# Campus Second-hand Book Trading System

Software Engineering Course Project

Major: IMIS

Term leader:James

Term member: Anthony, Jay, Henry, Walker, Damon

**list**

**Software engineering project proposal..... 3**

Project Description:..... 3

Platform operation process:..... 4

What the platform expects to achieve:..... 6

Team division and development cycle:..... 6

**Part 1: .....8**

**1.Customer Problem Statement..... 8**

**A.Problem Statement..... 8**

1) Question one..... 8

2)Question two..... 9

3)Question three..... 9

4)Question four..... 9

5)Question five..... 10

6)Question six..... 10

**B. Glossary of Terms..... 10**

1. User Interface (UI)..... 10

2. Structured Analysis (SA)..... 10

3. Entity Relationship Diagram (ERD)..... 10

4. Use Case Diagram (UCD)..... 11

5. Data Flow Diagram (DFD)..... 11

6. Data dictionary (DD)..... 11

**2. System Requirements.....11**

A. Enumerated Functional Requirements..... 11

B. Enumerated Nonfunctional Requirements ..... 13

C. User Interface Requirements ..... 14

**Part 2:.....19**

**3. Functional Requirements Specification**

**a. Stakeholder.....20**

**b. Actors and Goals.....20**

**c. Use Cases.....21**

i. Casual Description.....21

ii. Use Case Diagram.....22

iii. Traceability Matrix.....26

Iv. Fully-Dressed Description..... 27

**d. System Sequence Diagrams.....34**

**4.User Interface Specification.....35**

**a. Preliminary Design.....35**

**b. User Effort Estimation.....36**

# Software engineering project proposal

The purpose of the project is to establish a system that can collect SIAS university book information as a trading platform to realize the transaction of second-hand books, so that the students of the school can understand the possible sources of the required books, overcome the shortcomings of the traditional second-hand book market information, in order to achieve direct transactions between students. It is intended to be done by a team of 6 undergraduate students .

**Project Description:**

The current second-hand book trading market, mostly through the intermediary to achieve second-hand book transactions. This has indeed achieved a certain effect, but there are still serious shortcomings. First of all, the intermediary often pushes down the quotation and earns the difference. The price of the student's book is often lower than the price of the second-hand book bought, and the student's interests are damaged. Secondly, there is a defect in the intermediary market that the book information lags. The students can only be in the semester. Inquiries and transactions can only be made after the end of the acquisition with the intermediary.

Due to information asymmetry or other reasons, there is a lack of

communication between the senior and the lower grades, not to mention the students of different universities, who are constantly buying new materials every year. A large number of books are idle in the dormitory or at home, until they graduate and they are sold out as waste paper. It can be seen that the second-hand book reserves in colleges and universities are abundant and urgently needed for development. In recent years, the popularity of various second-hand book trading websites has also illustrated this point.

## Platform operation process:

Through the platform provided by the system, the textbook information used by all professional courses of SIAS University is released to realize information circulation. It is mainly divided into functional modules such as student login, book information management, information inquiry, forum exchange and feedback.

We will build a platform for SIAS students who want buy cheap used books. Every year we will buy a lot of used books from graduates. We disinfect and transport them to our warehouse. Customers can log in our app, choose their major, then add the books they need to the shopping cart. When we get paid dispatcher will send books to our customer.

Customer satisfaction expectations:

Our goal is that whenever a student needs to buy a book, their first

idea is to log in our App and place an order. On one hand, our books are very cheap, and using used books is an environmentally friendly and economical choice, on another hand, our transportation efficiency is very high. If we can achieve such an expectation, I think we are successful.

First of all, pay attention to quality, let the quality of products speak for the enterprise. In the enterprise management, the customer actually values the product quality most, the good product not only can bring the rich profit, can attract more off-line customer, even can cast an enterprise brand, thus the customer firmly grasps in his own hand. Secondly, improve the service attitude, let the high-quality service for the enterprise to enhance the color. Smile is the best brand, affinity, considerate, sincere service attitude, people like spring, I believe no one does not like and such a person, such a business cooperation. Third, fulfill the promise, so that the integrity of the enterprise imprint. Integrity is the foundation, in business cooperation, the implementation of commitments represents integrity, integrity of the enterprise customers must be satisfied, and look forward to cooperation again.

This requires every salesperson to make a commitment carefully according to the situation of the company, and the promise must be fulfilled after the promise, so as to maintain a good relationship of trust with the customers. Finally, collect customers undefined opinions on a regular basis and attach importance to customer needs. Maintaining

customers is a system engineering and requires the cooperation of all departments of the company. Customers are mobile, customer needs are not the same, which requires business personnel to actively communicate with customers, always control customer care.

## What the platform expects to achieve:

My customers can get what they need from my platform and have better book and dating resources. An endless range of resources can be obtained within a limited range. The user is classified by sorting the books. The user of the same book is introduced to the other party, and the problem of learning and living can be exchanged, so as to expand the inter-cultural circle and improve the user experience.

## Team division and development cycle:

In the workplace, teamwork is becoming more common in an expanding and complex organization. First, our team has six people, each of us has our own different ideas and expertise, we have enough ideas and experience, and Technical reserves to complete this work. For example, in our team, James has a more comprehensive skill. He is good at deploying team members and can make up for the shortcomings of each module. Anthony has extensive experience in the second-hand book trading market, and he is good at writing code. And we can get mature advice

when building project features. Damon is good at design of art layout. Walker has a talent for exploring potential markets, and he can bring more profits to our app. Henry is good at management and planning. Jay is good at module design, and further refine the modules divided by system analysts and architects to ensure that each module is completed according to established standards and requirements.

Questionnaire cost: (expected to issue 300-500 questionnaires) (200 yuan);

Cost should be passed: (mainly promoted by website) (2000 yuan);

Network construction costs: (2000 yuan);

Hardware cost: (domain name application, warehouse lease after B2C) (4000 yuan);

Hiring employees: (Distribution of employees, development to B2C stage management of staff in the warehouse) (3000 yuan)

Working capital: (5000 yuan);

Total: 16200 yuan;

Expected time: 3-5 months.

Phased planning:

In the construction phase: This phase seems to be normal. Actually, there are many tedious and tedious tasks and steps. It is a very important link. Only consider the complexity and solution of the problem as much as possible during the construction phase. It will be easier to use later.

In the operational phase: This is the final phase of testing. In order to provide value, the project must have good functionality, be well designed, and be completed (or close to) within the specified time and budget. And it is accepted and used by more users, and it is well received by users.

The platform needs to be easy to maintain, stable and safe.

# PART 1

## Customer Problem Statement

### A.Problem Statement

As a customer, I need a lot of services to meet my needs. Convenient and fast This is what our customers want to get.

1) Question one

In terms of purchase, we chose to buy books online to save time. Sometimes when we want to find a book, we may forget the specific name of the book. We only know one thing, and the books we searched for are not what we want. Buying books will be a waste of time. Sometimes when you pick a book, there are many types of books, which are particularly messy, and you can't find books of the type you like. I want to go to my favorite books to find the books I like, and I can read them in one class or all the books.

2)Question two

Sometimes when we buy books, it is especially troublesome to want to know more about the old and new books. It is not easy for the seller to communicate. We want to buy a second-hand book with less notes. The result of the textbook is full of notes and graffiti. In this case, only one textbook can be purchased, which will result in waste of resources and funds. And it is especially inconvenient to want to bargain for the seller without any chance.

3)Question three

If you have bought a book, you can evaluate it, so that other students can buy it.

4)Question four

When a student buys a book and makes a mistake, not being able to change the order will result in low purchase efficiency and delay time. This will lead us to aversion to this platform. If we can modify the quantity and type of orders after we place an order, this is convenient.

5)Question five

When we go to see some books, we can't be sure that we can buy them or not, we need to collect them first, so that we can find them next time.

6)Question six

When we choose to buy some books, there are different ways of paying. Sometimes WeChat has money, sometimes bank cards have money.

## B. Glossary of Terms

1. User Interface (UI)

The user interface, in the industrial design field of human–machine interaction, is the space where interactions between humans and machines occur.

2. Structured Analysis (SA)

In software engineering, structured analysis and structured design are methods for analyzing and converting business requirements into specifications and ultimately, computer programs, hardware configurations and related manual procedures.

3. Entity Relationship Diagram (ERD)

An entity relationship diagram shows the relationships of entity sets stored in a database.

4. Use Case Diagram (UCD)

A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved.

5. Data Flow Diagram (DFD)

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modelling its process aspects. A DFD is often used as a preliminary step to create an overview of the system, which can later be elaborated. DFDs can also be used for the visualization of data processing (structured design).

6. Data dictionary (DD)

A data dictionary, or metadata repository is a "centralized repository of information about data such as meaning, relationships to other data, origin, usage, and format". Oracle defines it as a collection of tables with metadata.

# 2. System Requirements

## A. Enumerated Functional Requirements

| Label | Functional Requirements | Description |
|---|---|---|
| 1 | View the information of books (classification of books) | It's easier for customers to find books that is needed. |
| 2 | Communication | Chatting between sellers and buyers can be achieved. |
| 3 | Make an order | Buyers confirm purchases |
| 4 | Confirmation of receipt and evaluation | Let other buyers know more detailed user experience of the book |
| 5 | Publish and modify information of books | Make information correct of sellers or buyers |
| 6 | Refunds or exchange | The process by which the buyer returns or exchange unsatisfactory goods to the seller |
| 7 | Payment method | Support various payment methods |
| 8 | Buyer Information Management | Name, major, grade, gender, mobile phone number |
| 9 | Seller Information Management | Name, major, grade, gender, mobile phone number, |
| 10 | Goods Information Management | Title, author, edition, etc |
| 11 | After-sale service | Various service activities provided after the sale of commodities |

## B. Enumerated Nonfunctional Requirements

**Functionality**

1. User information shall be kept confidential, and the administrator shall not disclose the user information.

2. Only those with correct login password can enter the system, and only the user or the administrator can modify the user's information.

**Reliability**

1. The system of the website must be operated 12 hours a day, and the average failure is no more than 2 times a week.

2. Each repair shall take less than 24 hours.

3. Users who quit the system for non-security. reasons, such as failure of application or other reasons, shall not be lost.

**Performance**

1. User feedback questionnaire, set in the corner of the first interface, user opinion survey box:

2. Each query must be answered within 30 seconds

**Supportability**

The system uses the Wechat program as the client, which has a simple interface, friendly interaction, simple operation, and can attract users, thus ensuring the user base.

# C. User Interface Requirements

## User interface design specification

### 1 Introduction

### 1.1 Background

The software system to be developed by this software is a second-hand book trading platform, the version is 1.0 version, and the functions to be realized in the homepage include: information announcement, classified recommendation purchase, scan code sale book, book search, and nearby books for sale. The personal center includes: I have put books, my collection, two-dimensional code to promote books.

### 2. Interface design specifications that should be followed

### 2.1 User Interface Design Principles

The system adheres to the principle of graphical user interface (GUI) design, and the interface is intuitive and transparent to users. After the user touches the software, the corresponding functions on the interface can be seen at a glance, and the application system can be conveniently used without much training.

### 2.2 Interface consistency

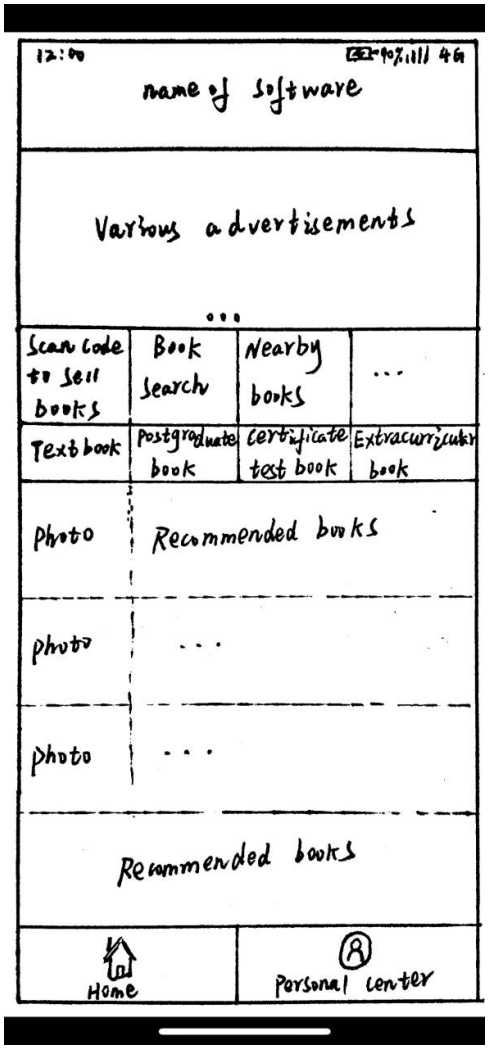
The consistency of the interface should be maintained in the interface design. Consistency includes the use of standard controls, as well as the use of the same information representation methods, such as ensuring consistency in terms of fonts, label styles, colors, terminology, display error messages, and more.

## 3. Overall style of the station

This section describes the styles that must be used consistently on all interfaces of the product: a simple and clear style, a light color, and a simple style icon.

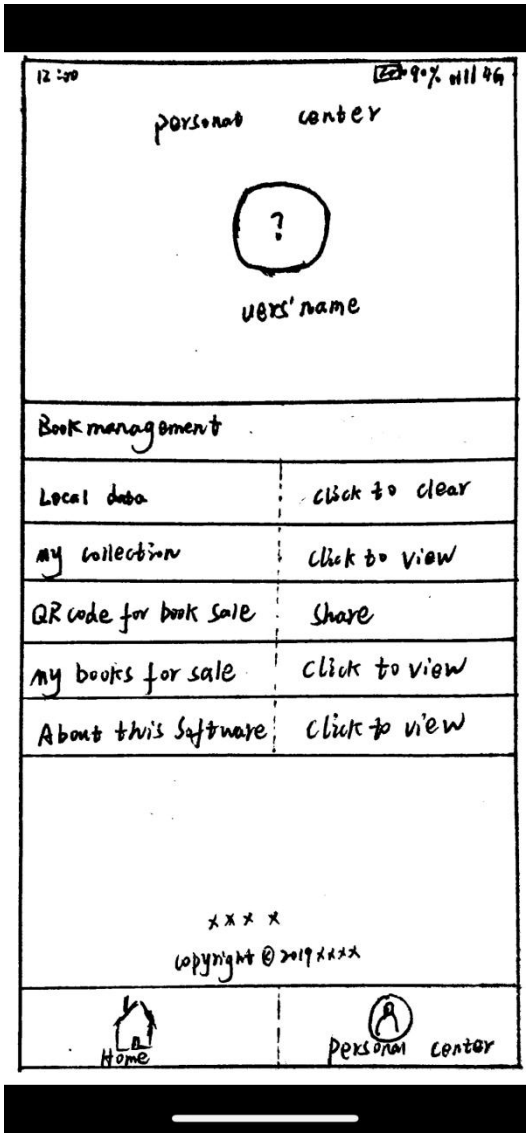
## 4. Home style

The main page of the home page is white with a resolution of 480x800, 720x1080, 1080x1920.



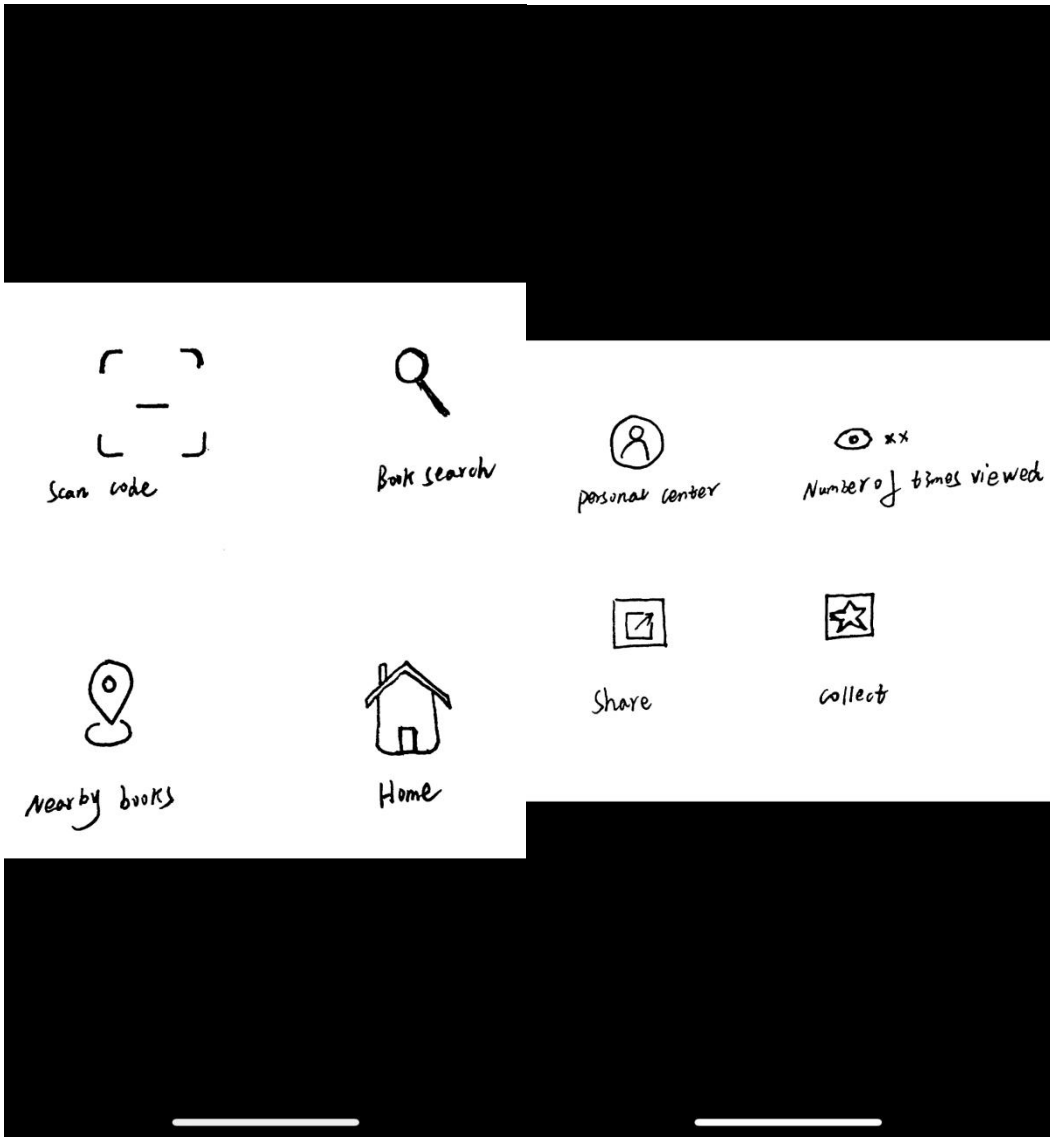

**5. Personal center style**

The main color of the home page is white and blue, and the applicable image resolution is 480x800, 720x1080, 1080x1920.




**6. Button style**

The color of the button is yellow, blue, green, and red. It is dominated by a flat style.




**7.Text style**

To create the best legibility on the mobile side, paying particular attention to these special levels, the combination of words, lines, and paragraphs of these formatted towers is equally important in a natural light environment. There is no universally accepted line width standard on the mobile side. Traditionally, however, every narrow column in a newspaper or magazine tends to be 39 characters. Given that this ideal

line width has been tested for centuries, it also works well on mobile fonts.

The standard for line spacing is usually 1.4em, but this is too compact for the screen: fonts that perform well on the screen have a key feature - large grooves, large grooves require a larger line spacing to maintain spatial hierarchy . In turn, shorter line widths require smaller line spacing. So remember to set the mobile side to be more compact.

The text will be left aligned.

**8.Form style**

①, Form grouping

②, Set the default options

③, The format requirements for the user

④, Give an error message

⑤, Input focus and keyboard

⑥,Do a good job of matching and identification

⑦,Try to reduce the page jump

**Part 2**

# 3. Functional Requirements Specification

## a. Stakeholder

Employees (Software operations team);

Investors (Shareholders who invest in this software) ;

Managers (General manager of projects and systems);

Customers (Students who want to buy used books);

Physical store’s owner that sells used books in SIAS;

supplier (Students who want to sell their books);

Teachers who manage books.

## b. Actors and Goals

| Actor | Actor's Goal | Use Case Name |
|---|---|---|
| Buyer& Seller | To login our system | Sign in |
| Buyer& Seller | To comment on our services or goods | User Evaluation Feedback |
| Buyer | To buy books | Publish Purchase Message |
| Buyer | To choose books | Browse merchandise(books) |
| Buyer | To buy books | Purchase goods |
| Seller | To sell them books | Publishing transfer information |
| seller | To send books when get an order | Send goods |
| Buyer | To buy books | Make an order |
| Buyer | To Check the details of books | Commodity Details |
| Buyer | To buy books | Add to chart |
| System administrator | To confirm administrator identity | Login confirmation |
| System administrator& Buyer& Seller | To change the login password | Change password |
| System administrator | To verify if the books can be sold | System verification |

## c. Use Cases

### i. Casual Description

**System verification：** When sellers want to post their book transfer information, they must pass our system verification.

**Release：** We will release the information if verification succeed.

**Not release:** We won’t release the information if verification failed.

**Add to cart :**Buyers can buy their favorite goods in the shopping cart first.

**Purchase goods:**When the buyer determines what he wants, he or she will pay for it from the shopping cart.

**publish transfer information：** This information expresses the contents, specifications, prices and other comprehensive information of the books sold, which is the way the seller presents the books to the buyer.

**Evaluation**: After the buyer receives the book, he gives trial feedback to the seller.

**Publish Purchase Message:**

The buyer successfully released the purchase information and got book information about their purchase list.

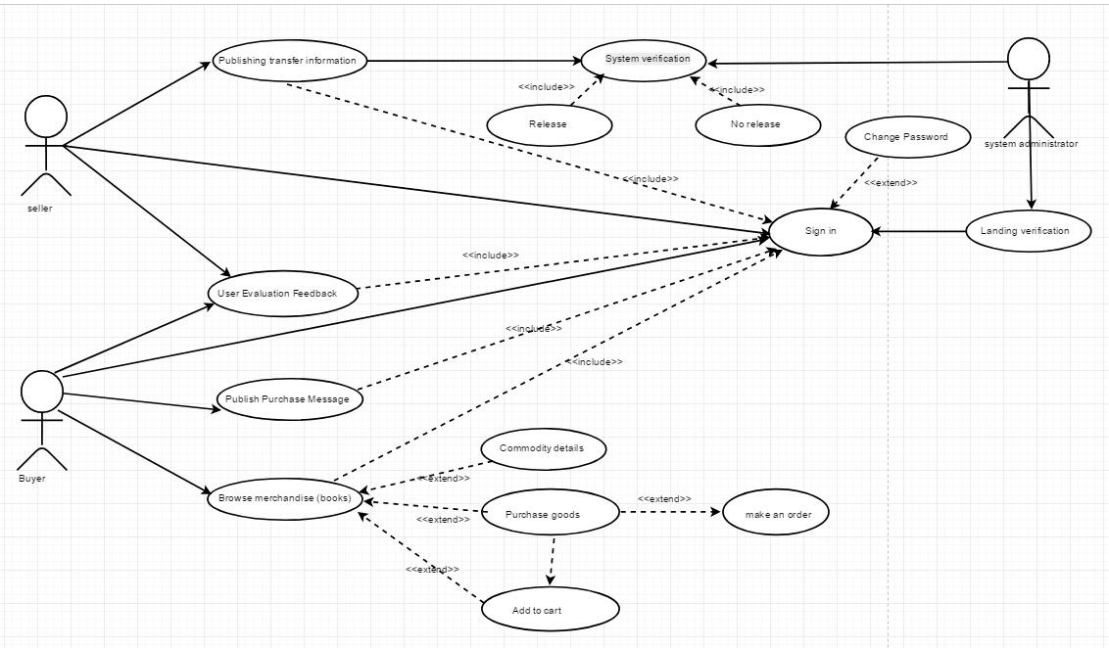
**Browse merchandise (books):**

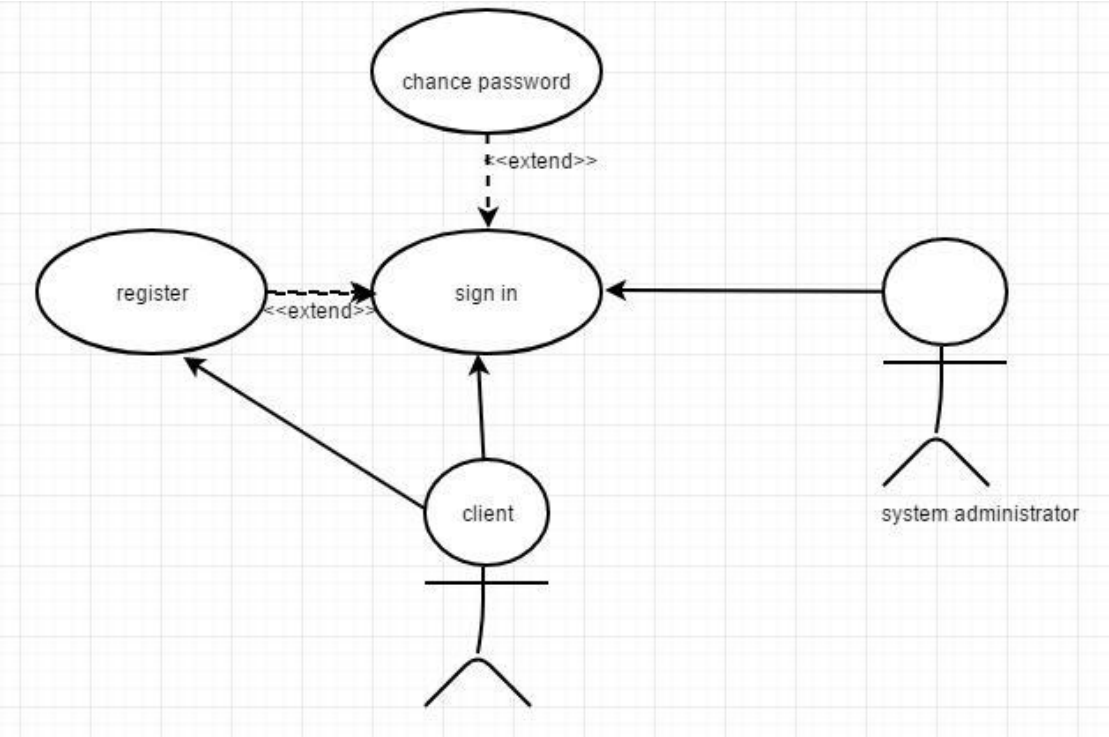
Buyers browse existing book information to determine purchase behavior.

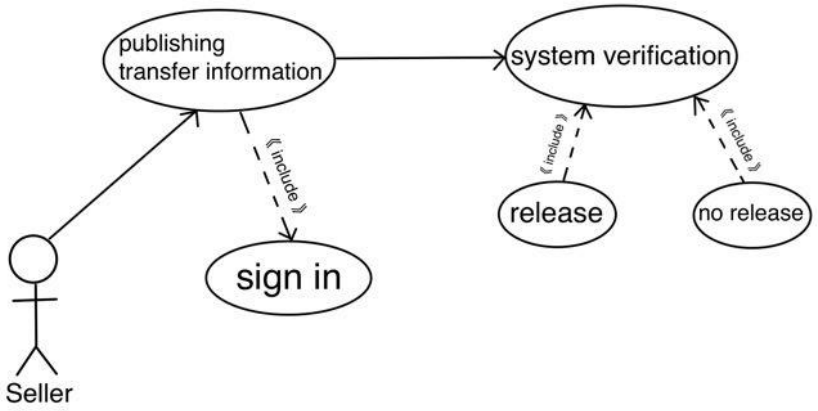
**Make an order:**

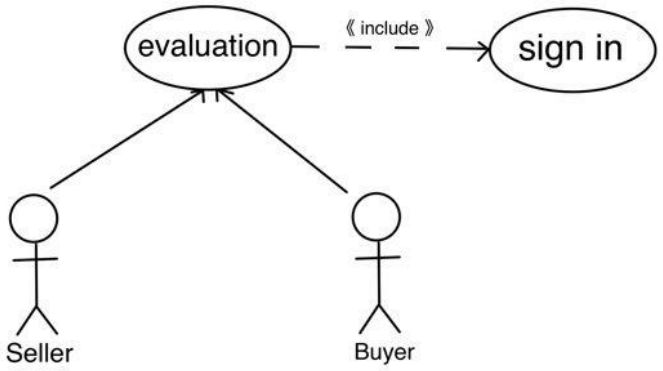
The buyer orders the goods by placing an order

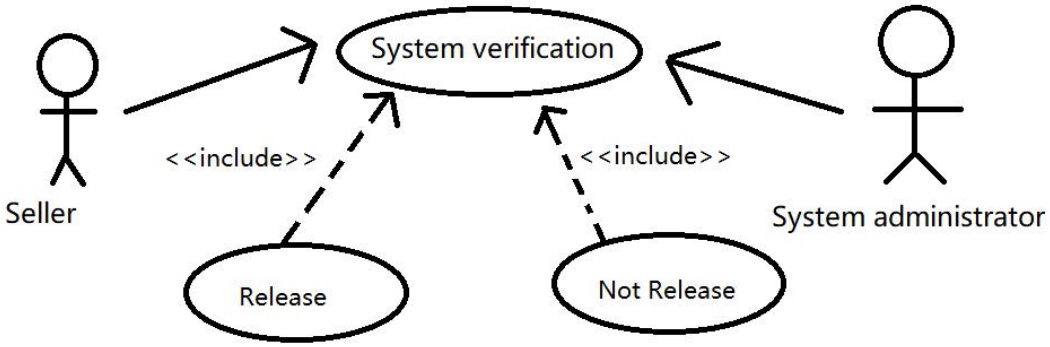
## ii. Use Case Diagram

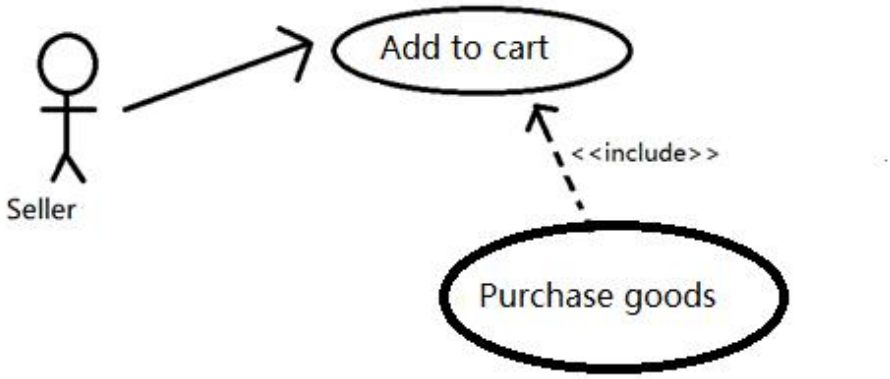


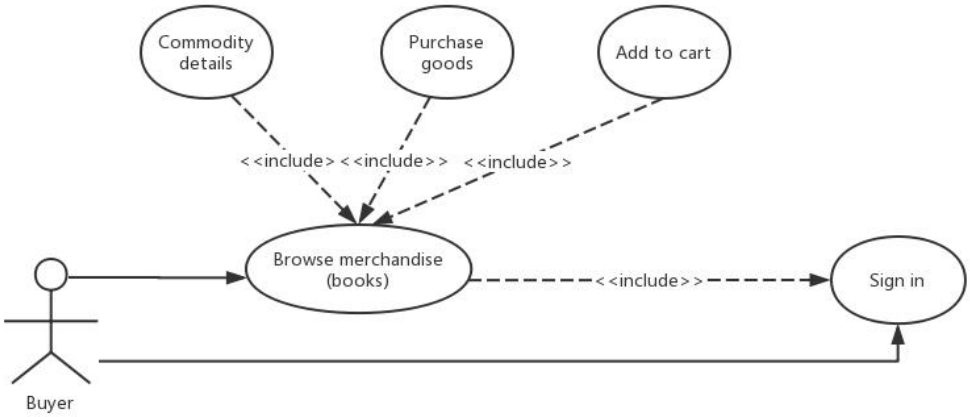

publishing
transfer information
system verification
《include》
《include》
《include》
release
no release
sign in
Seller

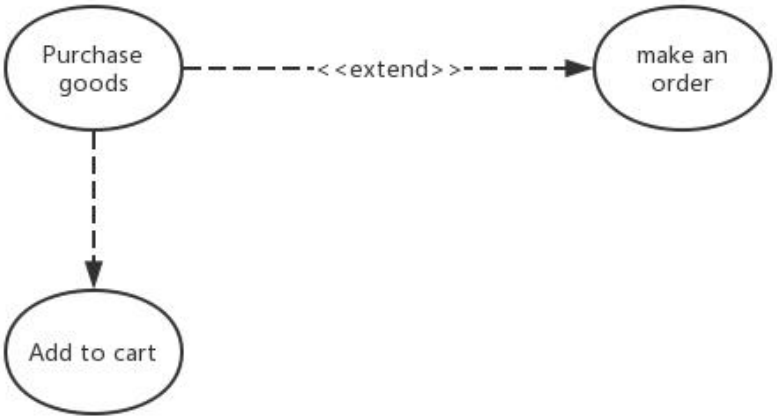

evaluation
《include》
sign in
Seller
Buyer

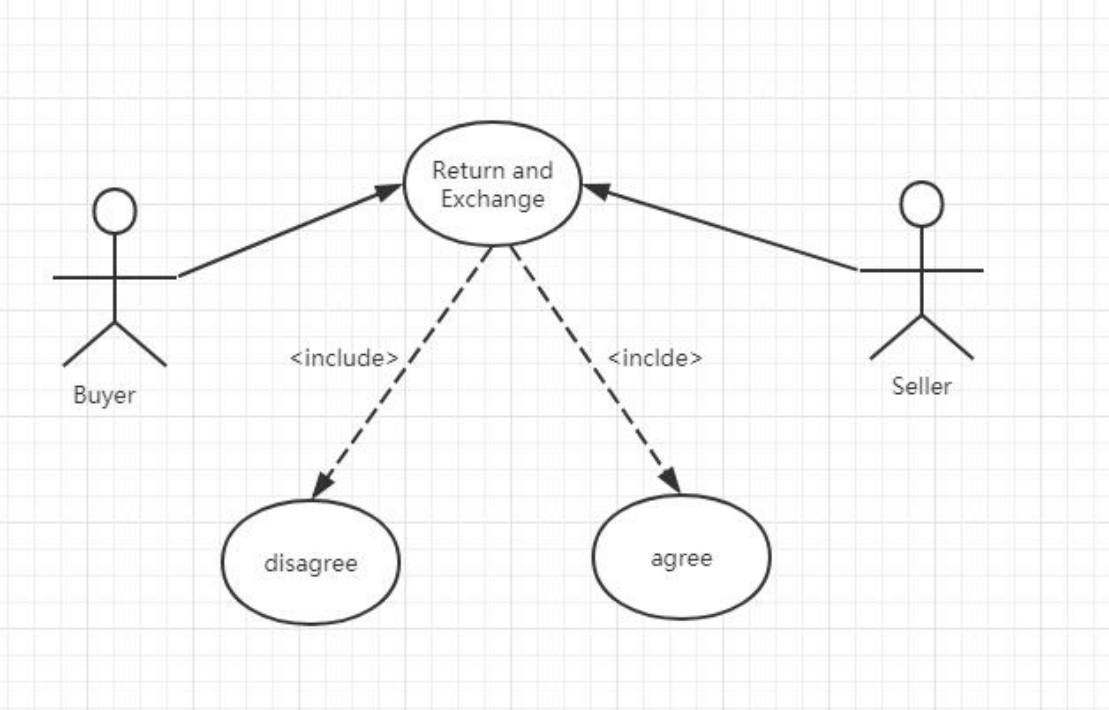

System verification
Seller
<<include>>
<<include>>
System administrator
Release
Not Release


Add to cart
Seller
<<include>>
Purchase goods

Publish Purchase Message
<<include>>
Sign in
Buyer


Commodity details
Purchase goods
Add to cart
<<include>>
<<include>>
<<include>>
Browse merchandise (books)
<<include>>
Sign in
Buyer


Purchase goods
<<extend>>
make an order
Add to cart




## iii. Traceability Matrix

| |
|---|
| REQ1. Check the goods information (books will be classified) |
| REQ2. Communication (Buyers can communicate with sellers) |
| REQ3. Order |
| REQ4. Confirmation of receipt and evaluation |
| REQ5. Return and exchange (unsatisfactory return and exchange) |
| REQ6. Payment method |
| REQ7. Publish and modify cargo information |
| REQ8. Buyer Information Management |
| REQ9. Seller Information Management |
| REQ10. Goods information management |
| REQ11. Processing after-sales service |

| Req't | PW | UC1 | UC2 | UC3 | UC4 | UC5 | UC6 | UC7 | UC8 | UC9 | UC10 | UC11 | UC12 | UC13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REQ1 | 5 | | | | × | × | × | | | | × | × | | |
| REQ2 | 3 | × | × | | | | | | × | × | | | | |
| REQ3 | 3 | × | | | | | | | × | × | | | | |
| REQ4 | 3 | × | × | | | × | | | × | × | | | | |
| REQ5 | 3 | × | | | | × | | | | × | | | | |
| REQ6 | 4 | × | | | | × | | | × | | | × | | |
| REQ7 | 4 | | | × | | | × | × | | | | | | × |
| REQ8 | 1 | × | | × | | | | | × | | | | × | |
| REQ9 | 1 | × | | | | | × | × | × | | | | × | × |
| REQ10 | 5 | × | | × | × | × | × | | | × | × | × | | |
| REQ11 | 3 | | × | | | | | | | | | | | |
| Max PW | | 5 | 3 | 3 | 2 | 5 | 4 | 2 | 5 | 5 | 2 | 3 | 2 | 2 |
| Total PW | | 23 | 9 | 10 | 10 | 20 | 15 | 5 | 15 | 17 | 10 | 14 | 2 | 3 |

# Iv. Fully-Dressed Description

| **Use Case UC-1:** | register |
|---|---|
| **Related Requirem'ts:** | none |
| **Initiating Actor:** | buyer and seller |
| **Actor's Goal:** | There are information in the database and be able to log in to the program. |
| **Participating Actors:** | buyer, seller, system administrator |
| **Preconditions:** | Seller submit the transfer information. |
| **Postconditions:** | If this use case succeeds, add one more user. |
| **Flow of Events for Main Success Scenario:** | |
| → 1. | When the user clicks "Register", the use case begins. |
| → 2. | Users fill in personal information. |

| | | |
|---|---|---|
| → | 3. | When the user clicks "Submit Registration", the use case ends. |
| → | 4. | System update seller information. |
| ← | 5. | When the seller fails to register successfully, the system prompts "Fail to register successfully, please re-register". |
| ← | 6. | When the seller registers successfully, the system prompts "Register Successfully, Please Log in". |

| **Use Case UC-2:** | sign in |
|---|---|
| **Related Requirem'ts:** | REQ2, REQ3, REQ5, REQ7, REQ9, REQ10, , stated in Table Traceability Matrix |
| **Initiating Actor:** | buyer, seller, system administrator |
| **Actor's Goal:** | Login to Personal Account and Allocate Management Permissions. |
| **Participating Actors:** | System administrator |
| **Preconditions:** | This buyer record already exists in the database. |
| **Postconditions:** | If this use case succeeds, the buyer enters the system . |

**Flow of Events for Main Success Scenario:**

| | | |
|---|---|---|
| → | 1. | This use case begins when the user clicks "Log in". |
| → | 2. | This use case ends when the user clicks "Quit". |
| ← | 3. | When the user is not registered, the system prompts "not registered, please login after the user registers". This use case ends. |
| ← | 4. | When the user is logged in, the system prompts "User is logged in", and the use case ends. |

| **Use Case UC-3:** | publish transfer information |
|---|---|
| **Related Requirem'ts:** | REQ6,REQ7, REQ9 (stated in c. iii) |
| **Initiating Actor:** | Seller |

| | |
|---|---|
| **Actor's Goal:** | Publish transfer book information |
| **Participating Actors:** | System administrator |
| **Preconditions:** | There are complete and adequate sales of books. |
| **Postconditions:** | Published books can be audited by administrators. |

**Flow of Events for Main Success Scenario:**

→ 1. 1:Sellers release sales information on the platform.

→ 2. 2: Administrator gave it a pass

→ 3. 3:Buyer confirmation information.

**Flow of Events for Extensions (Alternate Scenarios):**

The seller's book information could not be passed.

| | | |
|---|---|---|
| → | 1. | Sellers release sales information on the platform. |
| → | 2. | Management is not allowed to pass. |
| → | 3. | Sellers improve information or cancel book information. |

| | |
|---|---|
| **Use Case UC-4:** | user evaluation feedback |
| **Related Requirem'ts:** | REQ5 (stated in c. iii) |
| **Initiating Actor:** | Seller |
| **Actor's Goal:** | Learn about the buyer's feedback. |
| **Participating Actors:** | seller buyer |
| **Preconditions:** | The buyer has placed the order and the seller has delivered the goods. |
| **Postconditions:** | If this use case succeeds, the transaction succeeds by adding one. |

**Flow of Events for Main Success Scenario:**

→ 1. This use case begins when the purchase confirms receipt.

| | | |
|---|---|---|
| → | 2. | The buyer has succeeded in adding one more transaction to the purchased goods. |
| ← | 3. | System updates transaction success options. |
| ← | 4. | When the user is logged in, the system prompts "User is logged in", and the use case ends. |

Flow of Events for Extensions (Alternate Scenarios):

1:The buyer failed, and the use case ended.

| **Use Case UC-5:** | System verification |
|---|---|
| **Related Requirem'ts:** | REQ7, REQ9 (stated in c. iii) |
| **Initiating Actor:** | Seller |
| **Actor's Goal:** | To verify if the books is allowed to sold. |
| **Participating Actors:** | System administrator |
| **Preconditions:** | Seller submit the transfer information. |
| **Postconditions:** | System administrator will check the information of books. |

**Flow of Events for Main Success Scenario:**

| | | |
|---|---|---|
| → | 1. | Seller clicks the sale button and fills in the book information. |
| ← | 2. | System administrator will get the information and check it. |

**Flow of Events for Extensions (Alternate Scenarios):**

| | | |
|---|---|---|
| ← | 1. | Seller can sell this book. |
| ← | 2. | Seller can't sell this book. |

| Use Case UC-6: | Purchase goods |
|---|---|
| Related Requirem'ts: | REQ1,REQ2,REQ3,REQ8,and REQ9 |
| Initiating Actor: | Buyer |

| | |
|---|---|
| Actor's Goal: | Buyers Buy Goods |
| Participating Actors: | Browse merchandise; Commodity details; Add to cart; |
| Preconditions: | The buyer successfully selected the goods and negotiated with the seller for detailed information such as price. |
| Postconditions: | make an order |

Flow of Events for Main Success Scenario:

| | | |
|---|---|---|
| → | 1. | The seller enters information about the goods he wants to buy in the search or finds the goods he wants to buy in the commodity classification. 2. Select the goods to be purchased. 3. The buyer confirms the purchase and the system generates the order. 4. The system notifies the seller to deliver the goods. |
| ← | 2. | include ： add to cart (UC-7) |
| → | 3. | (1). Choose the goods to buy.(2). Buyers choose the goods they like.(3). Add to your add to cart. |

| **Use Case UC-7:** | Add to cart |
|---|---|
| Related Requirem'ts: | REQ1,REQ3,REQ12 |
| Initiating Actor: | Buyer |
| Actor's Goal: | Buyers can easily see the total value of multiple items purchased |
| Participating Actors: | Browse merchandise; Commodity details: purchase goods |
| Postconditions: | make an order |

Flow of Events for Main Success Scenario:

| | | |
|---|---|---|
| → | 1. | By searching and browsing book,2. buyers choose to join the shopping cart they like, 3.they can easily know the detailed prices of many books.. |
| ← | 2. | Include: Commodity details(UC-6)<br>Browse merchandise(book) (UC-4) |

| **Use Case UC-8:** | Publish Purchase Message |
|---|---|
| **Related Requirem’ts:** | REQ8, REQ10, stated in Table Traceability Matrix |
| **Initiating Actor:** | Buyer |
| **Actor’s Goal:** | To buy books. |
| **Participating Actors:** | Buyer, System administrator |
| **Preconditions:** | The buyer logs into the system to publish their own purchase list and the information is real and effective, reflecting the buyer's real needs. |
| **Postconditions:** | The buyer successfully released his own purchase list and received a response from the seller. |
| **Flow of Events for Main Success Scenario:** | |
| → 1. | The buyer chooses “Publish Purchase Message”. |
| → 2. | The buyer fills in the information of the product to be purchased. |
| ← 3. | The system confirms that the information of the product is true and valid. |
| → 4. | After the buyer confirms the information again, the information is released. And save it to the database. |

| **Use Case UC-9:** | Browse merchandise (books) |
|---|---|
| **Related Requirem’ts:** | REQ1, REQ12, stated in Table Traceability Matrix |
| **Initiating Actor:** | Buyer , seller and system administrator |
| **Actor’s Goal:** | To choose books. |
| **Participating Actors:** | Buyer |
| **Preconditions:** | The goods for viewing exist in the database. |
| **Postconditions:** | If this use case is successful, the number of viewers will increase by one; if this use case is unsuccessful, the system status will remain unchanged. |
| **Flow of Events for Main Success Scenario:** | |
| → 1. | When the buyer clicks "View", this use case begins. |

| | | |
|---|---|---|
| ← | 2. | The system displays the goods that exist in the database. |
| ← | 3. | System update viewers. |

| **Use Case UC-10:** | Make an order |
|---|---|
| **Related Requirem'ts:** | REQ3,stated in Table Traceability Matrix |
| **Initiating Actor:** | Buyer |
| **Actor's Goal:** | To order goods by making an order |
| **Participating Actors:** | Buyer, System administrator |
| **Preconditions:** | Goods not off shelves. |
| **Postconditions:** | If this use case succeeds, add an item to the waiting list of the buyer's purchased goods. |

**Flow of Events for Main Success Scenario:**

| | | |
|---|---|---|
| → | 1. | **This use case begins when the buyer clicks on "make the order"** |
| ← | 2. | **Inform the buyer that the order has been placed successfully**. |

| **Use Case UC-11:** | Return and Exchange |
|---|---|
| **Related Requirem'ts:** | REQ1,REQ4,REQ11 |
| **Initiating Actor:** | Buyer |
| **Actor's Goal:** | If the buyer is not satisfied with the goods, he may return or exchange them. |
| **Participating Actors:** | Buyer, Seller |
| **Preconditions:** | Buyer dissatisfied with the goods. |
| **Postconditions:** | Buyer return books or exchange books |

**Flow of Events for Main Success Scenario:**

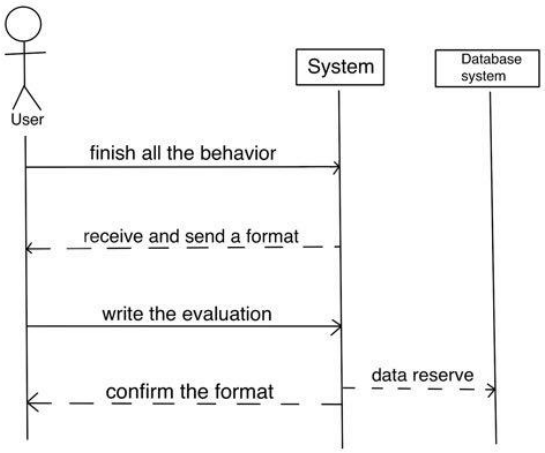
| | | |
|---|---|---|
| → | 1. | Buyer log in and click "Return and exchange" and write down the reason. |
| → | 2. | Waiting for Administrator censor it. |

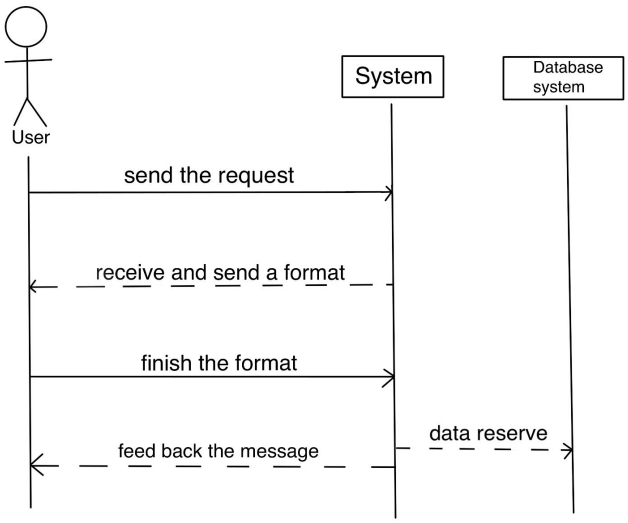
**Flow of Events for Extensions (Alternate Scenarios):**

| | | |
|---|---|---|
| ← | 1. | When confirming receipt, click "Return for Exchange". The system prompts that the goods cannot be returned and exchanged. |

| | | |
|---|---|---|
| ← | 2. | When the seller does not agree to return or exchange the goods, the operation is unsuccessful. |

## d. System Sequence Diagrams



# 4. User Interface Specification

## a. Preliminary Design

Specific requirements are as follows:

1. The user interface is mainly composed of two tags, which are divided into login and registration.

2. In the "Registration" tab, the user can enter a username and password. The specific requirements are:

a) The username and password cannot be empty;

b) The username must begin with an uppercase letter and consist of at least three letters or numbers;

c) The password cannot directly display the actual content and needs to be hidden;

3. Click the “Register” button, the program will check the content input by the user according to the requirements of 2, if the user input does not meet the requirements, a dialog box will pop up to remind the user to re-enter; if the requirements are met, the registered information will be added to the “ The message summary tab shows that the user's input is cleared and the user is prompted to register successfully.

5. After the user successfully registers the user, the display result of the "Info Summary" tab is displayed.

## b. User Effort Estimation

Sign in：total 6 mouse clicks, as follows

Click the “login” menu

The left side shows "User Login"

the right side shows "Information Registration"

--- after completing data entry as shown below ---

Click the “Login” button to complete

After clicking on the applet

Click ”search”

Find the books you want

Then Click to join the shopping cart or favorites

Then click back to the home page

Click ”navigation”

Click on the shopping cart

Check out books you want to buy

Or Click to see the balance.

登录Email / 手机号：

请输入您的密码：

短信验证码登录　　登 录

忘记密码？ | 注册

请输入您的Email：*

请输入密码：*

请重复密码：*

验证码：　19 - 8=?　刷新 *

提交注册并登录

仅需输入Email和密码，立刻完成注册！

书名、作者、出版社、ISBN、文具　搜 索　同店找书　高级搜索

热门搜索：毛泽东思想和中国特色　高等数学（第七版）　计算机网络　管理学