



FIT5192 Assignment One - Design Report

Book Shop

Team: Simple

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Declaration

We declare that this Design Report is our own work. We have not copied from any other student's work or from any other source except where due acknowledgment is made explicitly in the text, nor has any part of this submission been written for us by another person.

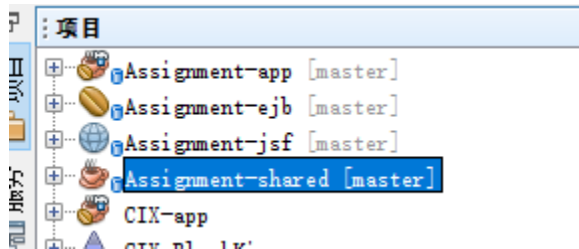
Signature: Wenchao Li

Signature: Jiabin Zeng

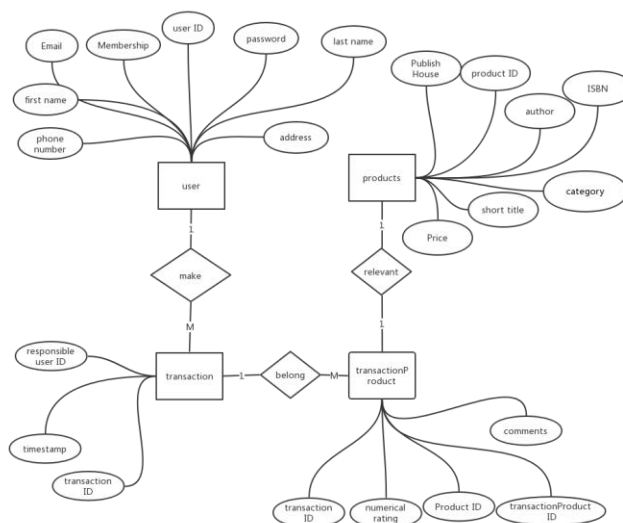
1 Overview of your application's goals

Our application aims to allow users to trade their books online.

2 Functional/architecture diagram illustrating how the core aspects of the application fit together.



Our assignment are divided in to 4 part. Shared project contains entities and EJB interfaces. EJB project are the implementation of business logic and JPA fully function. App and jsf function are the frontend of the entire project. The E-R diagram is shown in below.



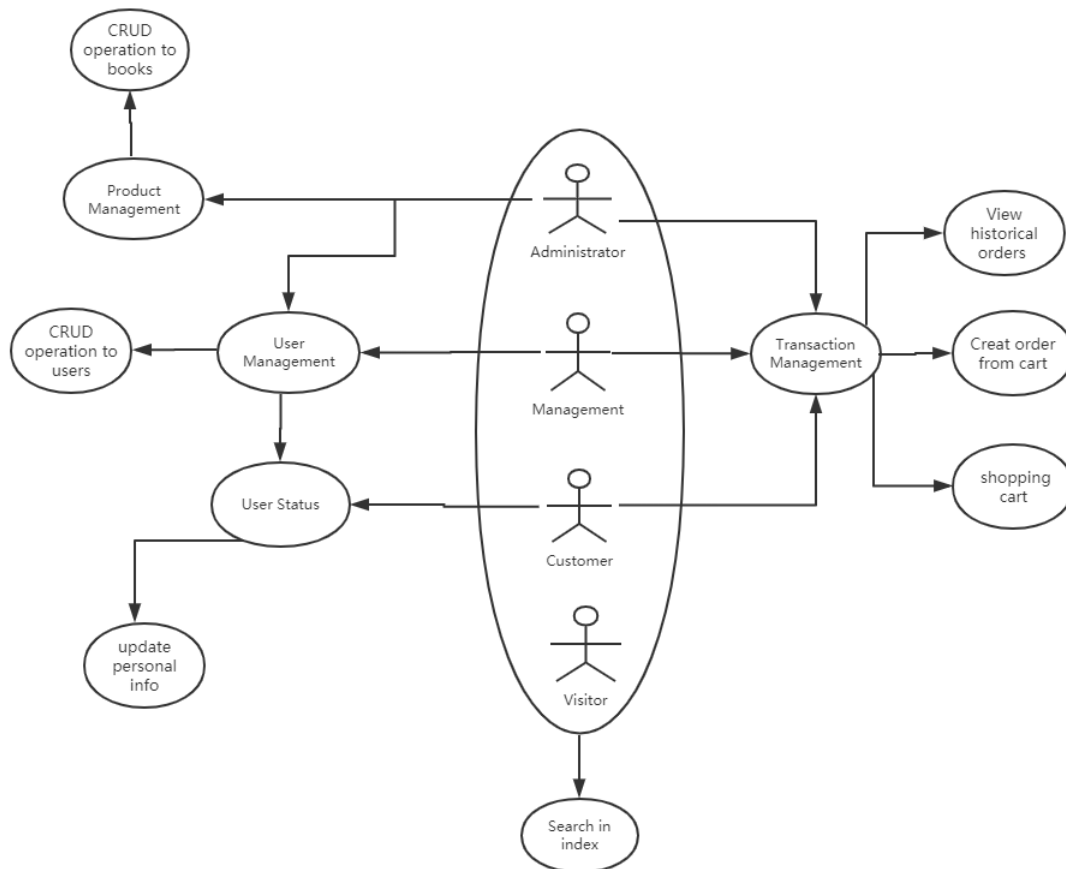
The technology we in this project including: JSF, Named and Dynamic JPQL, JPA, KNN, Bean validation. We have reached at least D-level or above.

3 Description of core application functionality and how it works.

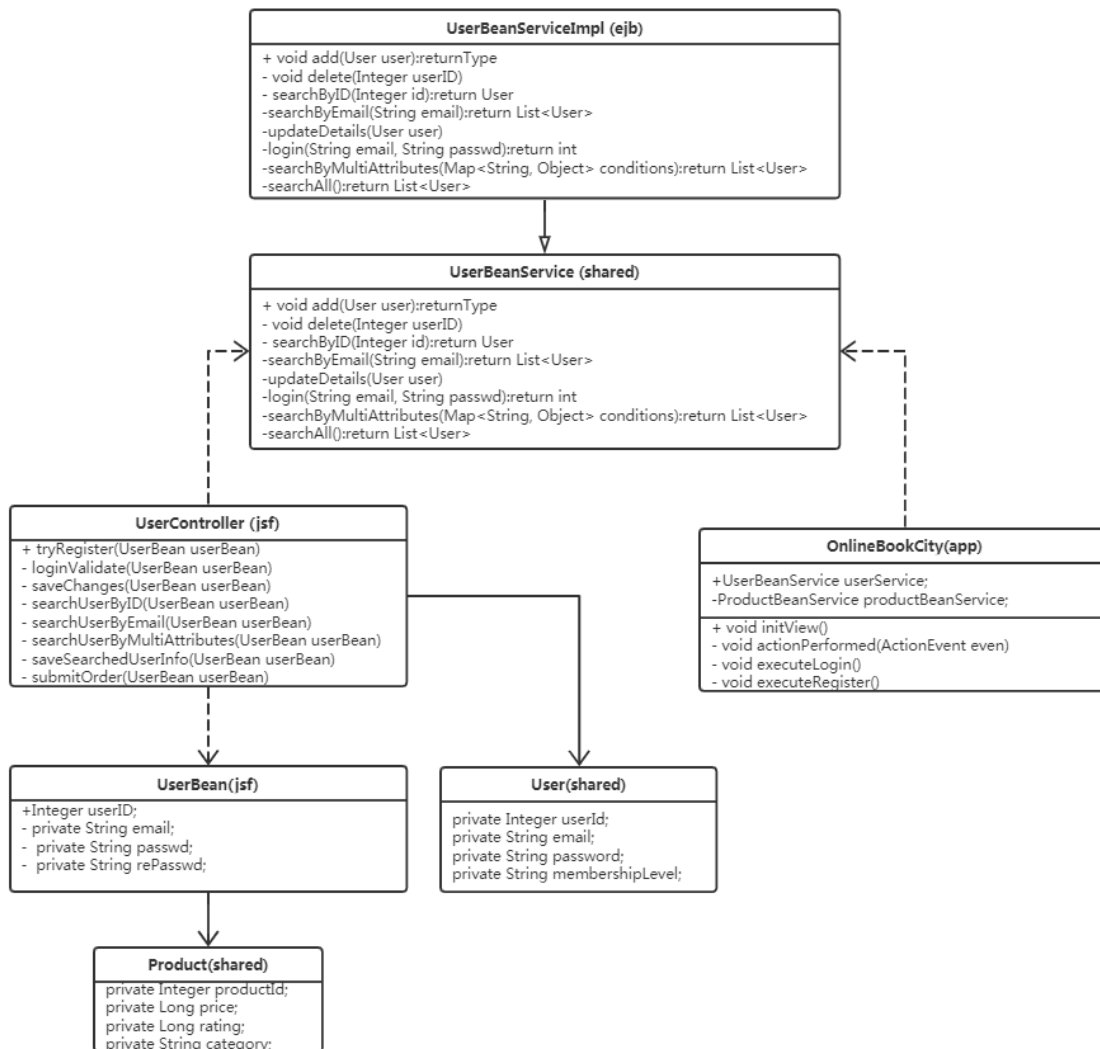
Use Case Diagram

As the use case diagram shown below, there are four kinds of users, each of them has different different permissions. High level users will have all the permissions of the low level. For Visitors, they are only allowed to search the book but not to buy any books. For

Customers, they can add several books to shopping cart and create a order containing several different books. After finishing the order, they can also find the records in the transaction. In addition, they can also update their personal information. As for Managements, besides the permissions of Customers, they can upgrade the level of users from Visitor to Customer, and vice versa. However, the level of Managers can only be changed by Administrators. Moreover, the users can only be deleted by Administrators too.

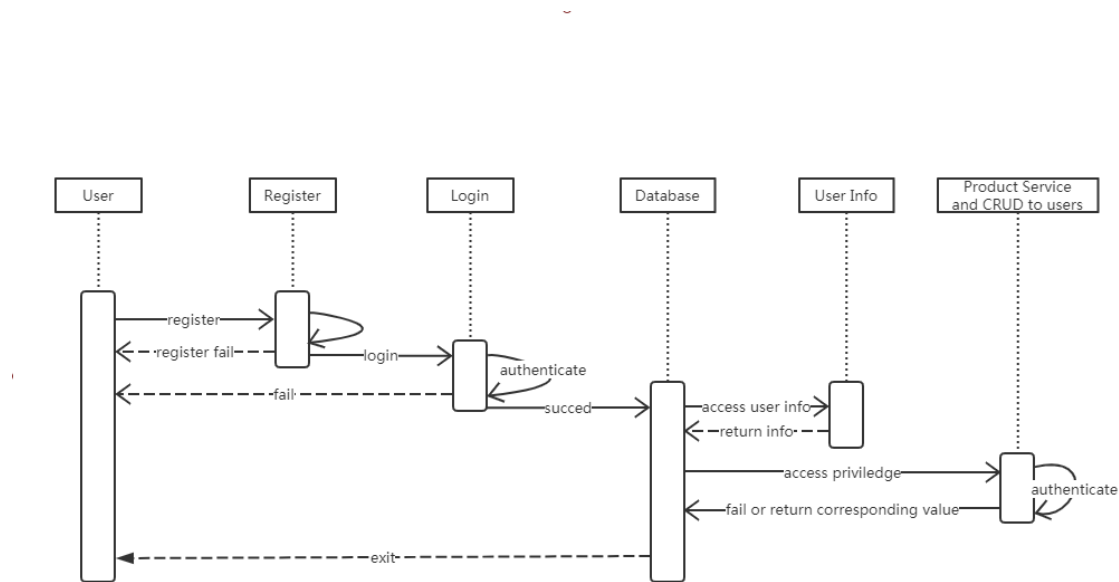


UserService Class Hierarchy



At first, I have to introduce the meaning of this picture. It consists of the most important class involved in the management of the users. As the the picture shown above, I have note which part they belong to in their head parts. The User and Product class are the Entity classes. JSF means the class is related to the web client. App means the class is related to the GUI. The classes involved in this picture are most related to the business control. They communicate the presentation layer and the database layer.

Sequence Diagram about UserService



The above image shows the user login and subsequent interaction with the platform. Firstly, it's need to register a new account by email if user don't have one. Then, user login in. The presentation can reach the information of this user by searching in database and display the information. When the user wants to get the product service and do CRUD operations to other users, the priviledge must be authenticated. Finally ,the user exits.

Login/Register

Welcome to the Book City

Please Login in first!

Your Email:

Your Password:

Re-Enter Your Password:

•

对象

user @assignment (mysql57...

开始事务

备注

筛选

排序

导入

导出

user_id	ADDRESS	AGE	EMAIL	FAVORMOVIE	FIRSTNAME	GENDER	LASTNAME	MEMBERSHIPLEVEL	PASSWORD	PHONENUMER
1	(Null)		547118000@qq.com	(Null)	(Null)	(Null)	(Null)	Administrator	8a4c64e615f3e8019945dd4b197673	(Null)

Welcome to the Book City

Please Login in first!

Your Email:

Your Password:

Login

Register

product management

user management

transaction management

user status

Book Shop

author:

shortTitle:

price:

category:

rating:

publish_house:

search/recommend

Book name	author	category	rating	price	publish house	My shopping Cart
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User status

Update personal information by click the “user status” link

Welcome to the user status page

You can update your personal information!

Last Name:

First Name:

Address:

Phone Number:

Age:

Gender:
☒ male ☐ female

Favorite Movie:

MemberShip Level:

Result in database:

user_id	ADDRESS	AGE	EMAIL	FAVORMOVIE	FIRSTNAME	GENDER	LASTNAME	MEMBERSHIPLEVEL	PASSWORD	PHONENUMBER
1	Suzhou	23	547118000@qq.com	The Lords of Rings	Li	male	shuaishuai	Administrator	8a4c64e615f3e8019945dd4b197673	15507928723

User Management

In User Management page, we can search users by multiple attributes or single attribute. If we input nothing, it will return all users have lower level users for Administrator or Management.

[product management](#)
[user management](#)
[transaction management](#)
[user status](#)

User Management

User ID	Email	Last Name	First Name	Membership Level
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Here I display the operation of Administrator only.

[product management](#)[user management](#)[transaction management](#)[user stat](#)

User Management

User ID:	<input type="text"/>
searchByID	<input type="text"/>
Email:	<input type="text"/>
searchByEmail	<input type="text"/>
Last Name:	<input type="text"/>
First Name:	<input type="text"/>
Phone Number:	<input type="text"/>
searchByMultiAttributes	<input type="text"/>

User ID	Email	Last Name	First Name	Membership Level
2	11111@qq.com			Visitor
3	22222@qq.com			Visitor
4	33333@qq.com			Visitor
5	44444@qq.com			Visitor
6	55555@qq.com			Visitor

We can click the UserID and jump to detailed page. Then the Administrator can do several operations as below picture.

Information of User

User ID:	2
Email:	11111@qq.com
Last Name:	<input type="text" value="test"/>
First Name:	<input type="text" value="test"/>
Phone Number:	<input type="text"/>
Address:	<input type="text" value="test"/>
Membership Level:	<div> Visitor Visitor Customer Management </div>
Age:	<input type="text"/>
Gender:	<input type="text"/>
Favorite Movie:	<input type="text"/>
	<input type="button" value="save"/> <input type="button" value="delete"/>

[user management page](#)

user_id	ADDRESS	AGE	EMAIL	FAVORMOVIE	FIRSTNAME	GENDER	LASTNAME	MEMBERSHIPLEVEL	PASSWORD	PHONENUMER
1	Suzhou	23	547118000@qq.com	The Lords of Rings Li	test	male	shuaishuai	Administrator	8a4c64e615f3e8019945dd4b197673	15507928723
2	test	(Null)	11111@qq.com	(Null)	test	(Null)	test	Management	8a4c64e615f3e8019945dd4b197673	(Null)
3	(Null)	(Null)	22222@qq.com	(Null)	(Null)	(Null)	(Null)	Visitor	8a4c64e615f3e8019945dd4b197673	(Null)
4	(Null)	(Null)	33333@qq.com	(Null)	(Null)	(Null)	(Null)	Visitor	8a4c64e615f3e8019945dd4b197673	(Null)
5	(Null)	(Null)	44444@qq.com	(Null)	(Null)	(Null)	(Null)	Visitor	8a4c64e615f3e8019945dd4b197673	(Null)
6	(Null)	(Null)	55555@qq.com	(Null)	(Null)	(Null)	(Null)	Visitor	8a4c64e615f3e8019945dd4b197673	(Null)

Administrator can delete the user too. The result shows below:

Information of User

User ID: 6

Email: 55555@qq.com

Last Name:

First Name:

Phone Number:

Address:

Membership Level: Visitor ▼

Age:

Gender:

Favorite Movie:

user management page

对象 user @assignment (mysql57...)

开始事务 备注 筛选 排序 导入 导出

user_id	ADDRESS	AGE	EMAIL	FAVORMOVIE	FIRSTNAME	GENDER	LASTNAME	MEMBERSHIPLEVEL	PASSWORD	PHONENUMER
1	Suzhou	23	547118000@qq.com	The Lords of Rings Li		male	shuaishuai	Administrator	8a4c64e615f3e8019945dd4b19767315507928723	
2	test	(Null)	11111@qq.com	(Null)	test	(Null)	test	Management	8a4c64e615f3e8019945dd4b197673 (Null)	
3	(Null)	(Null)	22222@qq.com	(Null)	(Null)	(Null)	(Null)	Visitor	8a4c64e615f3e8019945dd4b197673 (Null)	
4	(Null)	(Null)	33333@qq.com	(Null)	(Null)	(Null)	(Null)	Visitor	8a4c64e615f3e8019945dd4b197673 (Null)	
5	(Null)	(Null)	44444@qq.com	(Null)	(Null)	(Null)	(Null)	Visitor	8a4c64e615f3e8019945dd4b197673 (Null)	

Shopping cart order view

In addition, user can add create several goods to shopping cart. And create a order containing multiple goods.

Book name	author	category	rating	price	publish house	My shopping Cart
Wild Animus	Rich Shapero	romance		2004	Too Far	add to shopping cart
To Kill a Mockingbird	Harper Lee	popularization of science		1988	Little Brown & Company	add to shopping cart
Isle of Dogs	Patricia Cornwell	popularization of science		2002	Berkley Publishing Group	add to shopping cart
The Catcher in the Rye	J.D. Salinger	popularization of science		1991	Little, Brown	add to shopping cart
The Girl Who Loved Tom Gordon	Stephen King	popularization of science		2000	Pocket	add to shopping cart
The Lovely Bones: A Novel	Alice Sebold	history		2002	Little, Brown	add to shopping cart
The Bean Trees	Barbara Kingsolver	economics		1989	Perennial	add to shopping cart
Life of Pi	Yann Martel	economics		2003	Harvest Books	add to shopping cart
Where the Heart Is (Oprah's Book Club (Paperback))	Billie Letts	popularization of science		1998	Warner Books	add to shopping cart
The Da Vinci Code	Dan Brown	popularization of science		2003	Doubleday	add to shopping cart
A Time to Kill	JOHN GRISHAM	history		1992	Dell	add to shopping cart
The Color of Water: A Black Man's Tribute to His White Mother	James McBride	romance		1997	Riverhead Books	add to shopping cart
Message in a Bottle	Nicholas Sparks	popularization of science		1999	Warner Vision	add to shopping cart
Message in a Bottle (Paperback)	Nicholas Sparks	popularization of science		1999	Warner Books USA	add to shopping cart

Shopping cart view

Shopping Cart

Title	Price	Rating	delete operation
Isle of Dogs	2002		<input type="button" value="delete"/>
Harry Potter and the Prisoner of Azkaban (Book 3)	2001		<input type="button" value="delete"/>
total fee:	12007		

[home link](#)

Finished order

[product management](#)

[user management](#)

[transaction management](#)

[user status](#)

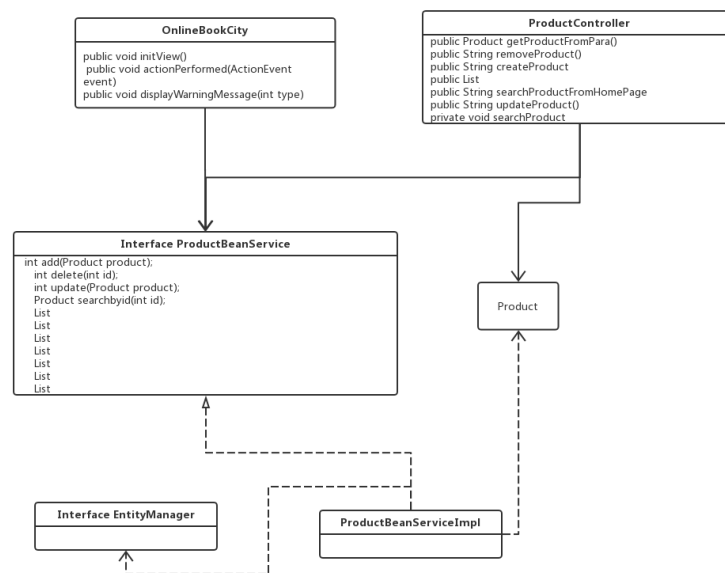
transaction information

Book name	author	rating	price	number of products	your rating	your comment	operation
Isle of Dogs	Patricia Cornwell		2002	1			update comment
Harry Potter and the Prisoner of Azkaban (Book 3)	J. K. Rowling		2001	5			update comment

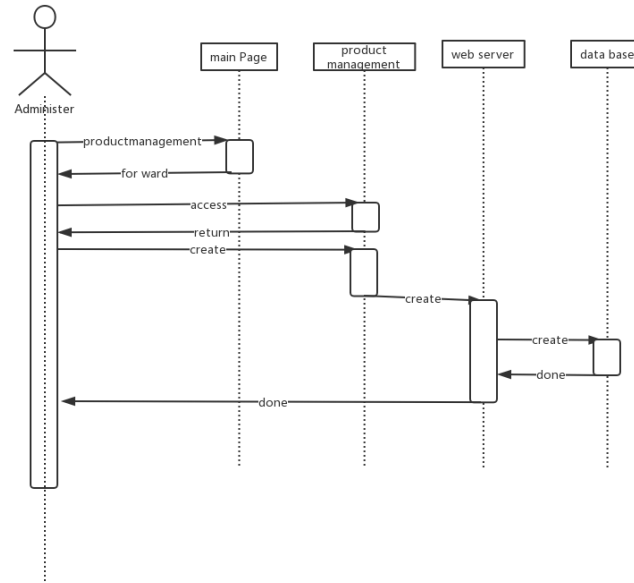
[home link](#)

Product UML

The UML diagram shows the detail information and the relationship about the class files which product function are used. ProductBeanService.java defines some basic function (e.g. CRUD) and some extra business logic function. The GUI's action relies on the product service interface which is shared between EJB project and client project. ProductBeanServiceImpl.java implements the interface with the help of JPA. It also relies on Product.java. ProductController.java are the controller of web page and is responsible for manipulating the EJB model.



Creating a product



The process of creating a product is define in the sequence diagram. Skipping the login part, the administrator clicks the product management link and is redirected to the product managemet page. The creating function is shown with the search function. After typing the information of the book, click the create button.

Product Management

author:	1
shortTitle:	1
price:	1
category:	1
rating:	1
publish house:	1
<input type="button" value="create"/>	<input type="button" value="search"/>

Book name	author	category	price	rating	publish house	op
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The rest of the process is done automatically. Then, the page will be refreshed and we can see if it works.

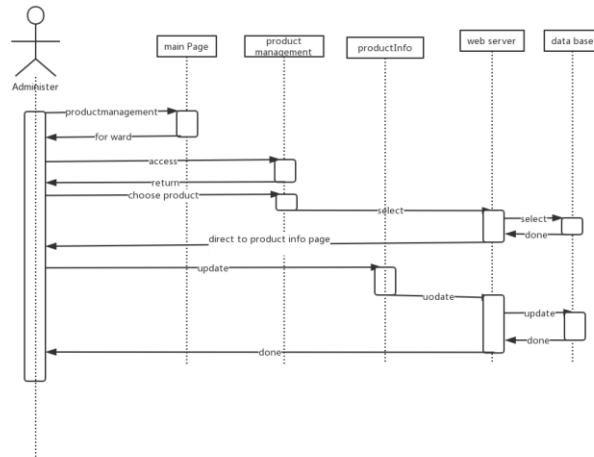
- shortTitle:1
- price:1
- author:1
- rating:1
- category:1
- publish_house:1

Number you want to add to shopping cart(less than 5):

1 ▾

[home link](#)

Updating a product



Both Updating process and Deleting process have the same as the creating process in the first step. Before updating the book, we need to enter the product management page and search for the product. The update and delete function are in the same page to reduce duplicate work.

Product Management

author:	<input type="text"/>
shortTitle:	<input type="text"/>
price:	<input type="text"/>
category:	<input type="text"/>
rating:	<input type="text"/>
publish_house:	<input type="text"/>
<input type="button" value="create"/>	<input type="button" value="search"/>

Book name	author	category	price	rating	publish house	operation
Heartbreaker	Julie Garwood	economics	2010		Pocket	update/delete
Wild Animus	Rich Shapero	romance	2004		Too Far	update/delete
Animal Farm	George Orwell	history	2004		Signet	update/delete
Chosen Prey	John Sandford	popularization of science	2004		Berkley Publishing Group	update/delete
The Dead Zone	Stephen King	history	2004		Signet Book	update/delete
Dolores Claiborne	Stephen King	popularization of science	2004		Signet Book	update/delete
Three Faces	Mary Roberts	history	2004		Love Books	update/delete

After clicking the link in the red box, we see the web page as below:

100/p

[home link](#)

shortTitle:

price:

author:

rating:

category:

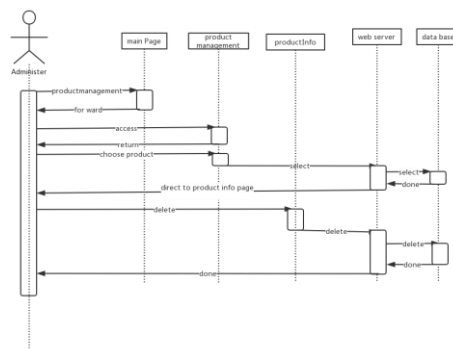
publish_house:

update

delete

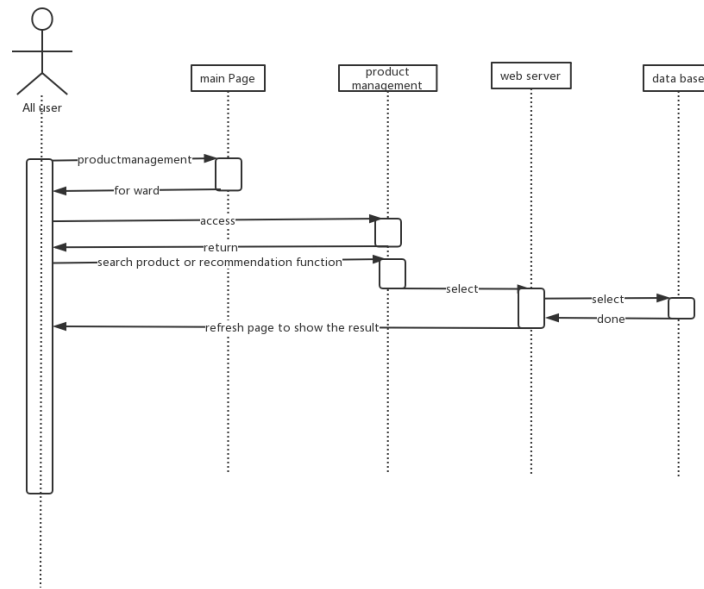
After modifying the product click the update button, the page will be redirected to product management.

Deleting process



Deleting process is similar to updating process, user can delete the product in the same page.

Searching process



We implemented a multi-category search at both home page and product manage page. The function are slightly different. In the home page, we treat empty search as a recommendation search and in the product management page we treat it as a list all search.

author:

shortTitle:

price:

category:

rating:

publish_house:

create

search

Book name	author	category	price	rating	publish house	operation
Heartbreaker	Julie Garwood	economics	2010	Pocket	update/delete	
Wild Animus	Rich Shapero	romance	2004	Too Far	update/delete	
Animal Farm	George Orwell	history	2004	Signet	update/delete	
Chosen Prey	John Sandford	popularization of science	2004	Berkley Publishing Group	update/delete	
The Dead Zone	Stephen King	history	2004	Signet Book	update/delete	
Dolores Claiborne	Stephen King	popularization of science	2004	Signet Book	update/delete	
Three Fates	Nora Roberts	history	2004	Jove Books	update/delete	
Without Remorse	Tom Clancy	popularization of science	2004	Berkley Publishing Group	update/delete	
The Guardian	Nicholas Sparks	history	2004	Warner Books	update/delete	
Dude .Where's My Country?	Michael Moore	popularization of science	2004	Warner Books	update/delete	
The Devil Wears Prada : A Novel	LAUREN WEISBERGER	history	2004	Broadway Books	update/delete	
Rainbow Six	Tom Clancy	history	2004	Berkley Publishing Group	update/delete	
Birthright	Nora Roberts	economics	2004	Jove Books	update/delete	
Cujo	Stephen King	popularization of science	2004	Signet Book	update/delete	

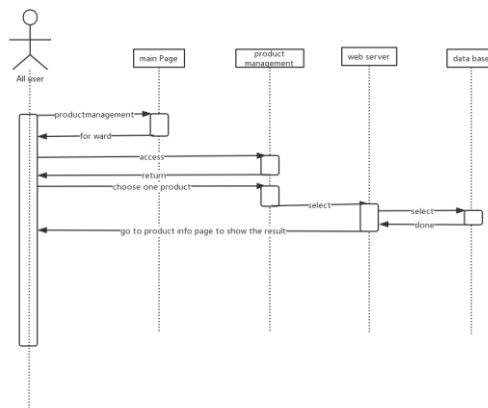
Book Shop

author:							
shortTitle:							
price:							
category:							
rating:							
publish_house:							
search/recommend							
Book name	author	category	rating	price	publish house	My shopping cart	
Wild Animus	Rich Shapero	romance		2004	Too Far	add to shopping cart	
To Kill a Mockingbird	Harper Lee	popularization of science		1988	Little Brown & Company	add to shopping cart	
Isle of Dogs	Patricia Cornwell	popularization of science		2002	Berkley Publishing Group	add to shopping cart	
The Catcher in the Rye	J.D. Salinger	popularization of science		1991	Little, Brown	add to shopping cart	
The Girl Who Loved Tom Gordon	Stephen King	popularization of science		2000	Pocket	add to shopping cart	
The Lovely Bones: A Novel	Alice Sebold	history		2002	Little, Brown	add to shopping cart	
The Bean Trees	Barbara Kingsolver	economics		1989	Perennial	add to shopping cart	
Life of Pi	Yann Martel	economics		2003	Harvest Books	add to shopping cart	
Where the Heart Is (Oprah's Book Club (Paperback))	Billie Letts	popularization of science		1998	Warner Books	add to shopping cart	
The Da Vinci Code	Dan Brown	popularization of science		2003	Doubleday	add to shopping cart	
A Time to Kill	JOHN GRISHAM	history		1992	Dell	add to shopping cart	
The Color of Water: A Black Man's Tribute to His White Mother	James McBride	romance		1997	Riverhead Books	add to shopping cart	
Message in a Bottle	Nicholas Sparks	popularization of science		1999	Warner Vision	add to shopping cart	
A Lesson Before Dying (Vintage Contemporaries (Paperback))	Ernest J. Gaines	popularization of science		1997	Vintage Books USA	add to shopping cart	
I Capture the Castle	Dodie Smith	history		2003	St. Martin's Griffin	add to shopping cart	
Lord of the Flies	William Gerald Golding	history		1959	Perigee Trade	add to shopping cart	
Snow Falling on Cedars	David Guterson	economics		1995	Vintage Books USA	add to shopping cart	

So the search results are different.

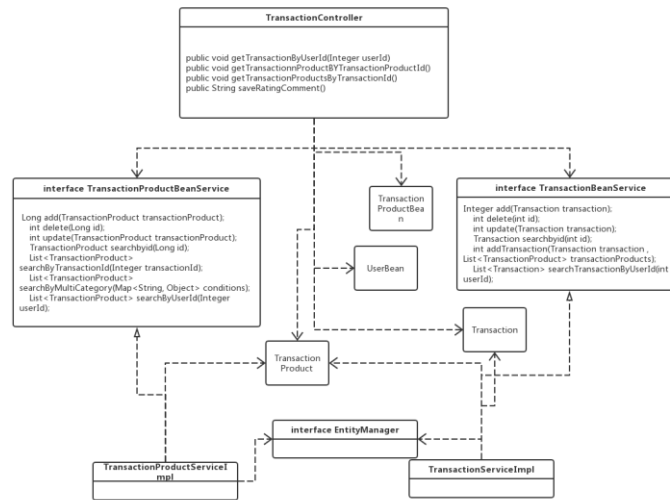
5. View detailed product

The function is used for customer and visitor. They can access the product information in the home page through the relevant link. Here is the sequence diagram.

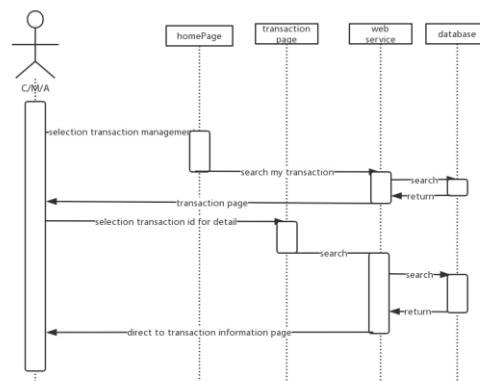


publish_house:							
search/recommend							
Book name	author	category	rating	price	publish house	My shopping Cart	
Wild Animus	Rich Shapero	romance		2004	Too Far	add to shopping cart	
To Kill a Mockingbird	Harper Lee	popularization of science		1988	Little Brown & Company	add to shopping cart	
Isle of Dogs	Patricia Cornwell	popularization of science		2002	Berkley Publishing Group	add to shopping cart	
The Catcher in the Rye	J.D. Salinger	popularization of science		1991	Little, Brown	add to shopping cart	
The Girl Who Loved Tom Gordon	Stephen King	popularization of science		2000	Pocket	add to shopping cart	
The Lovely Bones: A Novel	Alice Sebold	history		2002	Little, Brown	add to shopping cart	
The Bean Trees	Barbara Kingsolver	economics		1989	Perennial	add to shopping cart	
Life of Pi	Yann Martel	economics		2003	Harvest Books	add to shopping cart	
Where the Heart Is (Oprah's Book Club (Paperback))	Billie Letts	popularization of science		1998	Warner Books	add to shopping cart	

We implemented the link with the shopping cart function to reduce duplicate code.

Transaction Service

The UML diagram shows the basic component of the transaction function in class architecture. Transaction controller are in the assignment-jsf project and it relies on 2 interfaces. Because of the supporting of multiple products in one transaction, we design 2 interfaces. One interface is used for creating the user's transaction, the other one is used for recording the product in the transaction. **TransactionProductBeanServiceImpl.java** and **TransactionServiceImpl.java** are the implementation of the interface in assignment-ejb project. **Transaction.java** and **TransactionProduct.java** are defined in assignment-shared project.

View transaction history

By clicking the transaction management, we can see the history of transaction directly.

transaction ID	transaction fee	transaction info
1	4000	More information
51	1988	More information
53	2002	More information

author:
shortTitle:
price:
rating:

Book name	author	price	rating	TransactionID
-----------	--------	-------	--------	---------------

2. Comment function and detail transaction

Comment function are integrated with the transaction. User can comment each of the product in a transaction as long as he want. By clicking the More information. The detailed information of a transaction is shown.

transaction information

Book name	author	rating	price	number of products	your rating	your comment	operation
Icebound	Dean R. Koontz		2000	1			update comment
The Girl Who Loved Tom Gordon	Stephen King		2000	1			update comment

By clicking the update comment, users can comment and rating.

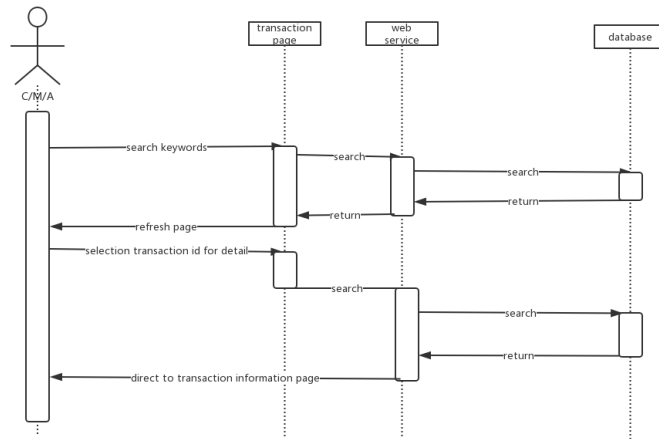
shortTitle: Icebound
rating: ▼
commmmment:

Searching in transaction

author:
shortTitle:
price:
rating:

Book name	author	price	rating	TransactionID
-----------	--------	-------	--------	---------------

The provided searching function has a similar function in product management.



Adding to shopping cart

