LGW Express

Software Requirement Specification

2017.4.5

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1.Introduction

“According to actual needs, logistics is the process of the realization of customer requirements from the supply to the entity in the transport, storage, loading and unloading, handling, packaging, distribution processing, distribution, information processing and other functions of the organic combination of customer requirements.” the definition of logistics.

In recent years, with the development of a series of large e-commerce sites, online shopping began to occupy a large proportion in people's lives and logistics distribution also began to affect people's life. The service logistics distribution information system provides will directly affect the user's experience of the online shopping, which indirectly influences the popularity of an e-commerce website. The logistics activities include not only logistics distribution, but also business flow and cash flow. They are closely related to each other closely. Logistics distribution is an important form of business including most of the necessary factors in logistics. In the process of social reproduction, the basic principle and application of the scientific methods of management, system planning, organization, command, coordination, control and supervision of the logistics activities, make the logistics activities to achieve the best coordination and cooperation.

The purpose of this project is to improve people's work efficiency, improve the efficiency of logistics distribution, avoid human error, ensure that the package could be sent to the customer correctly and the customer enjoys a series of after-sales service, etc. In this project, we set up a logistics system to communicate with business man, delivery man and customer in order to provide customers with more convenient and safe logistics distribution services.

In our project, there are three main actors: business man, delivery people and customer. Delivery man inquires the orders from this system which needs to send. And he contacts with the customer to confirm the delivery time and the receiver according to the customer’s information recorded in the system. Then he sends the package to the corresponding receiver and makes the package signed. Another thing the delivery man needs to do is to confirm whether the goods are damaged or lost in transit. If the goods are damaged or lost, the delivery man needs to inform customers and company for further processing.

The customer also can inquire logistics information and update his person information such as delivery address, contact information and so on by this system. He signs his package digitized which is safer. And he is able to pay for the goods when it is delivered to him in different ways. When he is not satisfied with the goods, the system provides him with a platform to communicate with business man for refund or exchange.

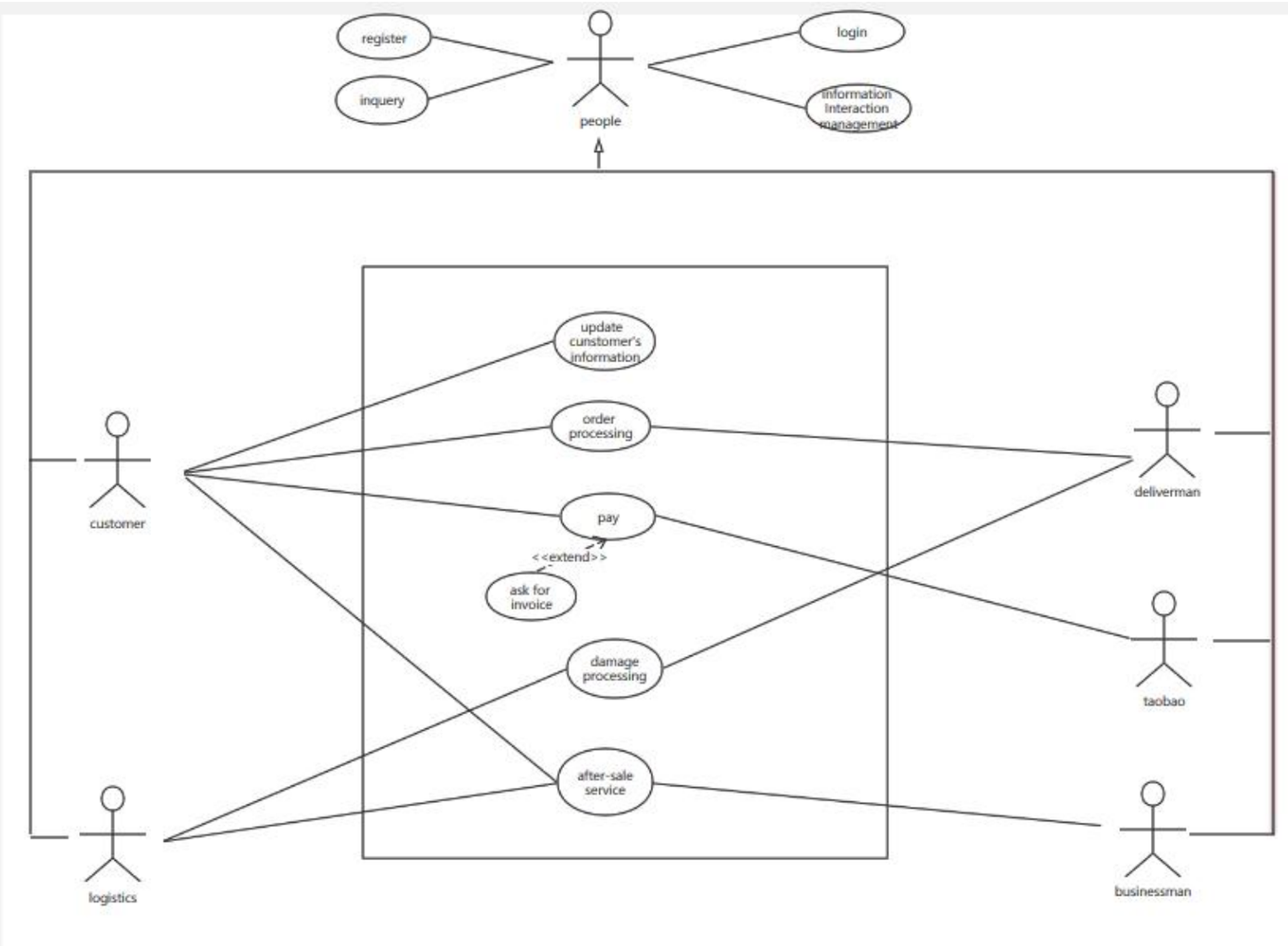
The business man can manage interaction with delivery man and customer. And when the customer chooses to “Cash on Delivery”, the system will send the money to the business man when the customer confirms the order or after 15 days.

The system is dedicated to provide users with a more convenient and useful logistics platform. And it makes the customer communicate with the logistics company and business man more efficiently. It not only improves the user’s satisfaction, but also improves the delivery efficiency. Therefore it realizes the user, logistics companies, businesses can benefit from that together.

Details are shown below.

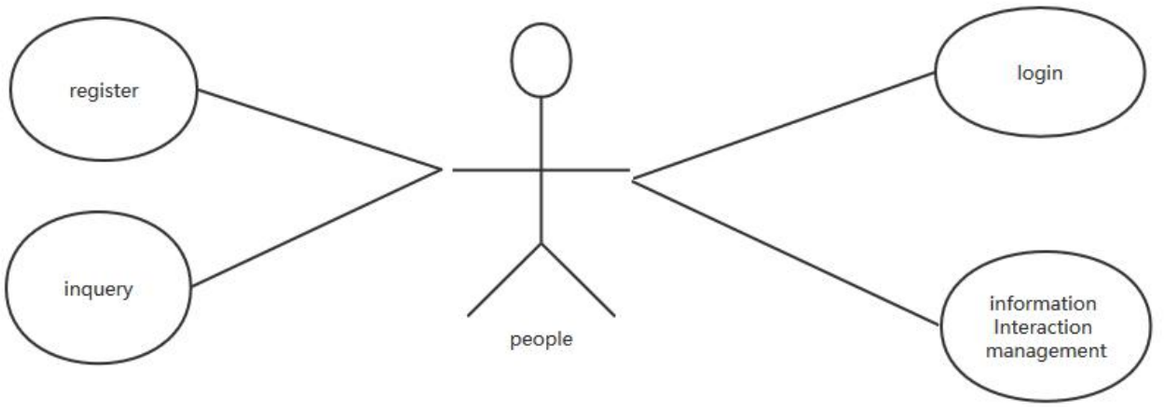
2.Use Case Modeling

2.1 Global Use Case

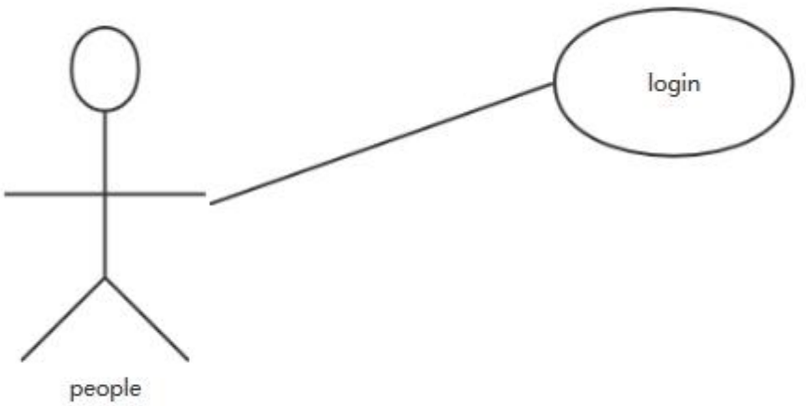


2.2 Base Use Case

2.2.1 People Use Case

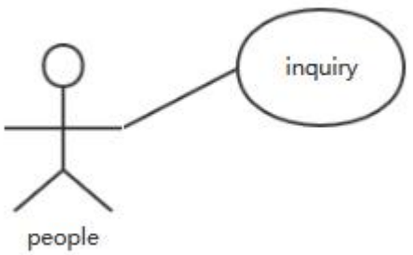


2.2.2 Log in Use Case



Name of use case	Log in
Identifier	UC0002
Description	Different users can log in our website.
Participant	Postman, Customer, Administer, Online sellers
PreConditions	1.They have registered our system.
BasicFlows	1.Different users input their user name and password. 2.Clicks “log in”. 3.If the user name and password are all correct,the web will return a welcome page
PostConditions	1.If the user is a customer, he can check the order information ,update the information and process the order. 2.If the user is a postman, he can get the information of the order which he will send. 3.If the user is an online sellers, he can contact the postman and customer and receive the payment. 4. If the user is an administer, he can dispute the authority and maintain the system. 5.If the user is the logistic company, it can inquiry the damage information and produce after-sale service
AlternativeFlows	1.If the password is wrong ,then output the hint and require users to input another time. 2. If the user inputs wrong password for three times ,then he should try next time after 10 minutes. 3. If the user forgets the password, he can retrieve the password by email or other methods which can determine his identity.

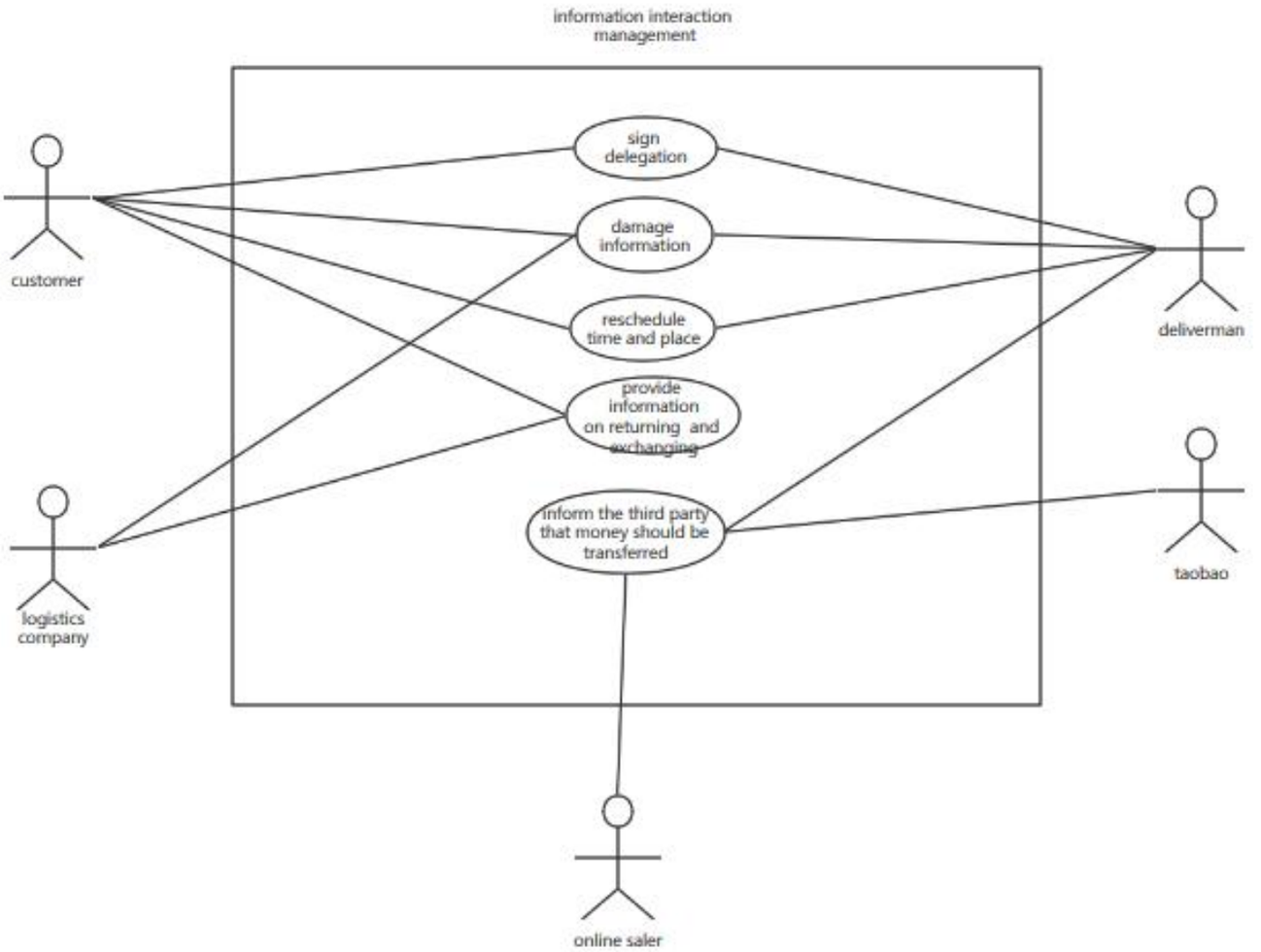
2.2.3 Inquiry Use Case



Name of use case	Inquiry
Identifier	UC0001
Description	Different people inquiry the system to get the messages they want
Participant	Postman,Taobao,Customer,Online sellers,Logistics company
PreConditions	1.They have logged in the system. 2.They have one task or more running on the system.E.g., a customer buy a product from Taobao and then the product is delivered with this system.The customer can inquiry the real-time situation of his product.
BasicFlows	1.Log in the system 2.1 1..For customers,they choose the product they want to inquiry.Then the system will show the real-time situation of his product such as location,status and so on. 2.Customers inquiry the system 2.2 1.For postman,they choose the product they are assigned to deliver 2.Then system tells the postman where to get the product. 3.Then postman inquires the system for customer's information such as address and phone number 2.3

	1.For Taobao they can track the product with this function. 2.They can confirm whether the product is dispatched to the postman. 3.They can confirm whether the product is received by customer 4.They can confirm whether the money should be transferred to online sellers. 2.4 1.For online sellers, they are informed of whether the product is sold 2.After transaction they can inquiry the system to confirm whether customer has paid the fee. 2.5 1.For logistics company ,it can be informed of the damage information if the product is damaged.
PostConditions	5 kinds of actors get the information they need and continue to do other work.

2.2.4 Information Interaction management

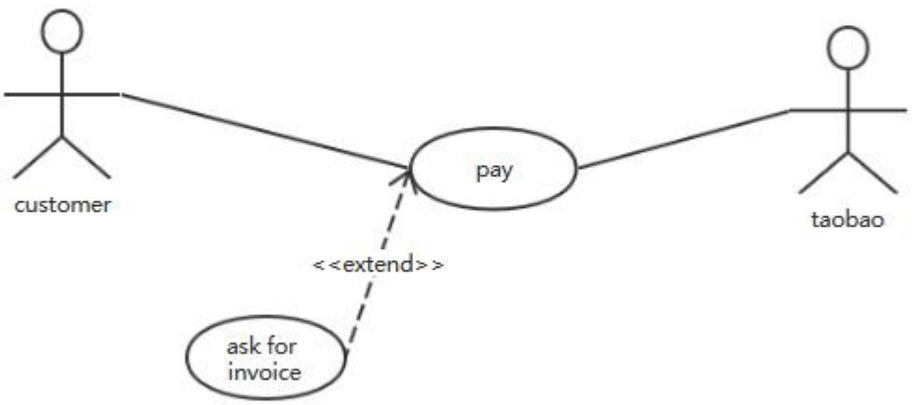


Name of use case	Information Interaction
Identifier	UC0003
Description	Four party can get exchange information with this system
Participant	Customer, Taobao, Logistics company, Online sellers, Postman
PreConditions	1.The customer has already order the product. 2.Users have registered and logged in the system
BasicFlows	1. When product was damaged or lost ,the information will be saved into system by postman. 2. The system will inform the Logistic company the damage or lost information. 3. If customer has no time to sign the receipt,he can negotiate with postman to reschedule time and place 4. Logistic company provide information about returning and exchanging 5. System inform the customer of information on returning and exchanging 6.Postman record on the system that the transaction finished 7.System inform the Taobao that money should be transferred to online seller
AlternativeFlows	1.If the interaction function fails ,the error information will be send to administrator 2.And then he will take measures to fix the system.

2.3 Order Processing

Name of use case	Sign Order Processing
Identifier	UC0004
Description	Customer signs his package from postman by different ways.
Participant	Customer
PreConditions	Postman has contacted with customer to sign his package and the customer has paid for his package.
BasicFlows	1. The postman confirm whether the person signing the package is the customer himself 2. The receiver check whether the package is intact. 3. The receiver decides to sign the package. 3.1If the receiver choose to sign the receipt, he uses signature on a pad provided by the postman 3.2 Else if the receiver choose to use the fingerprint, he presses the finger in a specified area of the pad. 4. If the system verifies the receiver's information successfully It update the package status to "sign successfully". else the package status to "fail to sign" and the system will reschedule the receipt .
PostConditions	The corresponding information including the data of the received product and customer acceptance will be transferred back to the server. The order will be transferred back to the server.
AlternativeFlows	1. If the person is not the customer himself or not assigned by the customer the sign process will fail. 2. If the package is not intact,the receiver will consult with the postman and decide whether he will sign it or not.

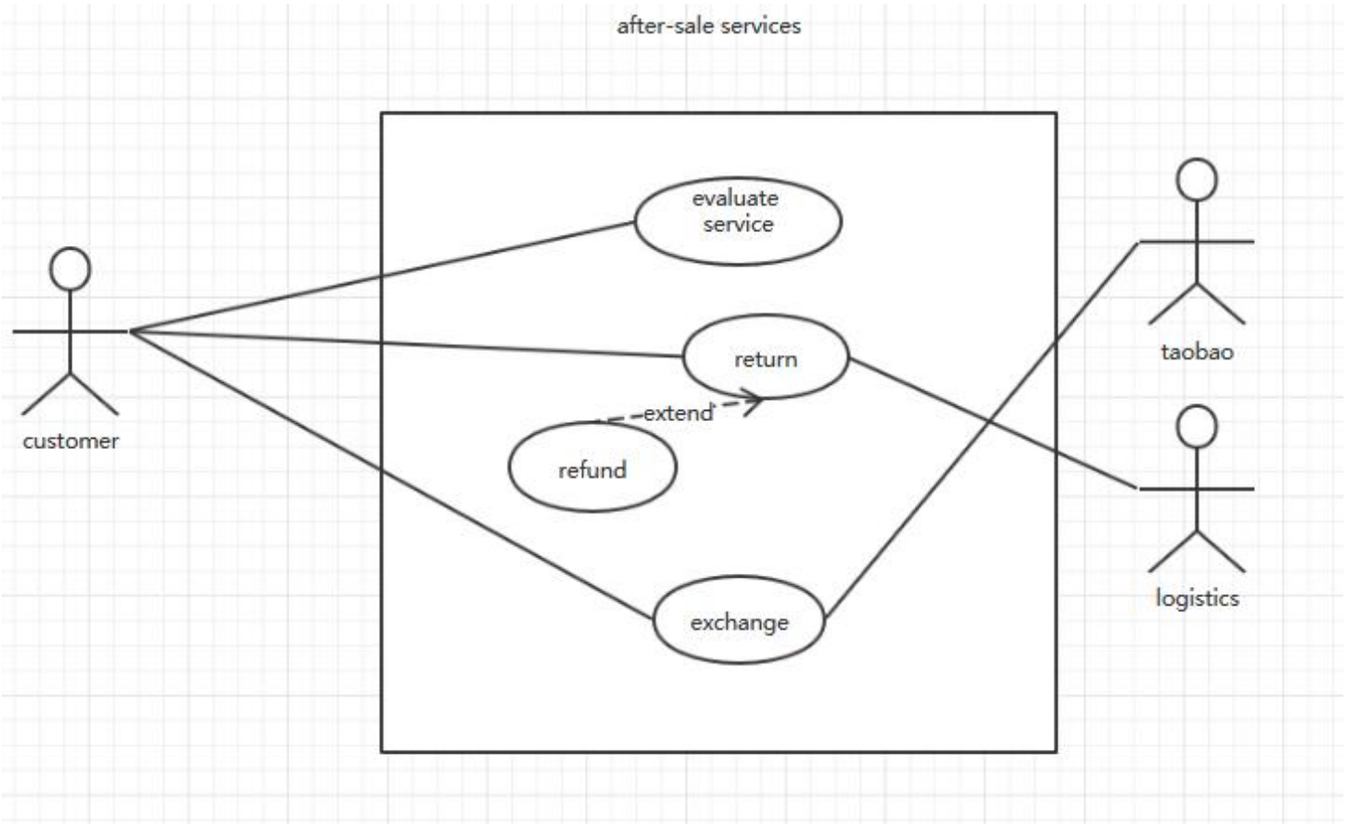
2.4 Pay Use Case



Name of use case	Pay
Identifier	UC0005
Description	Customer signs his package from postman by different ways.
Participant	Customer,
PreConditions	Postman sends the package to the customer and he needs to confirm the customer has paid for the package or not before the customer signs the package.
BasicFlows	1. If the customer has paid for his package with credit cards or PayPal when purchasing them online, the postman can know that from the system 2. If the customer hasn't paid, he can choose the methods of payment. 2.1 The customer chooses to pay by PayPal or WeiXin, the postman can provide the customer with a QR code which is stored in the system and the customer pays for the package by that. 2.2 The customer chooses to pay by credit,, the postman provides him with a POS machine. He offers his card ,inputs password and finish the payment.

	2.3 The customer chooses to pay by cash, he can give the cash to postman directly. 3. The system updates the package information that it has been paid off. 4. If the customer has confirmed receipt and asks for the invoices, the system will print it out.
PostConditions	The customer has paid the bill, and then he can sign the package. If the customer has confirmed receipt or doesn't do anything about order after fifteen days, the system wil send the money to the business man.
AlternativeFlows	If the customer refuse to pay for the product,the online sells will can ask Taobao for loss and the customer's reputation information will decrease in Taobao.

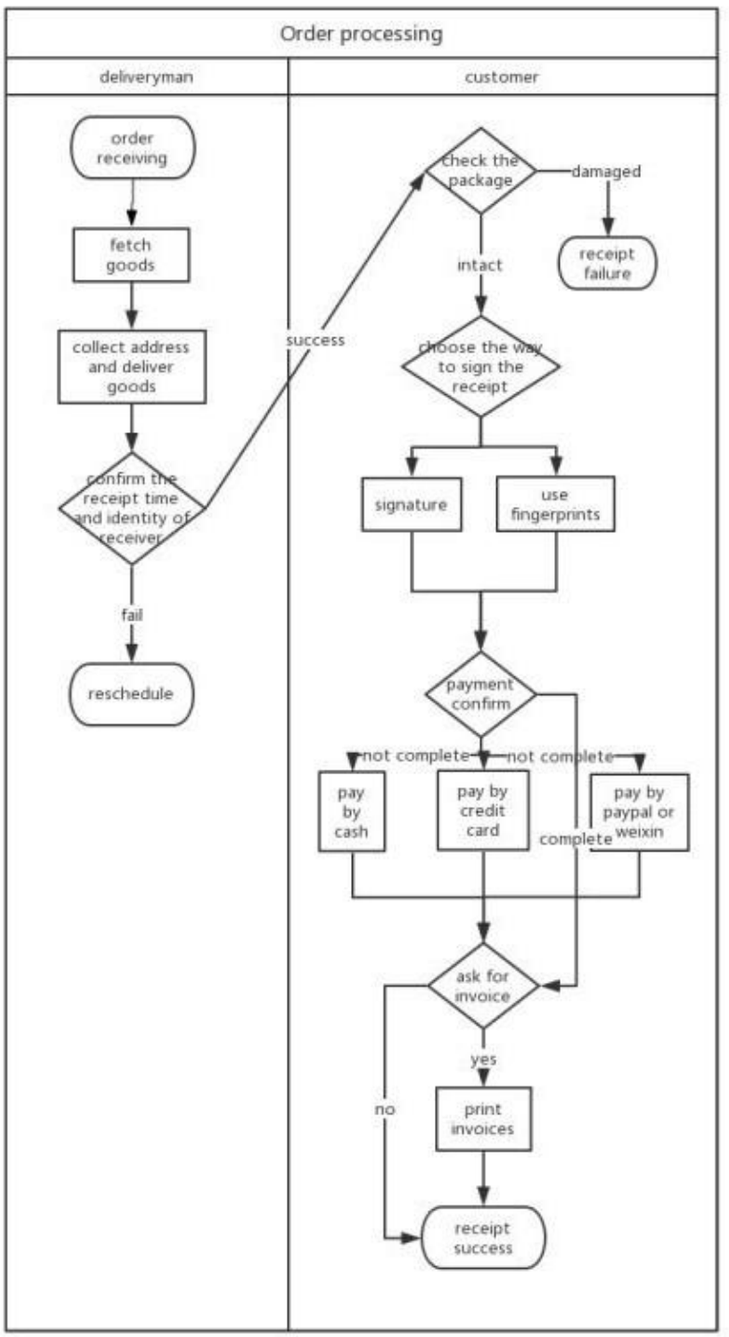
2.5 After-sales service Use Case



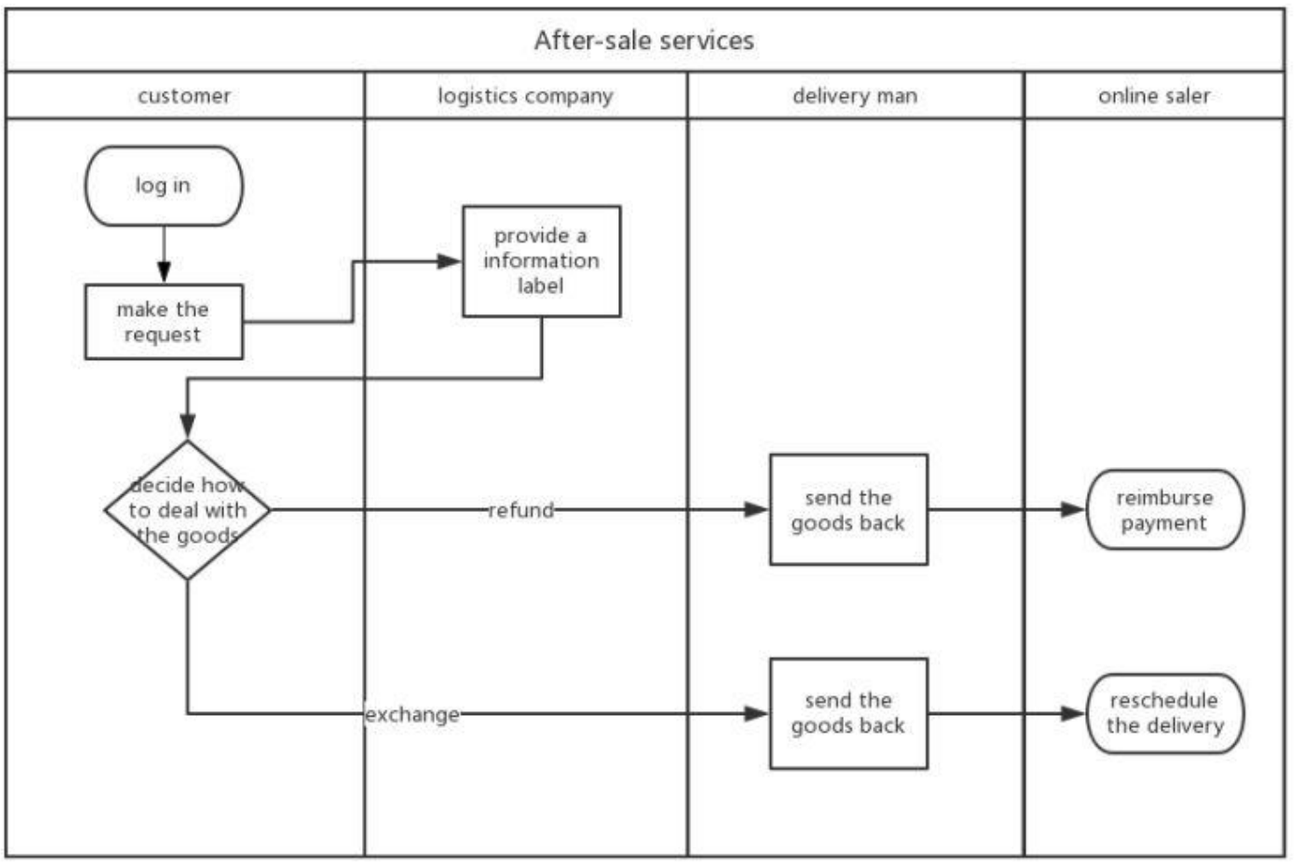
Name of use case	After-sales service
Identifier	UC0006
Description	The customer wants to return or exchange the goods.
Participant	Customer, Logistics company , Taobao, Online sellers
Preconditions	Customer has signed the package and he is unsatisfied with the product after receiving it. He could return it within 10 days.
Basic Flows	1. The customer needs to log in the system and submit the request of returning. 2. The system will obtain the information, it will provide the customer a label containing the address to which the package can be send back and the postage. 3. The customer could communicate with the online sellers and choose to send the package back and complete the transaction or to replace the current package with a new one. 3.1 If the customer choose to send the package back and complete the deal, The payment will be returned to the account balance which the system provides. 3.2 If the customer choose to replace the current package with a new one, a new delivery schedule will be made in the system.
PostConditions	The package customer sends back to the online sellers will generate a new package information in the system provided to the online sellers.
AlternativeFlows	If the customer don't get the after-sales they deserved, he can inform or complain the online sellers or logistics company with this system..

Activity Diagrams

3.1 Order processing diagram



3.2 After-sale services diagram



4 Glossary Terms

Information interaction

Refund

Evaluate

Non-delivery

Error-delivery

Reschedule

Receipt

Information

interaction management

invoice

Update pickup location

QR code

RUP

Track information

5 Supplementary specification

5.1

Ask：How we promise the safety of transaction?

Answer:：we introduce the third party into our system.Customer can choose many kinds of way to pay for the order.If the customer choose to pay by cash or credit card.The third will be logistic company,.Only after the order finished successfully and after a certain days passing,,will the money be transferred to businessman.If the customer choose paying online to pay for the order.Firstly, the money will be transferred to some third party such as Alipay.Then ,the third party will send a information to postman to ask him to print invoice.The next steps is same as the above.

5.2

Ask:why we design people use case model?

Answer: Because we find that many actors have same or similar actions such as inquiry the system for in information in this system.Therefore, we design people this abstract use case as the base.Consequently, many actor can inherit people. This thought will appear in many aspects in our project.

5.3

Others:

1.The app should be opened within 1 s

2.All daily maintenance should be done without interrupting user’s using.

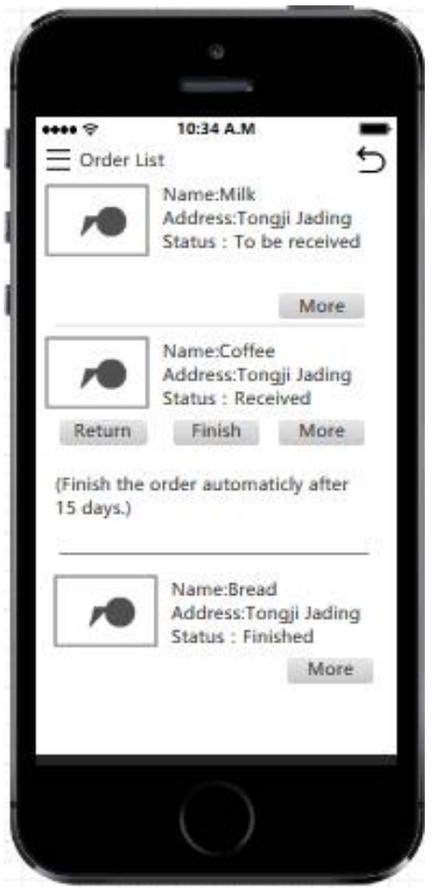
3.The system will be able to handle contemporary requests at a speed of 10000 per second

6.User Interfaces
6.1 Log in

Log in to the system.

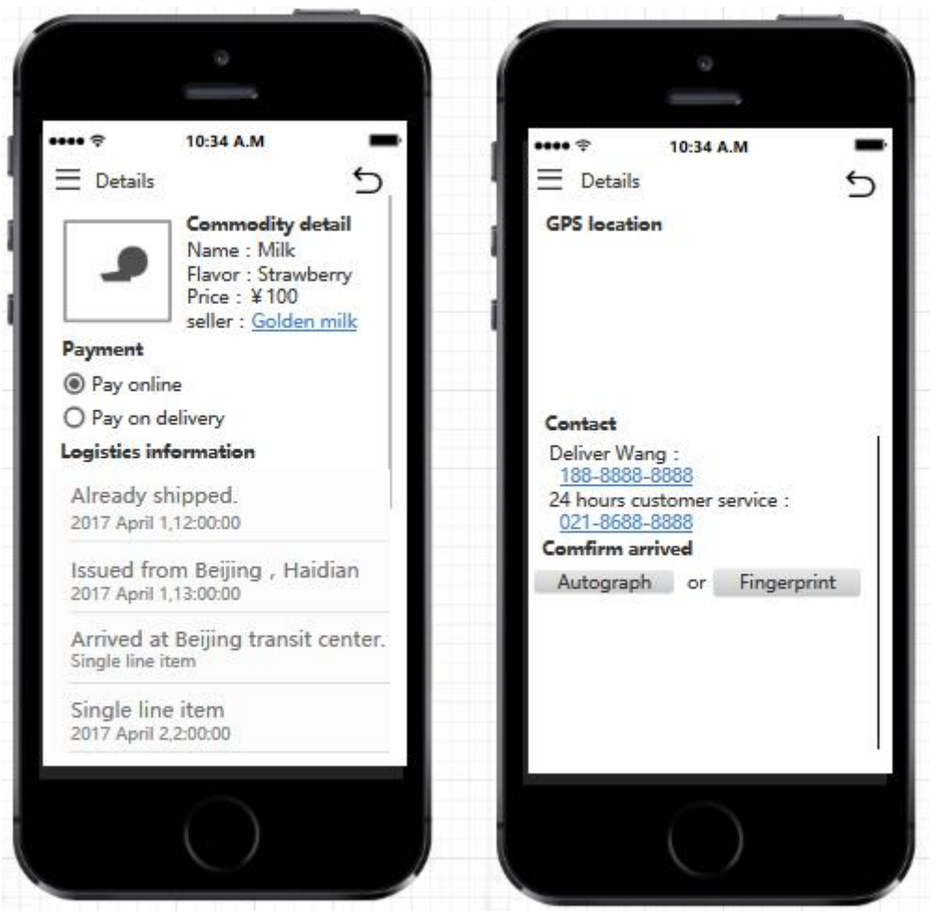
6.2 Order list

List all the orders and their statues.



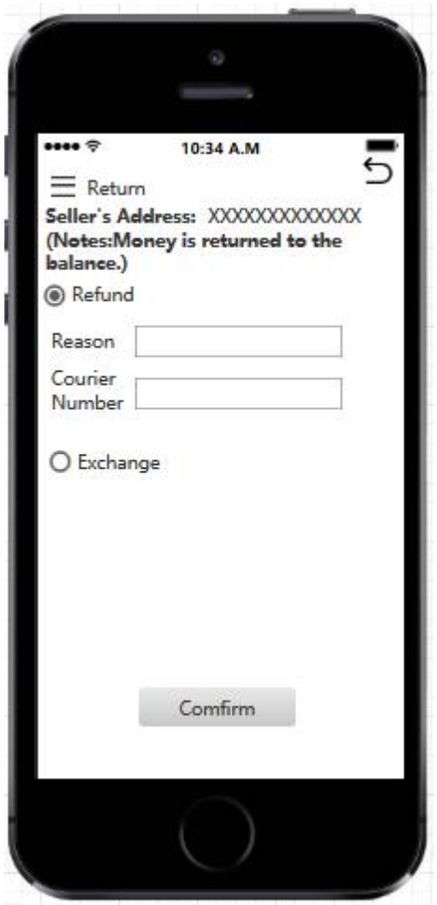
6.3 Details of each order.

Display the detail of each order.The customer can get the logistics information and contact with seller,delivery man and the business.If the commodity is arrived,the customer can sign on it.



6.3 Return

If the customer is not satisfied with the commodity,he can choose return the commodity or exchange for another one.



7.References

1.Rational Unified Process Best Practices for Software Development Teams

—Dual Headquarters:

Rational Software Abstract:This paper presents an overview of the Rational Unified Process the Rational Unified

Process is a software engineering process, delivered through a web-enabled, available knowledge base. The process enhances team productivity and delivers software best practices via guidelines, templates and tool mentors for all critical software life-cycle activities. The knowledge base allows development teams to gain the full benefits of the industry-standard Unified Modeling Language (UML).

2.A systematic study of UML class diagram constituents for their abstract and precise recovery

——Dept. d'Inf. et de Recherche Oper., Montreal Univ., Que., Canada

Abstract:Existing reverse-engineering tools use algorithms based on vague and verbose definitions of UML constituents to recover class diagrams from source code. Thus, reverse-engineered class diagrams are neither abstract nor precise representations of source code and are of little interest for software engineers. We propose an exhaustive study of class diagram constituents with respect to their recovery from C++, Java, and Smalltalk source code. We exemplify our study with a tool suite, PTIDEJ, to reverse-engineer Java programs as UML class diagrams abstractly and precisely. The tool suite produces class diagrams that help software engineers in better

3.Information system design for reverse logistics management using UML

——Asma Boussellaa

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-

——Mourad Abed

University of Valenciennes and Hainaut-Cambrésis, LAMIH, Research Laboratory,F-59313 Cedex 9, France

Abstract:The work presented in this paper is the modeling of an information system supporting all activities of the reverse logistics(RL). In order to gather knowledge about the current state of the art on this topic, a literature review is established for the available research works which are classified using a suitable criteria. Based on this review, our work consist of developing an information system (IS) design for reverse logistics (RL) management. The proposed modeling is based on an object-oriented analysis approach. The results announced at the analysis step includes the use case diagrams which modeling the dynamic aspect of the system with the actors interacting processes and a class diagram that models the key concepts of information managed in the system. This modeling is generic for a company which takes into account good practices in RL.

8.Contributions

Xuyang Cai (mockup)	1552734	20%
Jinwei Shen(mockup)	1552756	20%
Kefei Wu(user interface)	1552672	20%
Chen Huang(documents)	1552779	20%
Yuqing Teng(documents)	1452816	20%