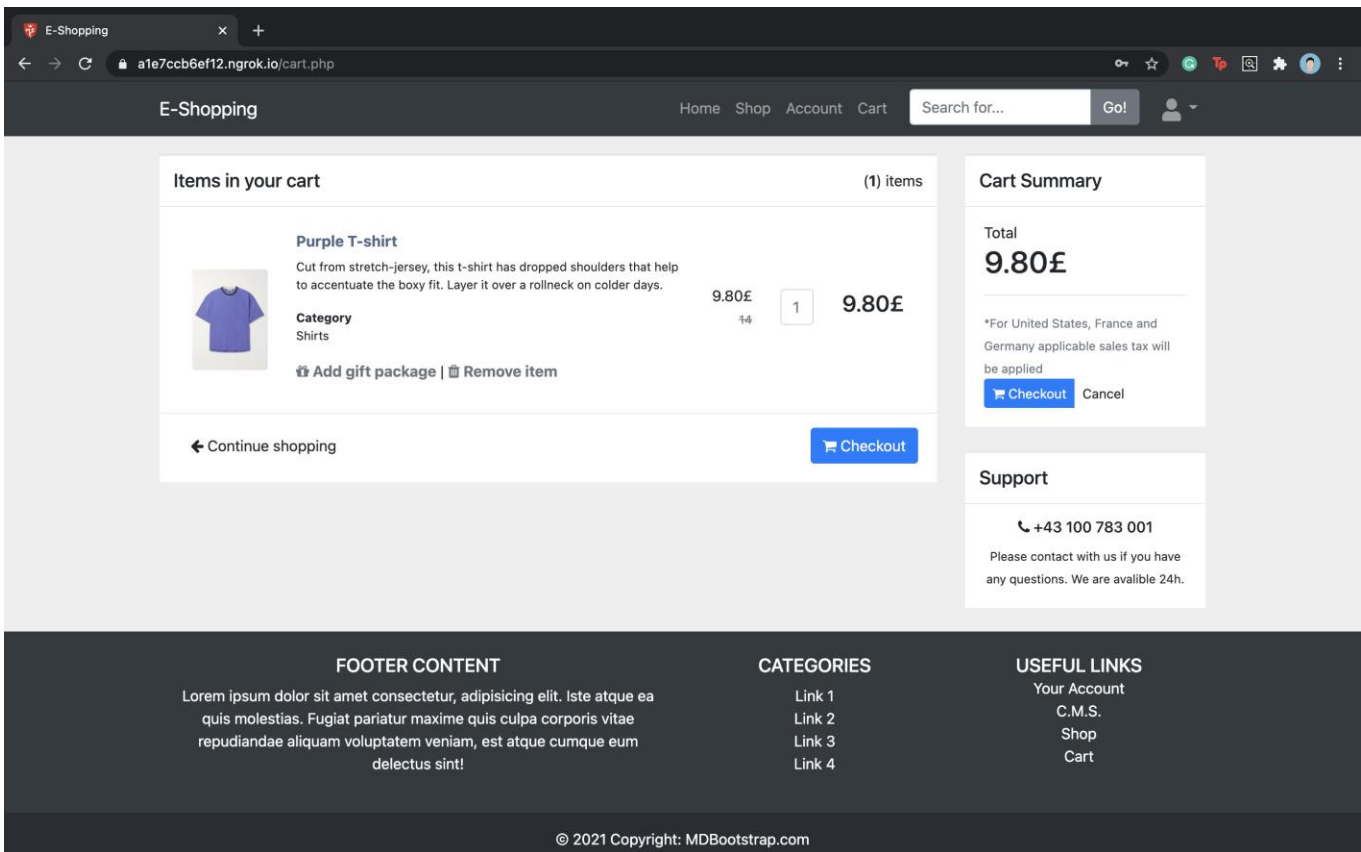
(15)



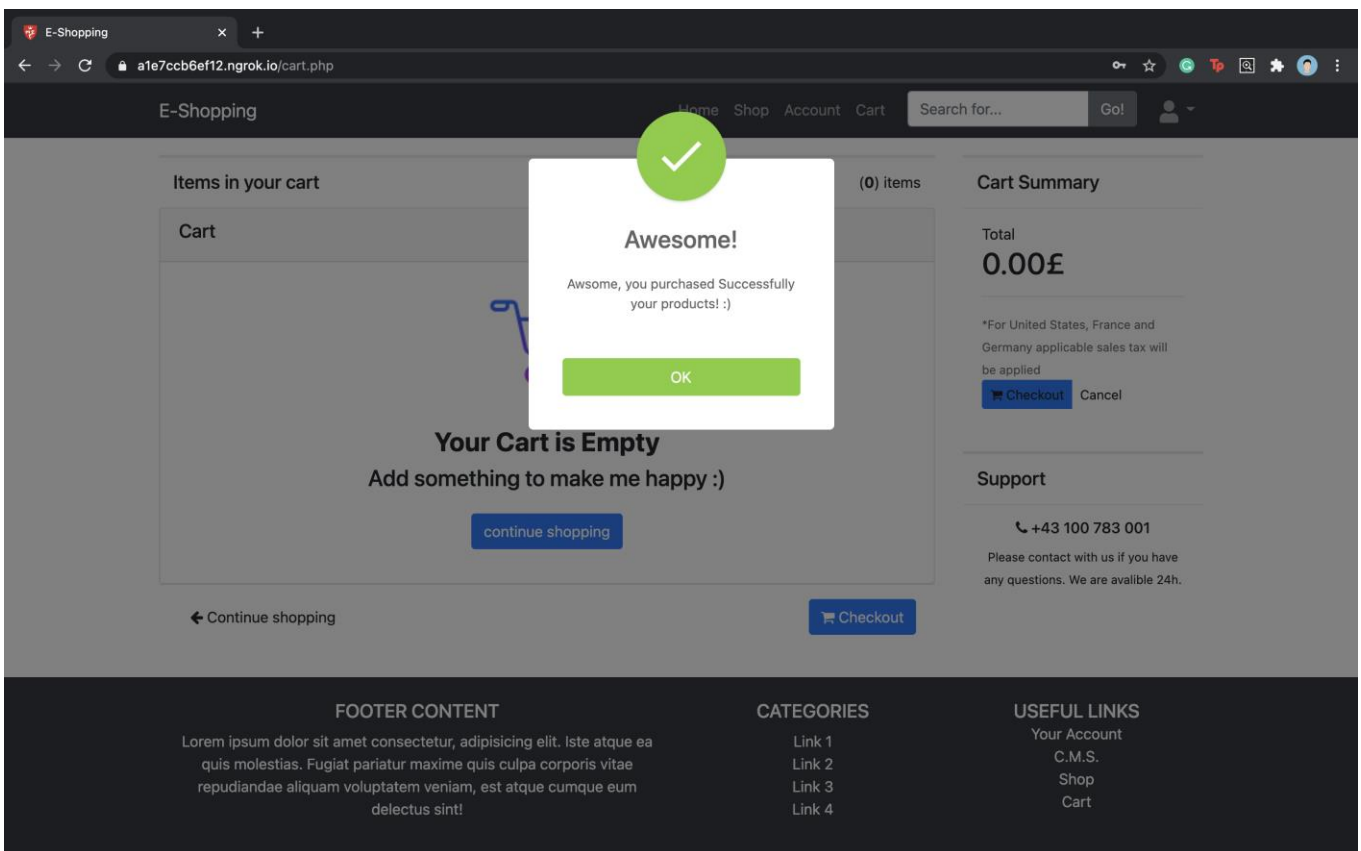
(16)



(17)




(18)



(19)

Your current balance is: 86£



adam latif
ID: 602fc14e57750000640024a4


[ORDERS LIST](#) 1

[PROFILE SETTINGS](#)

Order Details

[Export to Excel](#) [Refresh List](#)

Show 5 ▼ Status Any ▼ Name 🔍

#	Customer	Quantity	Order Date	Address	Net Amount	Action
1	 Purple T-shirt	1	19/02/2021	home	14£	➔

Showing 5 out of 25 entries

Previous 1 2 3 4 5 6 7 Next

(20) - This screenshot shows a product review section on an item, with the option of leaving a review.

E-Shopping

Home Shop Account Cart Search for... Go! 👤

Product Reviews

Posted by Francy.93 on 01/01/2019

★★★★☆

Quality looks fine, but the size is too small.

Posted by No DataBase result! (common.php - line 60) on 12/12/2012

★★★★☆

I bought 3, one for me and the other 2 for my team members. They were so excited to wear the same team shirt







Posted by No DataBase result! (common.php - line 60) on 22/01/2021

★★★★★

Nice shirt! I will definitely purchase one more.

[Leave a Review](#)

Products you might like



ADDITIONAL NOTES ON PROJECT

Connecting to a Database/Selecting Database and Collection: I have included libraries that must be required in the `__DIR__` function to get your current script's directory of 'autoload.php'. I have created an instance of MongoDB client set with SSL. I have selected the Databases to form the MongoDB and the collection inside the database of MongoDB.

Extract data from the server: I have extracted the data from specific external variables by optimally filters and collected within the database that was sent to the server. Filters the string optionally encoded into a special character.

Find: I have created a PHP array with our search criteria by using variables of username and title within the database. I have created a function that finds all the customers and items that match these criteria by using MongoDB find function. I have created a foreach loop the function that allows iterating over the set of documents that matched the search criteria and output all the documents and print the results.

Add: I have converted the PHP array to the customer database containing category, title, description, image, and price. Then I added a new product to the database by inserting a document into a collection. I have echoed the result back to the user by using printf that allows the output into a formatted string.

Delete: I have built a PHP array with delete criteria of the username from the database. Database stored in a collection that requires an id field as a primary key then it will be inserted into the PHP document with the driver automatically generating an Object Id for the `_id` field. Then I delete a customer from the database by removing a single document from a collection. I have echoed the result back to the user by using printf that allows the output into a formatted string.

Replace: I have created the criteria for finding a document to Replace by using variables of Id to replace within the database. I have Data to Replace in the product database containing category, title, description, image, and price. Then I Replace an item Id number from the database by Replacing a single document from a collection. I have echoed the result back to the user by using printf that allows the output into a formatted string.

Update: I have created a PHP array with our search criteria by using the search string variable. I have created a function that finds all the items that match these criteria by using MongoDB find function. I have created a foreach loop the function that allows iterating over the set of documents and linked to the replace customer PHP file into update PHP, so it replaces the item and updates the item detail.