**KEMI-TORNIO UNIVERSITY OF APPLIED SCIENCES**
**TECHNOLOGY**

Cha Li

# Designing and Implementing an Online Bookstore Website

The Bachelor's Thesis Information Technology programme
Kemi 2011

# PREFACE

I would like to thank everyone that helped me in the thesis project.
I also want to thank my supervisor Mr. Thai Bui. He gave me great help and advice in my thesis.

**ABSTRACT**

Kemi-Tornio University of Applied Sciences, Technology

|  |  |
|---|---|
| Degree Programme | Information Technology |
| Name | Cha Li |
| Title | Design and Implement Online Bookstore Website |
| Type of Study | Bachelor’s Thesis |
| Date | 26 February 2011 |
| Pages | 56 + 2 appendices or appendixes |
| Instructor | Thai Bui |

The aim of this thesis is to design and implement a web application as an online bookstore system, which consists of website interface and database. The system includes two website applications: customer application and administrator application. The stock manager is one type of administrator.

The online bookstore system provides the online administrative processes, as well as the completed customer online shopping used shopping cart. It should include several basic functions, such as register new customer, book online browsing, online transaction, admin management system and so on.

User can browse books and search books. Another function is that after user registers for login website, customer can also put some books in his/her shopping cart for order books. Customer also can update or modify account information. Customer can get back his/her password when he/she forgets password.

When user is administrator, after user login online bookstore website, user can manage website. There are two types of administrator. One is normal administrator. He/she should manually handle orders, view/add/delete/modify customer’s accounts. The other is stock manager. He/she can handle books information, like list existing books, modify or update existing quantity and price, add/delete a new book into stock.

Here is one more recommendation function. Base on the book customer has chosen, the system searches relational books information from database. The system recommends more relational books to customer, like interesting books, new books and so on. Also recommendation can increase books sales.

To design and implement the online bookstore system, I needed some programming technologies are used by PHP, MySQL, Database and Ajax language.

Keywords: Online Bookstore website system, PHP, MYSQL, AJAX.

## TABLE OF CONTENTS

# EXPLANATION OF CHARCTERS AND ABBREVIATIONS

| | |
|---|---|
| PHP | Hypertext Pre-Processor |
| MySQL | A relational database management system based on SQL |
| SQL | Structured Query Language |
| Ajax | Asynchronous JavaScript and XML |
| XML | Extensible Markup Language |
| IT | Information Technology |
| HTML | Hypertext Markup Language |
| IIS | Internet Information Server |
| URL | Uniform Resource Location |
| HTTP | Hypertext Transfer Protocol |
| DOM | Document Object Model |
| ID | Identification |
| ISBN | International Standard Book Number |
| ER | Entity Relation |

# 1. INTRODUCTION

## 1.1. Background

With the development and improvement of computer science, internet technology and database technology are used widely. Lot of people choose to shop online instead of walking traditional bookshop. The enterprise IT departments have recognized advantages to the internet. E-commerce functionality is more and more powerful. People will free shopping at home so easy. Nowadays, the bookstore website is often used as a platform for selling and purchasing books online. Registered customer can search all of books they want to buy.

During five years, I had already studied some courses like software design project, programming project and basic PHP language, Java language and database system. For the future work I need to review and strengthen knowledge. Designing and implementing an online bookstore system is my thesis topic.

In the thesis, how to achieve the process from customers purchase books and staffs management will be introduced. The online bookstore system completes user login, register, browse books, search books, purchase books, staffs manage books information, books categories, orders and accounts.

## 1.2. Structure of the Thesis

- The front of online bookstore system

Powerful and easy to operate are more important. Front as a direct interaction interface with users, in considering the function, but also taking into account the simplicity and ease of operation to make sure the majority of customers do not understand computer can easily bring them to enjoy the convenience of E-commerce.

- Background of online bookstore system

Consider the online bookstore system management simple, while providing a powerful management mode. There are customer information management, orders management and books management.

# 2. TECHNOLOGY PREVIEW

## 2.1. PHP

”Hypertext Preprocessor” is sometime abbreviated to ”PHP”. It is a server-side scripting language and HTML embedded scripting language used to build up dynamic web pages for implementation of web application. PHP is an open source and free download software. Open source means code data have not been encrypted, in order to facilitate people use for the second developing. It usually is used to be share between programmers.

PHP code is interpreted into a normal HTML page content in web server-side, then send it to browser. This way allows us to use it to complete more complex functions.

One major advantage is good cross platform compatibility form nearly all servers (e.g Apache, IIS, etc) and different platforms, like windows, linux and so on.

## 2.2. MySQL Database

MySQL is an open source back end database system. Database system is the main application to store data. It mainly uses in managing the information lists, and the information may be have many different sources, such as commercial transactions, customer requirements, or sales reports and so on. Database system is mainly used for processing information. A good database system can efficiently and quickly process the data rather than data.

SQL is structured query language and it is the easy database language to store data. Also SQL language can update and access the data. In the website, people get a variety of information through the SQL language. For example, books informationin, customer information, orders information in the online bookstore database system.

## 2.3. AJAX

Ajax is called Asynchronous JavaScript and XML. Ajax language uses the asynchronous processing technology. When customer submits data or changes a little data in the website, customer doesn’t need to load the entire website. The Ajax of asynchronous processing submitted data can be processed in the background, and it asks to change the data without refresh the website.

As Ajax technology, using JavaScript to test the validity of form data is most frequently used, or through JavaScript to operate XMLHttpRequest in order to achieve the purpose of the interacting with webserver or database. XMLHttpRequest is an object of XMLHttp component, also it is the core of Ajax. XMLHttpRequest allows to asynchronously get data from the server without refresh the website for each time, also it does not need to deliver all data the server processing. Applied with Ajax technology can greatly accelerate the speed of response and reduce customers waiting time.

To implement an Ajax asynchronous and local refresh, we need to do the steps as follow:
1. Create XMLHttp object
2. Create a new Http request, and specify the Http request method, URL and validation information. The purpose is to describe where to get data from XMLHttp object.
3. Set a function from Http request status changed in response.
4. Http request will be sent to web server, and the purpose is to get the returned data from the server. When readyState property values of XMLHttp object are changed, it will automatically excitated function. If readyState property value is equal to 4, the asynchronous process is completed. Through the XMLH responseText attribute or responseXml attribute to get data.
5. Send Http requests.
6. Get the asynchronous return data.
7. Use JavaScript and DOM to achieve local refresh. DOM main role is to refresh the local data.

# 3. REQUIREMENTS ANALYSIS

Requirements analysis process is an important stage in the system development. It determines the functions of the whole system integrity and stability. Software requirements analysis is an ongoing process of understanding and progressive refinement. Through requirements analysis, functions of the online bookstore system will be designed as below.

## 3.1. Requirements Gathering

The purpose of project is to create an online bookstore system.

### 3.1.1. Requirements

The online bookstore system carries out many functions. The most important functions are books sales, manage books, and manage shopping carts. In addition, the one more function of system also needs to provide to customers to search relational books in the database. At the same time, making sure trading books, the system must verify the customer identity. Finally the system must have administrator’s functions, which allows administrator operates and maintain back end database.

Overall according to the online bookstore system functional requirements, the system falls into the front management application and back-stage management application.
The front management application is the user visits online bookstore website and register user is customer. Only customer manages his/her account and shopping cart. So in this part, specific functions are described as below:

- Login and logout.
- Register
- Browse books (base on category list, or input keywords to search books).
- Add book to shopping cart.
- Handle shopping cart.
- Order books
- Payment methods
- Update account information.
- Recommendation
- Forget password

The back-stage management application is staffs manage the system. Stock manager’s responsibilities are book management, administrator’s responsibilities are order management and customers management. So in the staff part, specific functions are described as below:

- Login and logout
- Add/delete/modify account
- Handle order
- Stock manager manage books

## 3.2. System Architect

In this chapter, high levels and detail levels designing are given.

### 3.2.1. High Levels For Five Modules

According to requirements gather, the online bookstore system will be designed that consists of five basic modules. The diagram is as follow:

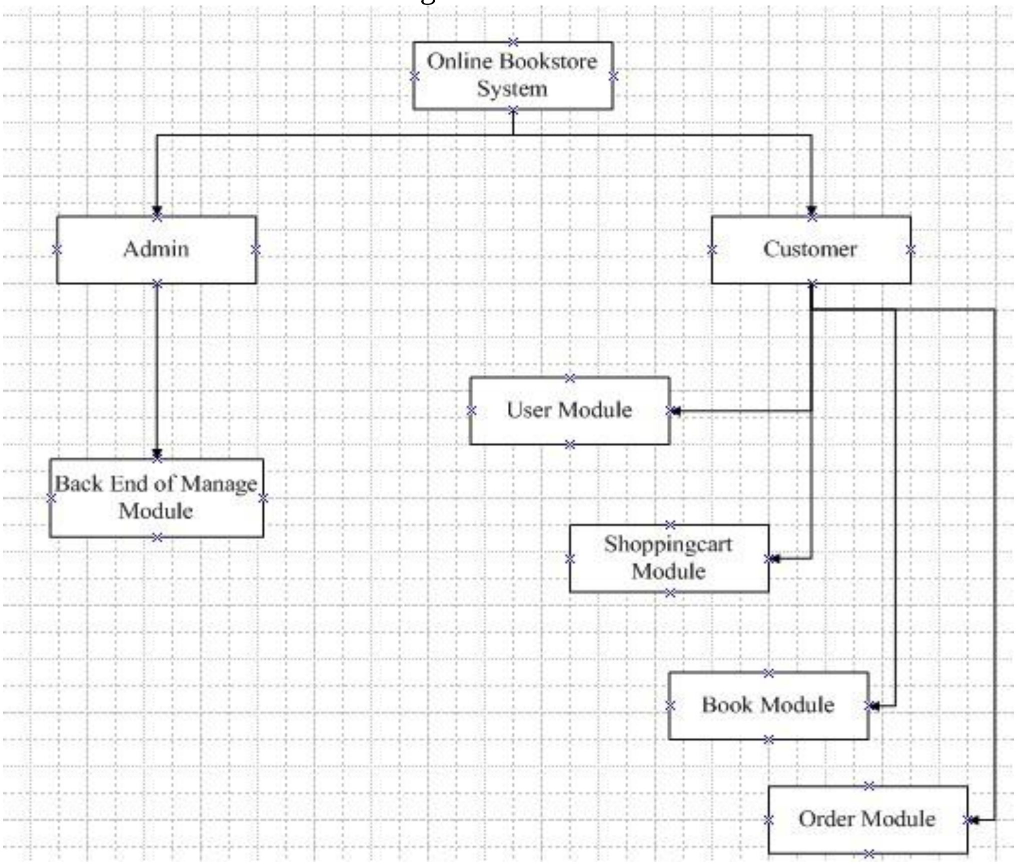


**Fig.1 Five modules of the online bookstore system**

- User Module
  At first customers must login or register to the system. Customers can purchase books after validate valid identity. Customers can modify their own account information at any time. When customers register successful, the online bookstore system will save customers' all information. One more function, when customers forget their password, they can click on "forget password" link to get back password.

- Book Module
  The function of book module is to show all of books. When customers enter online bookstore books website, they can view a list of all books categories and subcategories. The system sorts books, customers browse all kinds of books as needed. Customers can view books detail information. Also the system recommends books for customers.

Stock managers list book detail information, view all book lists, delete and modify book information.

- Shoppingcart Module
  The core of online bookstore system is shoppingcart module. The module is to simulate people purchase goods in supermarket used shoppingcart. The online bookstore of each customer has their own shoppingcart. Customers click on the picture of book or title to purchase books. The shoppingcart will automatically add the bookname, price and other information. At the same time, customer can delete book or edit book quantity as needed. Shoppingcart module automatically calculates and display totalprice. The customer just only press ”checkout” button, the system will automatically store the purchase information input back end database. In order to administrator to manage orders.

- Order Module
  The ”checkout” button in shoppingcart moves customer to order module. At first, order module lists books in shoppingcart. It includes books detail information, as book title,  price, quantity, item totalprice and total price. When customers confirm them, they will fill in shipping information about consignee detail information and payment methods. Then customers press ”checkout”button to place order.

- Back End of Manage Module
  Here is back end database of manage books module. When administrators or stock managers input ID and password, the system verify identity. The module functions are categories manage, add new book information, modify and delete specific book information. Administrator press ”deliver” button to handle order state.

### 3.2.2. Detail Levels Designing

#### 3.2.2.1. Sitemaps of The Online Bookstore

The purpose of sitemaps is to show what functions the online bookstore system architecture has.

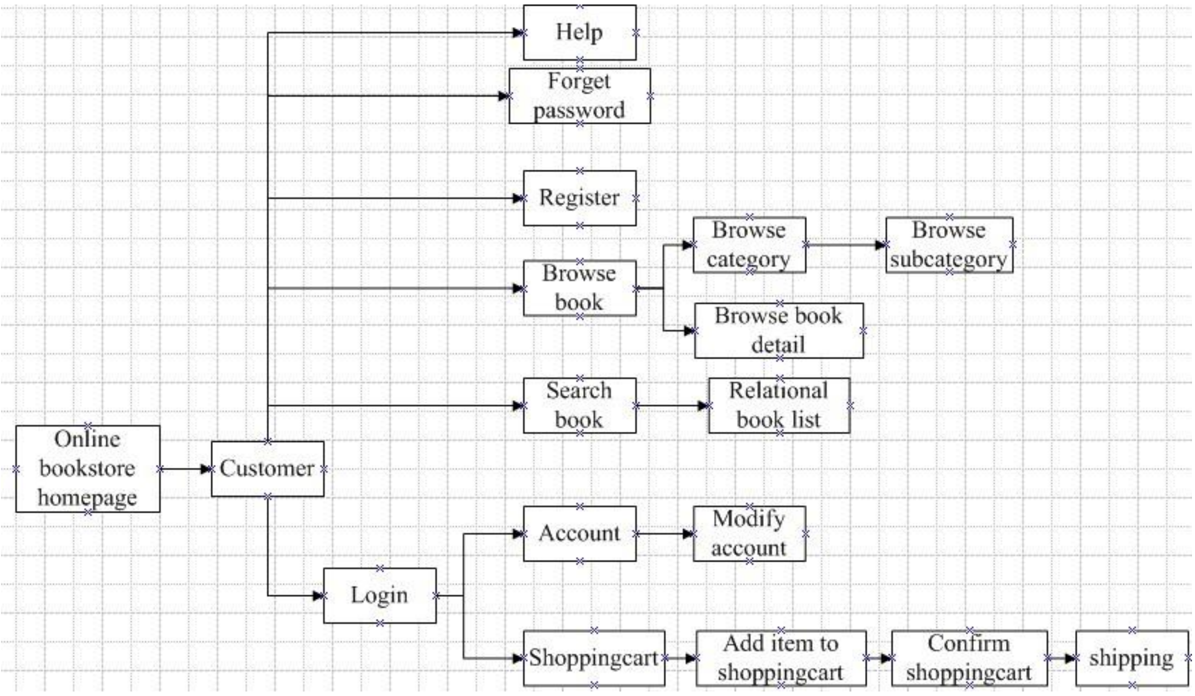


**Fig.2. Customer Sitemap**

Fig.2 shows how a customer enters the online bookstore homepage, he/she can view top menus: login, register, books, shoppingcart, account, and help. Customer clicks on categories or subcategories books to read books detail information. Also customer can search books. When customer logins successful, he/she manages his/her shoppingcart to place orders and manages account information.

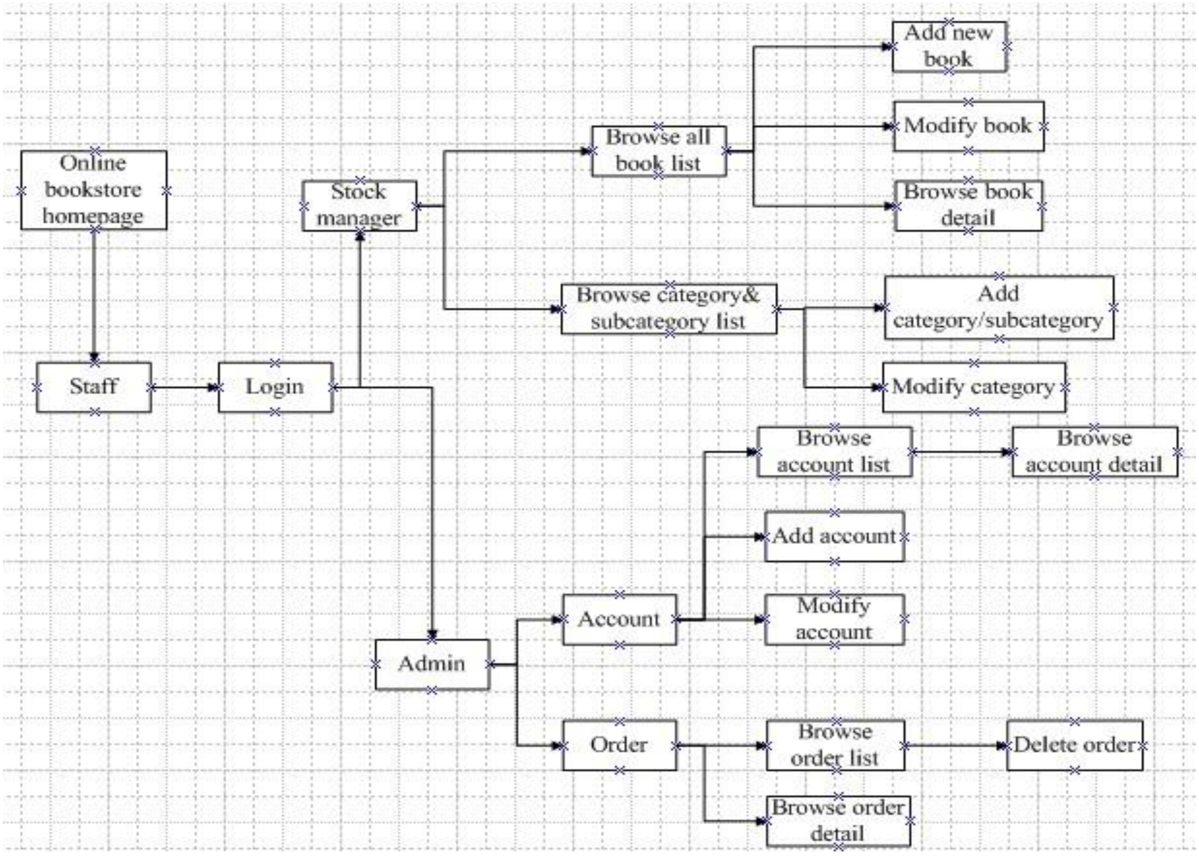


**Fig.3. Staffs Sitemap**

Fig.3 shows staffs manage back end database system. Stock manager’s responsibilities are to view all books list, browse categories and subcategories list and manage books information. Administrator’s responsibilities are manage customers’ accounts and orders.

### 3.2.2.2. Flow of Customer Diagram

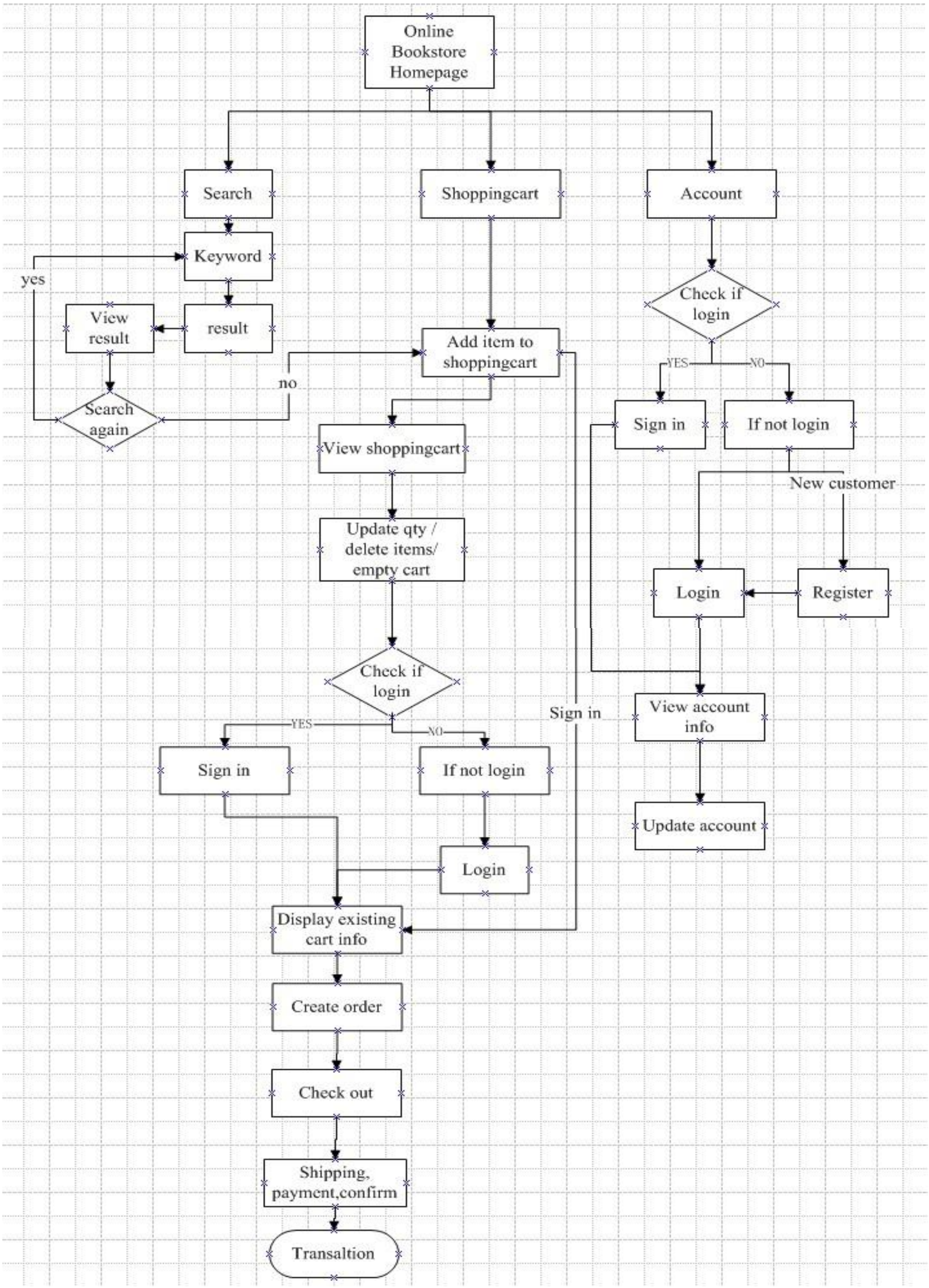


**Fig.4. Process diagram of customer searches, shopping cart, account**

Fig.4 diagram describes the whole process of customer searching books and purchasing books. There are main functions are customer login, register, search books, purchase books and place order.

1. Customer chooses or searches interesting books and puts them into his/her shopping cart.
2. Customer must be registered at first. Only after customer logins the online bookstore system, he/she can place orders.
3. Customer fills in shipping form, confirms information and submits the purchase orders, after he/she chooses books.

## 3.3. Use Cases

### 3.3.1. Common Functions

- Login

  Every time user logins the customer or administrator application, he/she must input both of the correct account ID and the password into the input-form. The application will get the input data and send to the System Server, and the server will communicate with the Database and check whether the account ID and password are matched. If it is correct, the application will display the Welcome-Window, and then switch to the Member Information Interface. Otherwise, the Error-window will be instead. After that, the application will turn back to the login interface.

- Logout

  This functionality works when the user selects the “Logout” menu, the application will be closed and return back homepage.

### 3.3.2. Customer Functions

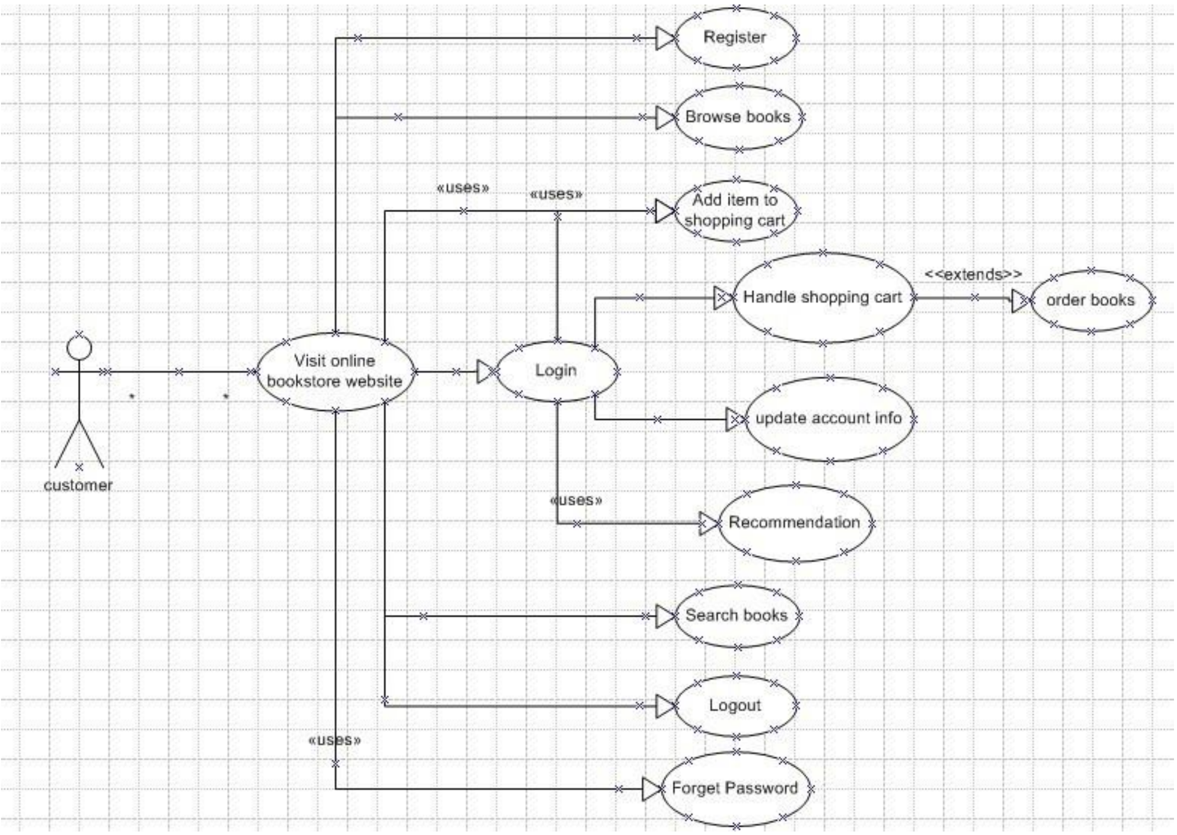


**Fig.5. Customer Use Case Diagram**

- Register
  Firstly, new customers need to register to get one account ID. Information which should be included: customer name, password, email address, phone number and address information. After registration, customers will get an account ID and they can login with account ID and password. The application will insert all the information into the corresponding database tables.

- Browse books
  Customers can choose interesting books from categories or subcategories. Customers click on the book link. They can browse specific book information as: book name, price, picture, abstract and so on.

- Handle shopping cart
  Customers manage their shopping cart. Each shopping cart has exactly one customer. Customers can edit specific book quantity, or delete specific books in shopping cart, or empty shopping cart.

- Order books
  When customers login the shopping cart website, they confirm items and press “processed to checkout” button, the system will request customers fill in shipping

form. The shipping form includes first name, last name, address, city, post and phone. When customers finish form, they choose payment method for next process. If customers are not logged in or unregistered, the purchase function will not work.

- Payment way
  There are two payment methods.

- Update account information
  Only registered customers can update his/her account information. After login successful, customers can change private information, like that address, password and so on. When they press submit button, the system will update and store the corresponding database.

- Search books
  All users can use the search engine. Users input keyword in search engine, and click on the "GO" button. The system will search books from the relational information in database. If there are matched books existing, the results will be listed on search page. Or else the search page will display no matched book.

- Recommendation
  According to customers choose one book, the system searches related information, then more books are referenced, like interesting books, new books and so on. Customers can choose more interesting books in shopping cart.

### 3.3.3. Administration Functions

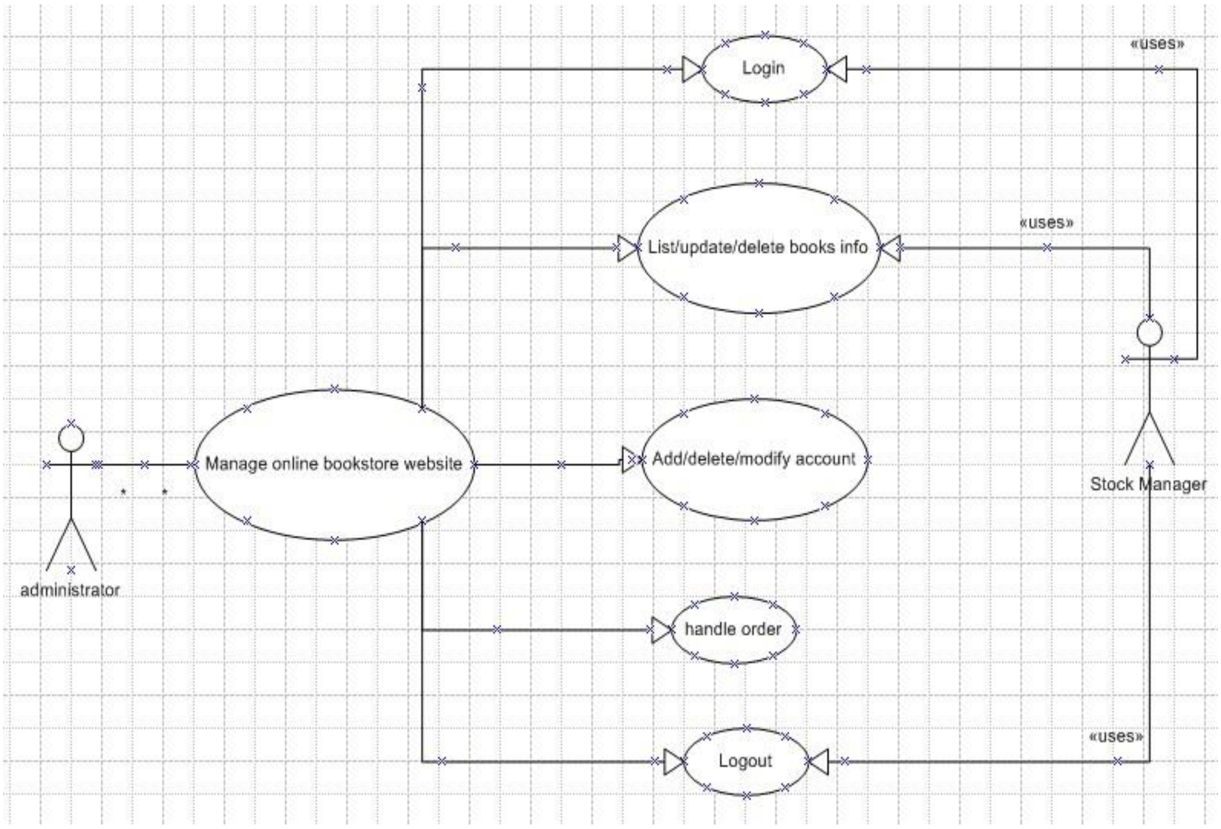

Login
«uses»
List/update/delete books info
«uses»
Manage online bookstore website
Add/delete/modify account
administrator
Stock Manager
handle order
Logout
«uses»

**Fig.6. Administrator Use Case Diagram**

- Add/delete/modify/view accounts
  On the account page of administration, the administrators can directly add or delete or modify or the customers’ accounts. It includes customer’s private information as his password, address and so on. Also administration can view all accounts list.

- Handle order
  Administrators login the handle order website, they browse all customers’ orders. There are “detail and delete” buttons after every ordering. After the administrators click on specific customer’s “detail” button, they can view the specific customer’s orders information. Such as order ID, book ID, quantity and so on. Also, administrators delete specific customer order. One more function is that administrators press “deliver” button to change order state.

- Stock manager
  Another type of administrator is stock manager. Stock managers can handle book information as list books detail information, modify or update existing quantity and price, add and delete books into stock.

## 3.4. The Main of Sequence Diagrams

In this chapter, there are some more important of sequence diagrams. It includes customer part, stock manager part and administrator part.

### 3.4.1. Customer Sequence Diagrams

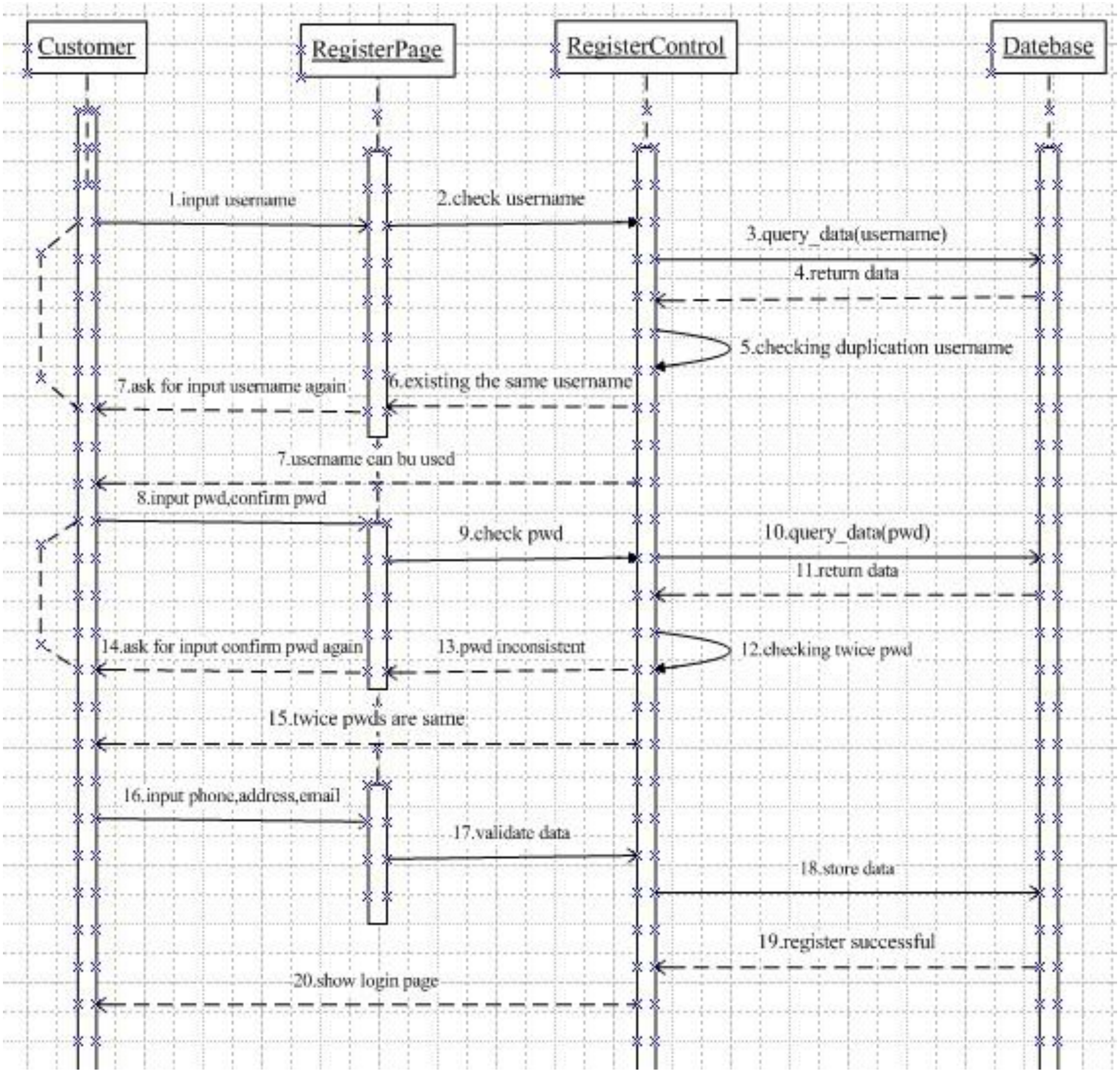


**Fig.7. Customer Register Sequence Diagram**

Fig.7 is drawn to describe the customer registers for new account on the online bookstore website. The new customer enters the website, and selects the “register” top menu. He/she inputs username, the application will check whether the username is valid or not, for instance the duplication username. If there is the same username, the application asks customer to inputs new username again. When username is passed, customer continues to fill in password and confirm password again. The application checks passwords twice from database. If passwords are inconsistent twice, the application asks for customer inputs confirm password again. Since the passwords are matched, customer will be allowed to fill in the rest of form as phone, address and email. The customer finishes the register form and submits it. The application will validates the entered data, then send to the system server to store customer information in account ID.

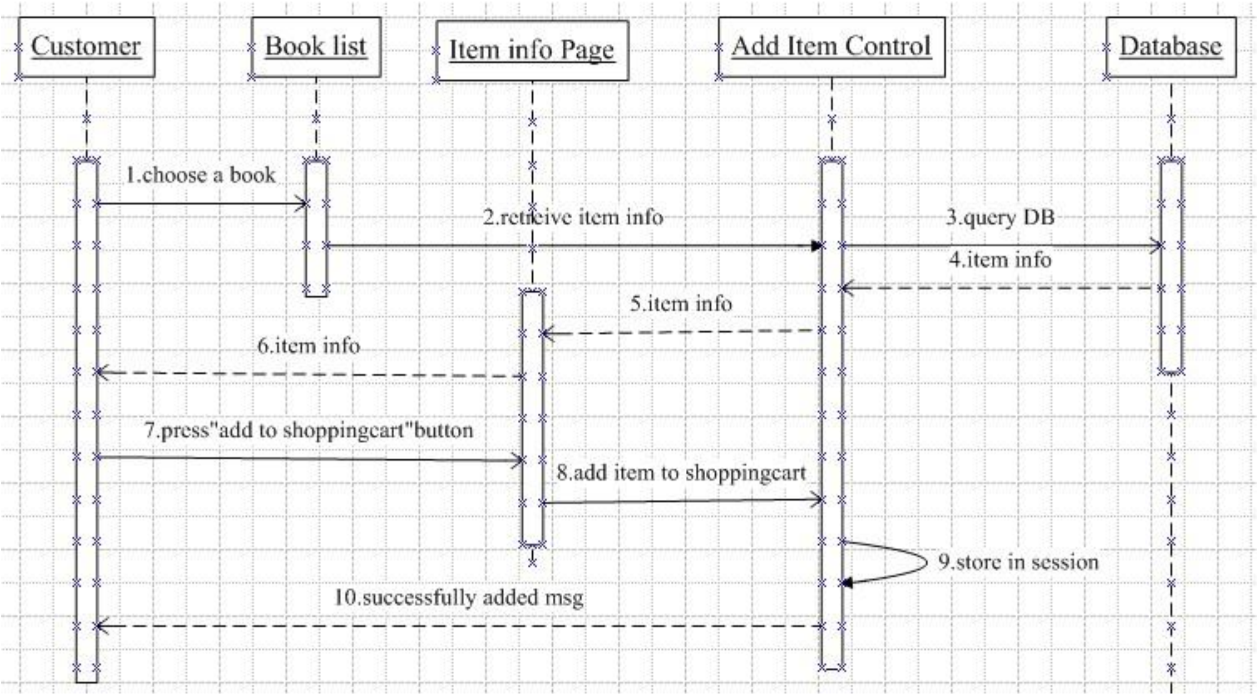


**Fig.8.Customer Add Item to Shoppingcart Sequence Diagram**

Fig.8 is drawn to describe the customer adds books to his/her shopping cart. When customer enters the books website, he/she can choose an interesting book form books list. The application will retrieve book information from database to show it on the book detail information page. After that, customer can presses "add to shopping cart" button, the application auto adds the book to shopping cart and stores in session. At the end, application will send successfully added message on website.

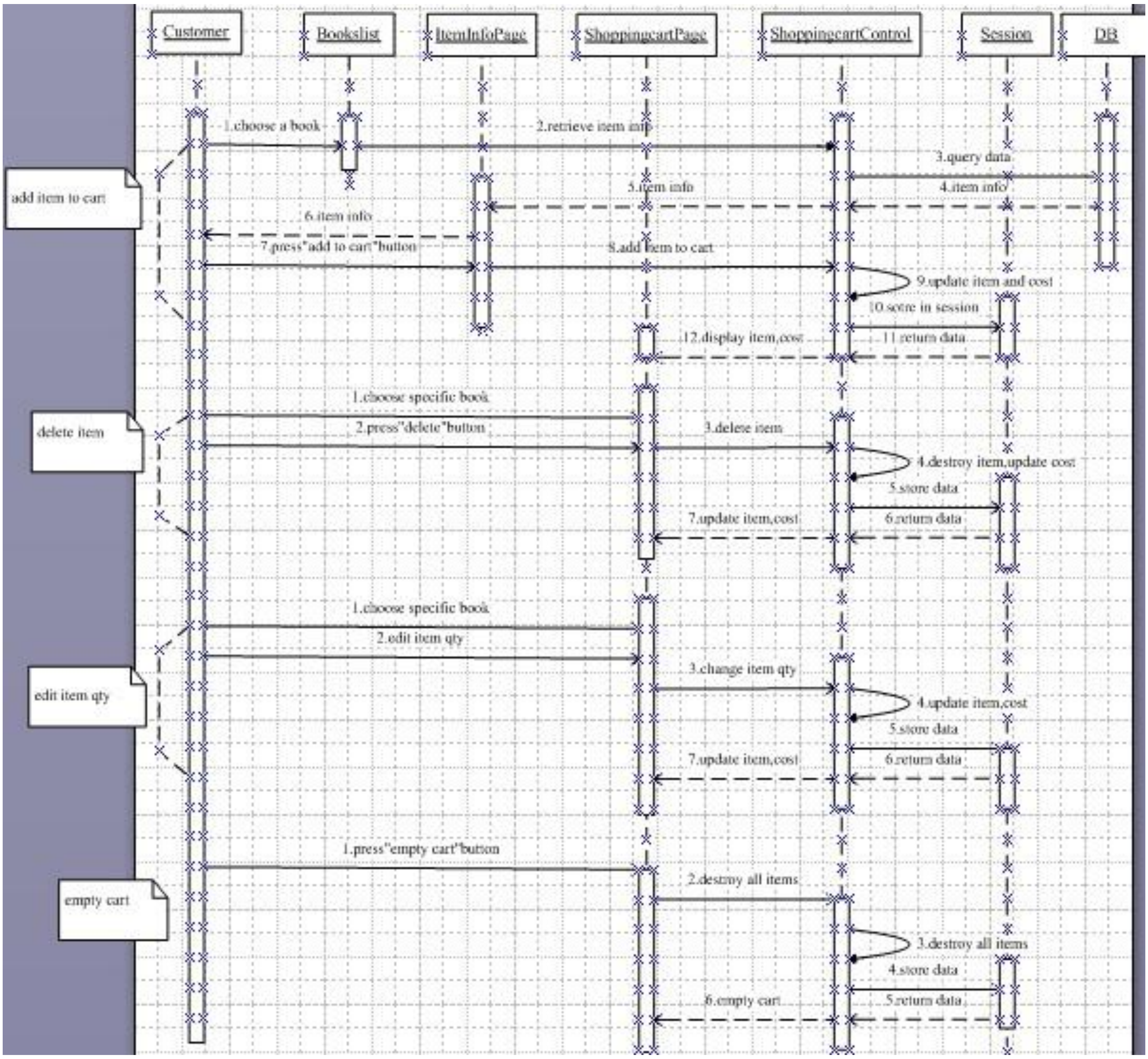


**Fig.9. Customer Handle Shopping cart Sequence Diagram**

Fig.9 is drawn to describe the flow of customer handling his/her shopping cart. The customer selects “handle shopping cart” menu to continue to add books to shopping cart. Also customer can choose specific book and delete it form shopping cart. The application will destroy specific book and update cost to show it on shopping cart page. Then application stores data in session. If the customer wants to edit book quantity, he/she presses “edit” button and changes quantity. The application will update book quantity and display cost to show it. Also, application stores data in session again. When customer does not want to purchase all books, he/she can press “empty shopping cart” button. The application will destroy all books in shopping cart and store data in session.

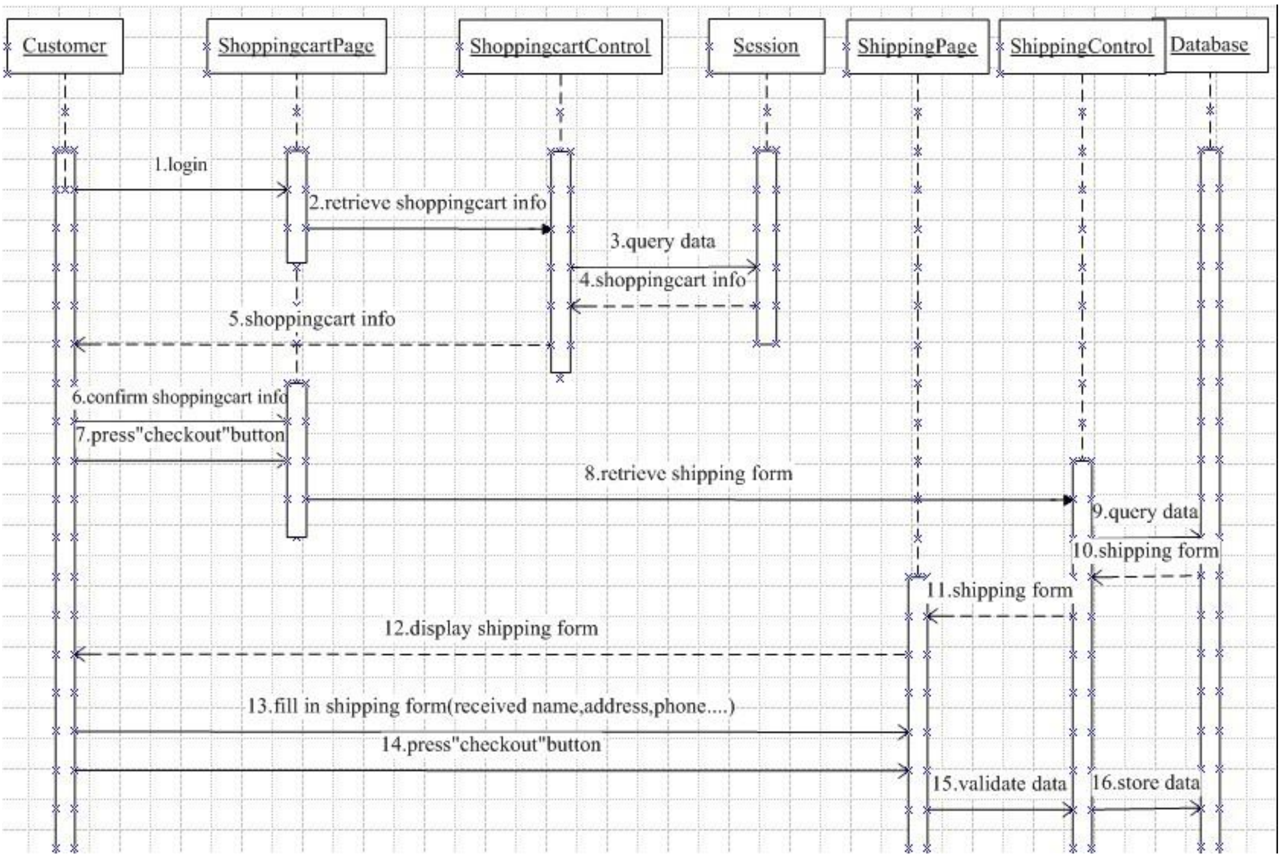


**Fig.10. Customer Place Order Sequence Diagram**

Fig.10 is drawn to describe the flow of customer places order. The customer must be login successfully on the shopping cart page. The application will retrieve his/her shopping cart detail information to show it to customer. Customer confirms shopping cart information, then presses "checkout" button. Next customer must fill in shipping form about received name, address and phone information, then presses "checkout" button again. The application will validate data and store it.

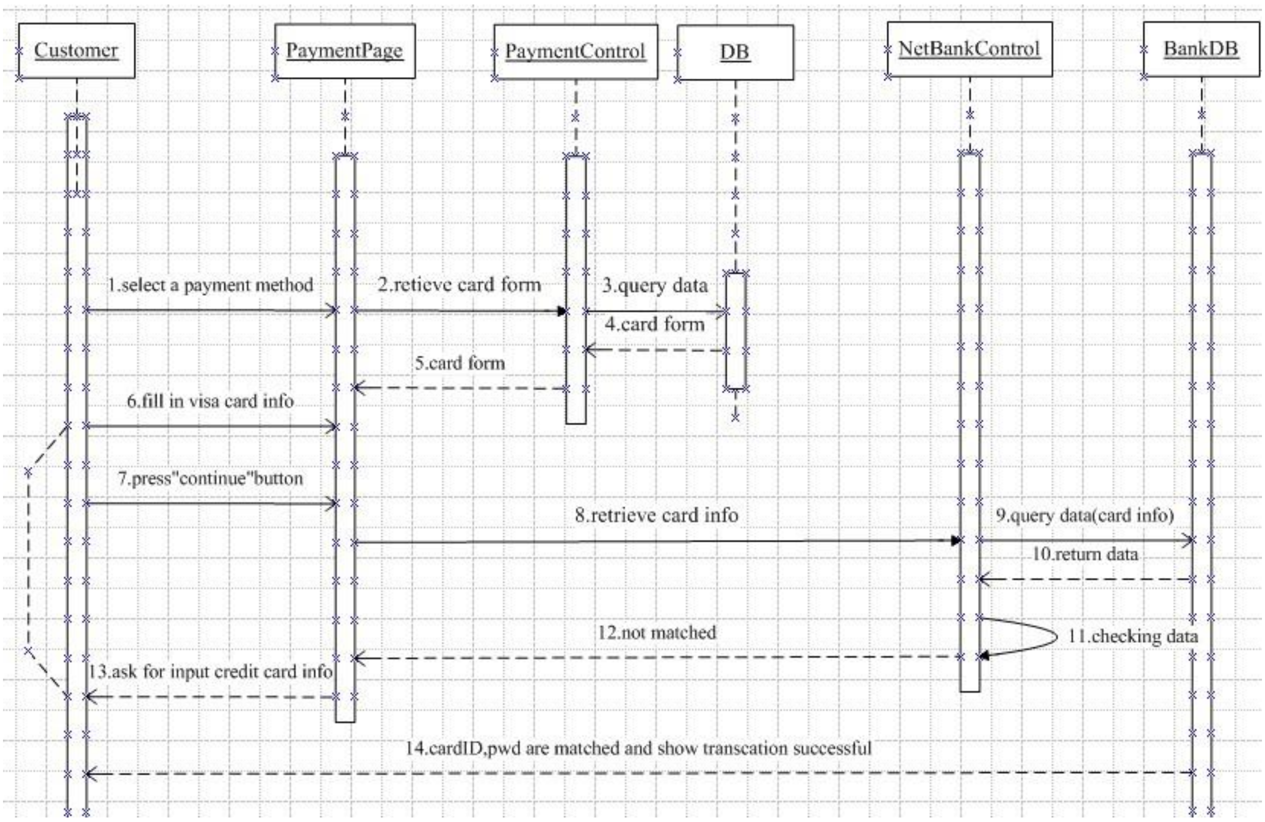


**Fig.11.Customer Payment Sequence Diagram**

Fig.11 is drawn to describe the flow of the customer selecting payment method after he/she finishes shipping form. When customer chooses just only one payment and fills in visa card information, he/she presses “continue” button. The application will check card information. If card information not matched, it asks for customer inputs credit card information again. When card ID and password are matched, the application will show transaction successful to customer.

### 3.4.2. Stock Manager Sequence Diagram

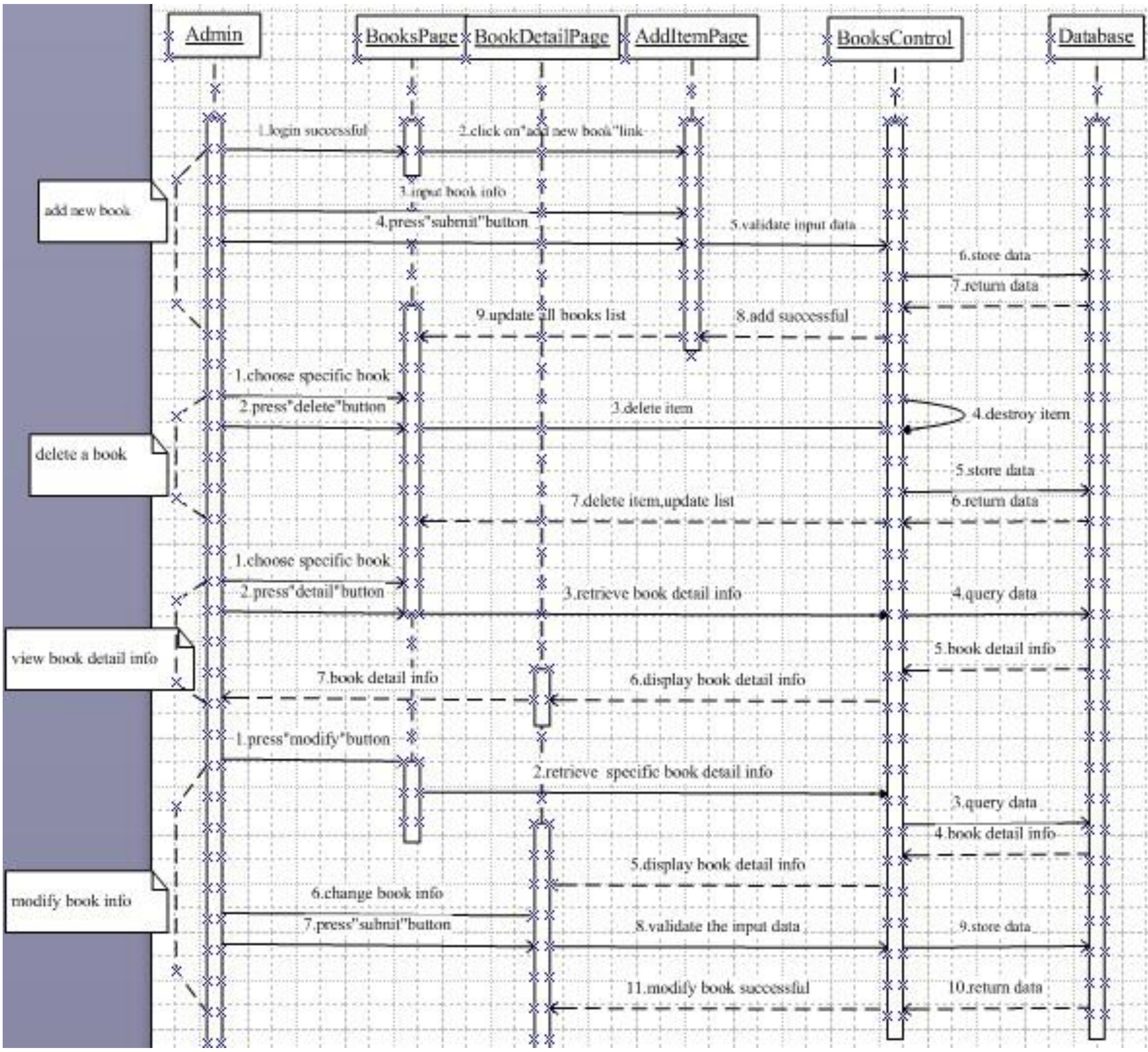


**Fig.12. Stock Manager Sequence Diagram**

Fig.12 is drawn to describe the process of how stock manager manages books. The stock manager must login online bookstore website, then selects “list books” top menu. He/she inputs books information in the text box on the add book page. Such as: title, image, category, author, year, ISBN, publisher, price and description. After that, stock manager presses “submit” button, the application will get the input data, send to the system server to store and show added successful on add book page. Then page will update all books list and auto switch to books list page. When stock manager wants to delete specific book and presses “submit” button, the application will destroy book from database and update database. The books list page will update. One more, stock manager can view all book lists.

If stock manager wants to edit book information, he/she choose specific book from categories or subcategories and press “edit” button. Then stock manager modifies specific book detail information like price or quantity and so on. At the end, he/she presses “submit” button. The application will get the input data and send to the system server to store.

### 3.4.3. Administrator Sequence Diagrams

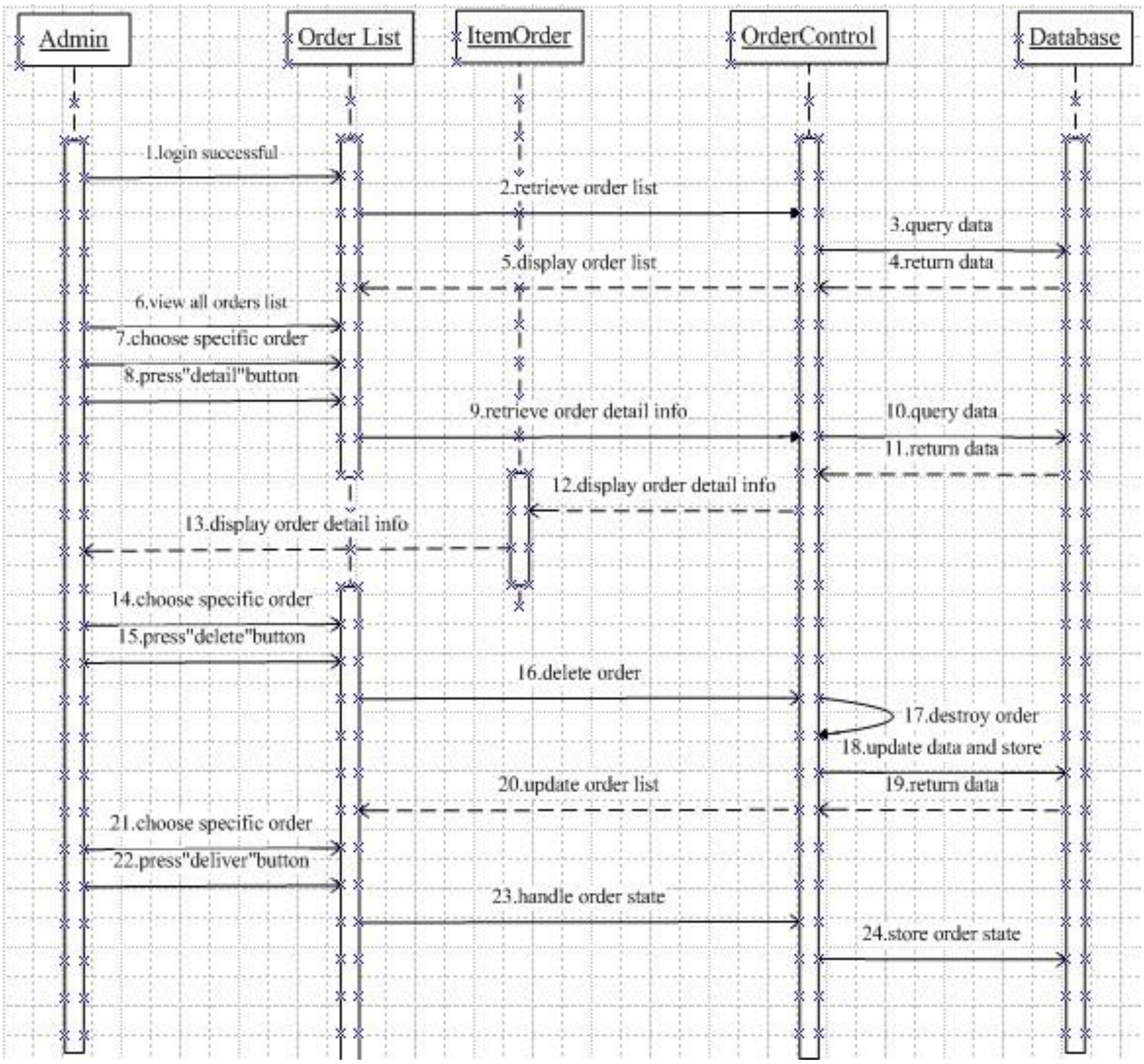


**Fig.13. Administrator Handle Order Sequence Diagram**

Fig.13 is drawn to describe the flow of how administrator handling order. The administrator must be login successfully to handle order website. He/she can browse all customers’ orders. There are “detail and delete” buttons after every order. The administrator chooses specific order and presses “detail” button. The application will display the order detail information. If administrator presses “delete” button, the application will destroy order from database and update database then store it. The order list page will update. When administrator chooses specific order, then he/she presses “deliver” button. The application will handle order state and store order state in database.

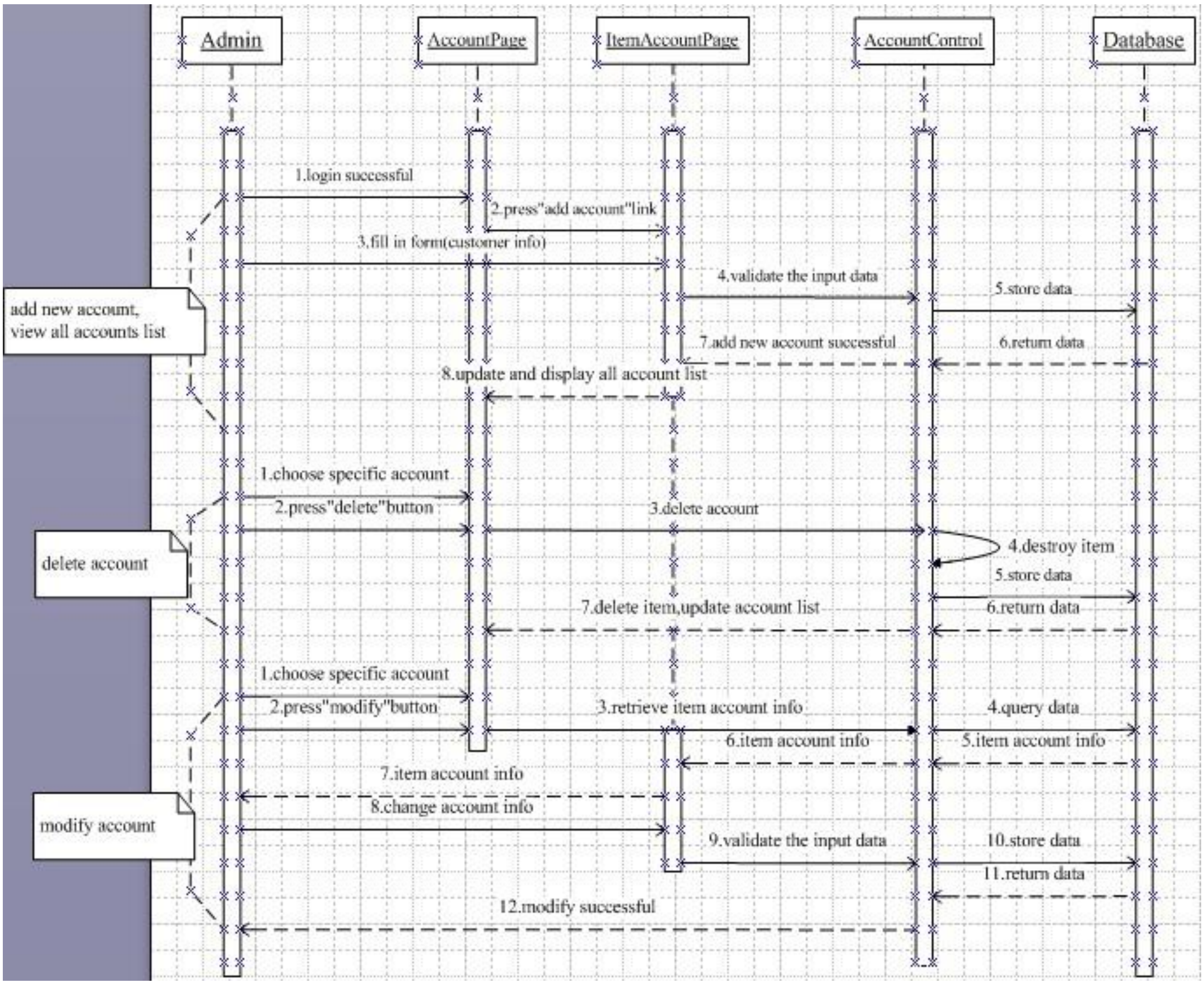


**Fig.14. Administrator Manage Account Sequence Diagram**

Fig.14 is drawn to describe the process of how administrator manages account. At first, the administrator must be login successful on account website. When administrator clicks on “add customer account”, he/she fills in the form about customer information and submits it. The application will validate the entered data and send to the system server. If the administrator chooses specific account will be deleted, then presses “delete” button. The application will destroy account from database and update database. The website auto switches to account list. If administrator chooses specific account, and he/she wants to modify account information, then he/she presses “edit” button. The application will display account information from database. Then administrator changes some information and presses “submit” button. The application sends data to the system server and stores again.

Also, it shows modify successful message on account detail page.

# 4. DESIGN DATABASE

Database plays an important role in the information management system. The structure of database will directly affect the efficiency of system and achievement of results. The good database structure design can improve the efficiency of the data storage, make sure data integrity and consistency.

## 4.1. Design ER Diagrams

According to the online bookstore requirements analysis, there are ER (entity-relationship) data models. As follows:

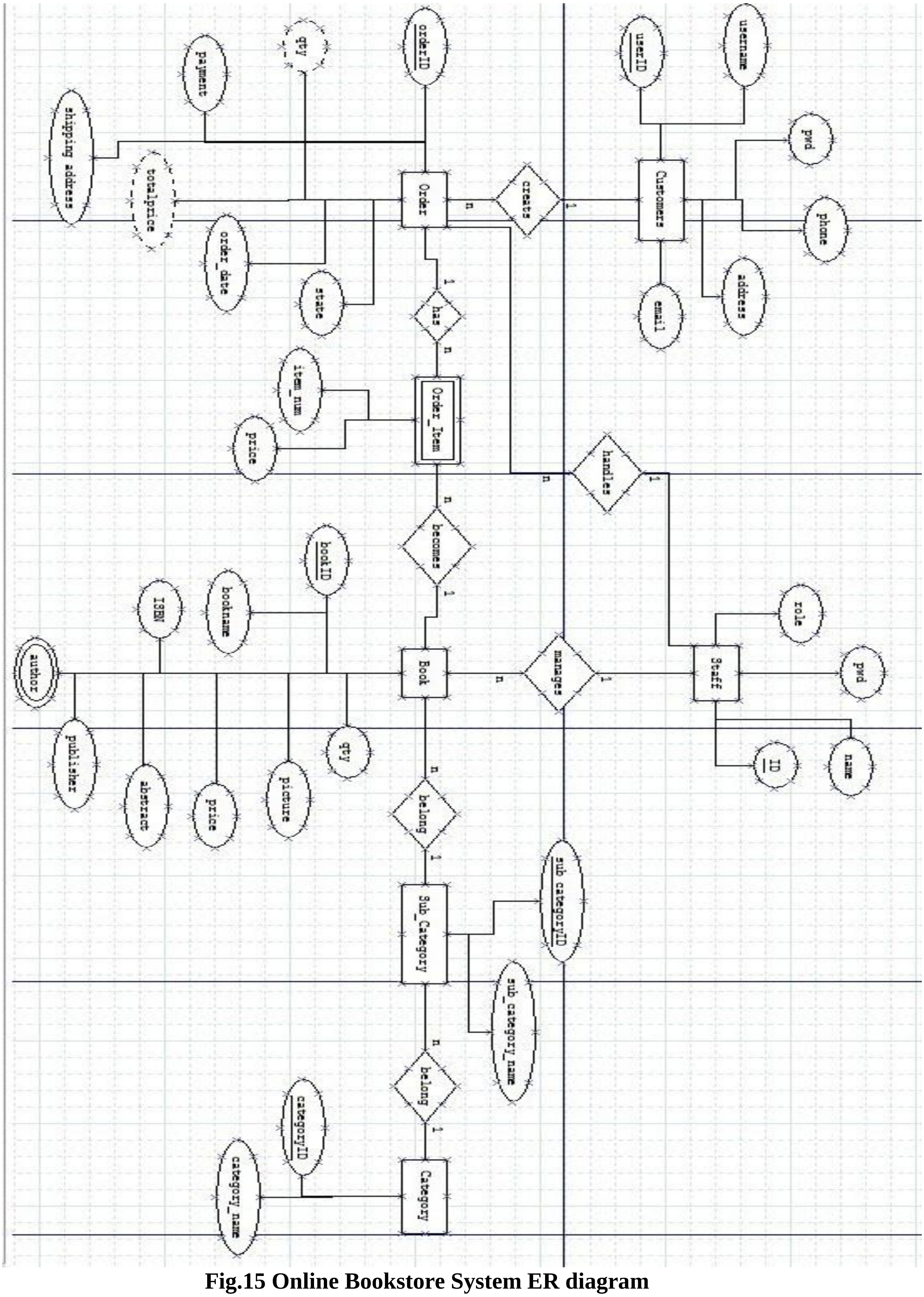


**Fig.15 Online Bookstore System ER diagram**

Fig.15 is drawn to describe the online bookstore system ER diagram. There are seven entities, it includes customers entity, order entity, order_item entity, book entity, category entity, subcategory entity and staff entity.
The property of an entity is the attribute. Each entity has some attributes. The primary key attribute is underlined.

In customers entity, there are six attributes. They are userID, username, password, address, phone, and email.
In order entity, there are seven attributes. They are orderID, quantity, payment, total price, order date, state and item number. In the order state, ”1” stands for the books have been sent. ” 0” stands for the books have not been sent.
In order item entity, there are two attributes. It includes item number and item price.
In  books entity, there are night attributes. It includes bookID, bookname, ISBN, author, publisher, abstract, quantity, price and pricture.
In subcategory entity, there are two attributes. It includes subcategory name and subcategory ID.
In category entity, there are two attributes. It includes category name and category ID.
In staff entity, there are four attributes. It includes ID, name, password and role.

Base on analysis before, here are the relationships between entities, as follow:
One customer can has multiple orders (1:n);
One order can has multiple item orders (1:n);
One staff can handle multiple orders (1:n);
One staff can manage multiple books (1:n);
One book can become multiple item orders (1:n);
One category belong multiple subcategories (1:n);
One subcategory belong multiple books (1:n);

## 4.2. Design Database Tables

According to the entities set and relationship of requirements analysis, online bookstore database designs seven tables. There are customer table, order table, order_item table, book table, category table, subcategory table, and staff table. As follow:

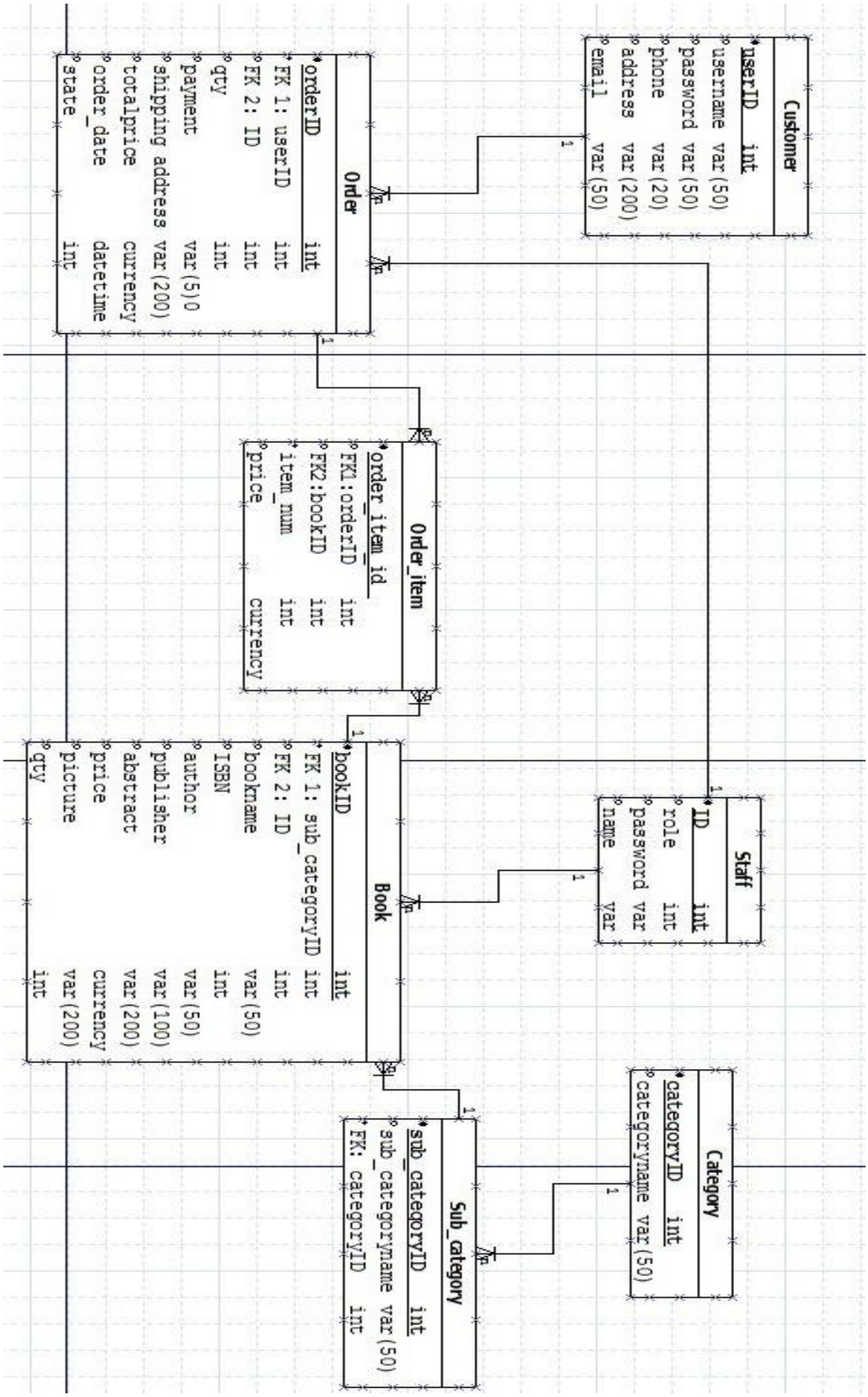


**Fig.16. Online bookstore database diagram**

# 5. IMPLEMENTATION

## 5.1. Development Environment

In the thesis project, the window as an operating system, Apache as the web server, MySQL as a database, PHP as server-side script interpreter. Because they are free or open source software, a stable and free website system can be established.

The appserv server is a collection of Apache server, MySQL server, and PHP comprehensive programming. The installation is easy.
Download address:
http://sourceforge.net/projects/appserv/files/AppServ%20Open%20Project/2.5.10/appserv-win32-2.5.10.exe/download?use_mirror=ncu

Also, Dreamweaver 8.0 is tool. Dreamweaver can be written in the PHP program, but Dreamweaver cannot compile PHP program.
Download address: http://www.onlinedown.net/soft/22017.htm

## 5.2. Algorithms and Interfaces

### 5.2.1. Login Websites

In the system, there are two login interfaces: customer login interface (as shown in Fig.17)and administrator login interface (as shown in Fig.18)
According to the input username to find whether the username has been existed, and whether password is corresponding.
There are the interfaces as:

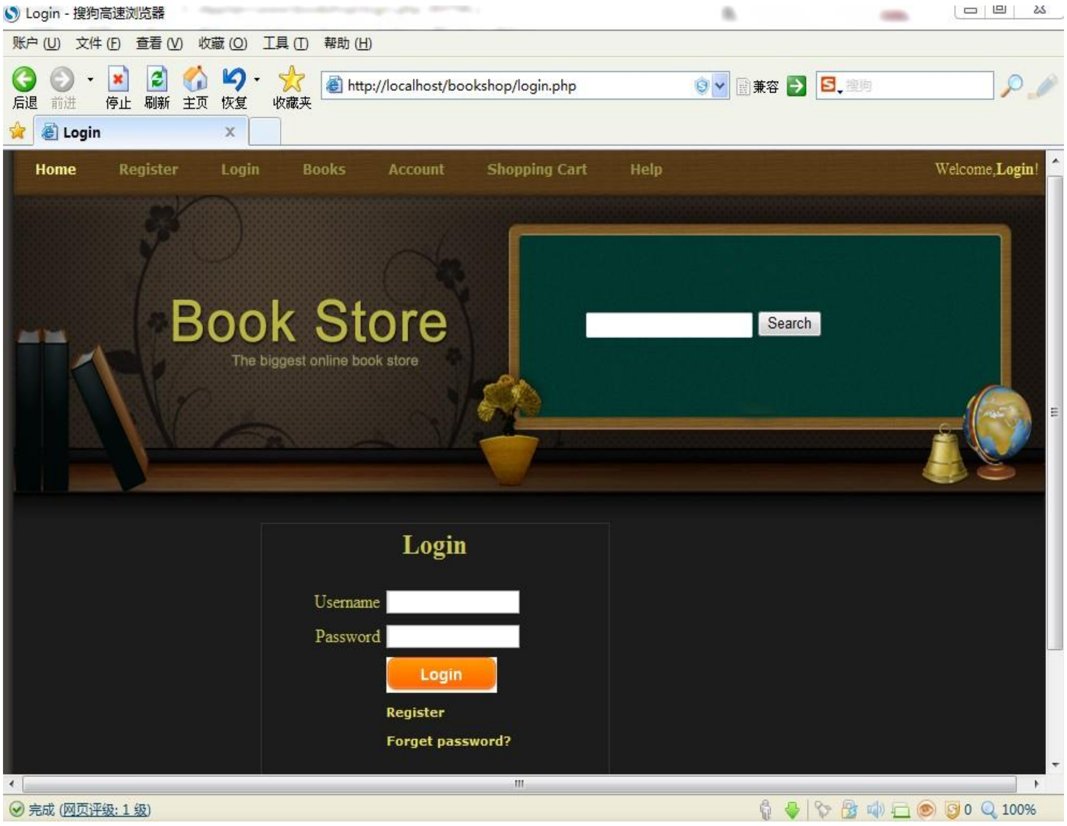

Login - 搜狗高速浏览器
账户 (U) 文件 (F) 查看 (V) 收藏 (O) 工具 (T) 帮助 (H)
后退 前进 停止 刷新 主页 恢复 收藏夹
http://localhost/bookshop/login.php
兼容
Login
Home Register Login Books Account Shopping Cart Help
Welcome,Login!
Book Store
The biggest online book store
Search
Login
Username
Password
Login
Register
Forget password?
完成 (网页评级: 1 级)
100%

Fig.17. Customer Login Interface

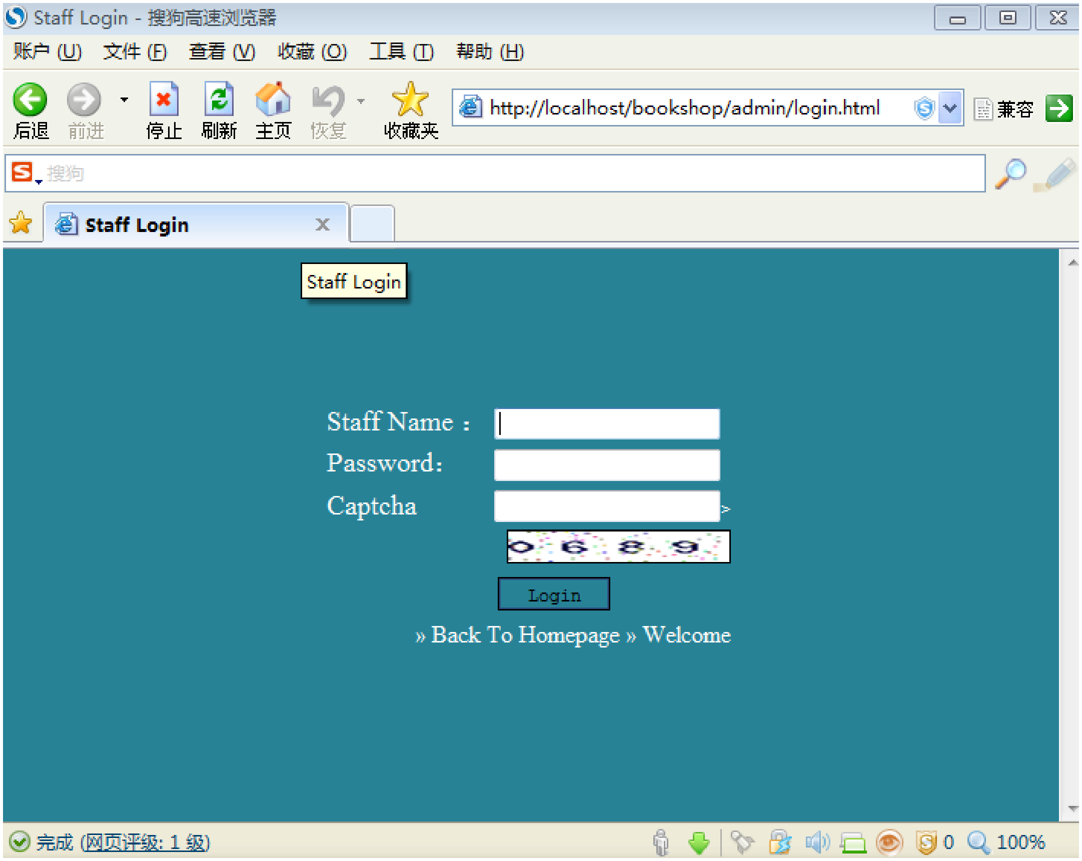

Staff Login - 搜狗高速浏览器
账户 (U) 文件 (F) 查看 (V) 收藏 (O) 工具 (T) 帮助 (H)
后退 前进 停止 刷新 主页 恢复 收藏夹
http://localhost/bookshop/admin/login.html
兼容
搜狗
Staff Login
Staff Login
Staff Name：
Password:
Captcha
0689
Login
» Back To Homepage » Welcome
完成 (网页评级: 1 级)
100%

Fig.18. Administrator Login Interface

The two login interfaces have the same login function. But the captcha does not work. There are some problems about coding.

### 5.2.2. Homepage Websites

When user logins successful, the page will be switched to different interfaces. One is customer homepage interface (as shown in Fig.19), and other is adminstrator homepage interface. However, in adminstrator homepage, we also have two interfaces: stock manager interface(as shown in Fig.20) and adminstrator interface (Fig.21)
At the end, if user login unsuccessfully, the page will go back the login interface again and ask for input username and password again.

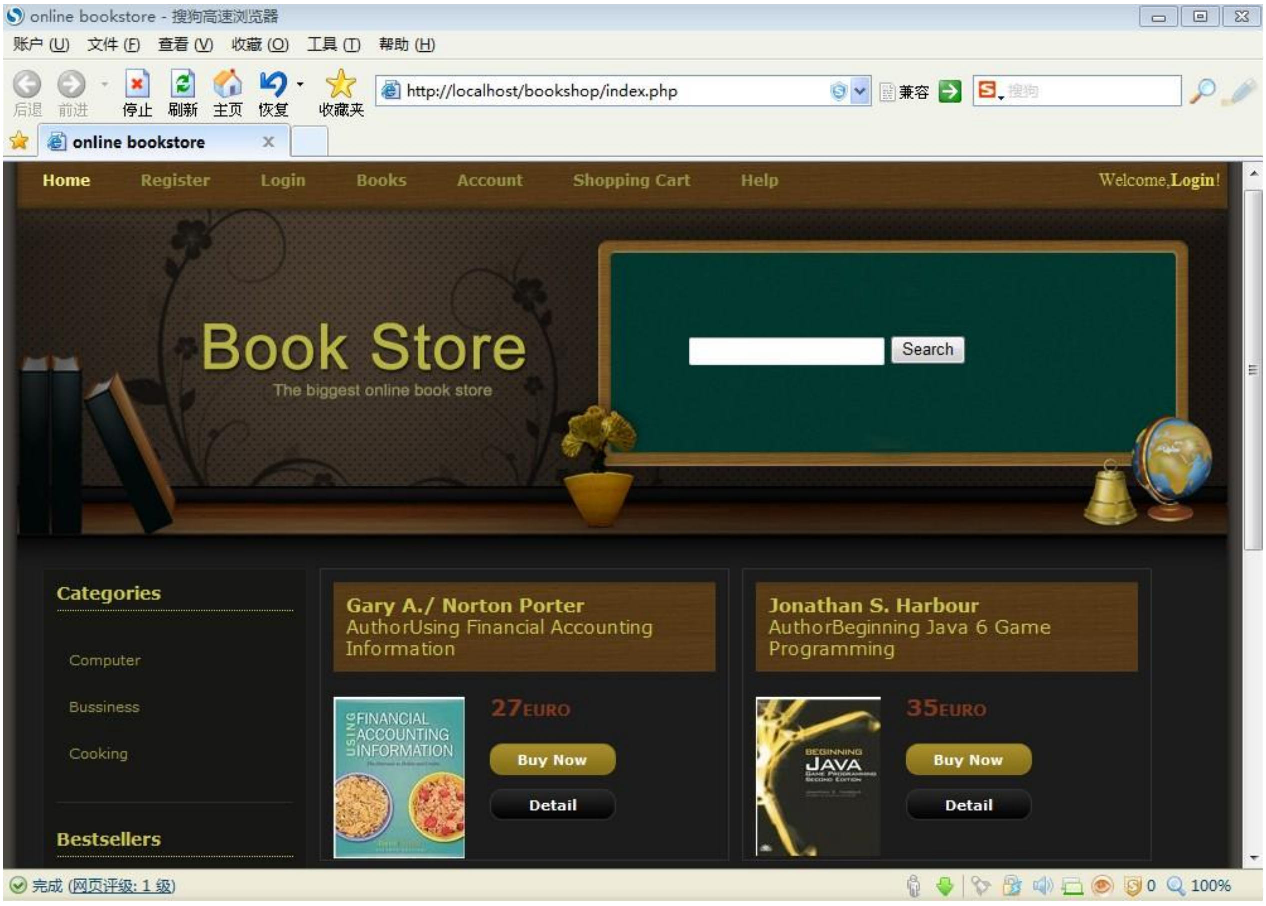
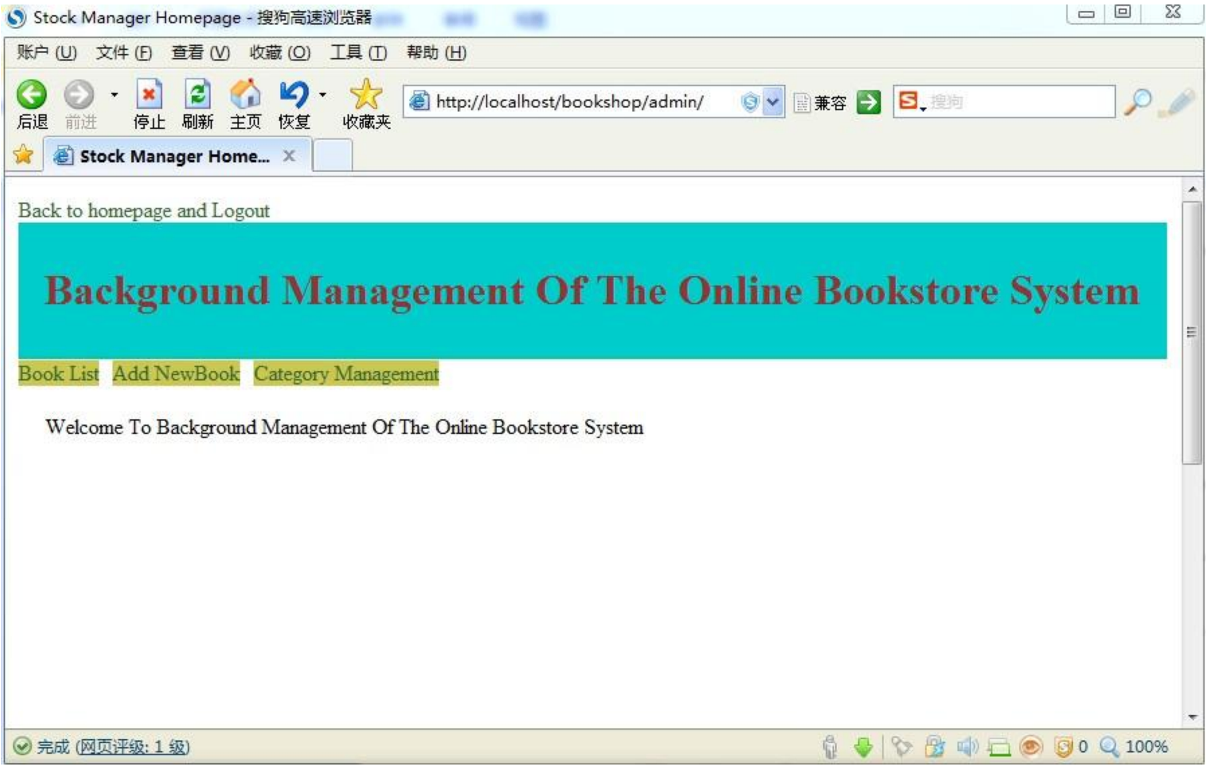

online bookstore - 搜狗高速浏览器
账户 (U) 文件 (F) 查看 (V) 收藏 (O) 工具 (T) 帮助 (H)
后退 前进 停止 刷新 主页 恢复 收藏夹
http://localhost/bookshop/index.php
兼容
搜狗
online bookstore
Home
Register
Login
Books
Account
Shopping Cart
Help
Welcome,Login!
Book Store
The biggest online book store
Search
Categories
Computer
Bussiness
Cooking
Bestsellers
Gary A./ Norton Porter
AuthorUsing Financial Accounting Information
USING FINANCIAL ACCOUNTING INFORMATION
27EURO
Buy Now
Detail
Jonathan S. Harbour
AuthorBeginning Java 6 Game Programming
BEGINNING JAVA
35EURO
Buy Now
Detail
完成 (网页评级: 1 级)
0
100%

**Fig.19. Customer Homepage Interface**



Stock Manager Homepage - 搜狗高速浏览器

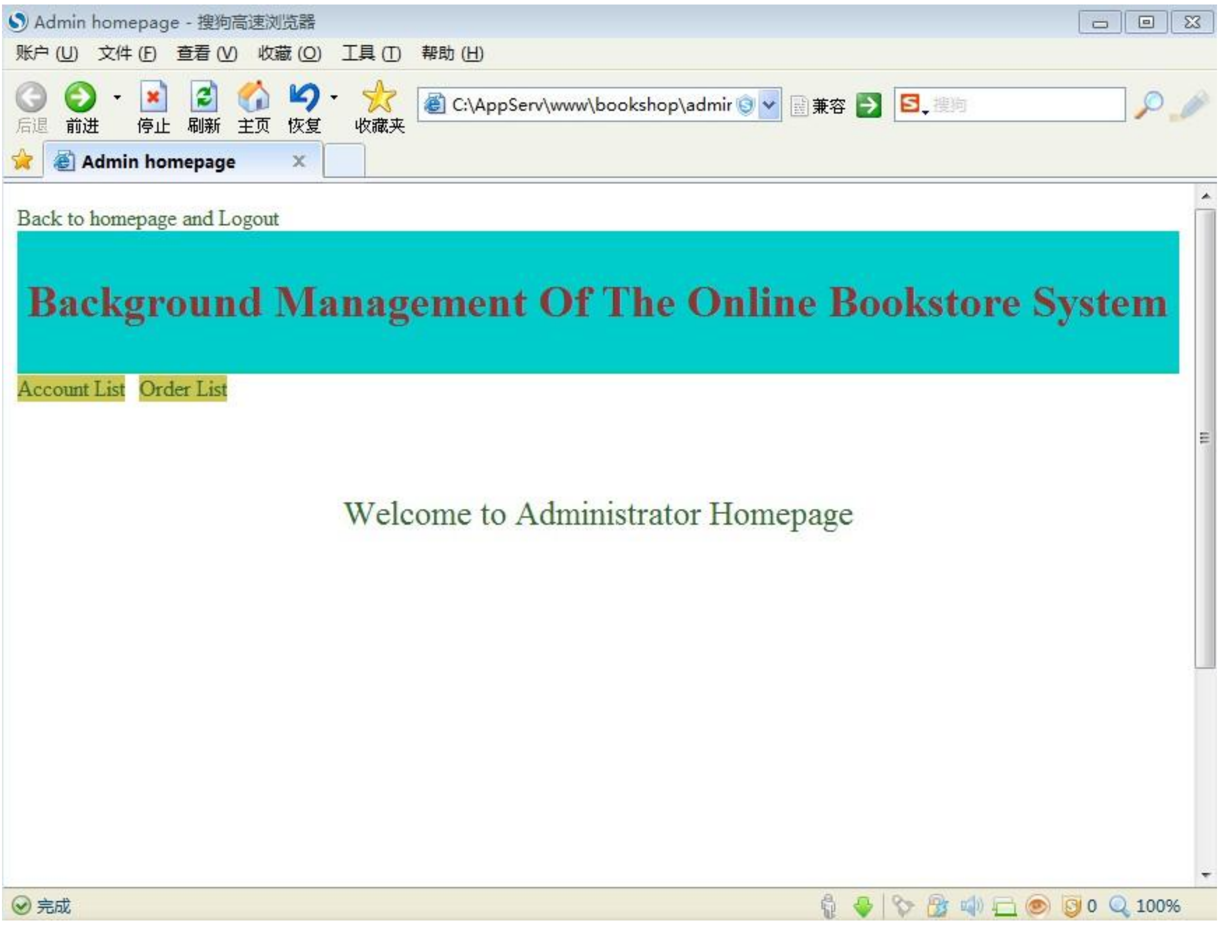
http://localhost/bookshop/admin/

Back to homepage and Logout

Background Management Of The Online Bookstore System

Welcome To Background Management Of The Online Bookstore System

Fig.20. Stock Manager Homepage Interface



Admin homepage - 搜狗高速浏览器

C:\AppServ\www\bookshop\admir

Back to homepage and Logout

Background Management Of The Online Bookstore System

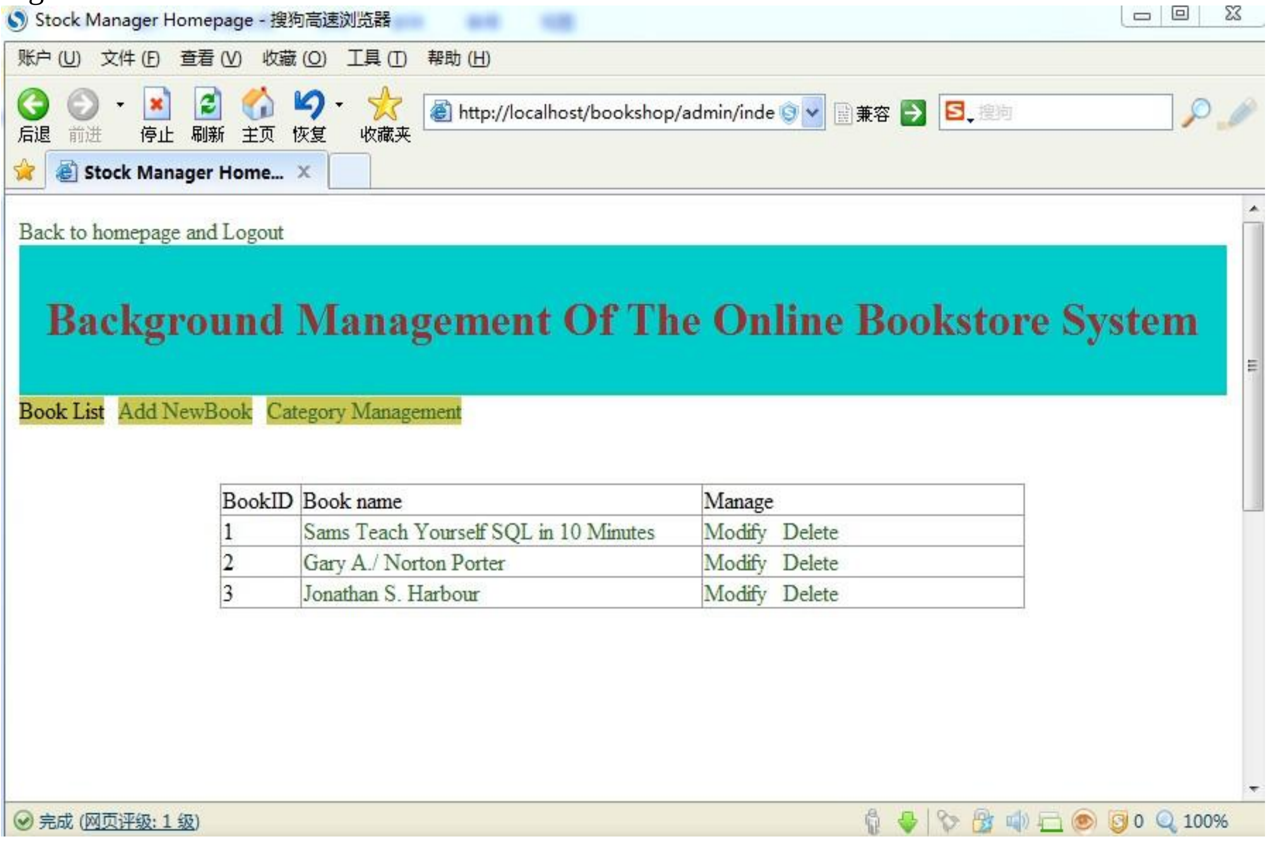
Welcome to Administrator Homepage

Fig.21. Administrator Homepage Interface

When an administrator or stock manager enter the login website, the system will distinguish them and allow them go to difference management website. The public static class is declared in the common.php. When user logins successfully, the static string value is set and got it. But now there are some bugs in the code, the bugs are not solved.

### 5.2.3. Stock Manager

In the Fig.20 stock manager homepage, he/she can mange all books in the system. Stock manager clicks on book list menu, the book list website will be showed. Such as Fig.21.


Stock Manager Homepage - 搜狗高速浏览器
账户 (U) 文件 (F) 查看 (V) 收藏 (O) 工具 (T) 帮助 (H)
后退 前进 停止 刷新 主页 恢复 收藏夹
http://localhost/bookshop/admin/inde
兼容
搜狗
Stock Manager Home...
完成 (网页评级: 1 级)
0
100%

Back to homepage and Logout

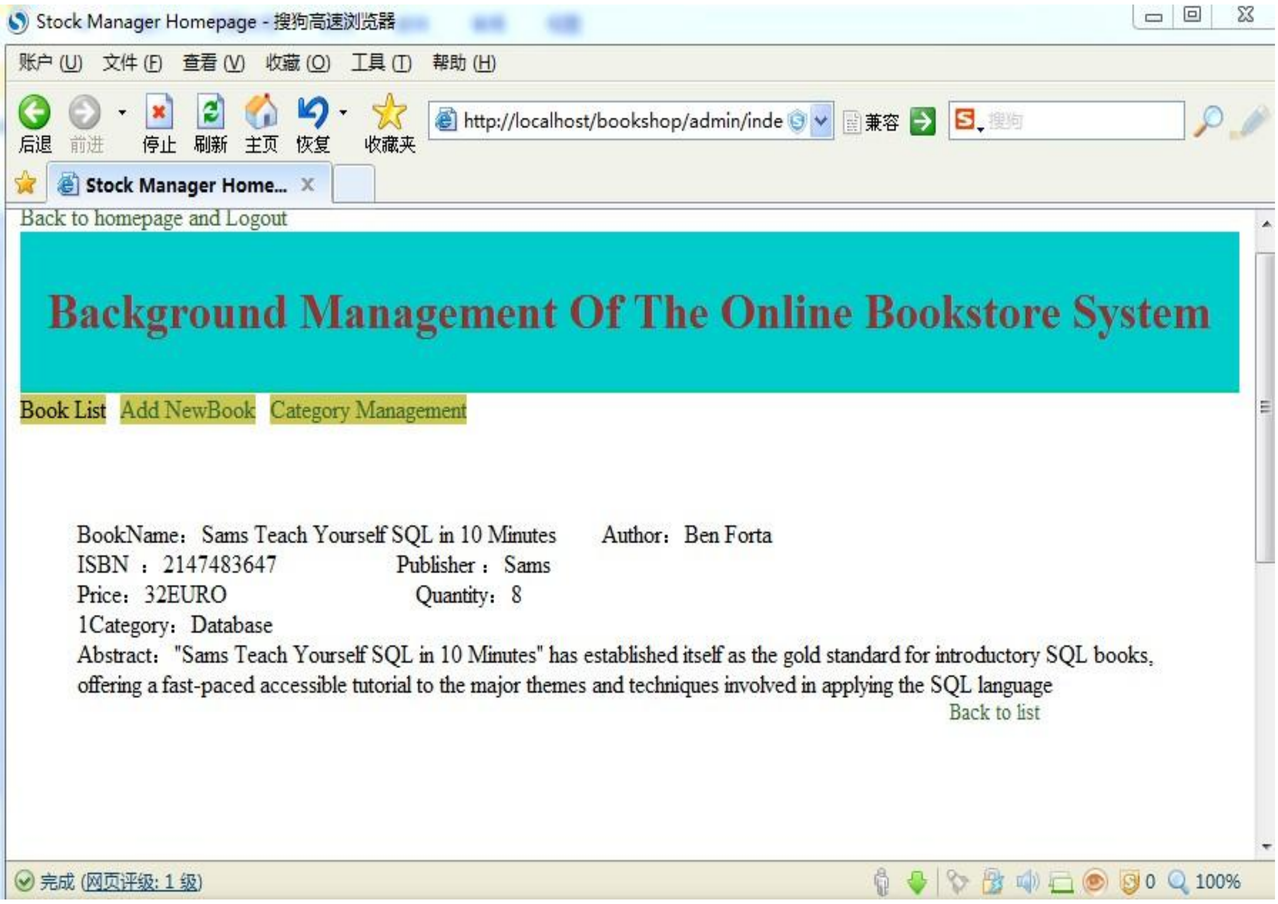
Background Management Of The Online Bookstore System

Book List Add NewBook Category Management

| BookID | Book name | Manage |
|---|---|---|
| 1 | Sams Teach Yourself SQL in 10 Minutes | Modify Delete |
| 2 | Gary A./ Norton Porter | Modify Delete |
| 3 | Jonathan S. Harbour | Modify Delete |

**Fig.21. Book List Interface**

Stock manager clicks on the specific bookname, the website switches to the book detail information website, like that Fig.22. here is ”Back to list” link, it lets stock manager return back the book list website.


Stock Manager Homepage - 搜狗高速浏览器
账户 (U) 文件 (F) 查看 (V) 收藏 (O) 工具 (T) 帮助 (H)
后退 前进 停止 刷新 主页 恢复 收藏夹
http://localhost/bookshop/admin/inde
兼容
Stock Manager Home...
完成 (网页评级: 1 级)
0 100%

Back to homepage and Logout

Background Management Of The Online Bookstore System

Book List Add NewBook Category Management

BookName：Sams Teach Yourself SQL in 10 Minutes Author：Ben Forta
ISBN ：2147483647 Publisher：Sams
Price：32EURO Quantity：8
1Category：Database
Abstract："Sams Teach Yourself SQL in 10 Minutes" has established itself as the gold standard for introductory SQL books, offering a fast-paced accessible tutorial to the major themes and techniques involved in applying the SQL language
Back to list

**Fig.22. Book Detail Information Interface**

The code is showed below means book detail information is called up data from database through bookID keyword.

```
<?php $book = $db_book->get_by_id($_GET['id']);?>
<div class="content"><br />
BookName：<?php echo $book['bookname'];?>
Author：<?php echo $book['author'];?>
ISBN : <?php echo $book['isbn'];?>
Publisher<?php echo $book['publisher'];?>
 Price：<?php echo $book['price'];?>EURO
Quantity：<?php echo $book['qty'];?>
<?echo $book['sub_categoryID'];?>
Category：<?php echo $db_category->getsub_by_id($book['sub_categoryID']);?><br />
Abstract：<?php echo $book['abstract'];?>
```

All the local books information can be added in the database by administrator. Like that Fig.23.

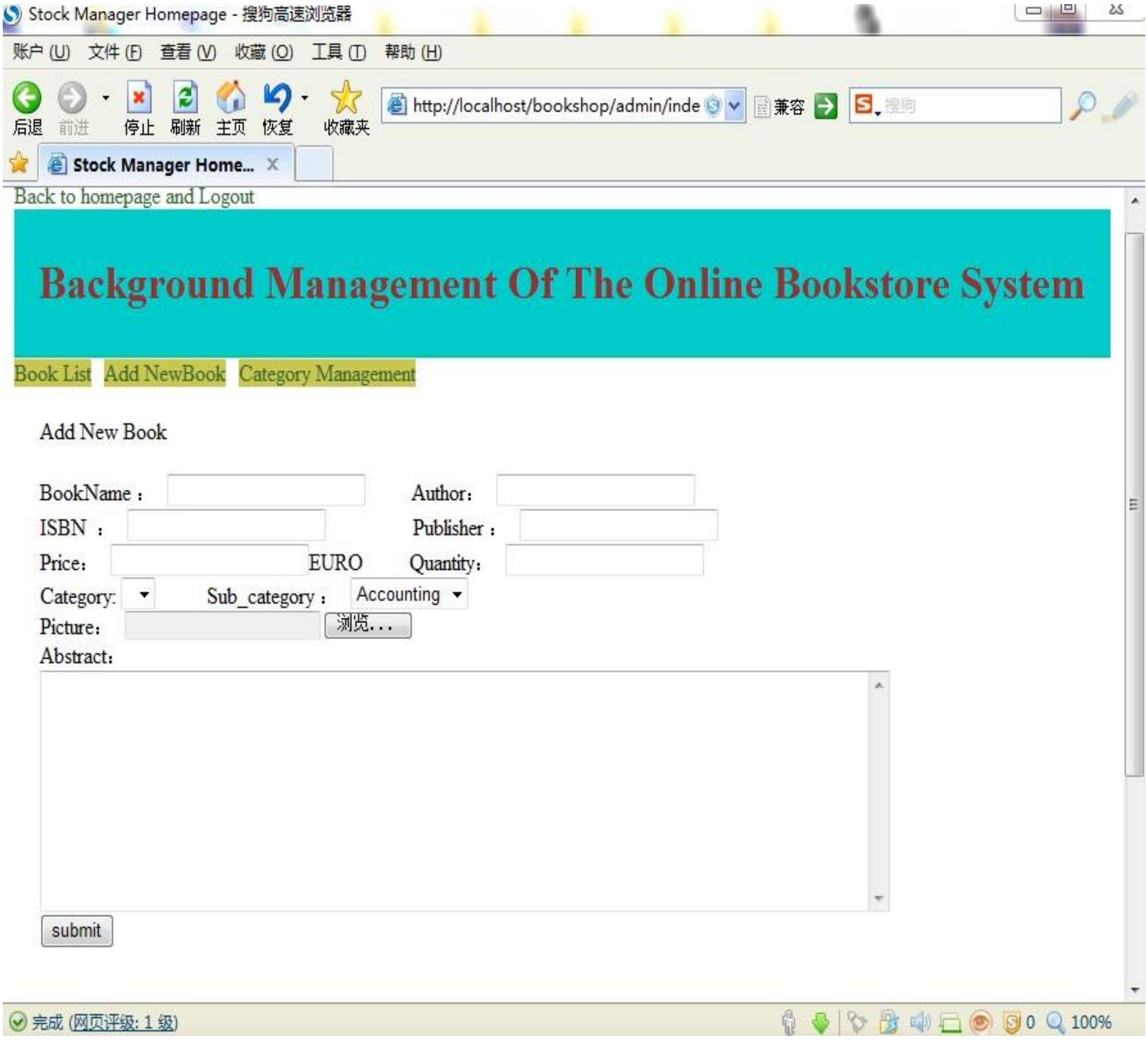
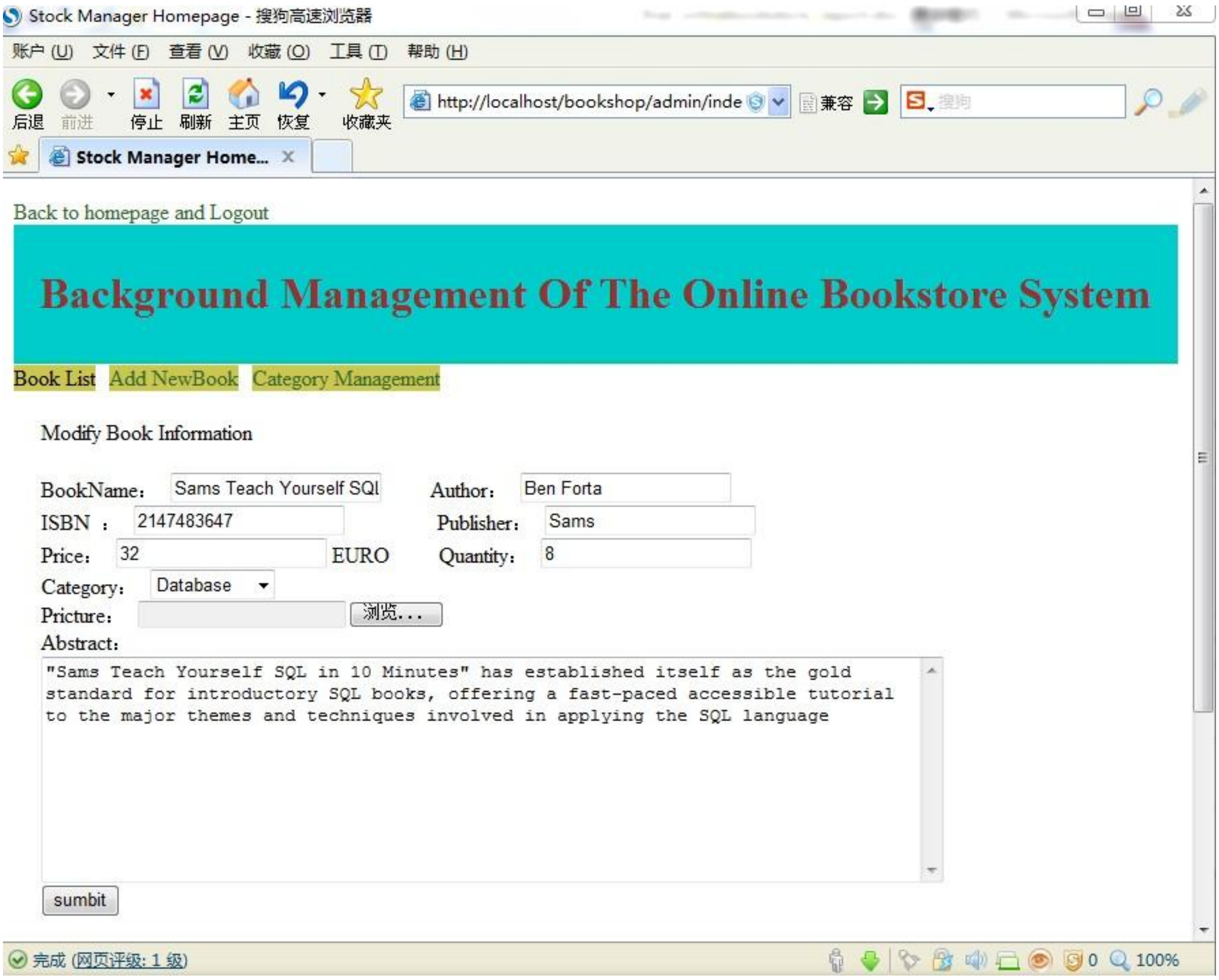

Stock Manager Homepage - 搜狗高速浏览器
账户 (U) 文件 (F) 查看 (V) 收藏 (O) 工具 (T) 帮助 (H)
后退 前进 停止 刷新 主页 恢复 收藏夹
http://localhost/bookshop/admin/inde
兼容
Stock Manager Home...
Back to homepage and Logout
Background Management Of The Online Bookstore System
Book List
Add NewBook
Category Management
Add New Book
BookName :
Author:
ISBN :
Publisher :
Price:
EURO
Quantity:
Category:
Sub_category :
Accounting
Picture:
浏览...
Abstract:
submit
完成 (网页评级: 1 级)
100%

Fig.23.Add New Book Information Interface

Below is the code for adding book information to store in database. For example, add the bookname in database.

```
<form action="<?php echo $admin_url;?>/book_message.html" method="POST"
onsubmit="return checkForm();" enctype="multipart/form-data">
BookName:<input type="text" size="20" name="name" value="" id="name">
```

After new books are added, the website auto jumps to the books list website. Here you can see all books in the list. There are two functions: modify books and delete books in each book. When stock manager chooses sepcific book and presses modify button, the book information is shown from database. Stock manager changes some books information and presses submit button. Fig.24.


Stock Manager Homepage - 搜狗高速浏览器
账户 (U) 文件 (F) 查看 (V) 收藏 (O) 工具 (T) 帮助 (H)
后退 前进 停止 刷新 主页 恢复 收藏夹
http://localhost/bookshop/admin/inde
兼容
Stock Manager Home...
完成 (网页评级: 1 级)
0 100%

Back to homepage and Logout

Background Management Of The Online Bookstore System

Book List Add NewBook Category Management

Modify Book Information

BookName: Sams Teach Yourself SQL Author: Ben Forta
ISBN : 2147483647 Publisher: Sams
Price: 32 EURO Quantity: 8
Category: Database
Pricture: 浏览...
Abstract:

"Sams Teach Yourself SQL in 10 Minutes" has established itself as the gold standard for introductory SQL books, offering a fast-paced accessible tutorial to the major themes and techniques involved in applying the SQL language

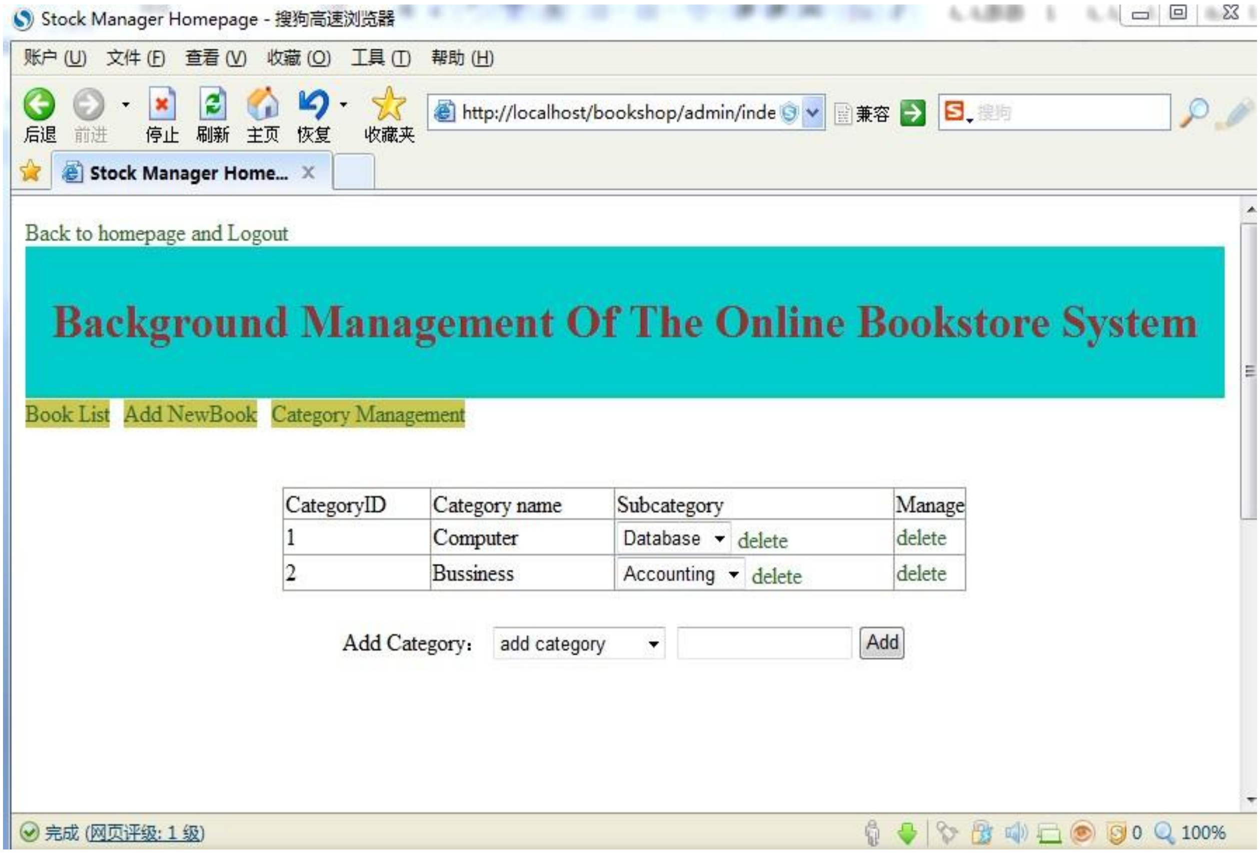
sumbit

**Fig.24. Modify Book Information Interface**

The code showed means modified books. In this code, bookID is search keyowrd from database. Just modify bookname for example.

```
<?php $book = $db_book->get_by_id($_GET['id']);>
<form action="<?php echo $admin_url;?>/books_message.html" method="POST">
BookName：
<input type="text" size="20" name="name" value="<?php echo $book['bookname'];?>">
<input type="submit" value="sumbit" name="submit" />
```

Stock manager adds category or subcategory in categories list, also he/she can delete them. In the specific category, there are many subcategories in it. Sub_item function means that get all subcategories by each categoryID. Such as Fig.25.


Stock Manager Homepage - 搜狗高速浏览器
账户 (U) 文件 (F) 查看 (V) 收藏 (O) 工具 (T) 帮助 (H)
后退 前进 停止 刷新 主页 恢复 收藏夹
http://localhost/bookshop/admin/inde
兼容
Stock Manager Home...
完成 (网页评级: 1 级)
0 100%
Book List
Add NewBook
Category Management

Back to homepage and Logout

Background Management Of The Online Bookstore System

| CategoryID | Category name | Subcategory | Manage |
|---|---|---|---|
| 1 | Computer | Database ▾ delete | delete |
| 2 | Bussiness | Accounting ▾ delete | delete |

Add Category: add category ▾ [ ] Add

Fig.25. Category Management Interface

The code means getting category or subcategory.

```
if ($_POST['category_add']==1)
{
        if($_POST['sub_type'] == 1)
        {
                $db_category->add_message($_POST['name']);
                $_POST['category_add'] = '';
        }
        else{
                $db_category->add_sub_message($_POST['parent_id'],$_POST['name']);
                $_POST['category_add'] = '';
        }
        unset($_POST);
}
```

Below is the code for deleting category or subcategory.

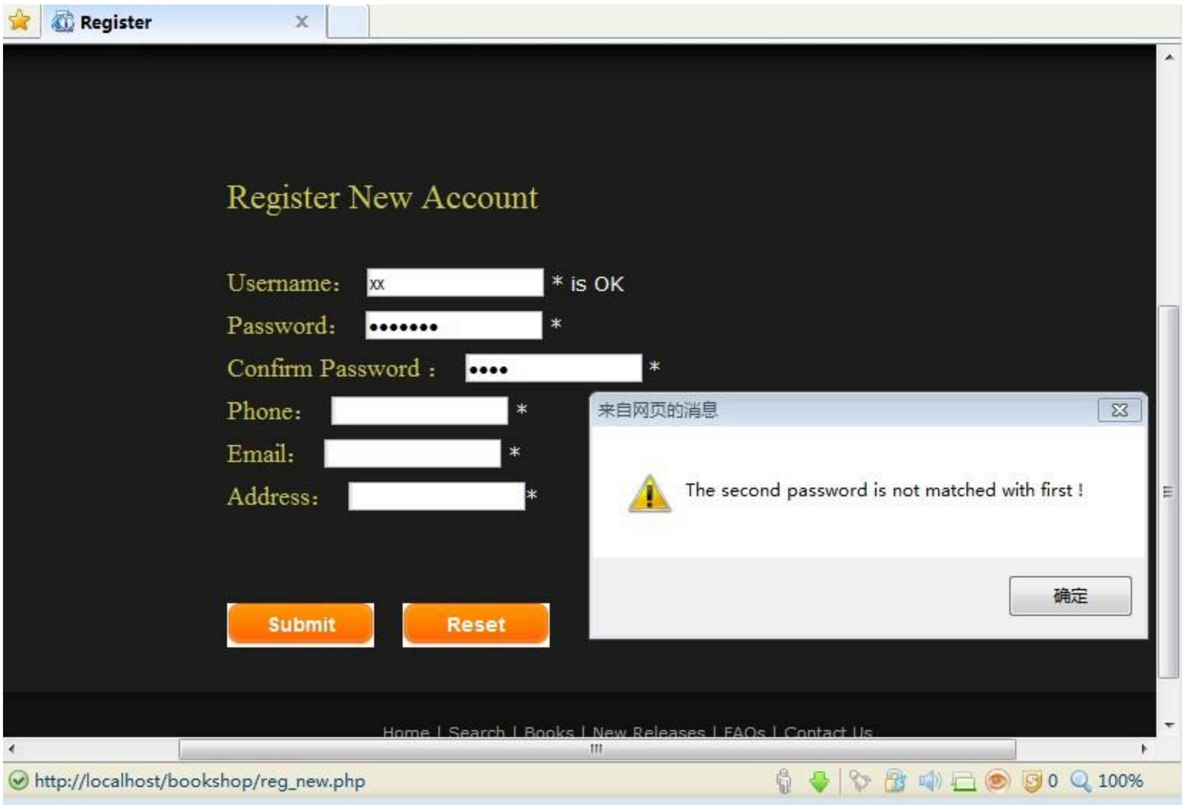
```
if (!empty($_GET['del']))
{
        //echo 'aaa'.$_GET['del'];exit;
        $category_message = $db_category->get_by_id($_GET['del']);
        if (!empty($category_message))
        {
                $db_category->delete_allsub_by_id($_GET['del']);
                $db_category->delete_by_id($_GET['del']);
        }
}
if (!empty($_GET['subdel']))
```

```
        {
                $subcategory_message = $db_category->get_sub_by_id($_GET['subdel']);
                if (!empty($subcategory_message))
                {
                        $db_category->delete_sub_by_id($_GET['subdel']);
                }
        }
```

There is a drop down list which used the select tag function. Variable is $subcategories to get how many subcategory in database. Check $subcategories whether is empty. If it is empty, it is running endif. Otherwise, subcategories are not empty, it is running loop from foreach statement to endif statement over. Option value is getted by sub_categoryid from database.

```
<select name="sub_item">
      <?php $subcategories = $db_category->get_allsub_by_id($category['categoryid']);if
(!empty($subcategories)):foreach ($subcategories as $subcategory): ?>
      <option value="<?php echo $subcategory['sub_categoryid'];?>"> <?php echo
$subcategory['sub_categoryname'];?> </option>
      <?php endforeach;endif;?>
     </select>
```

### 5.2.4. Customer Register



Register New Account

Username: xx * is OK
Password: ••••••• *
Confirm Password : •••• *
Phone: *
Email: *
Address: *

来自网页的消息

The second password is not matched with first !

http://localhost/bookshop/reg_new.php

**Fig.26. Customer Register Interface**

The code means sending request to the server.”GET” is the request type. url is the location of file on the server. True is asynchronous. If XMLHttpRequest wants to use Ajax, the open method of the asynchronous parameter must be true. The code such as below:

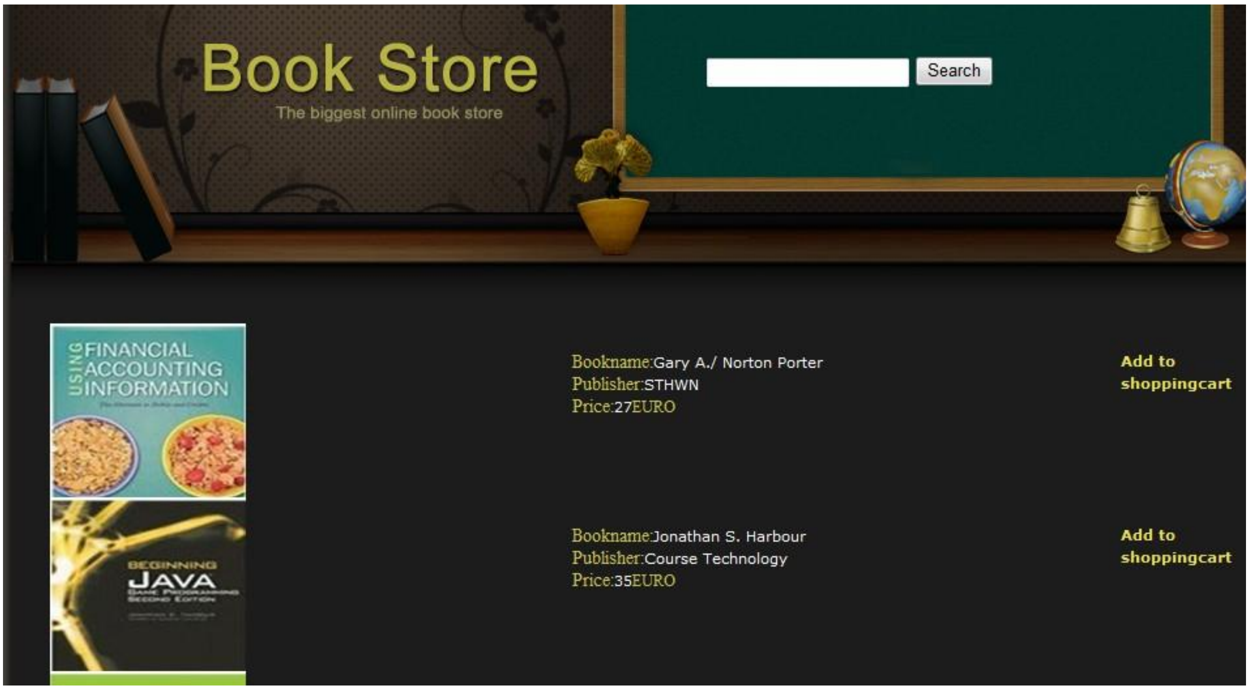
```
ajax.open("GET", url, true);
```

When the request is sent to the server, some tasks will be implemented on the response. When readyState is changed, the onreadystatechange is triggered.

The readyState changes from 0 to 4. When readyState value equal 4 and status is 200, the response is ready. The code like that below:

```
if (ajax.readyState == 4 && ajax.status == 200){
            if(ajax.responseText>0){
                  testCanReg.innerHTML="is OK";
                  isdoublename.value = "true";
            }else{
                  testCanReg.innerHTML="username has been existed!";
                  isdoublename.value = "false";
            }
      }
```

### 5.2.5. Books List



Bookname:Gary A./ Norton Porter
Publisher:STHWN
Price:27EURO

Bookname:Jonathan S. Harbour
Publisher:Course Technology
Price:35EURO

**Fig.26. Book List Interface**

The code means list all books in the books website. There is a loop function getting book from database. Like that:

```
<?php foreach ($db_book ->get_all() as $book):?>
   <?php endforeach;?>
```

# 6. CONCLUSION

During the guidance and supervision of my supervisor, after two months of design and development, I finally completed the development through my graduation project system based on PHP, MySQL and Apache.

In design part, I mainly defined the database and initialized the data. Through supervisor helping and repeated modifying, let me have a good understand the database. When I finished the database, I compiled coding. In this process, some difficulties came up mostly about programming language and connecting with database. I found out relational information on internet and researched open source coding. The problems were solved after I had understood and I modified code in the online bookstore system.

After carefully research this online bookstore system, I learned a good professional knowledge to integrated use. I got a deeper understanding from many of abstract and theoretical knowledge before. At the same time, I had known how to design and development the online bookstore system using the structured programming and models to achieve functions.

But also I still have many problems can not be solved. There are shoppingcart function, search function and handle order function. I think it is lack of insufficient programming skills and limited time. I would like to finish this project when I have enough time. It is very useful for future work to me.

# 7. REFERENCES

## List of the sources:

/1/ Build up website, PHP, [WWW-document]
<http://www.buildwebsite4u.com/advanced/php.shtml> 31.03.2011

/2/ Mysql, What is Mysql, [WWW-document]
< http://dev.mysql.com/doc/refman/5.0/en/what-is-mysql.html> 20.02.2011

/3/ Search win development.com, Ajax (Asynchronous JavaScript and XML), [WWW-document] < http://searchwindevelopment.techtarget.com/definition/Ajax> 31.03.2011

/4/ w3schools.com, Ajax Example,[WWW-document]
< http://www.w3schools.com/ajax/ajax_example.asp> 01.04.2011

/5/ ADOBE DREAMWEAVER CS5, What is Dreanweaver, [WWW-document]
< http://www.adobe.com/products/dreamweaver/whatisdreamweaver/> 27.03.2011

/6/ Bit Repository web resources for developers, Creating an AJAX Login Form using MooTools, [WWW-document] <http://www.bitrepository.com/ajax-login-form.html> 05.04.2011

/7/ Msgn's BLOG, eSHOP, [WWW-document] <http://mgc.name/article.asp?id=465> 07.04.2011

/8/ Buy.con, Books, [WWW-document]
<http://www.buy.com/retail/department.asp?loc=106> 10.03.2011

/9/ Baidu, apache, [WWW-document] <http://baike.baidu.com/view/28283.htm> 28.03.2011

/10/ Trulymanaged.com, Apache Feature List, [WWW-document]
<http://trulymanaged.com/blog/apache-feature-list/> 28.03.2011

/11/ Baidu, mySQL, [WWW-document]
<http://baike.baidu.com/view/24816.htm#sub24816> 29.03.2011

/12/ BLOG, js, [WWW-document]
<http://blog.csdn.net/xuezj508/archive/2009/07/28/4385738.aspx> 08.04.2011

/13/ SWOOLE, Source, [WWW-document]
<http://code.google.com/p/swoole/source/browse/trunk/libs/class/swoole/Admin.php> 06.04.2011

/14/ Forum, category, [WWW-document]
<http://bbs.blueidea.com/thread-3009982-1-1.html> 06.04.2011

# 8. APPENDICES

## 8.1. SQL Statement

- **`book` table**

```
CREATE TABLE `book` (
  `bookid` int(8) NOT NULL auto_increment,
  `sub_categoryID` int(8) NOT NULL,
  `ID` int(8) default NULL,
  `bookname` varchar(50) NOT NULL,
  `isbn` int(20) NOT NULL,
  `author` varchar(50) NOT NULL,
  `price` int(5) NOT NULL,
  `qty` int(8) NOT NULL,
  `publisher` varchar(50) NOT NULL,
  `abstract` text,
  `picture` varchar(50) NOT NULL,
  PRIMARY KEY  (`bookid`)
) ENGINE=InnoDB  DEFAULT CHARSET=utf8 AUTO_INCREMENT=4 ;
```

- **`category` table**

```
CREATE TABLE `category` (
  `categoryid` int(8) NOT NULL auto_increment,
  `categoryname` varchar(50) default NULL,
  PRIMARY KEY  (`categoryid`)
) ENGINE=InnoDB  DEFAULT CHARSET=utf8 AUTO_INCREMENT=3 ;
```

- **`sub_category` table**

```
CREATE TABLE `sub_category` (
  `sub_categoryid` int(8) NOT NULL auto_increment,
  `sub_categoryname` varchar(50) default NULL,
  `categoryID` int(8) default NULL,
  PRIMARY KEY  (`sub_categoryid`)
) ENGINE=InnoDB  DEFAULT CHARSET=utf8 AUTO_INCREMENT=4 ;
```

- **`customers` table**

```
CREATE TABLE `customers` (
  `userid` int(8) NOT NULL auto_increment,
  `username` varchar(50) NOT NULL,
  `password` varchar(50) NOT NULL,
  `address` varchar(100) NOT NULL,
  `phone` varchar(20) NOT NULL,
  `email` varchar(50) NOT NULL,
  PRIMARY KEY  (`userid`)
) ENGINE=InnoDB  DEFAULT CHARSET=utf8 AUTO_INCREMENT=3 ;
```

- **`order_items` table**

```
CREATE TABLE `order_items` (
  `orderID` int(8) NOT NULL,
  `bookID` int(8) default NULL,
  `item_num` int(8) default NULL,
  `price` decimal(5,2) default NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

- **`orders` table**

```
CREATE TABLE `orders` (
  `orderid` int(8) NOT NULL auto_increment,
  `userID` int(8) NOT NULL,
  `ID` int(8) default NULL,
  `qty` int(8) default NULL,
  `payment` varchar(10) NOT NULL,
  `shipping_address` varchar(100) NOT NULL,
  `order_date` date default NULL,
  `totalprice` decimal(5,2) default NULL,
  `state` int(8) NOT NULL,
  PRIMARY KEY  (`orderid`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8 AUTO_INCREMENT=1 ;
```

- **`staff` table**

```
CREATE TABLE `staff` (
  `id` int(8) NOT NULL auto_increment,
  `name` varchar(20) NOT NULL,
  `password` varchar(50) NOT NULL,
  `role` int(8) NOT NULL,
  PRIMARY KEY  (`id`)
) ENGINE=InnoDB  DEFAULT CHARSET=utf8 AUTO_INCREMENT=3 ;
```