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RESPONSIVE WEB DESIGN AND PHP E-COMMERCE

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Bachelor's Thesis
Spring 2018
Information Technology
Oulu University of Applied Sciences

ABSTRACT

Oulu University of Applied Sciences
Degree Programme in Information Technology

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Title of Bachelor's thesis: Responsive Web and PHP e-Commerce

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Term and year of completion: Spring 2018

Number of pages: 40

The main purpose of this bachelor's thesis was to develop a responsive design online shopping website. Which is meant for female shopping website. The products on the website are divided into women's clothing and accessories.

When starting to build the website required to install XAMPP, which is the basic web development environment. After creating the website folder under the "xampp/htdocs" directory, the built website could be tested locally. During the development process, the PHP language was used to edit the functionality of the website. The layout of the Bootstrap was built, and the responsive design website was edited using CSS3, to use the PayPal's API to complete the payment function.

As a result of the thesis, the responsive shopping website can adapt to the computer screen of 1200 pixels and the mobile phone screen of 380 pixels, making it convenient for users to browse the website on the computer screen or mobile screen. In the future, will improve the functionality of the website will be improved and more different sizes of screens will be adapted to it.

Keywords: Responsive web design, Bootstrap, CSS, PHP, E-commerce

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VOCABULAR

Term	Meaning
RWD	An approach to web design which makes web pages render well on a variety of devices and window or screen sizes.
Bootstrap	A self-starting process that is supposed to proceed without external input.
CSS	Cascading Style Sheets
Apache	A free and open-source cross-platform web server.
MySQL	An open-source relational database management system.
PHP	Hypertext Preprocessor.
UI	User Interface.
API	Application Programming Interface.

1 INTRODUCTION

Nowadays, e-commerce is developing very rapidly, because it has many advantages that traditional businesses do not have.

First of all, e-commerce is not limited by geographical area, the network can cover the whole world without restriction. Secondly, it is not limited by time and users can shop at any time of the day. Thirdly, it has no size constraints, and one only needs to update the server storage when the number of customers or products grows excessively. At the same time, in the era of big data, it is possible to collect user preferences and needs and advertise products based on their daily browsing content. This is an advantage that traditional businesses do not have.

The development of today's mobile devices is fast, and the number of smart phone users has exceeded the number of PC users in just a few years. And the customers who use mobile have higher shopping frequency because it has even fewer restrictions on user shopping, they can shop anywhere, anytime.

Therefore, the purpose of this thesis is to introduce the development process of the most popular responsive design shopping websites. It can adapt to the different screen of devices, and it can satisfy both users of computer and users of mobile browsing. Based on analyzing of different shopping websites, this thesis has collected the must have functionalities for an online shopping website.

2 PROJECT IMPLEMENTATION

This chapter describes the development process of the project.

2.1 Plan of the project

At the beginning of a product development process, a clear development plan is a good start point and also good for the success of late stage development.

First, a developer needs to confirm what kind of website he/she is developing, the nature of the website, and the customer group that the website is targeting. Then a plan for the function of the website should be made. And according to the analysis of the same nature of the website on the market, what features are needed for the developed website to give users a good shopping experience. Therefore, the project has collected the must have functionalities :

1. Content management capabilities
2. Search engine
3. Reporting tools
4. Email marketing integration
5. PayPal payment

A user interface should be created after the development plan of the website function. It should be similar to a website of the same nature on the market, because users are already familiar with the similar user interface of those websites, so that users can easily get familiar with how to use these functions when they are browsing this website.

This user interface will use the color black and white grey, which is more concise and intuitive.

2.2 How to implement the project

This chapter will introduce which tools were used to implement the project and the programming language used.

2.2.1 PHP

PHP is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML. [1]

With PHP, creating an online website is much easier and quicker than before. The extensible architecture and features of PHP make source code programming easier by providing standard templates and plug-ins. [2]

2.2.2 MVC

Model–view–controller in PHP is also called Web MVC. A Model–view–controller is an architectural pattern commonly used for developing user interfaces that divide an application into three interconnected parts. This is done to separate internal representations of information from the ways information is presented to and accepted from the user. The MVC design pattern decouples these major components allowing for an efficient code reuse and parallel development. [3]

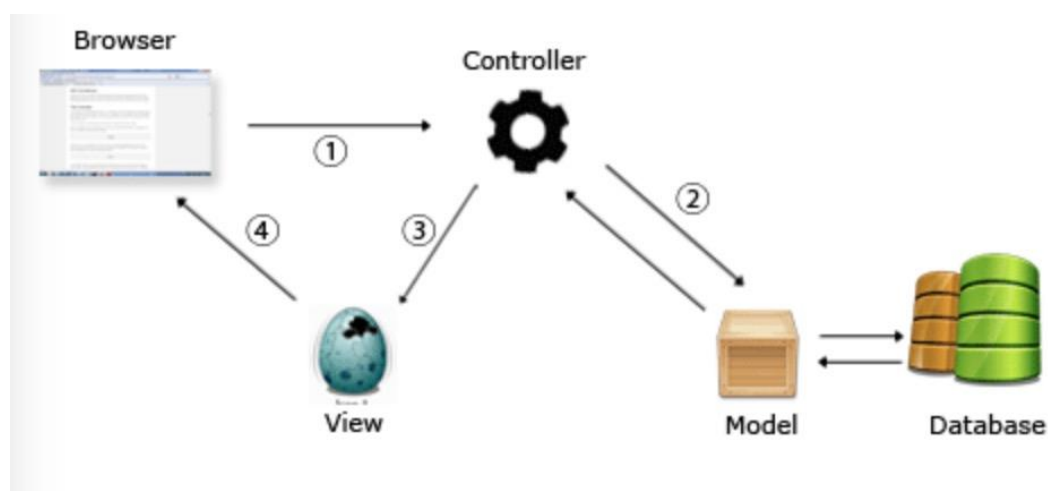


FIGURE 1 Structure of MVC

The figure 1 shows the structure of MVC. Firstly, the controller intercepts a request from the user. Then, the controller calls the model to finish reading and writing the state. Thirdly, the controller transfers data to the view. The final result is presented to the user.

2.2.3 XAMPP

XAMPP is a popular PHP development tool, it is also a free open source program that consists mainly of an Apache HTTP server, MySQL database, and scripts written in PHP and Perl. It allows programmers to test on their own computers without the internet access. [4]

The project needs the basic environment: Apache, PHP5.4+ and MySQL.

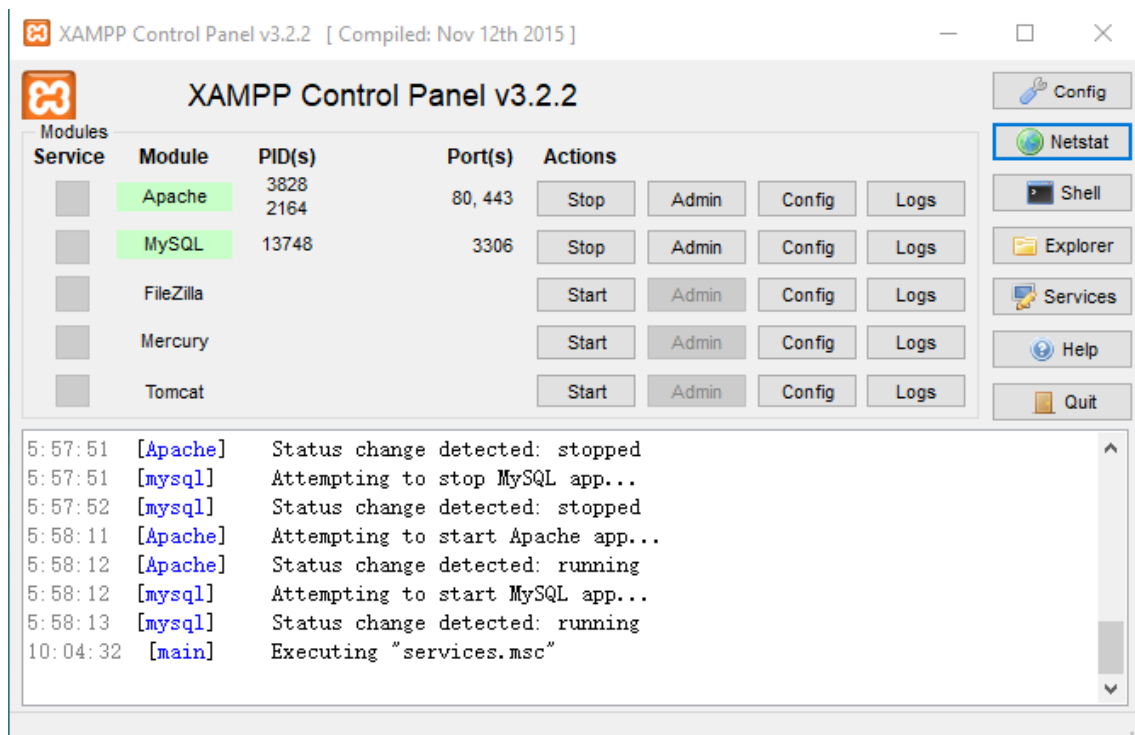


FIGURE 2 XAMPP UI

When going to XAMPP official website to download the appropriate version, the figure 2 shows that XAMPP is running.

- Apache/2.4.33 (Win32) OpenSSL/1.1.0g PHP/7.2.4

FIGURE 3 Version of XAMPP

The figure 3 is a version of XAMPP.

2.3 RESPONSIVE WEB DESIGN

2.3.1 What is responsive web design

Responsive web design (RWD) is an approach to web design which makes web pages render well on a variety of devices with different screen size. It provides the user with a good user experience on device or screen. [5]

For instance, the screen size of the PC is relatively large, it can range from 20 inches up to 30 inches, and the screen size of the mobile phone screen is much smaller, such as the screen size of iPhone is only 5 inches. If the user opens the traditional webpage with their iPhone, the user experience will become particularly bad because the iPhone can only display a small part of the content of the webpage. The rest of the content is hidden beside the screen border. And the user has to scroll vertically to view all the content. As a solution for such an unpleasant user experience, the responsive design can solve all those problems. Like every new technology, responsive web design also has its advantages and disadvantages. It will be explained in the next paragraph.

The Pros:

1. The powerful CSS3 Media Query allows the developer put the minimum effort to fit to a different size screen which means it costs less.
2. It is easy to make changes. The developer can make changes on what needed without an effect on other pages.
3. It can support a multi device and a platform which will save a lot of time and investments during the development process.

The Cons:

1. It may not support the old browser such as IE8 or previews version.
2. The loading speed may take longer because it will load all the CSS and JavaScript file and the loading file will be of a much bigger size.
3. It also has some limitations, usually some big commercial websites will have a lot of content which is exactly what responsive design should avoid. [6]

2.3.2 Bootstrap grid system

Bootstrap's grid system allows up to 12 columns across the page. The figure 4 below shows the Bootstrap grid system work for multiple devices. The Bootstrap grid system has four classes: xs (for small phones - screens less than 576px wide), sm (for phones - screens equal to or greater than 576px wide), md (for tablets - screens equal to or greater than 768px wide), lg (for small laptops – screen size equal to or greater than 992px wide), xl (for laptops and desktops – screen size equal to or greater than 1200px wide). The classes above can be combined together to create more dynamic and flexible layouts. [7]

	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	Extra large ≥1200px
Max container width	None (auto)	540px	720px	960px	1140px
Class prefix	.col-	.col-sm-	.col-md-	.col-lg-	.col-xl-
# of columns	12				
Gutter width	30px (15px on each side of a column)				
Nestable	Yes				
Column ordering	Yes				

Figure 4. The Bootstrap grid system work across multiple devices.

2.3.3 CSS fluid grid system

The fluid Grid System uses the percentage of pixels instead of pixel to define the width. For example, the original width of a picture: 240px, can now be written as width: 20%, This will allow the picture to dynamically change the screen size. [8]

2.3.4 CSS3 media queries

CSS3 media queries are the easiest yet most important part of responding to web design. Using media queries, it is possible to have a region displayed on the PC and hidden on the move. For example, the width of a mobile is about 400, while the width of a traditional PC is about 1366 or more. Using this difference, a media query can be written with a different width. [9]

CSS3 is a new version of CSS. It has more new properties than CSS. The valid code in CSS can be displayed in CSS3. The figure 5 shows that the part edited by CSS3 media queries on this website. The following CSS will appear when the screen is 380px. “img {width: 85%;}” is the CSS fluid grid system.

```
@media screen and (max-width: 380px) {  
  h1 { font-size: 1.8em; }  
  h2 { font-size: 1.4em; }  
  h3 { font-size: 1.1em; }  
  a.btn { font-size: 1em; }  
  img { width: 85%; }  
}
```

FIGURE 5 CSS3 Media Queries

3 MOBILE VERSION VS. DESKTOP SCREEN

This website was used for online shopping. It is built for those women who prefer shopping online. This website contains several basic functionalities, such as navigation, shopping cart, user registration, user login, shopping menu etc. Detailed functions will be explained in following chapters.

3.1 Diagram and basic introduction

The figure 6 shows the basic flow chart of this website. It contains all the necessary steps needed for a good shopping experience on this website.

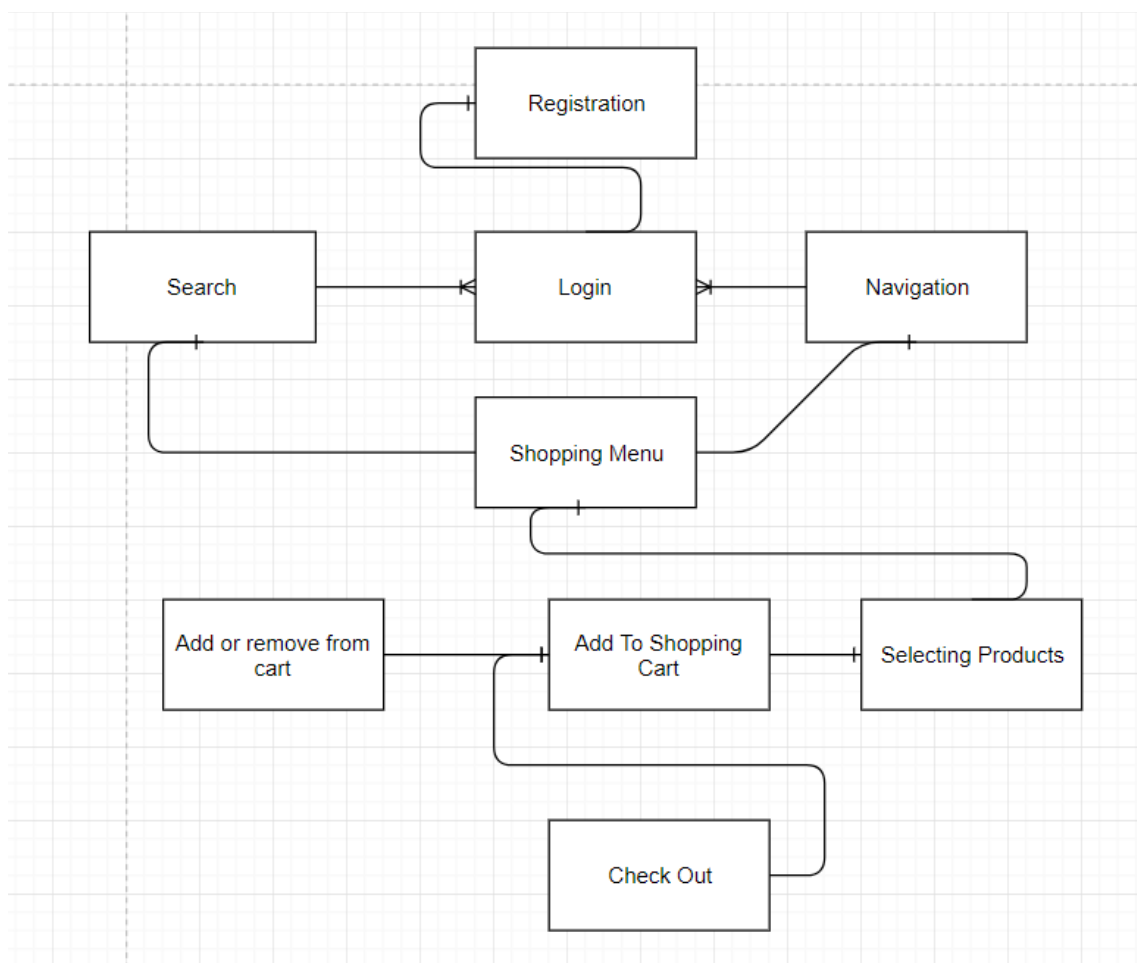


FIGURE 6. The Basic Flow Chart of This Website.

3.2 Navigation

There is different navigation on the desktop screen and on the mobile screen. On the mobile screen, it is presented vertically (Figure 7). The icon hides navigation, When the user hovers the icon, it will display. On the desktop, it is presented horizontally (Figure 8).

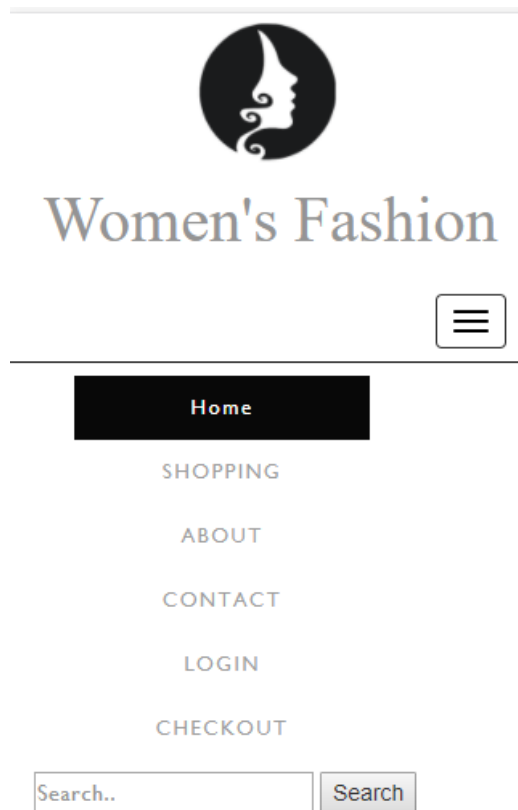


FIGURE 7. Navigation of Mobile Version

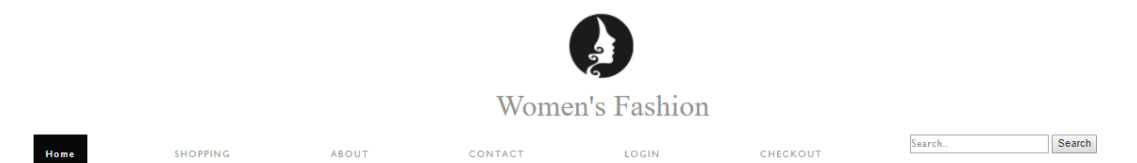




FIGURE 8. Navigation of Desktop Version

3.3 Shopping cart

Checkout pages are rendered differently on the mobile screen (Figure 9) and computer screen (Figure 10). On the phone, images and table list presentation will be vertical.

Checkout



Product	Price	Quantity	Sub-total	
Light coloured top 	\$59.99	3	\$179.97	<input type="text" value="-"/> <input type="text" value="+"/> <input type="text" value="x"/>
Yellow top 	\$69.99	1	\$69.99	<input type="text" value="-"/> <input type="text" value="+"/> <input type="text" value="x"/>

Cart Totals

Items:	4
Shipping and Handling	Free Shipping
Order Total	\$249.96

FIGURE 9. Checkout of Mobile Version

Checkout

Product	Price	Quantity	Sub-total			
 Light coloured top	\$59.99	3	\$179.97	<input type="text" value="-"/>	<input type="text" value="+"/>	<input type="text" value="x"/>
 Yellow top	\$69.99	1	\$69.99	<input type="text" value="-"/>	<input type="text" value="+"/>	<input type="text" value="x"/>

Cart Totals

Items:	4
Shipping and Handling	Free Shipping
Order Total	\$249.96

FIGURE 10. Checkout of Desktop Version

3.4 Contact

The length of form will vary with the screen size of the device. The figure 11 shows the suitable width for the phone screen. The form will be divided into two parts for the beauty of the UI (Figure 12), Because the screen width of the computer will be much larger than that of the mobile phone.

Contact Us

Your Name *

Your Email *

Your Subject

Your Message *

ABOUT
CUSTOMER SERVICE
@Women's Fashion

FIGURE 11. Contact of Mobile Version

Contact Us

ABOUT
CUSTOMER SERVICE
@Women's Fashion

FIGURE 12. Contact of Desktop Version

3.5 Products

The Bootstrap grid is used here (Figure 13). It will quickly complete responsive web design. Each column shows only three products. When used on the medium screen, “col-md-6” means dividing the website page into two parts. And “mb-4” means a margin bottom that is 0.5rem. When it is used on the mobile screen, it will show it like Figure 14. On the desktop, “col-lg-4” means dividing the website page into three parts in the large screen (Figure 15).

```

<div class="col-lg-4 col-md-6 mb-4">
  <div class="card">
    
    <div class="card-footer">
      <a href="item.php?id={row['product_id']}">
        <h1 class="card-title"><a href="item.php?id={row['product_id']}">{row['product_title']}</a></h1>
        <h1 class="card-price">&#36;{row['product_price']}</h1>
        <a class="btn btn-primary" target="_blank" href="../../resources/cart.php?add={row['product_id']}">
      </div>
    </div>
  </div>
</div>

```

FIGURE 13. Code of Display Products in Home Page



Women's Fashion



Light coloured top
\$59.99

ADD TO CART

FIGURE 14. Products of Mobile Version



Women's Fashion

Home

SHOPPING

ABOUT

CONTACT

LOGIN

CHECKOUT

Search...

Search

Grey jeans
\$59.99

ADD TO CART

Light coloured top
\$59.99

ADD TO CART

Yellow top
\$69.99

ADD TO CART



Blue dress



Rose red dress



Wine red dress

FIGURE 15. Products of Desktop Version

4 PHP ONLINE STORE

This chapter introduces the online website.

4.1 Online store

4.1.1 Navigation

The navigation bar (Figure 16) is the most important part of the online store. It not only helps the user to easily and clearly browse the content of the site, but also facilitates the customer to find the content and functions they need. It shows the relationship between the content of the site.

The figure 17 shows a multi dropdown box used in the navigation bar. The current online store page uses a float heading for user convenience. When the customer browses, only the content of the web page scrolls. The navigation bar remains on the top of the screen. When the user wants to switch to another category, they do not have to scroll up to find the navigation bar.



FIGURE 16. Navigation

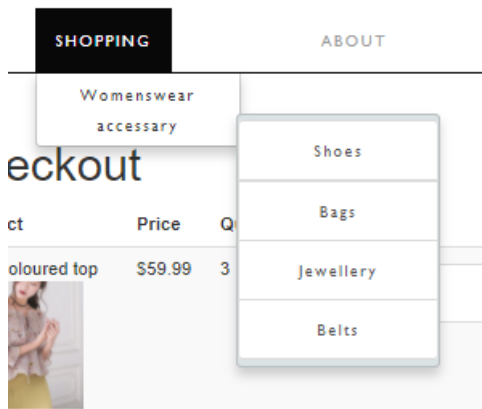


FIGURE 17. Categories

4.1.2 Subscribe

The customer will browse the shopping site and add their favorite items to the shopping cart or wish list, but some customers may just add the product without purchasing. This group of customers belongs to the "dreamer" who wants to have the products of the online shop but for some reason will not buy the product at that moment. What they need is extra motivation to encourage them to complete the transaction. E-mail subscriptions (Figure 18) have a role to play, a retailer can give them a surprise discount, such as prompting them: "Hey, we know that you like our products like us". Customers will be surprised and more likely to consider buying.

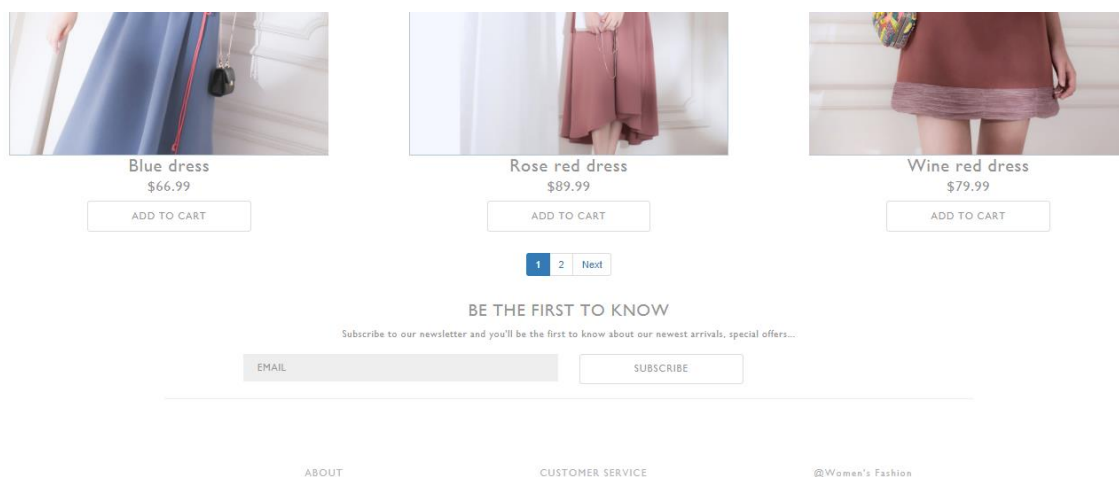



FIGURE 18. Subscribe

4.1.3 More detail and review of the Product

When customers are viewing those products, some of them will like to search for products with a typical search engine, such as Google to make comparisons and investigations to ensure that they fully understand the product. To prevent customers from leaving the online store or being attracted by other shopping sites, a good online shop will provide detailed product descriptions (Figure 19) and a real customer review.

SHOPPING ABOUT CONTACT LOGIN CHECKOUT



000

Clothing is a collective term for garments, items worn on the body. Clothing can be made of textiles, animal skin, or other thin sheets of materials put together.

Description

Reviews

2 Reviews From

★★★★☆ Anonymous 10 days ago
This product was great in terms of quality. I would definitely buy another!

★★★★☆ Anonymous 12 days ago
I've already ordered another one!

★★★★☆ Anonymous 15 days ago
I've seen some better than this, but not at this price. I definitely recommend this item.

Add A review

Name

Email

Your Rating

★★★★★

FIGURE 19. More Detail and Review of the Product

4.1.4 New

Most shoppers will first browse the "new" category of merchandise of the online store (Figure 20). New products are often the best and most attractive for sales. Therefore, retailers must display the latest products on the homepage to attract customers' browsing and purchasing.

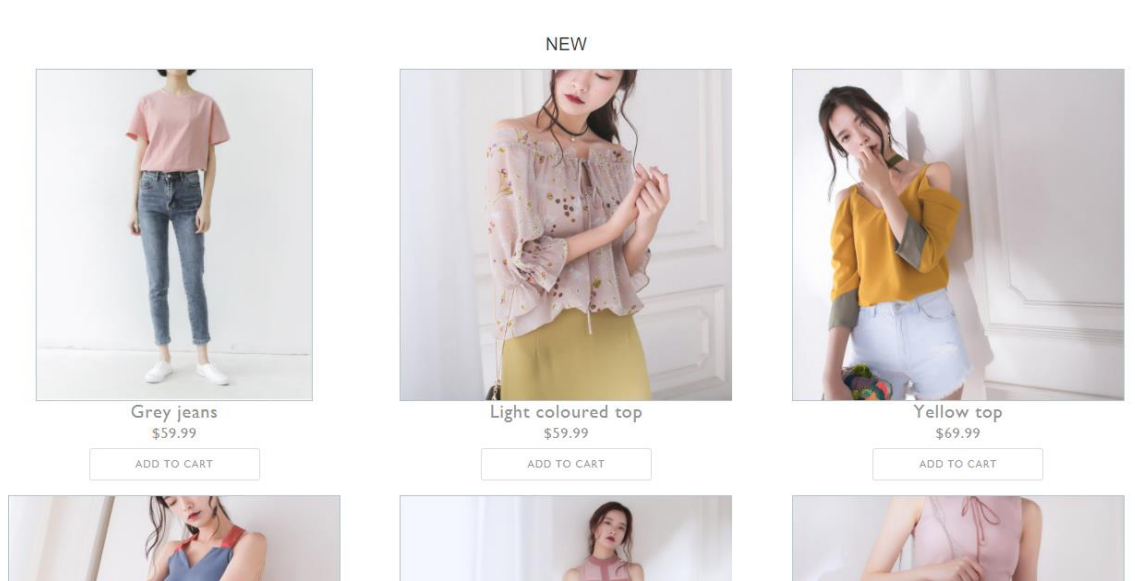


FIGURE 20. New Products

4.1.5 Search

The figure 21 shows the search function of the website. The existence of this function is very necessary, even the navigation bar can sort out most of the product category, it is not enough for a customer who wants to search for a specific piece of item. At that time, the built-in search engine with multiple filters could help the customer to quickly find what they want.



FIGURE 21. Search

4.1.6 About

This page is usually for customers to introduce the background of this shop (Figure 22), the main sales of goods, for which groups of people they serve, online shop changes, contact information and other contents.



FIGURE 22. About

4.1.7 Contact

Some users need to communicate with the managers of the online store, having e.g. questions about the product, questions about logistics, questions about the activities of the online store, questions about the shopping process, and online stores also need customer service to communicate with customers. Some online stores may collect most commonly asked questions and list those answers on the contact page (Figure 23). This approach can reduce the operating costs of website customer service.

Contact Us

ABOUTCUSTOMER SERVICE@Women's Fashion

FIGURE 23. Contact

4.2 Admin system

The Admin system is mainly used for online store owners to manage their website. This chapter will introduce the admin system interface and functionality.

4.2.1 The dashboard

Administrators will see the Dashboard after entering the management system. The figure 24 shows the dashboard of the administration page. Administrators can clearly see the total number of orders in the store, the total number of products and total number of product categories. The table that occupies a large part is the sales statistics for the current month. The owner can search for any sales statistics for the time period. It is really crucial information for the owner.

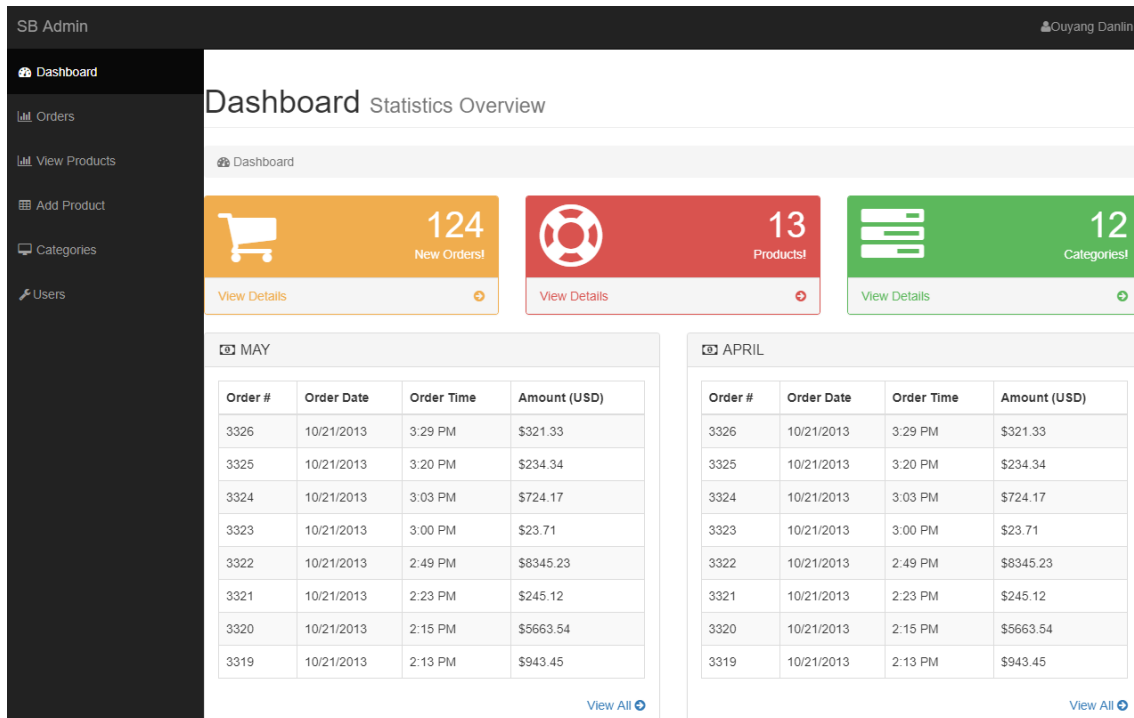


FIGURE 24. Dashboard

4.2.2 All Orders

The side navigation clearly shows administrators other management functions. The figure 25 shows all orders in the store. Administrators can view orders and delete orders that the shopper has cancelled.

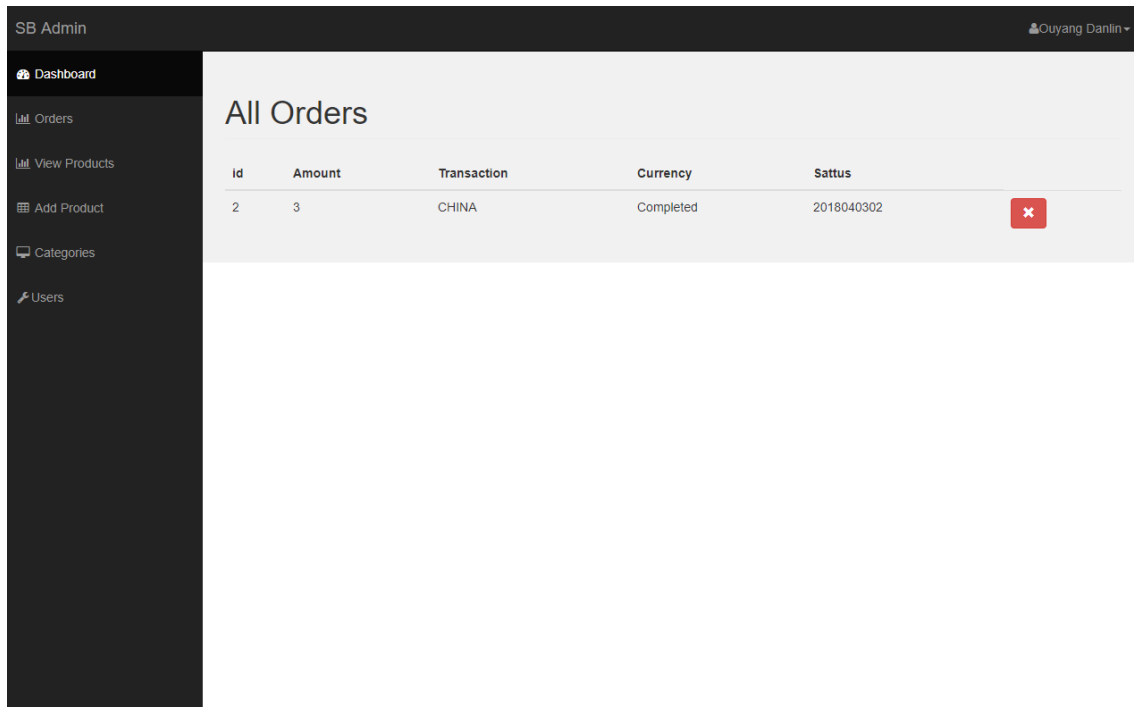


FIGURE 25. Orders

4.2.3 Products

The production detail page is in the Figure 26. A basic product page shown should at least allow owners to add, delete and update their products. It shows the interface of Add Products. It contains all the information that need to be filled.

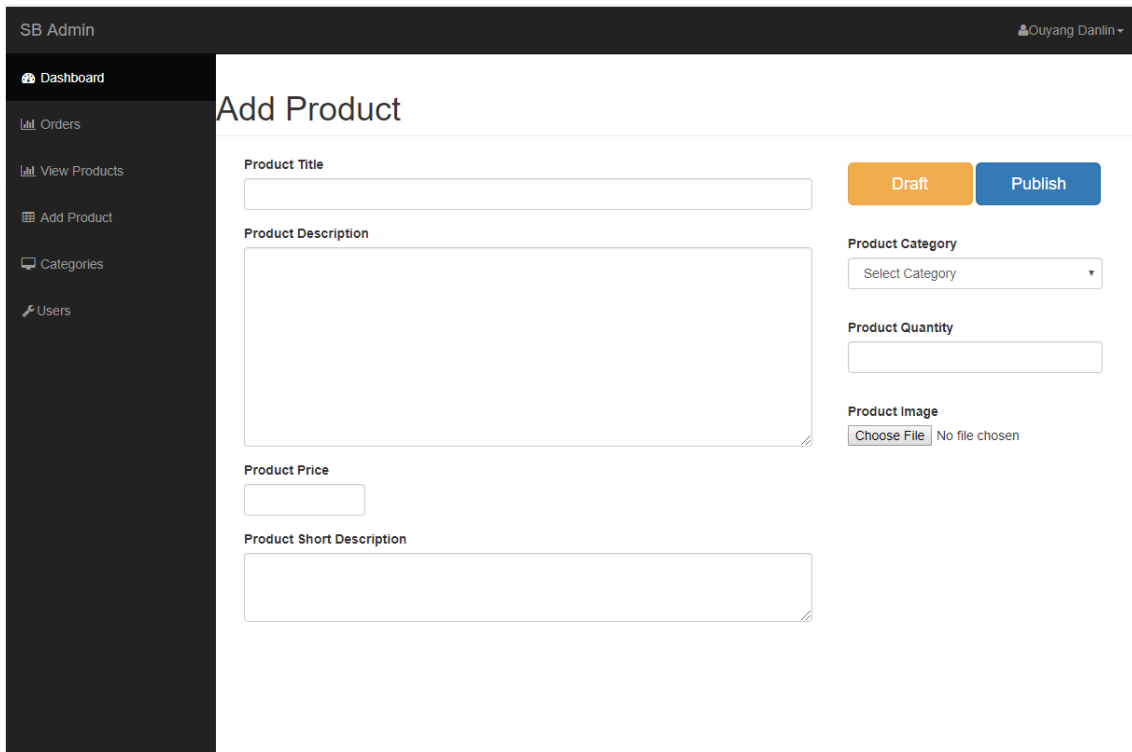


FIGURE 26. Add Product

The figure 27 shows the interface of View Products. On this page the owner can view all the products, and they can remove any product with the “X” button. If the product has something to be modified, the owner can click the product name and then forward to the Product Edit page which shows in the figure 28.

SB Admin Ouyang Danlin

All Products

Id	Title	Category	Price	Quantity	
1	Grey jeans	Jeans	59.99	4	
2	Light coloured top	Top	59.99	5	
3	Yellow top	Top	69.99	7	
7	Blue dress	Dresses	66.99	4	
8	Rose red dress	Dresses	89.99	8	
9	Wine red dress	Dresses	79.99	3	
10	Black belt	Belts	49.99	5	
11	Black jeans	Jeans	99.99	3	
12	Black shoes	Shoes	89.99	2	
13	Colorful top	Top	79.99	6	

FIGURE 27. Display All of Products

SB Admin Ouyang Danlin

Edit Product

Product Title

Product Description

Product Price

Product Short Description

Product Category

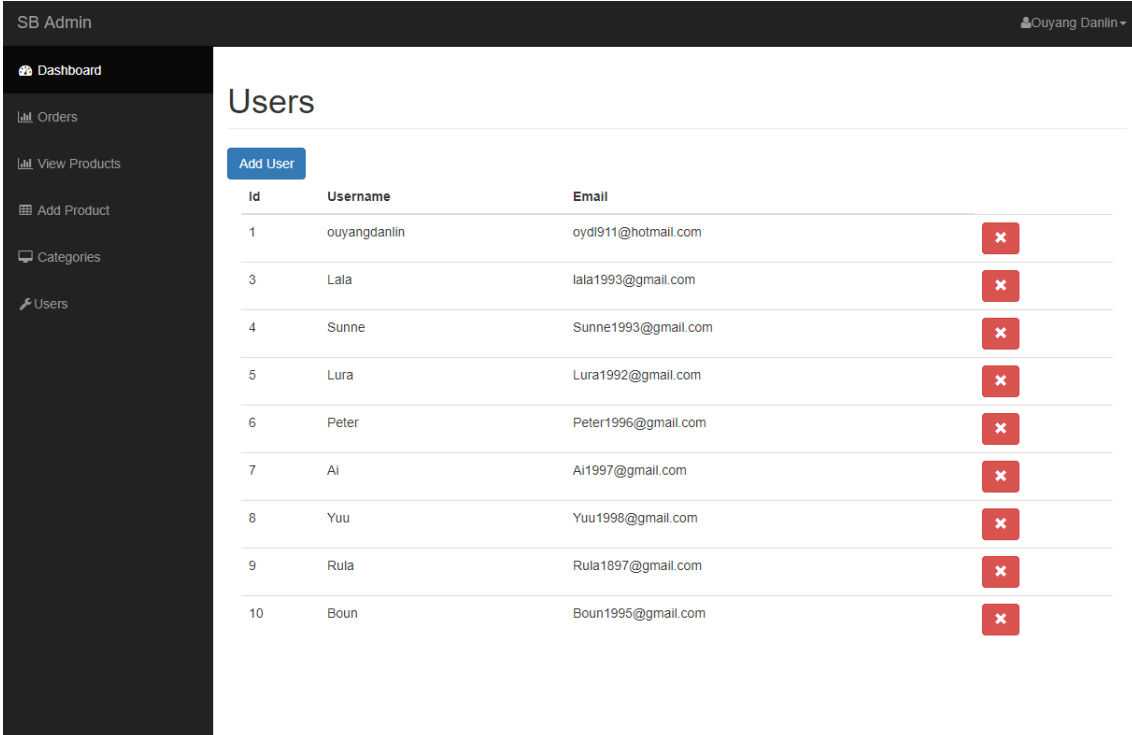
Product Quantity

Product Image
 No file chosen

FIGURE 28. Edit Product Information

1.1.1 Users

The administrator can view the information of registered users and their personal information, and of course their personal information will be kept safe, only their shopping activities will be tracked. The figure 29 shows all users on this website. Whenever a shopping sale event begins, those active users will always be noticed with an email.



The screenshot shows the 'Users' management interface in the SB Admin system. It features a dark sidebar with navigation options: Dashboard, Orders, View Products, Add Product, Categories, and Users. The main content area displays a table of users with columns for Id, Username, and Email. Each row includes a red delete button with a white 'x' icon. A blue 'Add User' button is located at the top left of the table.










Id	Username	Email	
1	ouyangdanlin	oydl911@hotmail.com	
3	Lala	lala1993@gmail.com	
4	Sunne	Sunne1993@gmail.com	
5	Lura	Lura1992@gmail.com	
6	Peter	Peter1996@gmail.com	
7	Ai	AI1997@gmail.com	
8	Yuu	Yuu1998@gmail.com	
9	Rula	Rula1897@gmail.com	
10	Boun	Boun1995@gmail.com	

FIGURE 29. Display Users

4.3 Database

Online shopping websites usually have two service systems. One is for customers and the other is for website administrators. Therefore, the administrators and users will be separated by their role in another table. The version of PHP used in the database was 7.2.4.

When customers use checkout, they will jump to login. Shopping websites usually require users to log in before you can check out, so that the site will store the user's order, and the administrator can check the user's order information in the back-end system. Administrators need to log in to access the management page when they log in to the management page. This is for the security of online stores.

The online store created mainly sells women's clothing and accessories, so it is divided into two categories, The database contains a category table, a subcategory table and a product table. The product table contains a foreign key which was linked to the subcategory, and the same method is also applied in the subcategory table. So all these three tables are connected like a tree structure and the category is the root. The figure 30 contains all the tables in the database and the relationship between different tables.

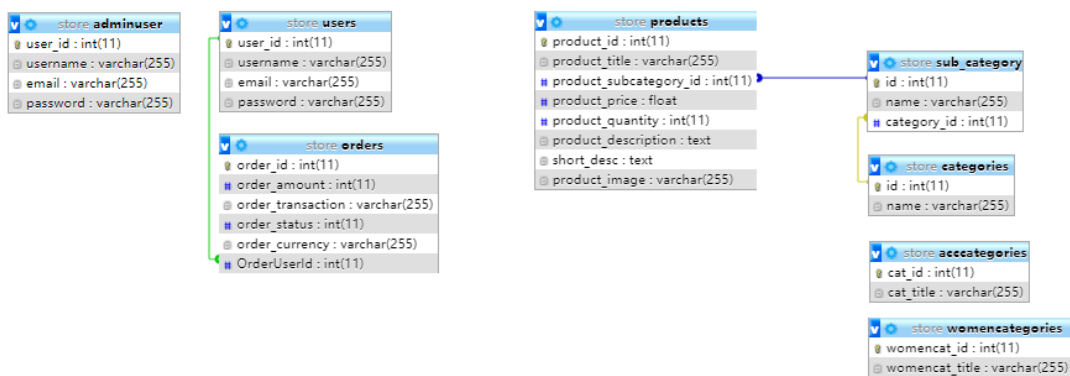


FIGURE 30. Database Table

4.4 Online payment

With the rapid development of shopping online, there are more and more ways to pay online. Today, PayPal is the most popular online payment method.

PayPal online payment services are available in more than 200 markets worldwide and can convert 55% of customer payments. No matter how an online payment is made, customer funds can be

further improved through PayPal. Can use it safely without worrying about the online shopping fraud. [10]

So being able to integrate a website with PayPal's Instant Payment Notification Service (IPN) is essential if one needs to process payments through website. There are 3 main parts to the PayPal IPN system (Figure 31):

1. A webpage that initiates a request to PayPal to make a payment.
2. A PHP page on your webserver that PayPal calls to notify you that the payment has been made.
3. A webpage that confirms the above payment and continues to the next phase of your web application, such as a 'Thank You' page. [11]



FIGURE 31. PayPal IPN System

First, you need to login to "PayPal developer" with PayPal account. Then, you need to add a business account in sandbox accounts.

The PayPal Sandbox (Figure 32) is a self-contained, virtual testing environment which mimics the live PayPal production environment. It provides a shielded space where you can initiate and watch

your application process the requests you make to the PayPal APIs without touching any live PayPal accounts. [12]

Total records: 3


<input type="checkbox"/> Email Address	Type	Country	Date Created	Status	Actions
<input type="checkbox"/> ▶ personal@codingcoding.com	PERSONAL	US	17 May 2018	complete	⋮
<input type="checkbox"/> ▶ oyd911-facilitator@hotmail.com	BUSINESS	FI	17 May 2018	complete	⋮
<input type="checkbox"/> ▶ oyd911-buyer@hotmail.com	PERSONAL	FI	17 May 2018	complete	⋮

[Delete Accounts](#)

FIGURE 32. Sandbox Accounts

The figure 33 is a test customer account. Personal information is automatically generated false information. And there is a virtual balance in the account for a shopping test.

Profile



personal coding
Joined in 2018 [Update](#)

[Update Photo](#)

Address

You have 1 address. [+](#)

1 Main St
San Jose, CA 95131
Primary address, Billing address

[Manage all addresses](#)

Account options

Language [v](#)

Time zone [v](#)

Nationality United States

SSN [Add your SSN](#)

Email

personal@codingcoding.com [+](#)

Primary

To update an email address, you must have at least two email addresses on file.

Phone



(4**) ***-1784 [Update](#) | [Remove](#) [+](#)

FIGURE 33. Virtual Account Profile

The figure 34 shows the customer's shopping cart item. It is included that the quantity and the price of the item are displayed. Let customers clearly know paid for what products they paid, the quantity of the products and the sum of the price.

People who pay you through the PayPal Payments Standard interact with HTML forms and hidden HTML input variables that you place on your website. When someone clicks a payment button in an HTML form on a webpage, the form submits the variables and their values to PayPal. You set the values of the variables to produce the desired effect, such as invoking the Buy Now, the Donate, the Subscribe, or the PayPal Shopping Cart checkout experience and various other PayPal features. [13]

Checkout

Product	Price	Quantity	Sub-total			
Rose red dress 	\$89.99	3	\$269.97	-	+	x
Grey jeans 	\$59.99	3	\$179.97	-	+	x

Buy Now

Cart Totals

Items:	6
Shipping and Handling	Free Shipping
Order Total	\$449.94

FIGURE 34. Checkout

After clicking the button will enter the figure 35 will show, indicating that the online payment test is successful.

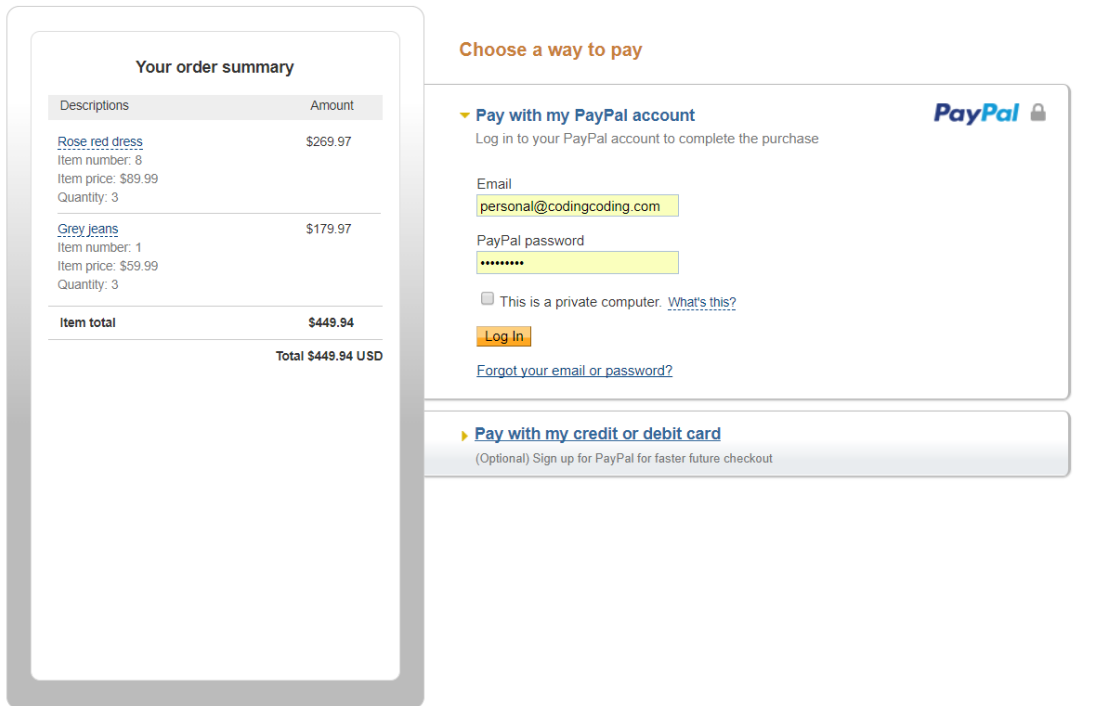


FIGURE 35. PayPal Test to Login the Account


Customers must agree the PayPal Electronic Communications Delivery Policy Consent (Figure 36) when using PayPal.

test facilitator's Test Store

Your order summary

Descriptions	Amount
<u>Rose red dress</u> Item number: 8 Item price: \$89.99 Quantity: 3	\$269.97
<u>Grey jeans</u> Item number: 1 Item price: \$59.99 Quantity: 3	\$179.97
Item total	\$449.94
	Total \$449.94 USD

PayPal Electronic Communications Delivery Policy Consent



This will just take a minute and then you can complete your transaction.

We've updated our Electronic Communications Delivery Policy. Please read it and consent so we can send your account information electronically, including your payment confirmation.

Please confirm that:

Yes, I've read and agree to the [Electronic Communications Delivery Policy](#). I understand that PayPal will provide me with information about my account electronically. I confirm that I can access emails, web pages, and PDF files.

[Agree and Continue](#)

FIGURE 36. PayPal Ttest to Agree Policy Consent

The figure 37 shows the address that the account has been stored. Or a new address can be added and modified as the destination to which the logistics are to be sent.

The screenshot displays a PayPal checkout interface. On the left, a 'Your order summary' box lists two items: 'Rose red dress' (3 items, \$269.97) and 'Grey jeans' (3 items, \$179.97), with a total of \$449.94 USD. On the right, the 'Review your information' section includes a 'Pay Now' button, a shipping address (Ouyang Danlin, Kajaanintie 34 C 23, Oulu, Finland, 90130), and a payment method of 'PayPal Balance' for \$449.94 USD. The contact information is 'personal@codingcoding.com'.

Descriptions	Amount
Rose red dress Item number: 8 Item price: \$89.99 Quantity: 3	\$269.97
Grey jeans Item number: 1 Item price: \$59.99 Quantity: 3	\$179.97
Item total	\$449.94
	Total \$449.94 USD

Review your information

[Pay Now](#) PayPal

Shipping address [Change](#)

Ouyang Danlin
Kajaanintie 34 C 23
Oulu, Finland
90130
Finland

Use as preferred shipping address

Note to seller: [Add](#)

Payment methods [Change](#)

PayPal Balance \$449.94 USD

PayPal gift card, certificate, reward, or other discount [Redeem](#)
View [PayPal policies](#) and your payment method rights.

Contact information
personal@codingcoding.com

[Pay Now](#)

FIGURE 37. PayPal Test to Confirm Shipping Address

Finally, "thank you for your shopping" (Figure 38) will tell the customer this shopping order id and will send the customer the email of the PayPal account with successful shopping and shopping receipts. It will help customers to track shopping products delivery. And if there is a problem with

the product to be returned, it is convenient for customer service to communicate with the client, and to quickly check orders.

test facilitator's Test Store

You just made a payment of
\$449.94 USD

[Print receipt](#)

Paid to
test facilitator's Test Store
oydl911-facilitator@hotmail.com

Ship to
Ouyang Danlin
Kajaanintie 34 C 23
Oulu, Finland
90130
Finland

Thanks for your order

✔ **personal, you just completed your payment.**

Your transaction ID for this payment is: 5D467683N7012340Y.

We'll send a confirmation email to personal@codingcoding.com.

[Go to PayPal account overview](#)
[Add funds from your bank](#)

FIGURE 38. Thank for Your Order

5 CONCLUSION

The main advantage of responsive design is the flexibility and usability. It is also easy to learn and implement. And the Bootstrap framework has provided a lot of functionalities when I was coding the layout of the website.

The total development process included the layout design, functionality design, database design and backend programming. All through I had used some shopping website, but the whole concept of e-commerce was not very familiar for me at the beginning. With the development of the website, I have more understanding of the concept of e-commerce. As for the back end, I also learned how to design a different database structure and my PHP overall programming skill has improved a lot.

The development process of the e-commerce website was easy at the beginning, but it became more and more difficult when I was implementing the Admin system. I spent a lot of time studying PHP and database. The final implementation was not an easy task for my skill level.

Using responsive design for the frontend is clearly the best way for a modern website. As for the back end, I think using pure PHP was not the most efficient way to do, but it was a better way for me to learn coding.

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