YITONG Express System Design and Analysis

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1 Overview

1.1 Introduction

This Package Delivery Application System is built for some logistics companies in China who delivers the products to customers home. For example, the logistics company contracting with TaoBao need to use this system. In this system ,the user will be the postman and the dispatcher of the logistics company , and the customers who buy the goods.

For postman: first, postman get the goods list from the system.and check it to find if there have something which was damaged or lost .And postman will communicate to the customer to refund or replace the goods.Then postman will send message to the other customer to confirm the way and time to sign. and postman deliver the goods to the customer at the appointment time,and ask the customer to pay(if needed),and sign by ipad. after the delivering ,update the tracking state,and finish the work.

For customer:When customers submit orders,the customer should select the shipping address and the way of payment. When package during delivery, the customer can check the logistics information of the package via our systems .Before sending,the postman will negotiate with customers and reach an agreement to delivery the package .The customer can choose electronic counter-sign or Fingerprint to sign.(may be the customer need proxy to sign off).Receive the goods within a month, if the customer is not satisfied with the goods he/she can use the function of return service.The customer is required to Registered in the system to complete the return process according to the specified process.

For Dispatcher:need to comfirm the goods,send the products to the next station,and then update goods status.

1.2 Objectives

1. Using UML theory and UML tools to complete the system design of Package Delivery Application System.
2. Increasing the field people’s working efficiency, the efficiency of delivery, and reducing the errors made by human inputs.
3. Offering a safer,easier to operate and more user-friendly Package Delivery Application System.

1.3 Current situation

Nowadays B2C business is increasing rapidly.The development of B2C business also promotes the development logistics business.The logistics company is responsible for delivering products,mails and documents to customer locations nationwide. The efficiency of filed personnel (people who deliver goods to customers' locations) and customer satisfaction are vital for any logistics company. However,there are many defects in the present logistics company. Here are some typical problems:not delivery the goods on time; others Get the Courier;service not make the Customers satisfied It Mainly reflected in the business, security, service aspects.

1.4 Function and characteristics

function:

This system aims to help Express delivery company to manage the process of delivery.To postman, it can get the goods information,each step is managed by this system.So it can greatly improve the efficiency,reduce the cost. To customer,he or she can easily get the state of the package and received the package in time.

characteristics:

1.safety:

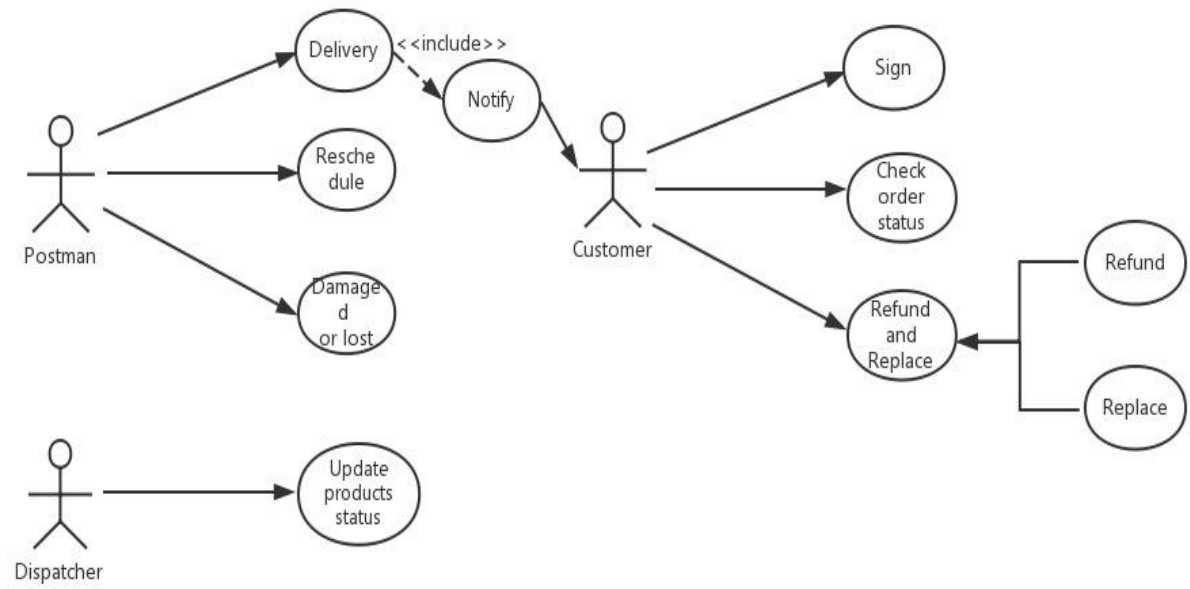
This system pay attention to safe problem.Other people can't sign the package without the permission of the customer.We use finger print to confirm the identify of customer.So the situation that one's package is signed by other person will not appear.

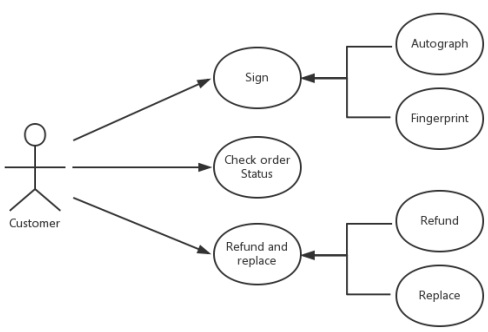
2.server:

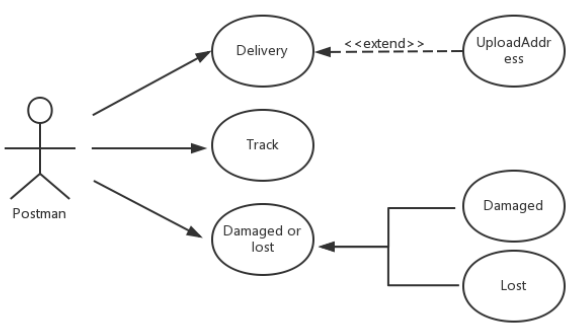
This system has serviceability capabilities.For example,the postman will check the products before transferring.So some accident will be found and save the time to solve the problem.And customer can check the state of the package at any time,so that he or she can manage the time to sign the package.

2 Use Case Modeling

2.1 Necessary use case diagrams







2.2 Detailed use cases

2.2.1 Use Case:Delivery

Use case:Delivery
ID:UC01
Actors: Postman
Preconditions: 1. The postman got the list
Flow of events: 1. Postman confirmed the address of every customer by the list 2. Postman send the message to customers 3. If customer reply yes then 3.1 postman deliver the goods on time. 4. Else 4.1 postman reschedule the list message.
Postconditions:
Alternative flow: 1. At any point the customer may move to a different page
Postconditions:

2.2.2 Use Case: Producet Damaged or Lost

Use case:Product damaged or lost
ID:UC03
Actors: Postman
Precondition:
Flow of events: 1.if the postman can't find the goods in the list 1.1. Postman send the explanation message to the customer 1.2. Postman get the list again to confirm the list 1.3. Postman send the goods state to the system 2.Else if the postman find the goods damaged 2.1. Postman send the explanation message to the customer 2.2. Postman send the goods state to the system
Postconditions:
Alternative flow:
Postconditions:

2.2.3 Use Case :Check Order Status

Use Case:Check Order Status
ID:UC05
Actors:Customer
Preconditions: 1. package during delivery
Flow of events: 1. The customer select the function of order tracking. 2. The customer input the logistics,which is provided by the logistics company when the package is sent. 3. The system gives the logistic information of the order to the customer.
Post conditions:
Alternative flow:
Post conditions:

2.2.4 Use Case:Sign

Use case:Sign
ID:01
Actors: Customer
Preconditions: 1. Postman and the customer reach an agreement on delivery time and has Delivered 2. the payment status is ‘already made the payment’.
Flow of events: 1. If signed by proxy 1.2 Postman asks the proxy to sign 1.3 The customer sign on the pad after checking the package 2. Else 2.2 Postman asks the customer to sign on the pad 2.3 The customer sign on the pad after checking the package. 3 Update the order status to “SIGN OFF ”
Postconditions:
Alternative flow:
Postconditions:

2.2.5 Use Case :Refund&Replace

Use case:Refund&Replace
ID:UC06
Actors: Customer
Preconditions: 1. The customer has signed for the order
Flow of events: 1. The customer enter to Return&Replace center and make an application for Return or Replace 2. The system provides the delivery address,which the customer should send the package to. 3. The system asks the customer to send the package back. 4. The customer sends the package and fills in the logistics information 5. **If** the customer want to exchange the goods 5.1 **The system makes a new order.** 6. **Else** 6.1 **The system reimburses the payment.**
Postconditions:
Alternative flow: 1. At any point the customer may move to a different page
Postconditions:

2.2.6 Use Case : Notify

Notify :Notify is included in Delivery.When postman send the package to the customer,he should commute with customer to reach an agreement that when and where to delivery the package.Postman need send message to thecustomer

2.2.7 Use Case:Refund

Refund: Refund is the child use case of **Return&Refund.** The customer sends the package to the address that system offer and fills in the logistics information in the system.After receive and check the goods,the system reimburses the payment to the customer.

2.2.8 Use Case:Return

Return:Refund is the child use case of Return&Refund. The customer sends the package to the address that system offer and fills in the logistics information in the system.After receive and check the goods,a new package is sent to the Customer.

2.2.9 Use Case:Update Products status

Update Products status: The actor is Dispatcher.Dispatcher need to comfirm the goods,send the products to the next station,and then update goods status.

3 Glossary of term

Postman: Postman is the person who deliver the packages.
Costumer:Customer is the person who receive the packages.
Dispatcher:Dispatcher is the person who is in charge of receive packages temporary ,update the tracking information and assign tasks to postman.
Delivery: Process of the deliver
Notify: Notify the customers the deliver schedule
Reschedule: If customer is not available, after notify the customer can contact postman to reschedule the delivery
Damaged or Lost: It is possible that the product could be lost or damaged during the process of delivery. If it is happened, the delivery person would record the information of the product on this system. Meanwhile, a message explaining the situation and making apologies will be sent to the customer. The customer can choose to deliver the product at any time without any extra fees or cancel the order.
Sign: The whole process of signing the product ordered will be digitally. When the customer is at home, he or she will sign the receipt using signature on a pad, fingerprint and so on. And the corresponding information including the data of the received product and customer acceptance will be transferred back to the server. The order will be marked as complete.
Check Order Status: Customer can track the package location by use the order number.
Refund and Replace: Customer can refund or replace the package if there is any problem with the package.
Update Products Status: Dispatcher will update package location every time it has been passed to a freight station or postman.

4.Supplementary specification

1 Physical Risks

Physical risk refers to the network equipment and wiring block network and physical properties caused by the surrounding environment, thus resulting in blocking the network system. It is the premise of the entire network security system, including the following:

1. Equipment stolen, destroyed .
2. Link aging or damage intentionally or unintentionally
3. Due to information leakage caused by electromagnetic radiation
4. Earthquakes, fires, floods and other natural disasters.

2 link risk

Link risk mainly refers to an intruder on the transmission line by installing bugging devices to steal important data transmission through the Internet, and then read out information through a number of techniques, resulting in leakage of information, or make some tampering to undermine the integrity of the data. All these factors have on the network insecurity poses a serious security threat.

3. Network Risk

3.1. Internet outlet at risk
3.2. attack.

4. System Risk

The top ten hazards of cross-platform applications including backup software, antiviral software, database software, file sharing application, DNS software, media players, instant messaging applications, and so on. In the network system, equipment included are: servers, switches, workstations. On the server, the main operating system on workstations, database systems and application software systems, but also the appropriate operating system on the switch. All of these devices, software systems are more or less there is a variety of "back door" and loopholes, these are important security risks. Once utilized, it will bring immeasurable loss.

5. Data Information Risk

Data security risk information include: disclosure of confidential information, unauthorized access, destruction of information integrity, counterfeit, destroy the system availability.

6. Email Risk

E-mail server is open to the world, e-mail is very fragile. When the browser sends an e-mail to another user on the Internet from the end, not only the letter itself is public, and can not know the letters in between reaching the final location has experienced a number of mail servers, so it is easy to use, there is a big security risks.

7. user risk

Users risk mainly refers to internal staff unauthorized access, misuse and safety consciousness and so on. Systems of internal resources is not open to any employees, but also need the appropriate access rights. Internal users

8. Risk Management

Strict management network system is an important measure of enterprises, institutions and users from attack. Rights and responsibilities unclear, chaotic management, security management system is not perfect or lack of maneuverability so may cause management of security risks.

9. virus attack

This is the most common network security risks.

10 Trading Risk

E-commerce-based logistics network system is the trend of modern logistics development. However, e-commerce, the two companies do not meet directly, it is determined in the identity confirmation, breach of contract and other aspects of accountability there are great difficulties. Therefore, trading risk to become logistics information network security threat, a new hazard. With traditional online trading transaction it should have the same non-repudiation.

11.Supply Chain Risk

In the enterprise market internationalization, the user needs a variety of backgrounds, reflecting the integrated supply chain logistics management thinking methods came into being. In the supply chain, each enterprise is a community of interests, individual companies can not produce the advantages produced by the strengths and synergies, and create greater value for customers, for the entire supply chain to get.

5.Initial snapshots of the system's user interface


我的
我的订单
全部
待发货
已发货
待签收
已签收
已发货
yamaha 钢琴
￥14,354
共一件商品,合计￥14,354(含运费￥0.00)
查看物流
待签收
苹果3kg
￥39.00
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查看物流


工作
货物清单
清单
耐克跑鞋
目的地：上海嘉定
用户联系方式：13426859998
关注
开启提醒
时尚休闲夹克
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用户联系方式：15698768809
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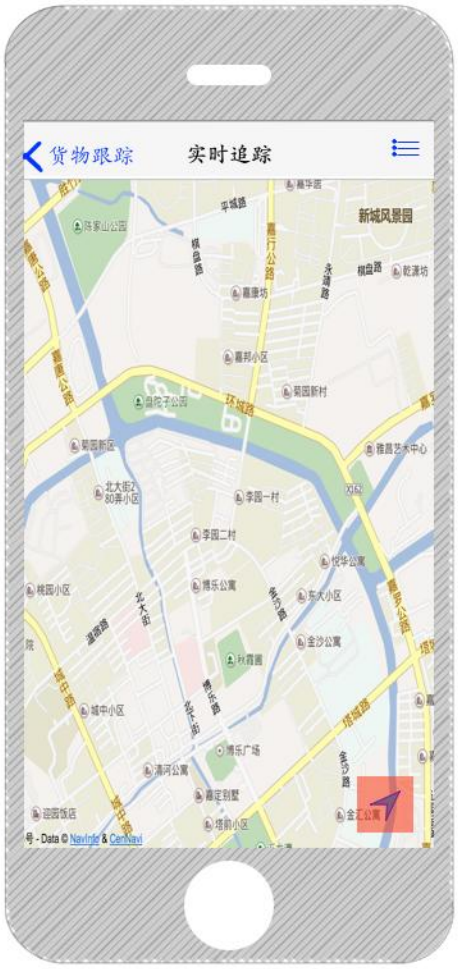

6. List of references

Reference book

Writer: 张龙祥
Name: UML 与系统分析设计
Published by: People's Posts and Telecommunications Press
Edition: August 2001 first edition
Brief introduction:

This book mainly introduces the application of UML and UML in the analysis and design of object-oriented software system.In this book, we get the knowledge of the concept , the structure and the semantics of the UML.

Reference article

Writer: Leszek A.Maciaszek

Name: Requirements Analysis and System Design---- Developing Information Systems with UML

Publication source: Person Education Limited

Brief introduction: This article combined end-user requirements with technical specifications via understanding of the use cases with subsequent finding of the ways of their implementation.

7. Contributions of team members.

***Team Leader: 1352961 QIN Bo(Use case, PPT, Document)**

1352863 ZHANG Jiaqi(Use case, PPT, Document)

1352892 TAN Jinru(UI design, PPT)

1352890 ZHANG Junyi(Specification)

1352871 KANG Huilin(Use case, document)

1256234 HUANG Rihui(Use case)