Online Book Store System

Shiyun Liu

1. System Brief Introduction

Online book store system is a case of e-commerce systems. It is widely used in our daily life. This system is built for book sale so that producer can publish and manage their books information to sale and customers can search and buy books easily. If the user is a member of this system, he/she can add books to their shopping cart and check out to create an order. It makes getting books at home come true.

2. Development Environment

Operating System: Windows 7
Development Software: MyEclipse 10
Server: Apache Tomcat 7.0
Database: MySQL 6.0
**Technologies:** JSP + CSS + Javascript
Frameworks : Struts + Hibernate

3. Functional Analysis

This online book store system has three kinds of users. They are Visitors, Members and Administrators.

Visitors can only search books and view books, but couldn't add the books into shopping cart and check out. In order to buy a book, users need to be members of this book store website. And administrators can manage the books information.

The use case diagram of the system is as follows:
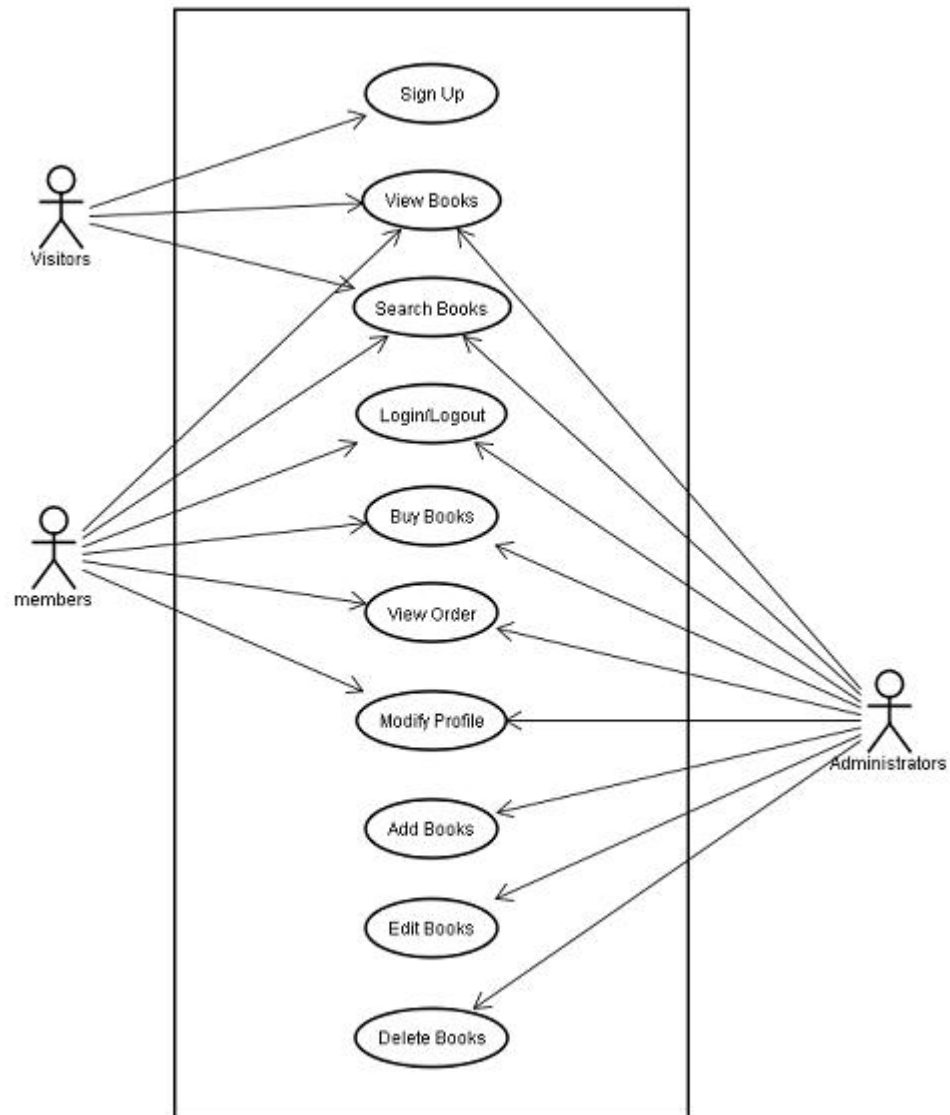
There are three kinds of users in this system. They are visitors, members and administrators. They have two common functions: View Books and Search Books. And each of them has its own functions, too. For visitors, they can sign up to become members of the system. For members, they can login and logout the system, add books into shopping cart and check out, view order information and modify their personal profile. For Administrators, besides the functions of members, they can also manage the books information, like add books, edit books and delete books.

4. Architecture

This system uses MVC (Model, View and Control) architecture pattern.
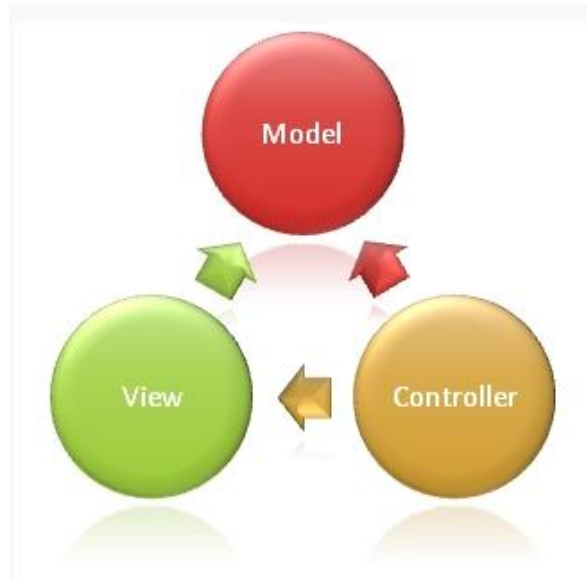
Model:

It notifies its associated views and controllers when there has been a change in its state. This notification allows the views to produce updated output, and the controllers to change the available set of commands. A passive implementation of MVC omits these notifications, because the application does not require them or the software platform does not support them.

Controller:

It sends commands to the model to update the model's state (e.g., editing a document). It can also send commands to its associated view to change the view's presentation of the model (e.g., by scrolling through a document).

View:

It requests information from the model that it needs for generating an output representation to the user.

This system use Struts and Hibernate Frameworks. Struts is used to build the View Level and Controller Level. Hibernate is responsible for connecting with database which acts as the Model Level.

5. Database Design

5.1 Tables

In this online book store system, there are three tables: USERINFO, BOOKINFO, ORDER.

USERINFO:

Name	Type	NULL	Default	Extras
Keys (1)				
🔑 Primary Key id				unique
Fields (8)				
id	int(10) unsigned	No	<auto_increment>	
username	varchar(15)	No		
pwd	varchar(32)	No		
email	varchar(32)	No		
address	varchar(100)	Yes	<NULL>	
postcode	varchar(6)	Yes	<NULL>	
level	numeric(10,2) unsigned zerofill	Yes	00000000.00	
power	tinyint(3) unsigned zerofill	No	000	

BOOKINFO

Name	Type	NULL	Default	Extras
Keys (1)				
🔑 Primary Key id				unique
Fields (10)				
id	int(10) unsigned	No	<auto_increment>	
bookName	varchar(128)	No		
isbn	varchar(64)	No		
writer	varchar(45)	No		
publisher	varchar(64)	No		
intro	text	Yes		
price	numeric(5,2)	No	0.00	
remaining	smallint(5) unsigned zerofill	No	00000	
picture	varchar(32)	Yes	<NULL>	
date	datetime	No	0000-00-00 00:00:00	

ORDER

Name	Type	NULL	Default	Extras
Keys (1)				
🔑 Primary Key id				unique
Fields (8)				
id	int(10) unsigned	No	<auto_increment>	
bookid	int(10) unsigned	No	0	
userid	int(10) unsigned	No	0	
number	tinyint(3) unsigned	No	0	
address	varchar(128)	No		
postcode	varchar(6)	No		
orderdate	datetime	No	0000-00-00 00:00:00	
status	tinyint(3) unsigned zerofill	No	000	

5.2 Data

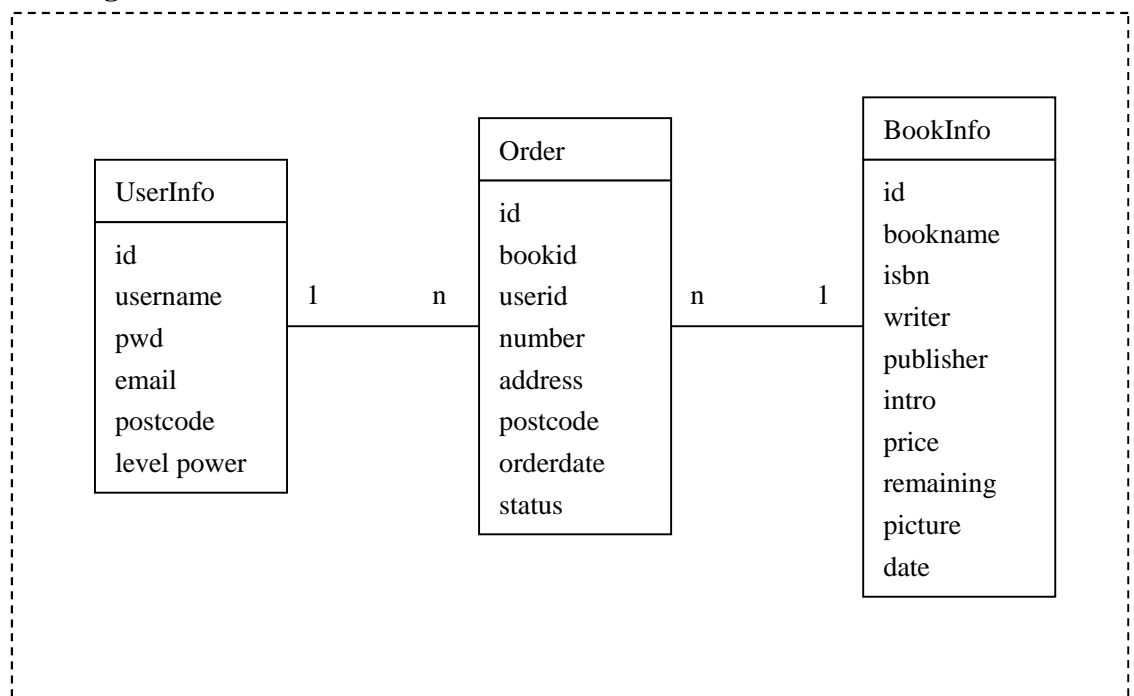Some users information and books information have already been set at the beginning.

USERINFO

id	username	pwd	email	address	postcode	level	power
1	aaa	aaa	aaaa@xxx.com	lwle	294953	00000000.00	000
2	bbb	123	123@1.2	421	243151	00000000.00	001
3	ccc	ccc	a@b.c	bj	123456	00000000.00	001
4	ddd	ddd	a@b.c	bj	123456	00000000.00	001
5	eee	eee	eee@b.c	eee	123456	00000000.00	000
6	pp	pp	pp2@sina.com	fdfdf	4545	00000000.00	000
7	123123	123	123@126.com	123	123	00000000.00	000

Power means the limits of the authority. If the power field is set as 001, it means that this user is an administrator.

BOOKINFO

id	bookName	isbn	writer	publisher	intro	price	remaining	picture	date
1	Fairy Stories	303-955-016	Ge Lin	YiZhiHua	<MEMO>	20.99	12700	image/Fairy.gif	2006-02-15 10:20:05
2	c++	111-222-333	Linda	Qinghua	<MEMO>	123.00	12846	image/CPlus.gif	2007-08-02 16:17:57
3	Java HeadFirst	169-240-395	liuyu	Beijing University	<MEMO>	32.00	02350	image/JAVA.gif	2007-07-28 20:39:27
4	Funny Stories	417-530-272	Aviche, Kellin	Education	<MEMO>	11.00	08672	image/Funny.gif	2010-10-23 07:26:35

5.3 ER Diagram

```
UserInfo          Order           BookInfo
                                   id
id                id              bookname
username    1  n  bookid    n  1  isbn
pwd               userid           writer
email             number           publisher
postcode          address          intro
level power       postcode         price
                  orderdate        remaining
                  status           picture
                                   date
```

One user can have multiply orders. One order only contains one book, but one book can belongs to many orders.

5.4 Database Connection

User Hibernate to connect with database.

```xml
<?xml version='1.0' encoding='UTF-8'?>
<!DOCTYPE hibernate-configuration PUBLIC
        "-//Hibernate/Hibernate Configuration DTD 3.0//EN"

"http://hibernate.sourceforge.net/hibernate-configuration-3.0.dtd">

<!-- Generated by MyEclipse Hibernate Tools.                -->
<hibernate-configuration>

    <session-factory>
        <property name="connection.username">root</property>
        <property
name="connection.url">jdbc:mysql://localhost:3306/bookstore?useUnic
ode=true&amp;</property>
        <property
name="dialect">org.hibernate.dialect.MySQLDialect</property>
        <property name="connection.password">yuyouji</property>
        <property
name="connection.driver_class">com.mysql.jdbc.Driver</property>
        <property name="hibernate.show_sql">true</property>
        <property
name="hibernate.transaction.factory_class">org.hibernate.transactio
n.JDBCTransactionFactory</property>
        <mapping resource="/bookstore/database/Bookinfo.hbm.xml" />
        <mapping resource="/bookstore/database/Order.hbm.xml" />
        <mapping resource="/bookstore/database/Userinfo.hbm.xml" />
    </session-factory>

    </hibernate-configuration>
```
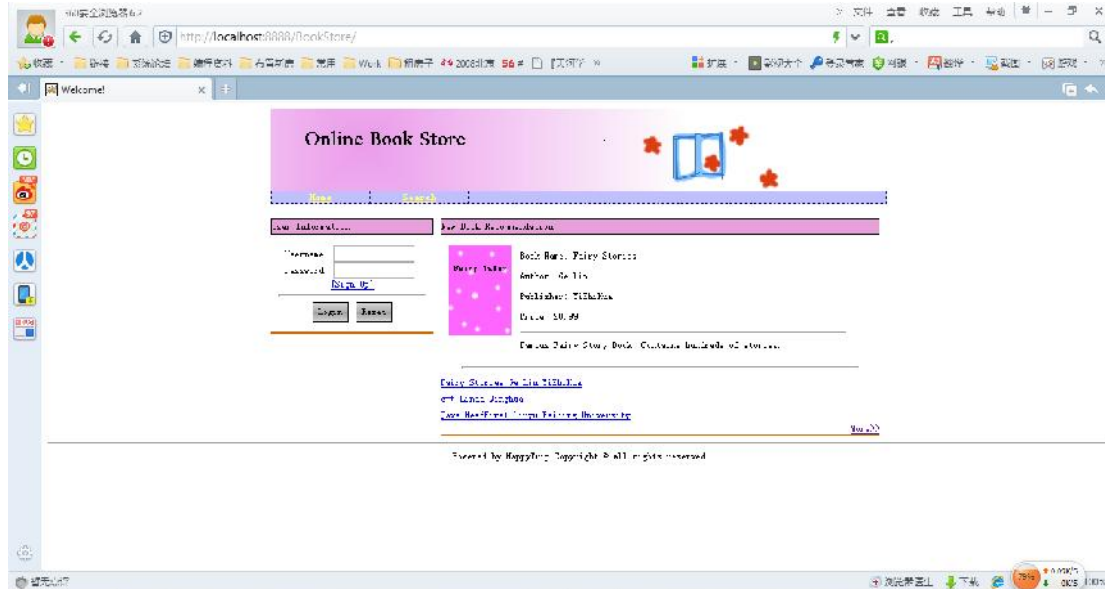
6. Result

(1) Home page:

The home page of this system also shows the newest book which has been added into the book store just now. If a member has checked out and created an ordered, the home page of this member will also show the order information of this member.

(2) Login check:

If input the wrong username and password:

If not fill the password field

If not fill the username field:

(3) View books:

Book Information:

Book Name:Fairy Stories Add into Shopping Cart

Author:Ge Lin

Publisher:YiZhiHua

Price:20.99

Famous Fairy Story Book. Contains hundreds of stories.

(4) Search books

Online Book Store

Home   Search

Book Name: [   ] Start search!

Funny Stories (Aviche, Kellin Education)   Add into Shopping Cart
Java HeadFirst (liuyu Beijing University)   Add into Shopping Cart
c++ (Linda Qinghua)   Add into Shopping Cart
Fairy Stories (Ge Lin YiZhiHua)   Add into Shopping Cart

[Front] [End]

Powered by HappyTrip Copyright © All rights reserved
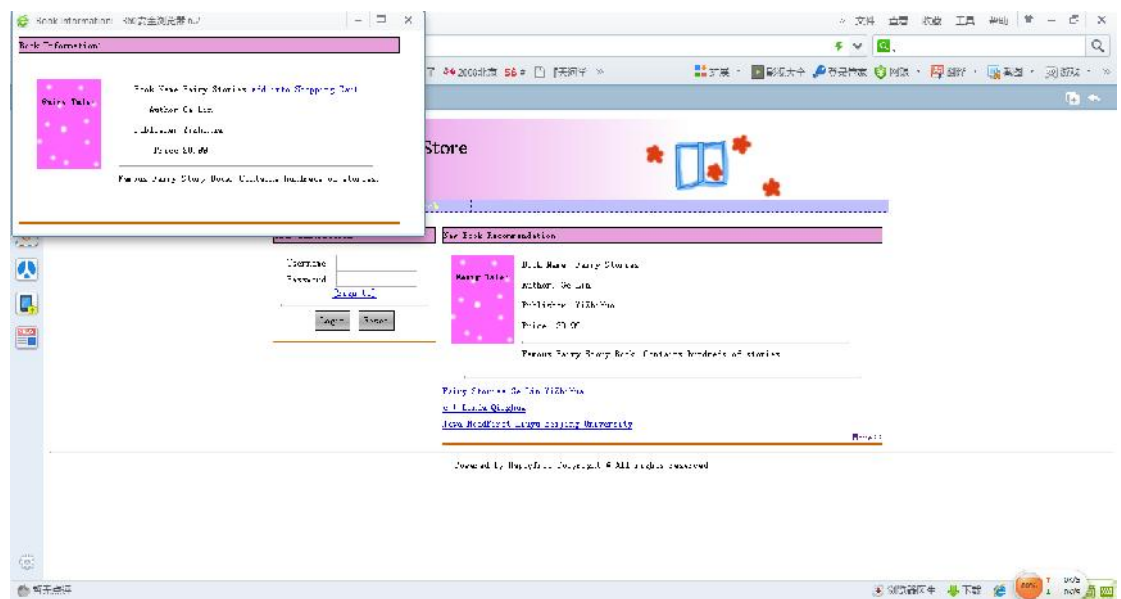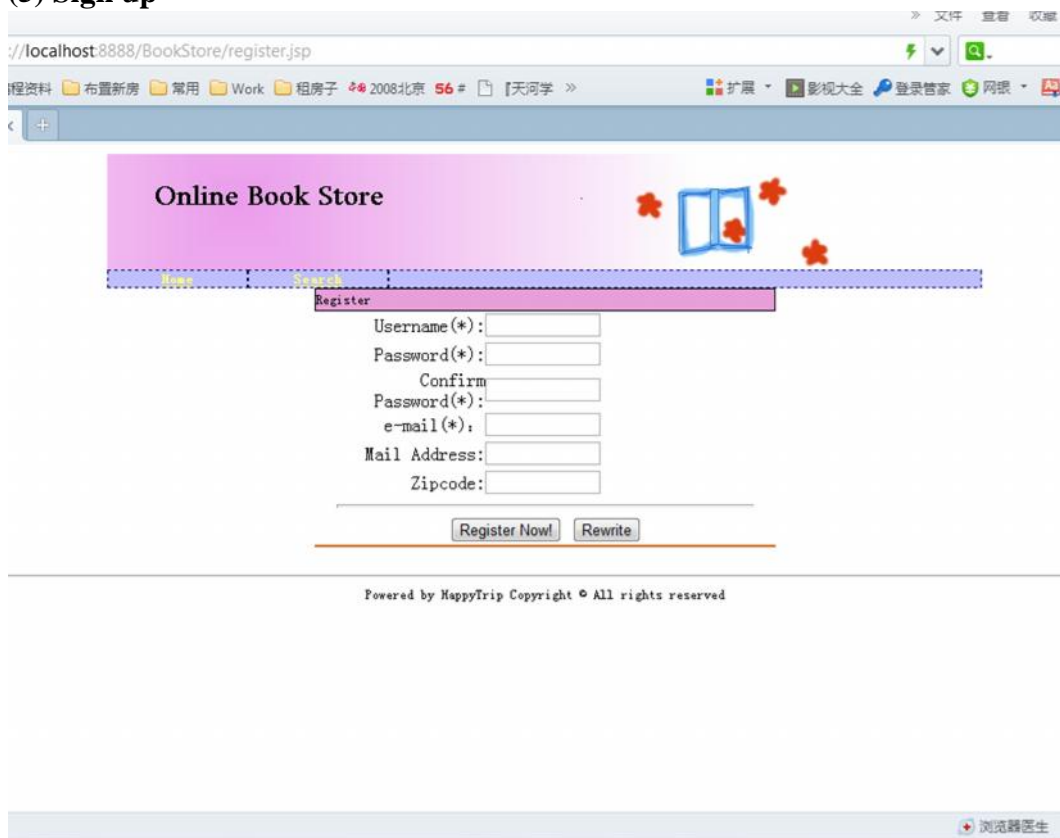
Use" Stories" as the search keywords.

(5) Sign up

Sign up with the username "tiger" and password "12345"
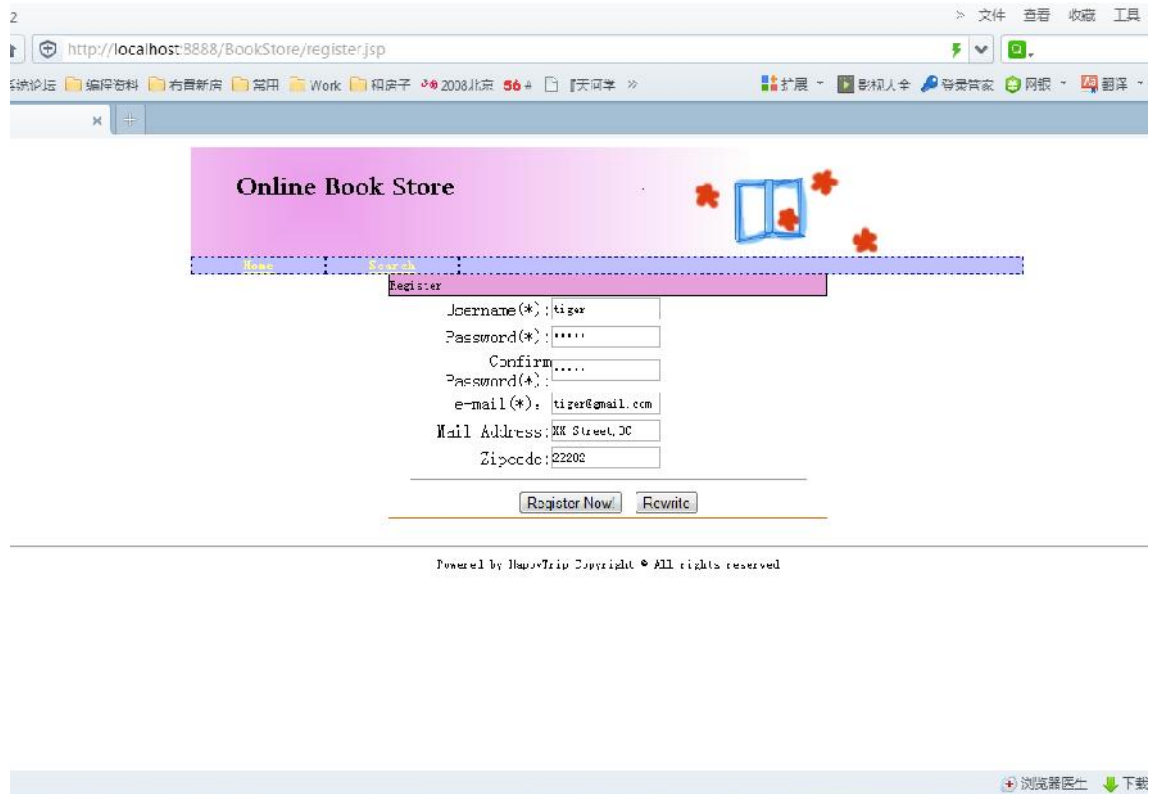
After registered, the page forward to the home page with login status, immediately
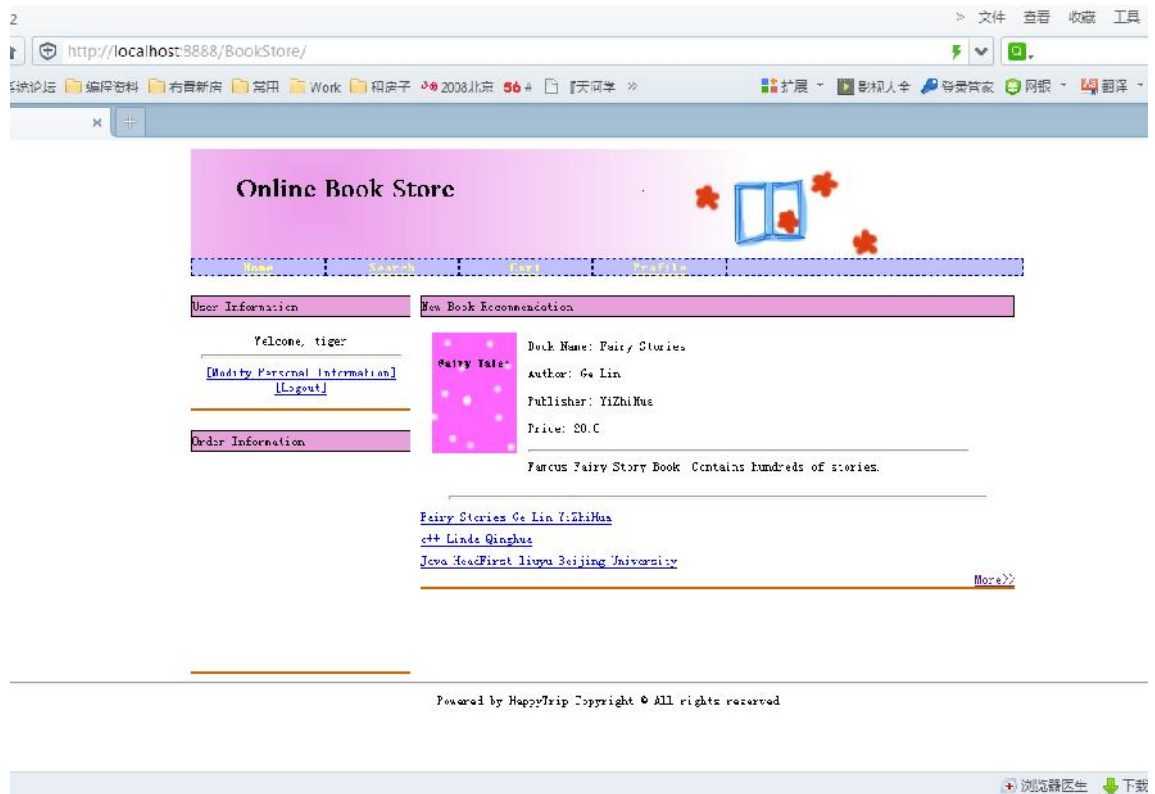
(6) Add books into shopping cart:
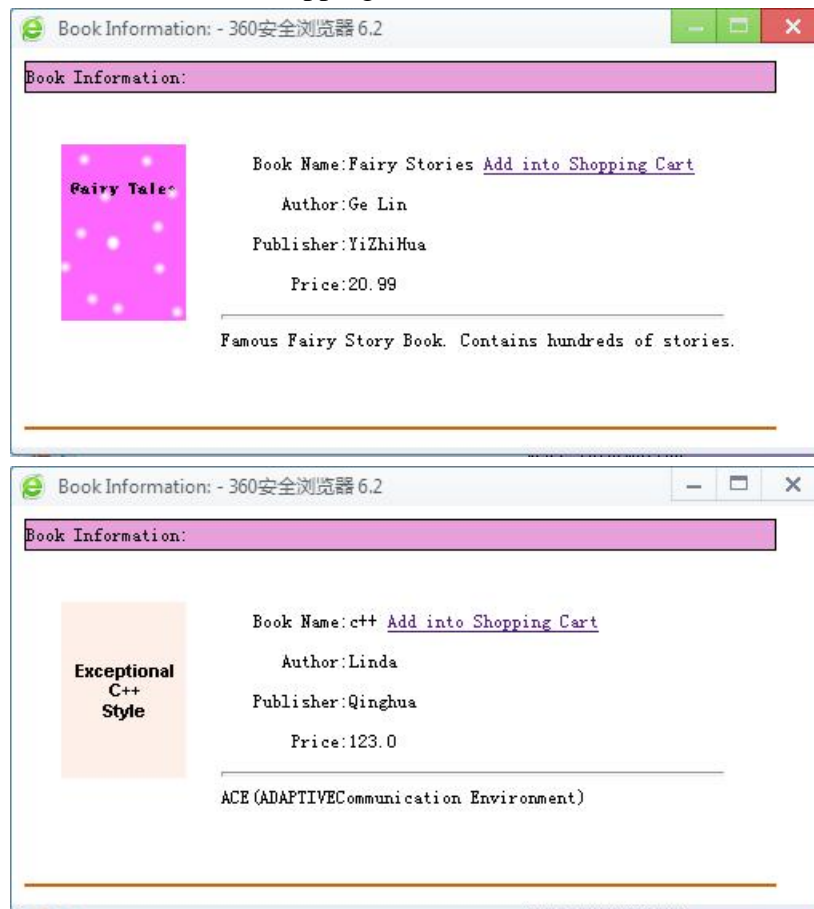
You can use the links after the book or open the books detail to add it into the shopping cart.
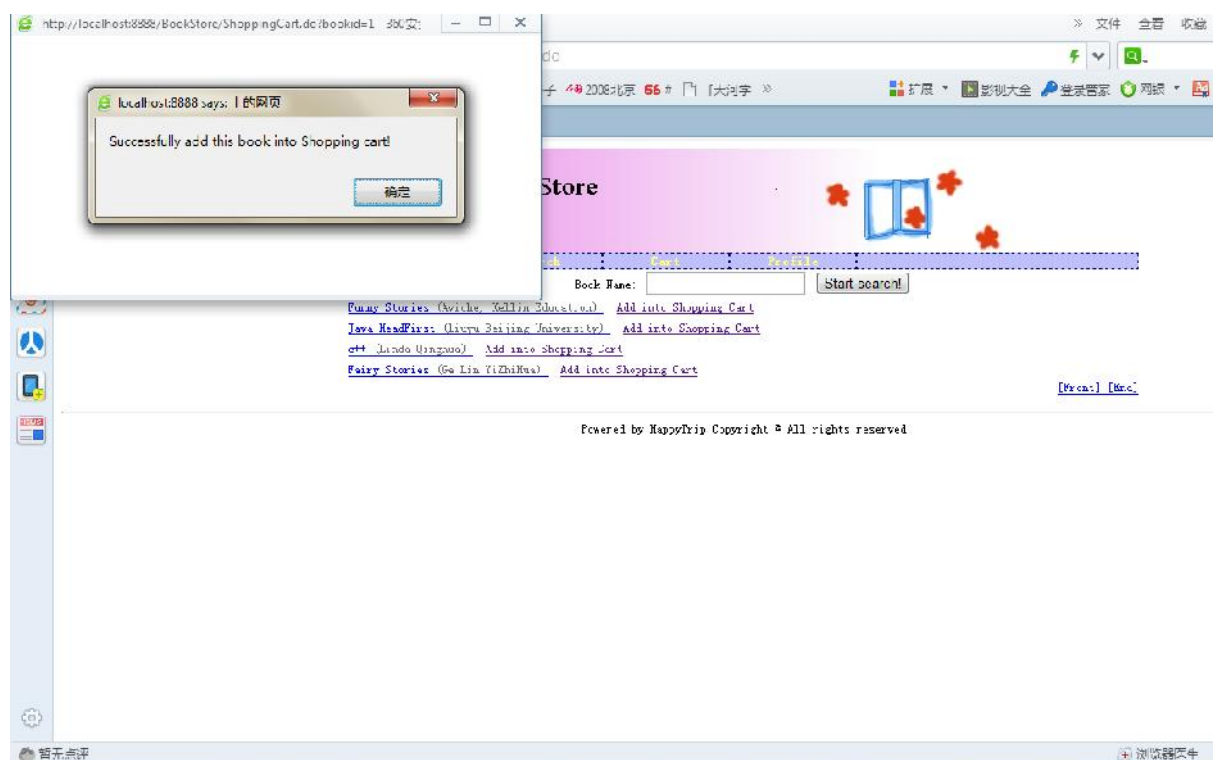
(6) View Shopping cart

Online Book Store

Home   Search   Cart   Profile

Cart
Fairy Stories (Ge Lin YiZhiHua)
c++ (Linda Qinghua)

Address(*): XX Street,DC   Zipcode(*): 22202

Checkout

(7) Check out

Online Book Store

Home   Search   Cart   Profile

Cart
Fairy Stories (Ge Lin YiZhiHua)
c++ (Linda Qinghua)

localhost:8888 says: 上的网页

fee paid!

确定

Address(*): XX S

(8) Display order information

Online Book Store

Home   Search   Cart   Profile

User Information

Welcome, tiger

[Modify Personal Information]
[Logout]

Order Information

New Book Recommendation:

Book Name: Fairy Stories
Author: Ge Lin
Publisher: YiZhiHua
Price: 20.99

Famous Fairy Story Book. Contains hundreds of stories.

c++ (2013-10-29 18:08:59.0)
Fairy Stories (2013-10-29 18:07:13.0)

Fairy Stories Ge Lin YiZhiHua
c++ Linda Qinghua
Java HeadFirst liuyu Beijing University

More>>

(9) View the order information:

(10) Modify Profile

(11) Administrator login

The search page is different, because it has three more functions: add books, edit books and delete books.

(12) Add books:

Fill the forms and press "save" button. Add a book names "101 Nights".

The page will display the new book:

And we can also view the details of this book.

(13) Edit books:

Change the price of this book from 25.00 to 15.00.

Also press "save" button to modify. And we can also check the book information. The price has already been changed to 15.00.

(14) Delete books:

Delete the first two books and the results are as follows:

Online Book Store

Book Name: [_____] [Start search!]

Java HeadFirst (liuyu Beijing University)   Add into Shopping Cart [Edit] [Delete]

c++ (Linda Qinghua)   Add into Shopping Cart [Edit] [Delete]

Fairy Stories (Ge Lin YiZhiHua)   Add into Shopping Cart [Edit] [Delete]

[Add] [Front] [End]