1.0 Introduction

1.1 Methodology

Rational Unified Process

The Rational Unified Process brings together elements from all of the generic process models, supports iteration and illustrates good practice in specification and design. The RUP is normally described from three perspectives:
A *dynamic perspective* that shows the phases of the model over time.
A *static perspective* that shows the process activities that are enacted.
A *practice perspective* that suggests good practices to be used during the process.
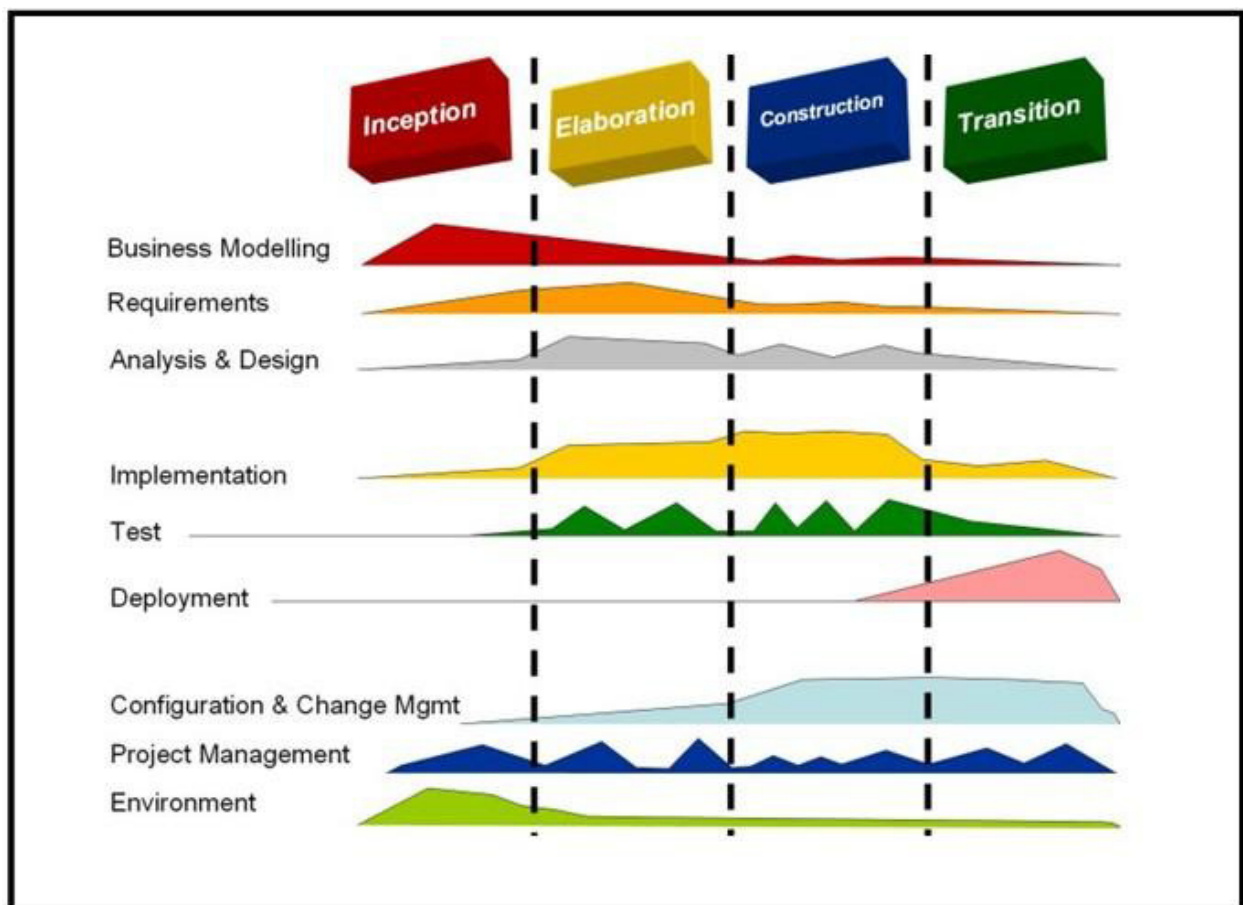

Fig 1.1: Phases of RUP

The different phases in RUP are:

Inception

The goal of the inception phase is to establish a business case for the system. Identifying all external entities that will interact with the system and defining this interaction. This information is used to assess the contribution of system to business.

Elaboration

The goals of the elaboration phase are to develop an understanding of the problem domain, establish an architectural framework, develop project plan and identify key project risks.

Construction

This phase is concerned with system design, programming and testing. Parts of the system are developed in parallel and integrated during this phase.

Transition

This is the final phase of RUP and is concerned with moving the system from the development community to the user community and making it work in real environment.

1.2 Purpose

Mass Retailer Management System is a web application that provides complete Enterprise Resource Package for Mass Retailers.

It aims to simplify the entire business process for every member of the firm, right from the Admin and HR Manager to the Logistics Manager by providing facilities for every function that can be performed by every employee of the firm. This in turn immensely reduces the managerial workload and improves efficiency of the company.

1.3 Scope

1. There are seven users of the system: Admin, HR Manager, Logistics Manager, Sales Employee, General Employee, Vendor and Retailer.
2. Admin can raise purchase orders to specific vendors based on their estimate product costs.
3. Vendors can accept orders based on stock availability, and the price quoted by the admin.
4. The admin can look for alternate vendors for reject orders, reducing processing time.
5. Retailers can buy products, and also avail any promotional offers available to them.
6. HR Manager can add employees, approve claims, and update attendance, which empowers the admin to monitor the firm closely.
7. Logistics manager will accept any shipment for which purchase orders have been raised, which will notify admin about product arrival.
8. Logistics manager is also responsible for sending shipments to retailers.
9. Sales employees can view their target vs achievements.
10. All employees can view their salary breaks and their attendance.

1.4 Definitions, Acronyms and Abbreviations

ERP: Enterprise Resource Package. These systems integrate internal and external management information across an entire organization, embracing finance/accounting, manufacturing, sales and service, customer relationship management, etc.

Mass Retailers: Wholesalers, who are engaged in the sale of goods in large quantities for resale.

Admin: Administrator. He has complete power over nearly every decision made in the firm. He is responsible for raising purchase orders. All order approvals are made by him.

WASCE: WebSphere Application Server Community Edition. It is an application server that runs and supports J2EE and web service applications.

DB2: Database_2.A database management system that provides a flexible and efficient database platform to maintain records of students, teachers, admin and dm.

JSP: Java Server Pages**.** It is used to create dynamic web content.

J2EE: Java 2 Enterprise Edition**.** A programming platform which is a part of java platform for developing and running distributed java.

JSF: Java Server Faces. It is a Java-based web application framework intended to simplify development integration of web-based user interfaces.

AJAX: Asynchronous JavaScript and XML. It is a group of interrelated web development techniques used on the client-side to create asynchronous web applications.

UML: Unified Modeling Language is a standard language for writing software blueprints. The UML may be used to visualize, specify, construct and document

XML: Extensible Markup Language is a text based format that let developers describe, deliver and exchange structured data between a range of applications to client for display and manipulation.

HTTP: Hypertext Transfer Protocol**.** It's a service protocol.

1.5 Tools Used

Application architecture – JAVA, J2EE JAVA
Java is an object-oriented programming language developed by Sun Microsystems a company best known for its high end UNIX workstations. Java language was designed to be small, simple, and portable across platforms, operating systems, both at the source and at the binary level, which means that Java programs (applet and application) can run on any machine that has the Java virtual machine (JVM) installed.

J2EE Java Platform, Enterprise Edition or **Java EE** is a widely used platform for server programming in the Java programming language. The Java platform (Enterprise Edition) differs from the Java Standard Edition Platform (Java SE) in that it adds libraries which provide functionality to deploy fault-tolerant, distributed, multi-tier Java software, based largely on modular components running on an application server.

Web server – WASCE
WebSphere Application Server Community Edition (from now on WASCE) is a free, certified Java EE 5 server for building and managing Java applications. It is IBM's supported distribution of Apache Geronimo that uses Tomcat for servlet container and Axis 2 for web services. Over 15 WASCE developers are committers in the Apache Geronimo project.

Development tool –Eclipse
Eclipse is a multi-language software development environment comprising an workspace and an extensible plug-in system. It is written mostly in Java.

Database platform – DB2
DB2 Database is the database management system that delivers a flexible and cost effective database platform to build robust on demand business applications and supports the J2EE and web services standards.

Design tool – Rational Software Architect
IBM Rational Software Architect, (RSA) made by IBM's Rational Software division, is a Unified Modeling Language UML 2.0-based visual modeling and design tool. Rational Software Modeler is built on the Eclipse open-source software framework and includes capabilities focused on visual modeling and model-driven development (MDD) with the UML for creating resilient, thought-out applications and web services.

1.6 Overview

Existing Systems

- View Information of employees
- Manual entry of inventory
- Only selling

Drawbacks

- Employees cannot communicate with other through the system
- Logistics Manager has to manually enter the product information
- HR has to approve claims using paperwork
- Retailer has to view physical catalog and place the order
- Tenders cannot be raised online

Proposed System

- Employees can communicate with each other through the system via a private messaging system
- Logistics Manager simply change the status of a purchase order already present in the system
- HR can view and approve claims through the system
- Retailer can view and buy products from the entire catalog online using netbanking or credit card
- Tenders can be raised online , which gives transparency in bidding process
- Admin can raise purchase orders and keep track of them
- Vendors can accept/reject purchase orders online, which reduces times delay
- Admin can keep track of all employees' performance instantly

2.0 Overall Description

2.1 Software Interface

Client on Internet
Web Browser, Operating System (any)
Client on Intranet
Web Browser, Operating System (any)
Web Server
WASCE, Operating System (any)
Data Base Server
DB2, Operating System (any)
Development End
Eclipse (J2EE, Java, JSF, HTML, XML, AJAX), DB2 (Database), Windows (OS),
WebSphere(Web Server)

2.2 Hardware Interface
Minimum Requirements

Client Side

Software	Memory Required	Processor
Internet Explorer 9	512 MB RAM	1GHz

Server Side

Software	Memory Required	Processor
DB2 Express Edition	256 MB RAM	1 GHz
WASCE (WebSphere Community Edition)		

2.3 Constraints
- Doesn't have SSL implementation
- Login and password is used for the identification of users.

2.4 ER Diagram
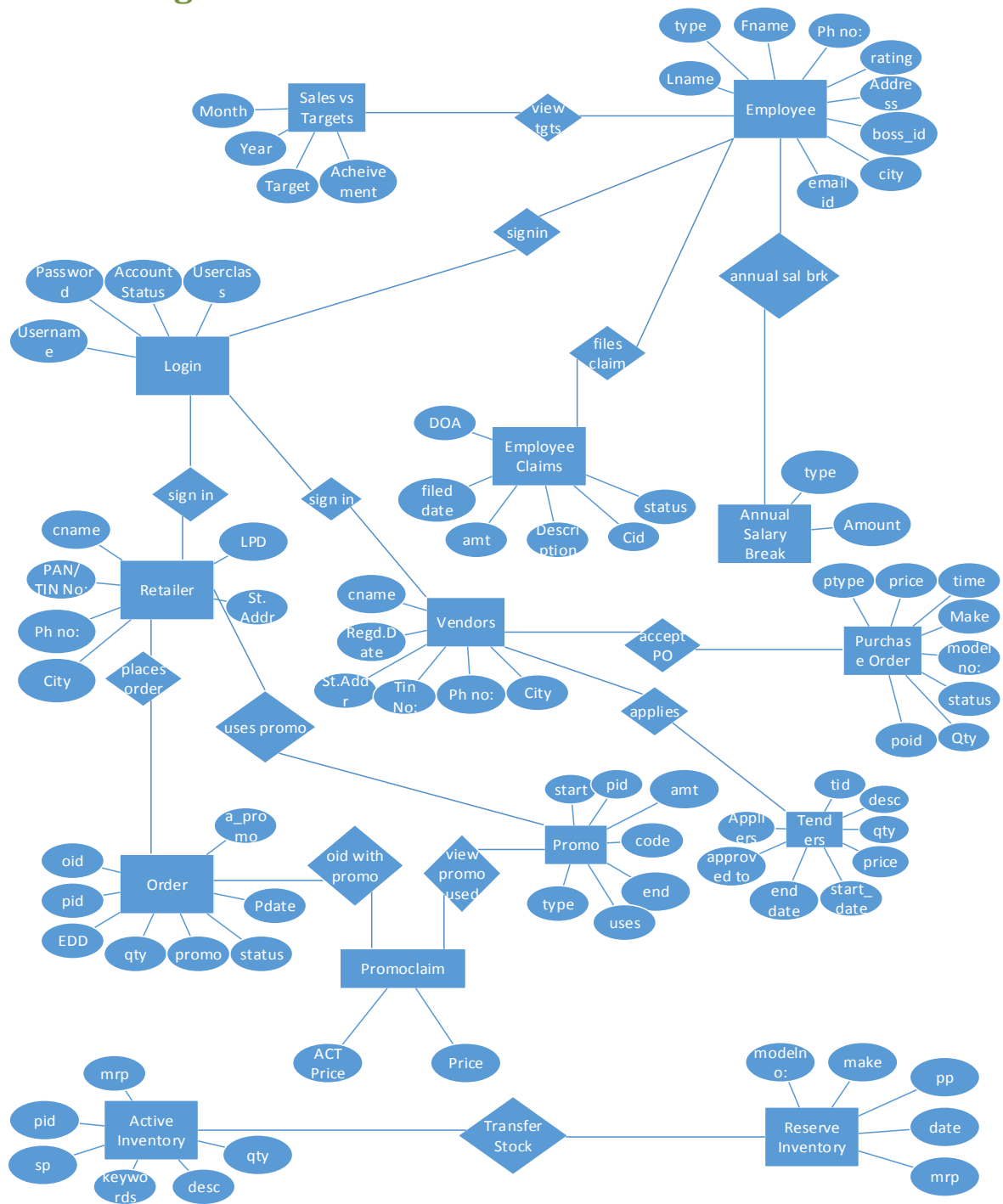
2.4.1 Description of the ER Diagram

- Login table stores information about usernames, passwords, account status and class of user. The Passwords stored can be hashed and stored.

- The Employee table contains information about the employees working in the company which in includes the sales employees also.

- Vendors table stores information about vendors.

- Retailers' table stores information about retailers registered with the firm.

- Annual Salary break table contains information about the salary which is paid yearly which can include stock options, incentives, bonuses, etc.

- The Employee claims table stores information about the claims made by the employees.

- If admin wants to buy a product from a vendor then he has to raise a PO (Purchase Order) the information about PO will be stored in PO Table.

- Admin can raise a tender to acquire a stock of products which are vendor independent and at a low cost. The information is stored in tenders table.

- Promo table contains information about the promotions which can be product specific or vendor specific.

- Orders table contain information about the orders placed by retailers.

- Sales vs. targets table contains information about the targets of the employee and target achieved.

- Promo Claim table contains information about the promo redemption details.

- Reserve inventory contains information about the products which are kept in reserve state and active inventory contains information about the products currently for sale.

2.5 Use Case Model Survey
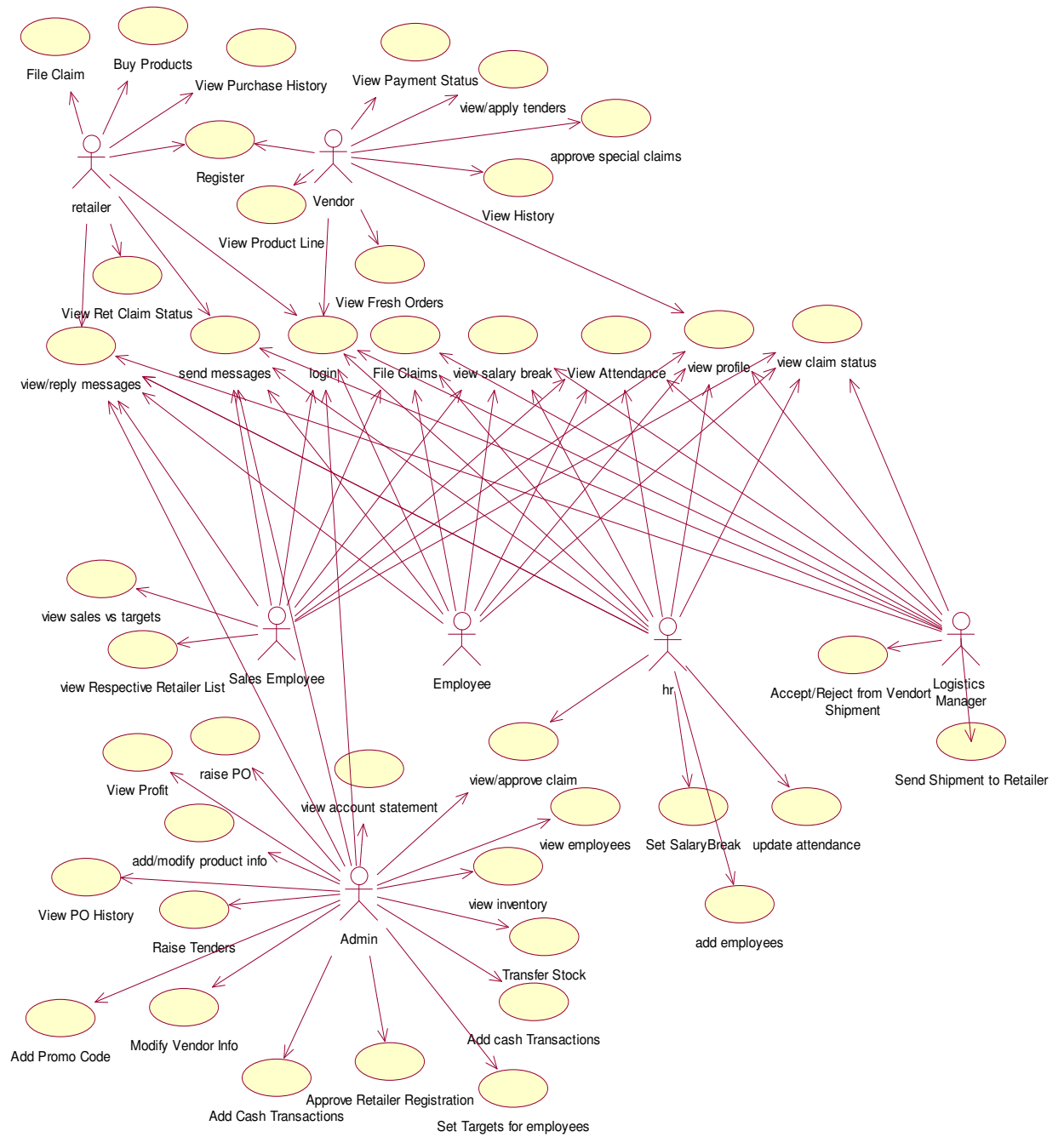
Admin:

Administrator abbreviated as admin is the super user of the system. Admin is basically a Managing Director or President or CEO of the firm. He can buy products from vendors, sell products to retailers, manage employees, and communicate with other users of the system. He can also file claims to vendors.

HR:

Human Resource Manages abbreviated as HR manages the employees of the company by updating attendance, setting salary breaks, approving claims of employees, answering queries of employees through messages. He can also manage his profile which includes his attendance and file claims which are directed to Admin.

Logistics Manager:

Logistics Manager is responsible to deal with logistics of the company. His job is to accept shipments from vendors which have valid orders and send shipments to retailers if they have any orders. Like any other employee he can also view his attendance and manage his profile.

General Employee:

General employee can manage his profile and file any claims and also can send messages to admin.

Sales Employee:

Sales employee can manage his profile, file claims and check his vendor list and their profile. He can also view his sales targets vs. achievements and send messages to Retailers/admin/Logistics Manager.

Retailers:

Retailers can buy products from the firm through the system. He can communicate with admin for promotions and also file claims if the delivered products doesn't meet the quality standards or any change in product specification.
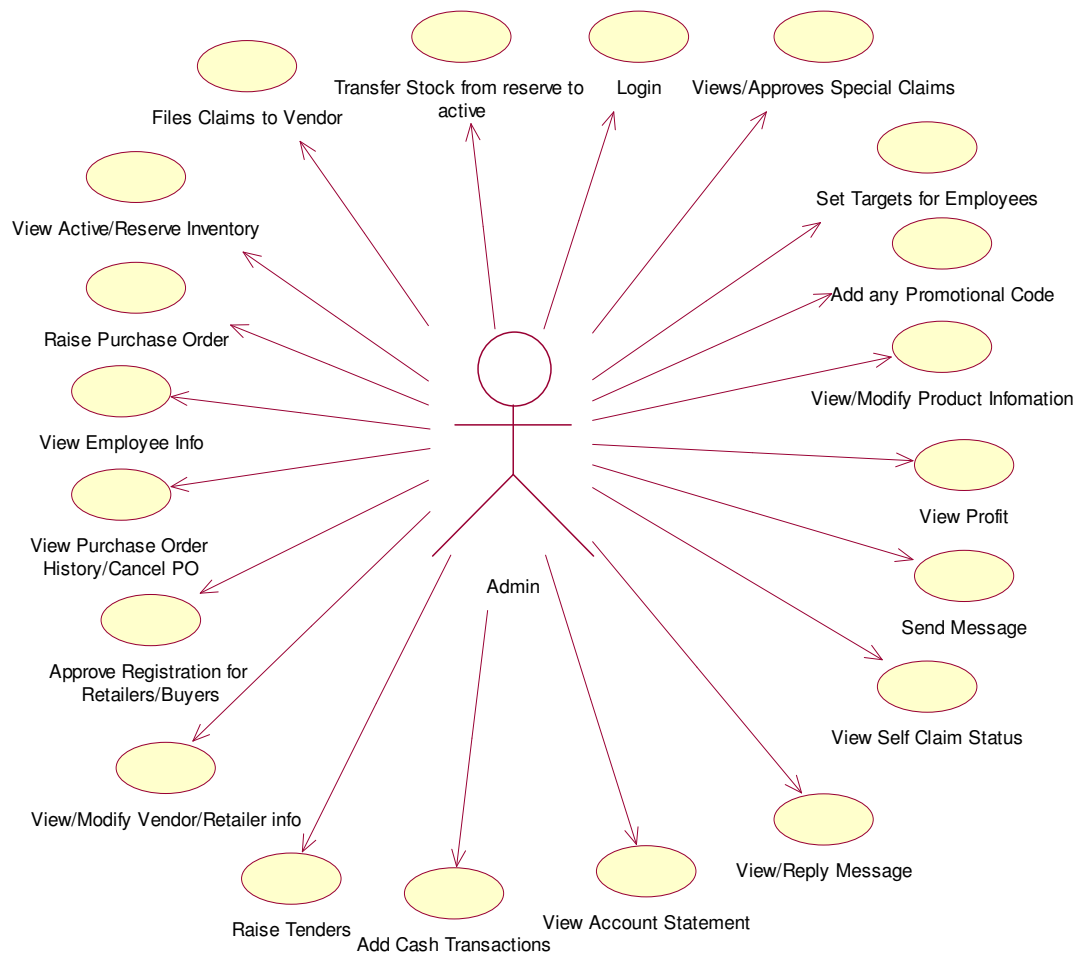
Vendors:

Vendors can update their product portfolio , modify product information, approve any claims made by the admin, view/accept fresh orders, bid to tenders raised by admin.

3.0 Specific Description

3.1 Use Case Reports

3.1.1 Admin use-case report

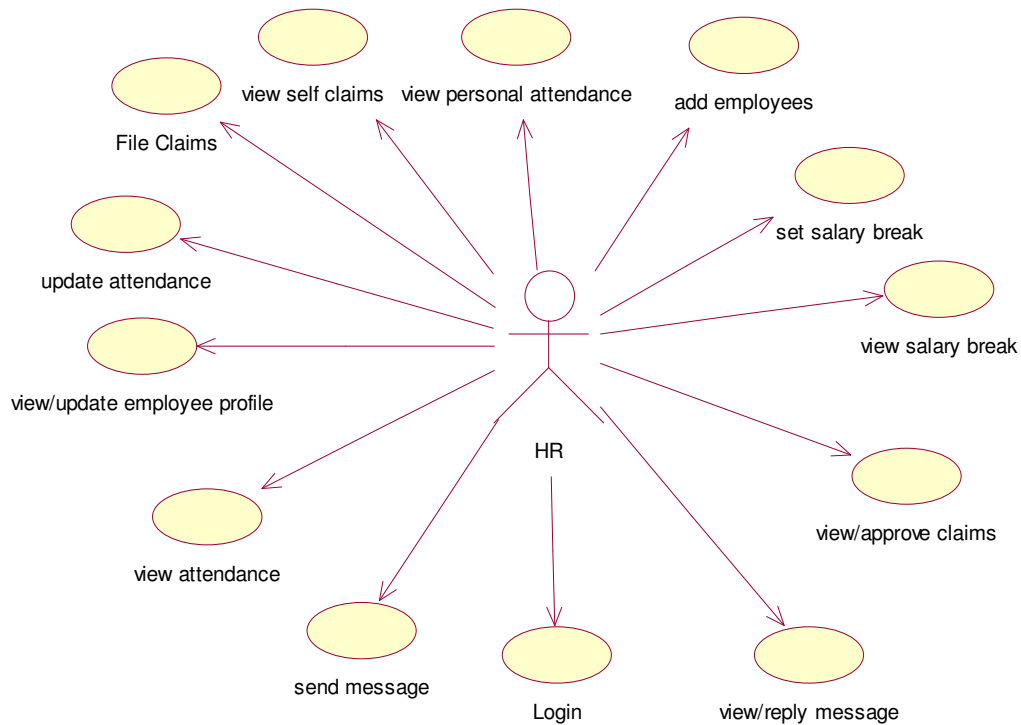| Use Cases:	Purpose
Login	Helps Admin to log into the System
View/Approve Special Claims	View and Approves any special claims made by retailer or HR.
Set Targets for Employees	Sets targets to be achieved by sales employees monthly it may be quantity target or turnover

	target.
Add Promotion Code	Adds promotional code so that all or specific retailers may get discounts when purchasing a product.
View/Modify Product Info	Admin can view the info of existing product and even modify the info if necessary which also includes price.
View Profit	Admin can view profit in his business which can help him predict his business growth.
Send Message	Admin can Send message to any of his employees, retailers and vendors.
View Self Claim	If Admin makes any claims to vendor then he checks his claim status.
View/Reply Message	Admin can view messages sent by others and also reply to them.
View Account Statement	Admin can view account statement which includes Purchase Orders, Salaries Paid and any payments made.
Add Cash Transactions	Admin can add any cash transaction made by the company which includes Rents, utility payments, etc...
Raise Tenders	Admin can post a tender which are mainly meant to acquire a specific product irrespective of vendor in huge quantities and at lower price.
View/Modify Vendor/Retailer Info.	Admin can view vendor and retailer information and modify their details.
Approve Registration for Retailers/Buyers	Retailers' registration must be approved by admin before they can login
View Purchase Order History/ Cancel Purchase Order	Admin can view all previous and current Purchase Orders, and cancel any current ones
View Employee info	Admin can view information about all employees working in the firm
Raise Purchase Order	Admin can buy products from vendors, by raising a purchase order
View active/reserve inventory	Admin can view the stock position of all products in both reserve as well as active inventory
File claims to vendors	Admin can file claims to the vendors if he feels that the purchased product does not meet the quality standards.

3.1.2 General Employee use-case report
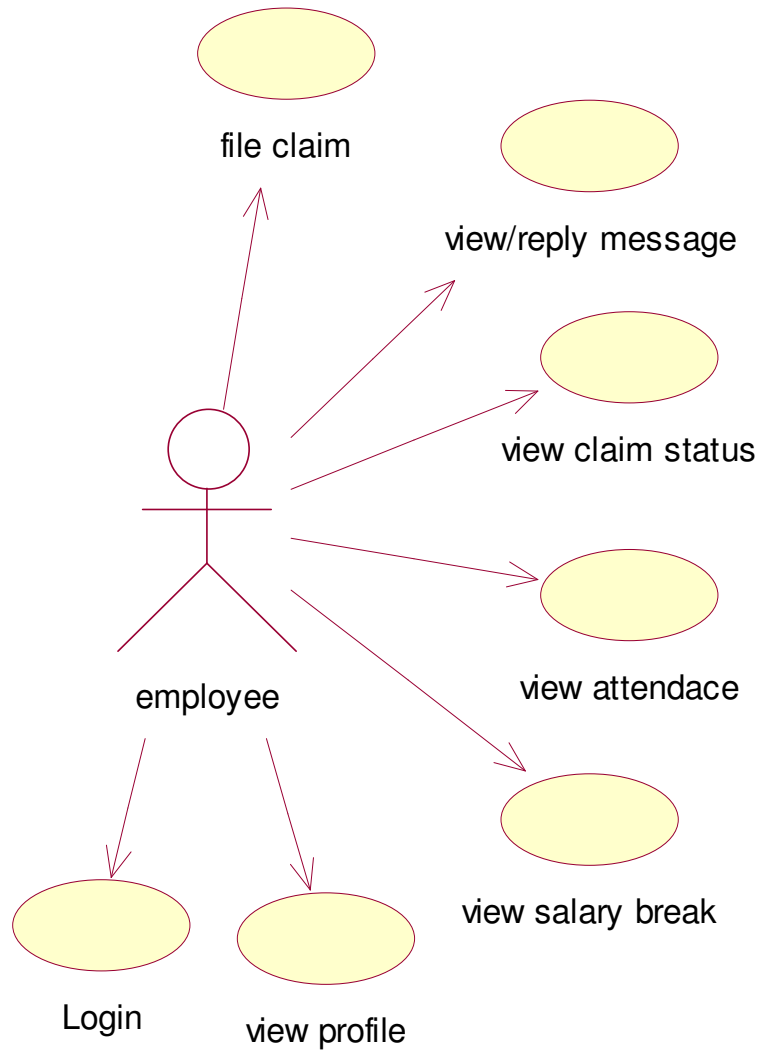
Use Cases	Purpose
Login	General Employee can login
File Claim	Employee can file any claim which can include his travel bills, mobiles bills, etc.
View/Reply Message	Employee can view messages sent to him, and also reply to them
View Claim status	Employee can view the status of claims filed by him
View Attendance	Employee can view his attendance
View Salary break	Employee can view his salary break, and take a print
View Profile	Employee can view his own profile

3.1.3 HR use-case report

view self claims   view personal attendance   add employees

File Claims

update attendance

set salary break

view salary break

view/update employee profile

HR

view attendance

view/approve claims

send message

Login   view/reply message

Use Cases	Purpose
Login	HR can login to his profile
Send message	HR can send message to employees, and to admin
View Attendance	HR can view attendance of any employee, which helps him take disciplinary action.
View/Update employee profile	HR can view and update profile of any employee working in the company
Update attendance	HR updates attendance of all the employees
Files claim	HR files claims which include his travel bills, utility payments, which are redirected to admin
View self claims	HR can view status of claims filed by him
View personal attendance	HR can view his own attendance
Add employees	HR can create user IDs for new employees, and add their information into the system
Set salary break	HR updates the salary break of an employee, with physical approval of the admin if necessary
View salary break	HR can view the salary break set by him
View/approve claims	HR can view or approve the claims filed by all the employees in the company
View/Reply message	HR can view all messages sent to him, and reply.

3.1.4 Logistics Manager use-case report
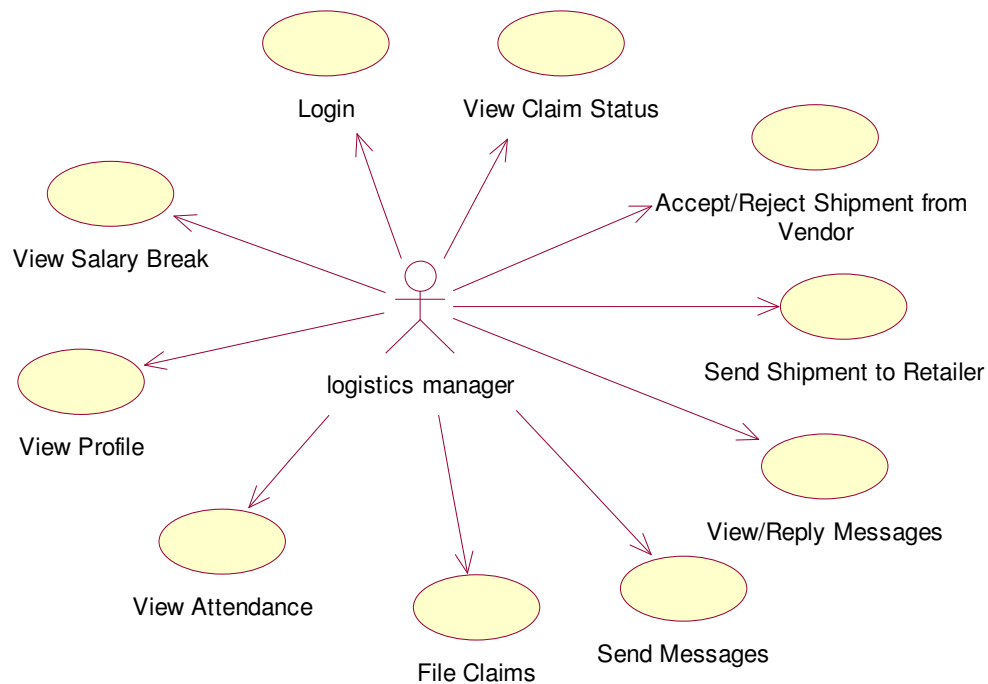
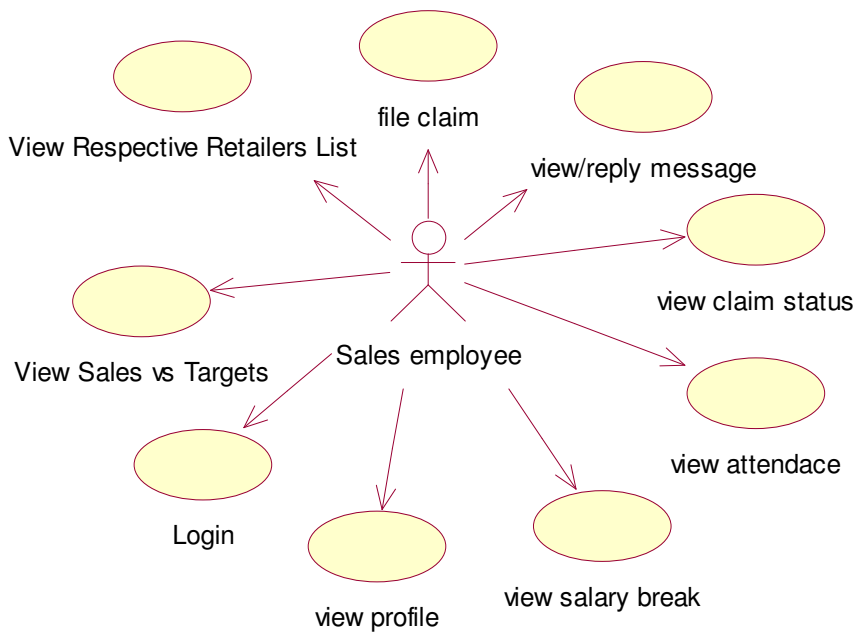| Use Cases	Purpose
Login	Logistics Manager can login to his profile
View claim status	Logistics manager can view claims filed by him
Accept/Reject Shipment from vendor	Logistics manager will accept the shipment if purchase order is valid and stock meets the quality. If any of the conditions fail, he rejects the shipment
Send Shipment to retailer	Logistics manager sends shipment to a retailer, if there is a valid order
View/reply messages	Vendor can view messages sent to him and reply if necessary
Send message	Logistics manager can send message to vendor, retailer, admin and HR
File claims	Logistics Manager can file any claims such as utility bills etc.
View profile	Logistics manager can view his profile
View Salary break	Logistics manager can view his salary break

3.1.5 Retailer use-case report
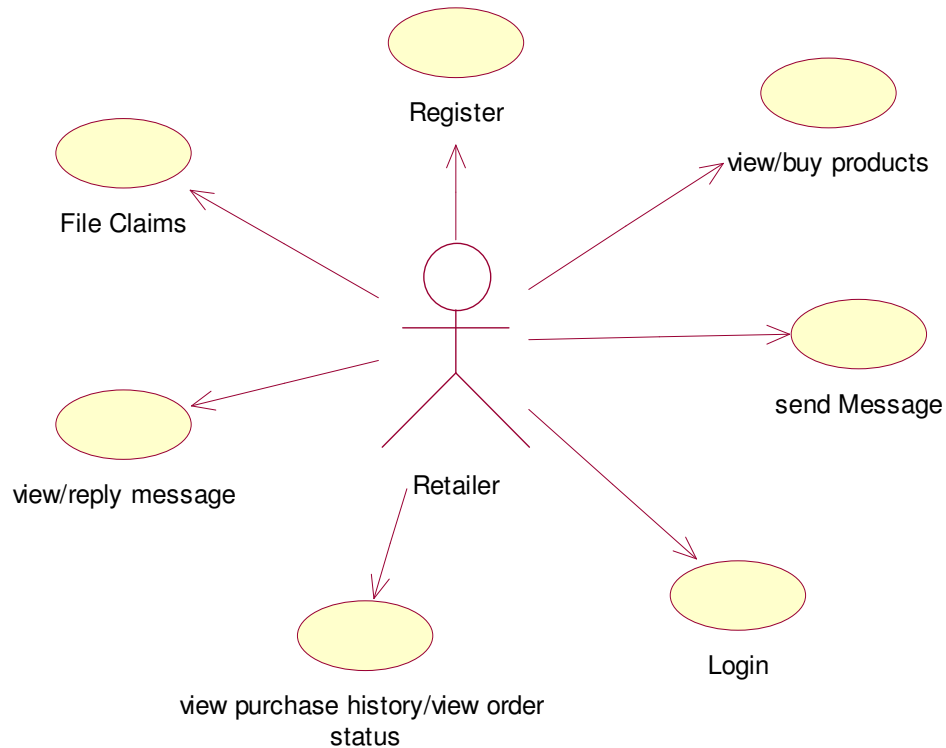
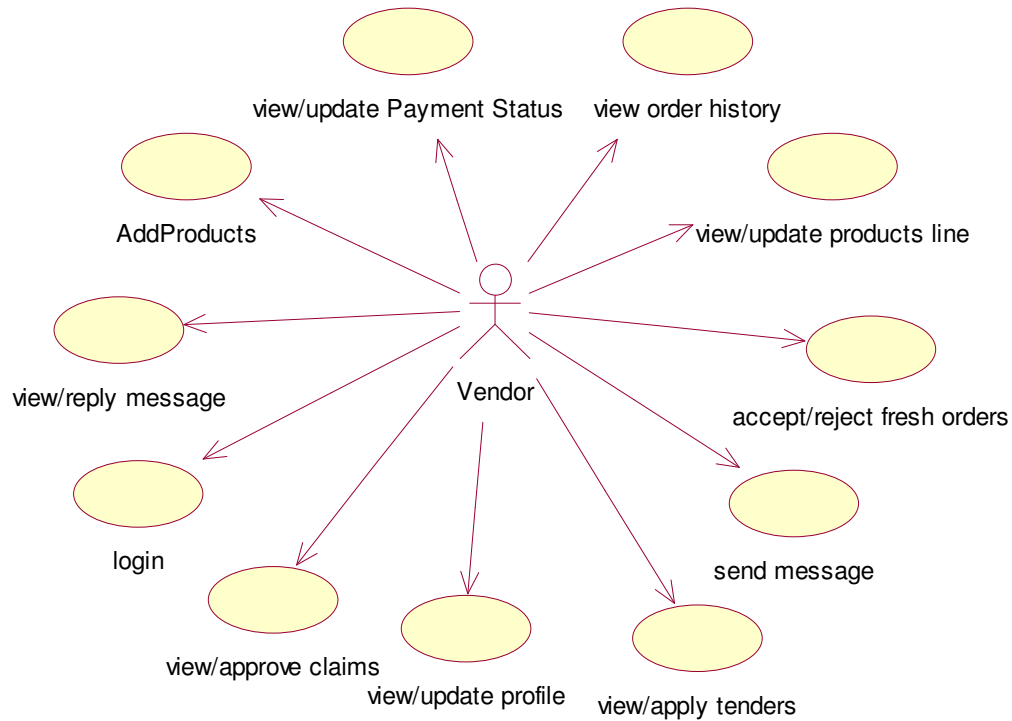| Use Cases:	Purpose:
Login	Retailer can login into the system to buy products or to take advantage of the features of the system.
View Purchase history/View Order Status	Retailer can view his purchase history and also view status of his order.
View/Reply Message	Retailer can view messages sent to him and reply to them if necessary.
File Claims	Retailer can file claim if the product received by him/her doesn't match quality.
Register	Retailer has to register which is a perquisite to take advantage of the system. The Registration has to be approved by admin.
View/Buy Products	Retailer can view products available and buy them according to his requirement.
Send Message	Retailer can send messages to admin/employee/logistics manager/HR.

3.1.6 Sales Employee use-case report

| Use Cases:	Purpose:
Login	Sales Employee Logs into the system to take simplify his daily work.
View Sales vs Targets	Sales employee can view his targets set by the admin and also view his achievement.
View Respective Retailers List	Sales Employee can view the list of retailers and their profile assigned to him.
File Claim	Sales Employee can file claims which can include travel bills, utility bills, etc…
View/Reply Message	Sales Employee can view messages sent to him and reply to them if necessary.
View Claim Status	Sales Employee can view status of claim filed by him.
View Attendance	Sales Employee can view his attendance.
View Salary Break	Sales Employee can view his salary break and take a print of his pay slip if necessary.
View Profile.	Sales employee can view his profile which includes his rating.

3.1.7 Vendor use-case report

| Use Cases:	Purpose:
Login	Vendor can login to the system.
View/Reply Message	Vendor can view messages sent to him and reply to them if necessary.
Add Products	Vendor can add more products to his portfolio.
View/Update Payment	Vendor can update the payment which is intended for him after he receives it.
View Order History	Vendor can view his order history.
View/Update Product Line	Vendor can view and update his product line which includes any changes in price he is offering.
Accept/Reject Fresh Orders	Vendor can accept or reject fresh orders for him.
Send Message	Vendor can send message to admin/logistics manager.
View/Apply Tenders	Vendor can view tenders raised by admin and apply to them if its suites him.
View /Update Profile.	Vendor can view and update his profile.
View/Approve Claims	Vendor can view claims made by admin and approve them if they match vendor policy terms.

3.2 Activity Diagrams

## 3.2.1 Activity Diagram of Purchase Order
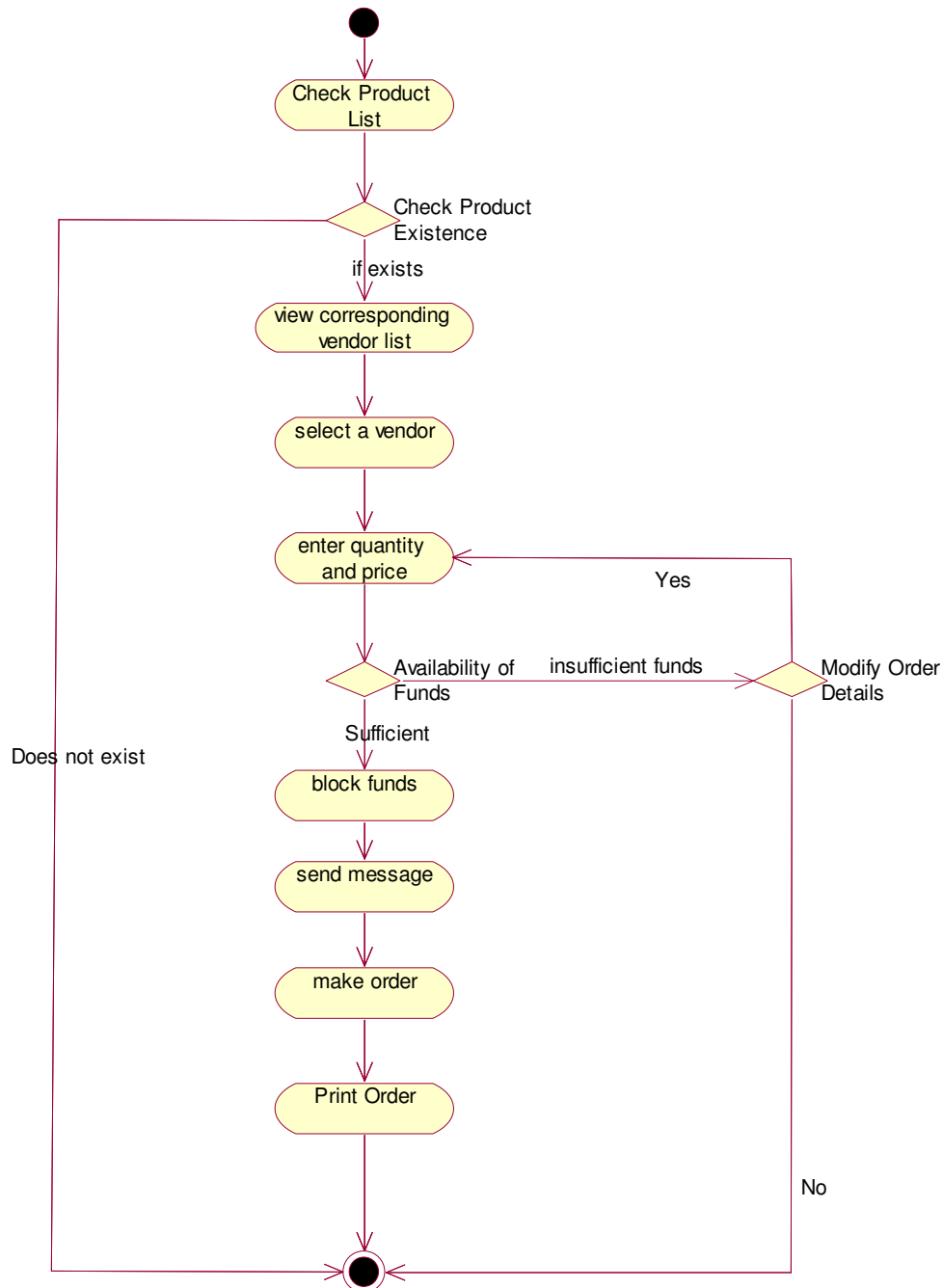
To raise a Purchase Order first admin checks the availability of the product if the product is available then he selects the vendor and inputs the qty and price at which he wants to buy. If funds are sufficient then the order is executed the funds are blocked preventing the admin to use the same funds for other purposes. A message is sent to the respective vendor and hard copy of order is generated and admin and take a print or just discard it. If the funds aren't sufficient then the user is prompted to alter the details the user can alter details or discard the order.

3.2.2 Activity Diagram for Stock Transfer from Reserve to Active Inventory.
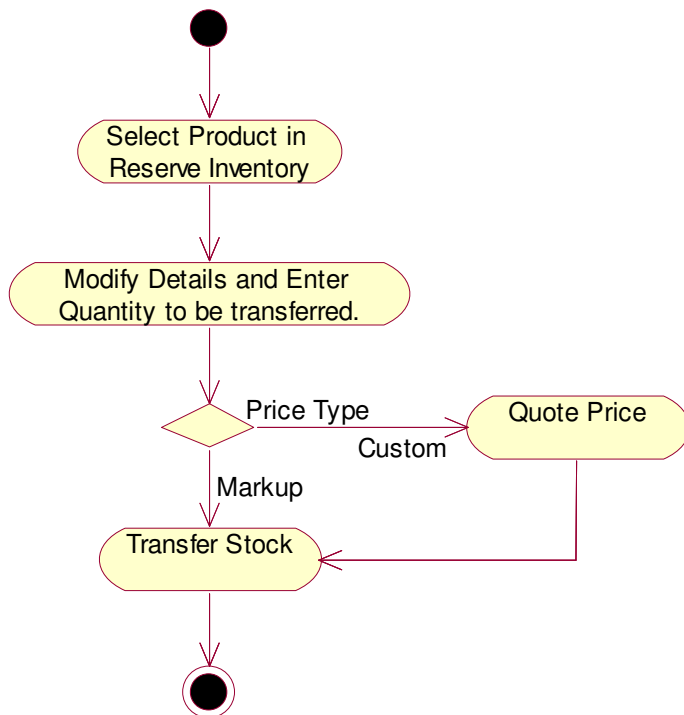
Admin can transfer stock from reserve inventory to active inventory to sell it. First the admin selects a product in reserve inventory modify details if necessary and inputs the quantity to be transferred here admin has two choices one to use default markup price or can quote a custom price. After the price is quoted stock is transferred from reserve inventory to active inventory.

3.2.3 Activity Diagram for Approving Claim
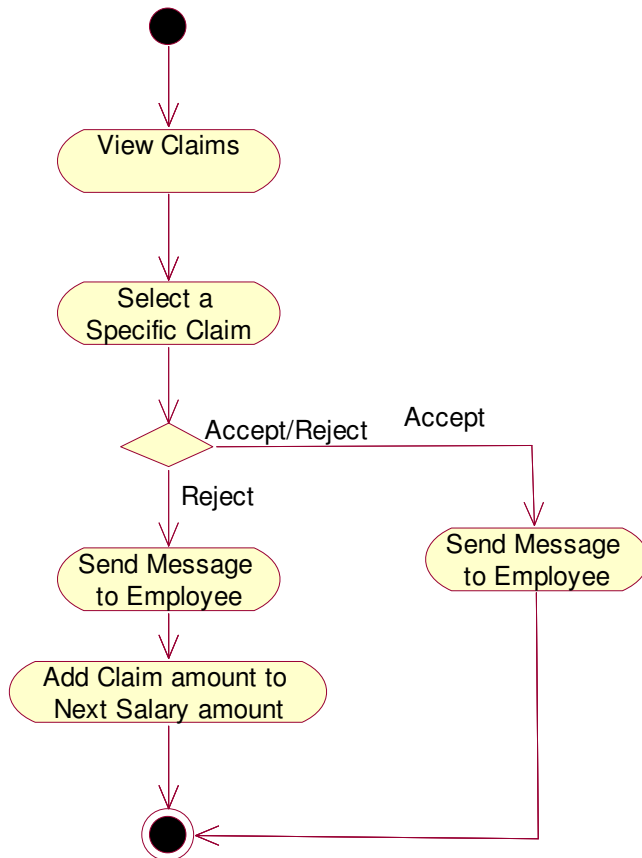
HR can approve/reject claims filed by the employees. First the HR Manager views claims then he selects a specific claim. Views the details of the claim which includes the claim amount and purpose of the claim. If the claim is approved by the HR Manager a message is sent to employee and claim amount is added to next salary payment. If the claim is rejected by the HR then a message is sent to the employee and it depends on the employee whether to file a new claim or not.

3.2.4 Activity Diagram for Accepting Shipment
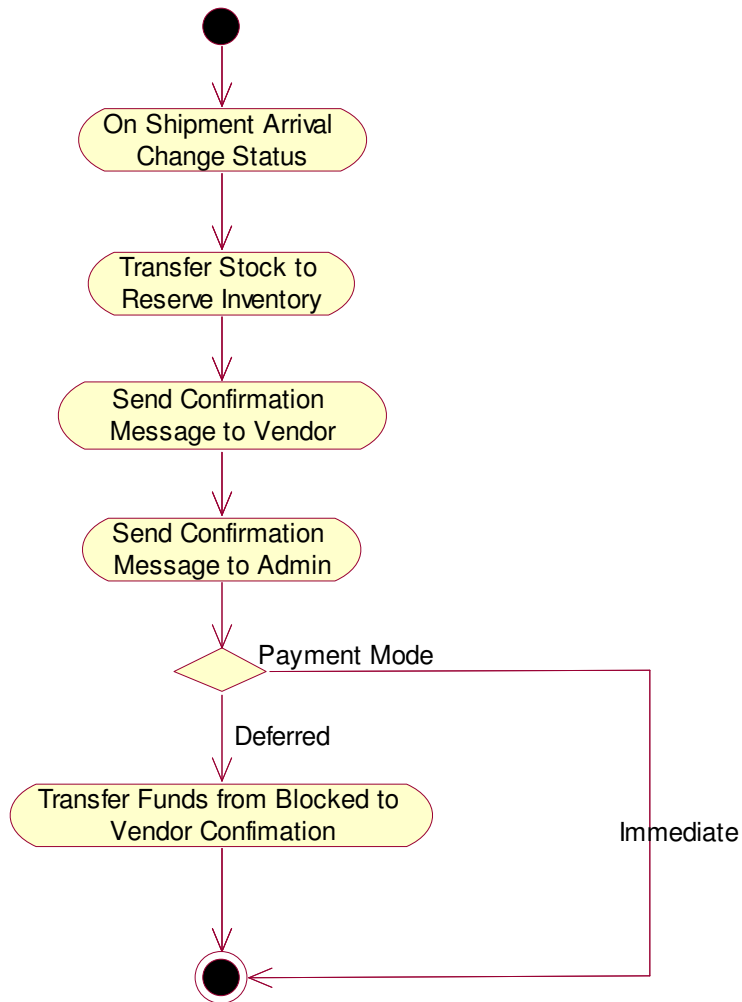
Logistics Manager is responsible for accepting a shipment from a vendor for a valid order. After the stock reaches the warehouse logistics manager updates status. When the status is updated the stock is transferred to reserve inventory. Confirmation messages are sent to admin as well as Admin. If payment mode is immediate the then PO is completed else funds in blocked status will be transferred to vendor confirmation.

3.2.5 Activity Diagram for Sending Shipment to Retailer.
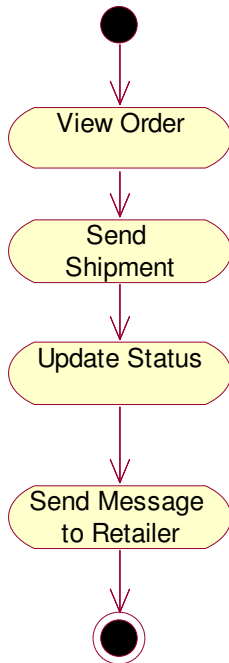
The Logistics manager view pending orders. He selects a specific order ships the material physically and changes the status as soon as the shipping status changes a message is sent to the retailer.

3.2.6 Activity Diagram for Buying Product.
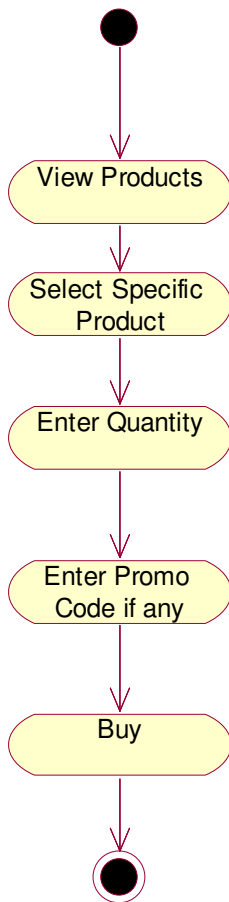
```
        ●
        │
        ▼
 ┌──────────────┐
 │ View Products │
 └──────────────┘
        │
        ▼
 ┌──────────────┐
 │Select Specific│
 │   Product     │
 └──────────────┘
        │
        ▼
 ┌──────────────┐
 │Enter Quantity │
 └──────────────┘
        │
        ▼
 ┌──────────────┐
 │ Enter Promo   │
 │ Code if any   │
 └──────────────┘
        │
        ▼
 ┌──────────────┐
 │     Buy       │
 └──────────────┘
        │
        ▼
        ◉
```

The major activity of a retailer is to buy a product from the firm. Retailer first looks for the required product. He then selects the product and enters quantity and promo code is entered is applicable and then order is placed. The buy activity indicates entire process right from transferring funds to receiving order confirmation message.

3.2.7 Activity Diagram for Accepting Fresh Purchase Orders.
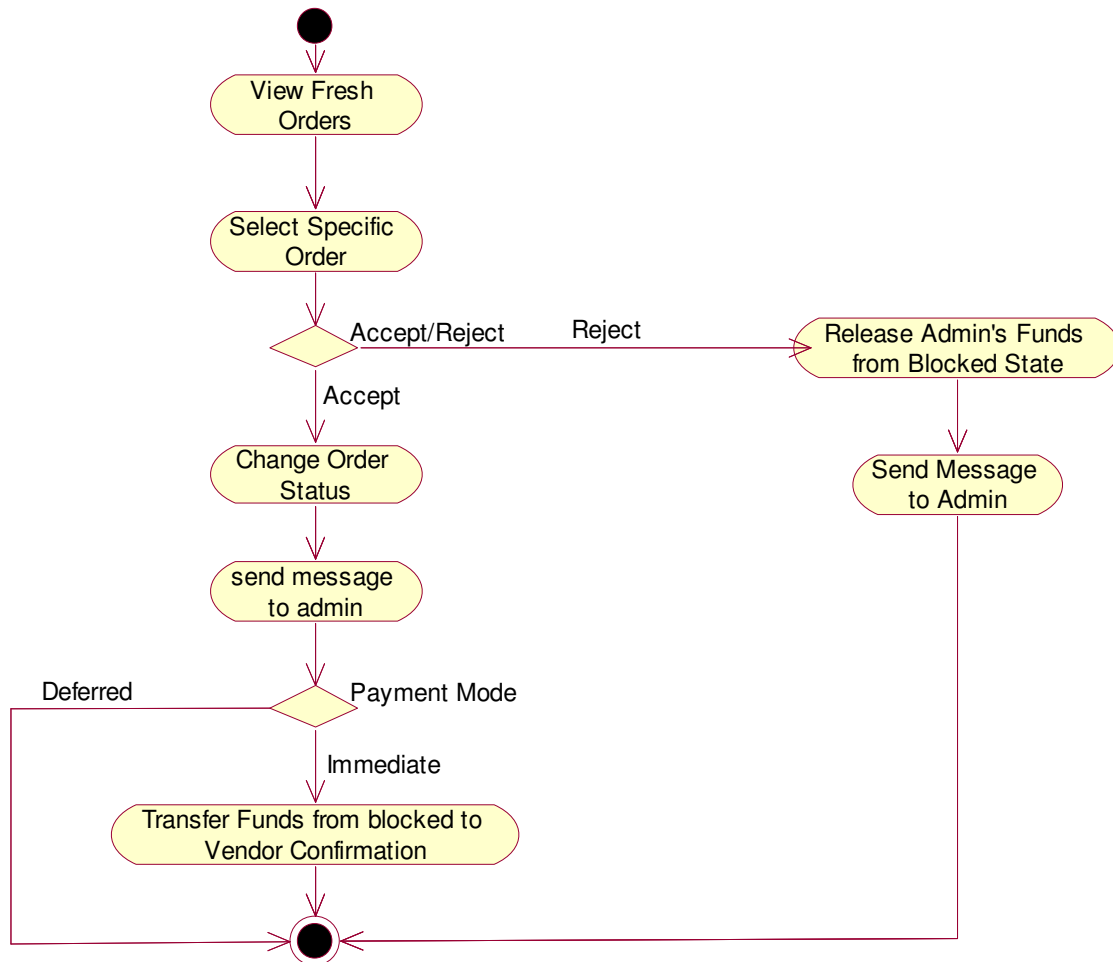
Vendor can accept order placed by admin. First the vendor checks for fresh orders select a specific order. If the order matches the protocols of the vendor he accepts it else he rejects it. If order is accepted then there arises two cases in payment modes if payment mode is immediate then funds of firm will be immediately transferred from blocked status to vendor confirmation and message is sent to admin about order acceptance. If payment mode is deferred then just a message is sent to admin about order acceptance. If order is rejected by the vendor the funds are released from blocked state and a order decline message is sent to admin.

3.3 Sequence Diagrams.

3.3.1 Sequence Diagram for Raising Purchase Orders.
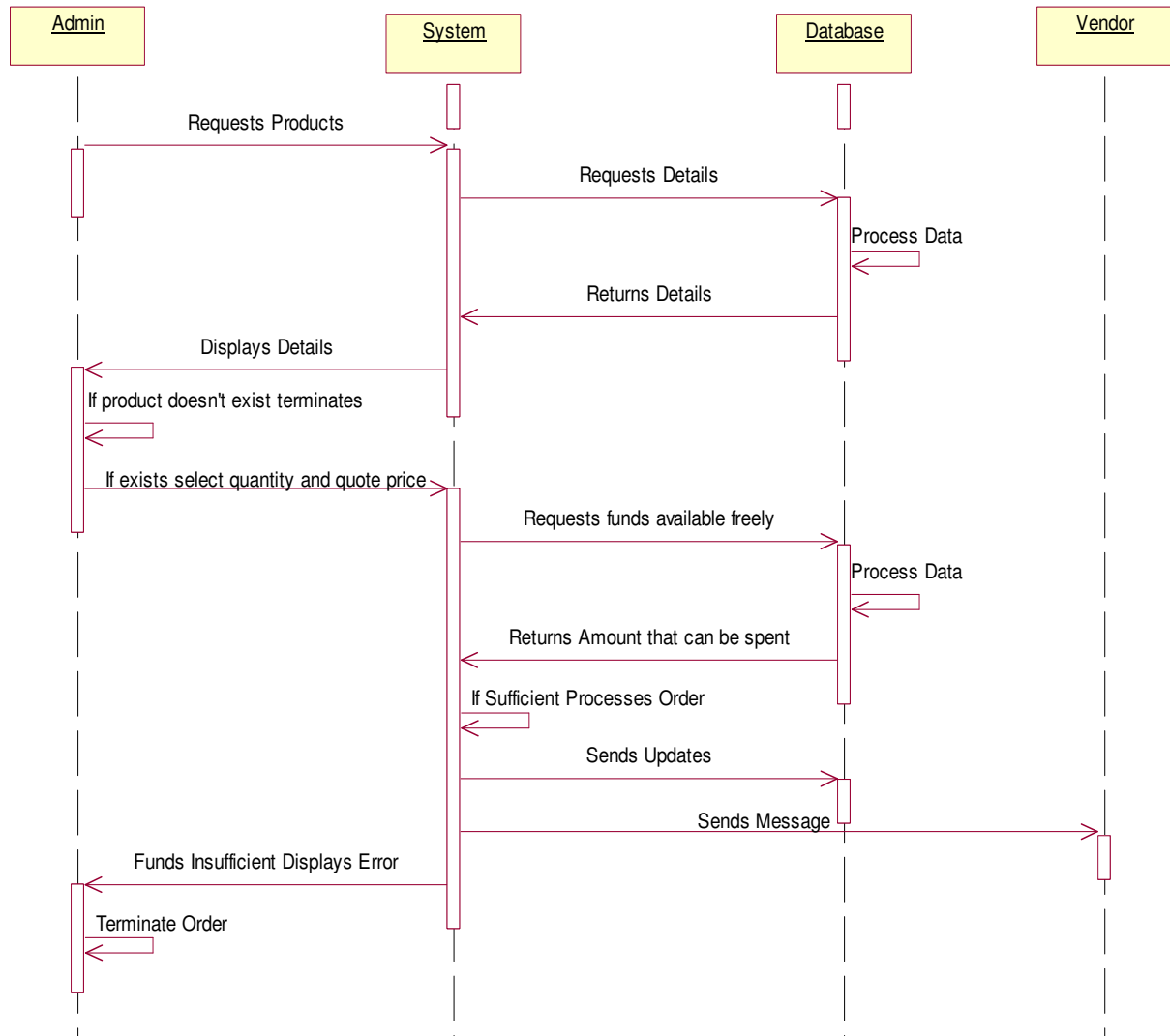
In raise PO page the admin has to select the product he wishes to order from the list of products. The System shows the list of all vendors who supply the product. Admin selects one such vendor, enters price and quantity in the respective text boxes and clicks on order button. The order is directed to respective vendor and a confirmation message is sent to both vendor and admin.

3.3.2 Sequence Diagram for Transferring Stock from Reserve to Active Inventory.

Admin	System	Database

Requests for Products in Reserve Inventory

Requests Details

Processes Data

Sends data

Displays Data

Selects a Specific Product

Requests Details of Specific Product

Processes Data

Sends Data

Displays Data

Modifies Data

Makes Computations and Transfers to Active Inventory

Sends Updates

Admin first checks the products in reserve inventory and clicks on transfer. Admin can modify details of the product by placing information in respective textboxes. He has a choice of selecting a markup price or quote custom price. Once he clicks on transfer button the stock gets transferred.

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3.3.3 Sequence Diagram for Approving Claims

```
   Admin              System              Database        Employee/Sales
                                                             Employee

     |  Requests Pending Claims  |              |                |
     |-------------------------->|              |                |
     |                           |  Requests Data |              |
     |                           |--------------->|              |
     |                           |        Process Data           |
     |                           |              |<--|            |
     |                           |   Sends Data  |               |
     |                           |<--------------|               |
     |      Displays Data        |              |                |
     |<--------------------------|              |                |
     |                           |              |                |
     |   Selects a Specific Claim|              |                |
     |-------------------------->|              |                |
     |                           |  Requests Details             |
     |                           |--------------->|              |
     |                           |        Process Data           |
     |                           |              |<--|            |
     |                           |   Sends Data  |               |
     |                           |<--------------|               |
     |      Displays Data        |              |                |
     |<--------------------------|              |                |
     |      Accepts/Reject       |              |                |
     |-------------------------->|              |                |
     |                           | Makes Computations            |
     |                           |<--|          |                |
     |                           |  Sends Updates |              |
     |                           |--------------->|              |
     |                           |       Sends Message           |
     |                           |------------------------------>|
```

HR views the list of pending claims to be approved. He selects a specific claim and information about that particular claim is retrieved from the database and displayed. The HR Manager views the details and decides whether to approve the claim or not. If HR manager approves the claim, a message is sent to employee about claim approval. If the claim is rejected, HR Manager specifies the reason for rejection and a message is sent to employee with specified reason of rejection.

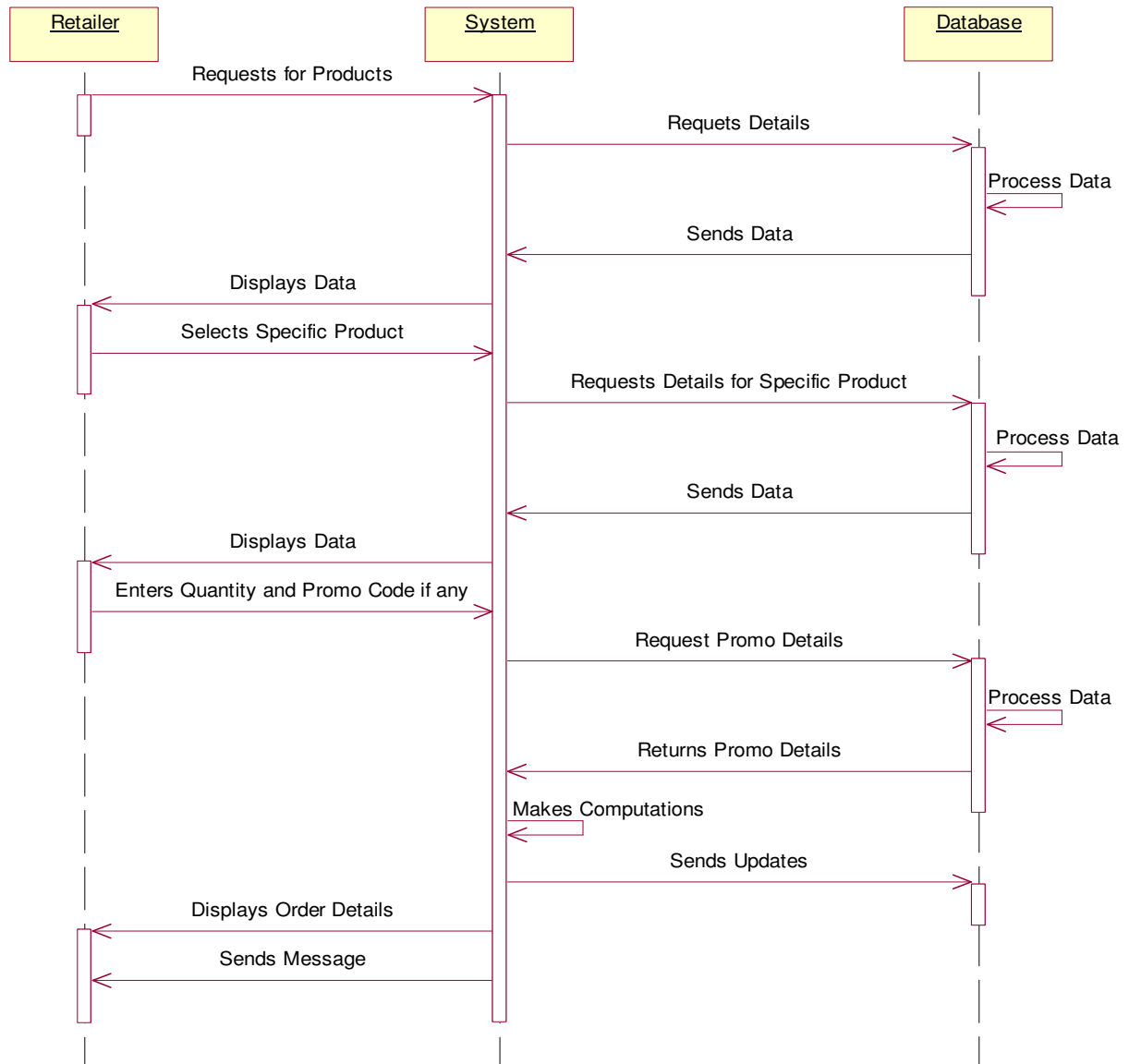### 3.3.4 Sequence Diagrams for Accepting Shipment.
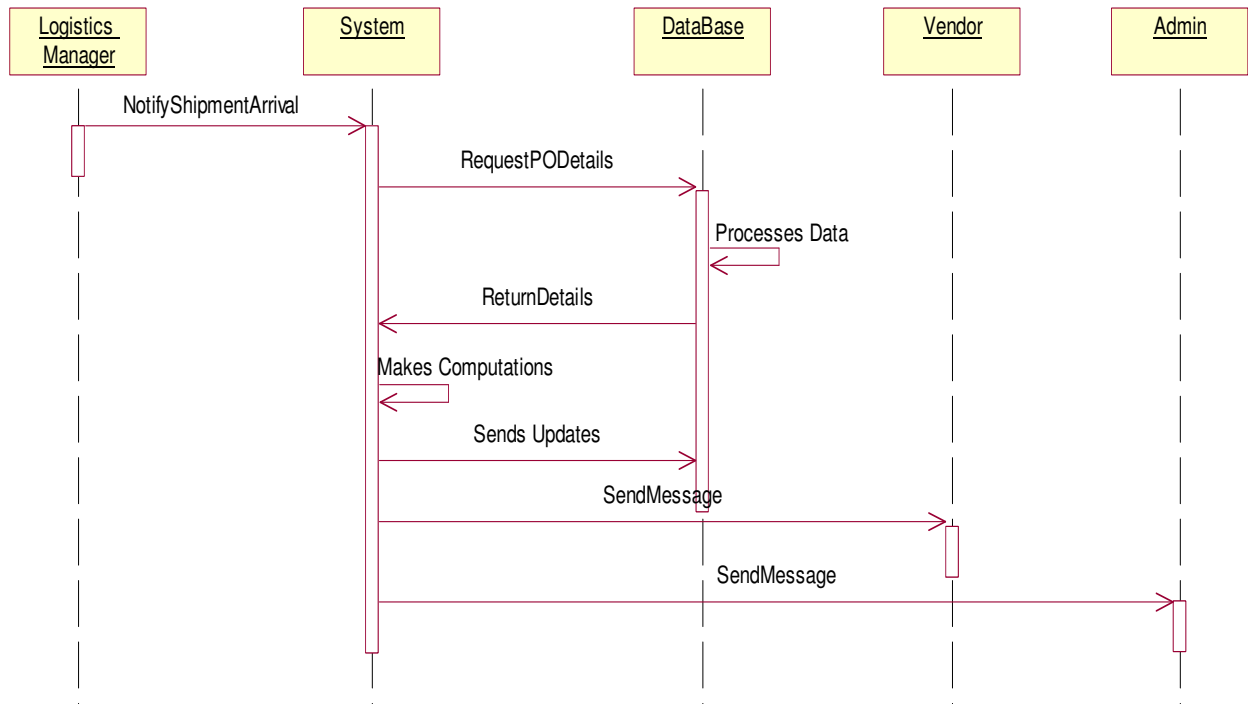
As soon as the shipment arrives at the warehouse the logistics manager checks for the orders that are yet to arrive. He selects the respective order and confirms its arrival. The stock would be transferred to reserve inventory.

3.3.5 Sequence Diagram for Sending Shipment.
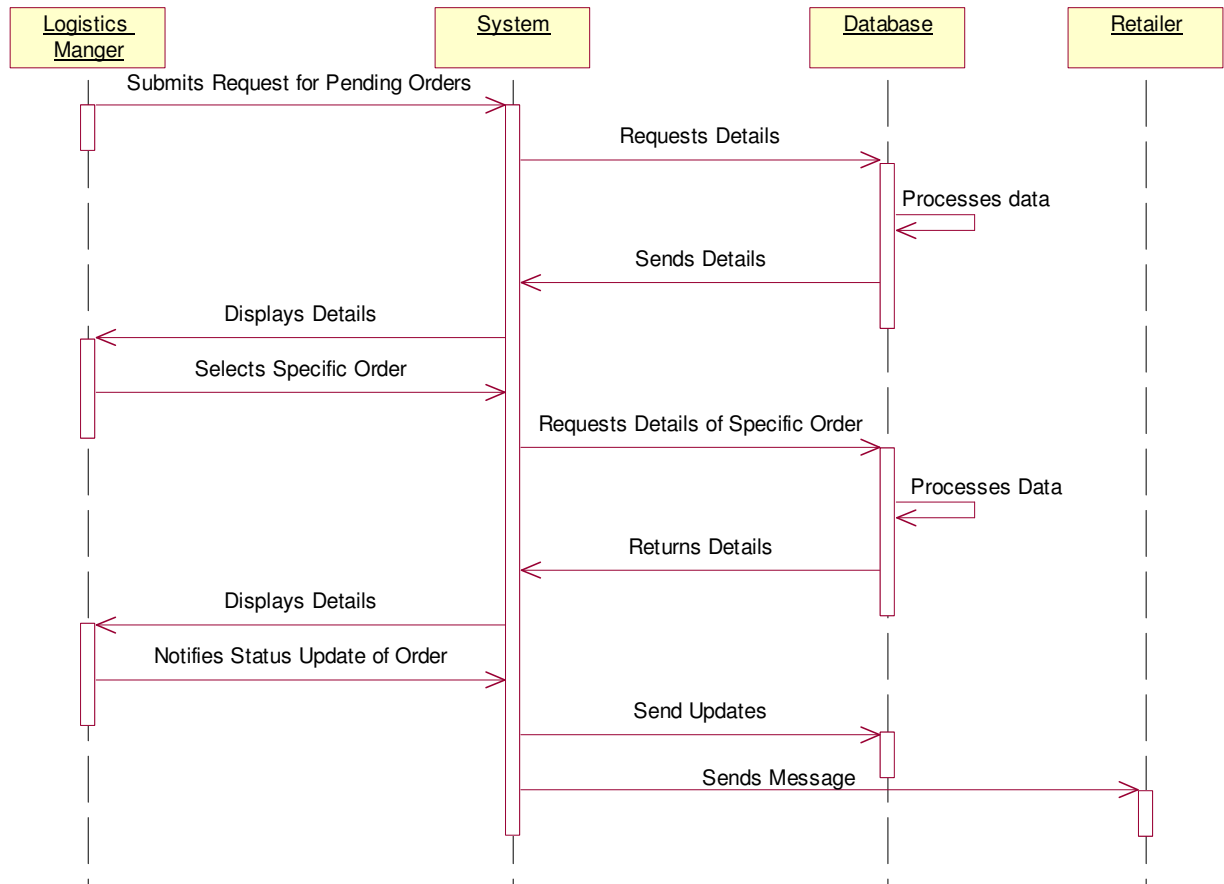
The logistics manager requests for the orders that are to be shipped. He selects a specific order, sends it physically using some sort of transport and updates its status.

3.3.6 Sequence Diagram for Buying Products.

Retailer | System | Database

- Requests for Products (Retailer → System)
- Requets Details (System → Database)
- Process Data (Database)
- Sends Data (Database → System)
- Displays Data (System → Retailer)
- Selects Specific Product (Retailer → System)
- Requests Details for Specific Product (System → Database)
- Process Data (Database)
- Sends Data (Database → System)
- Displays Data (System → Retailer)
- Enters Quantity and Promo Code if any (Retailer → System)
- Request Promo Details (System → Database)
- Process Data (Database)
- Returns Promo Details (Database → System)
- Makes Computations (System)
- Sends Updates (System → Database)
- Displays Order Details (System → Retailer)
- Sends Message (System → Retailer)

The retailer checks for the products available for sale. He selects a specific product, enters quantity and promo code (if any). He transfers money using a Payment gateway (which is not implemented in current project). A confirmation message is sent to the retailer.

## 3.3.7 Sequence Diagram for Accepting Fresh Purchase Orders.
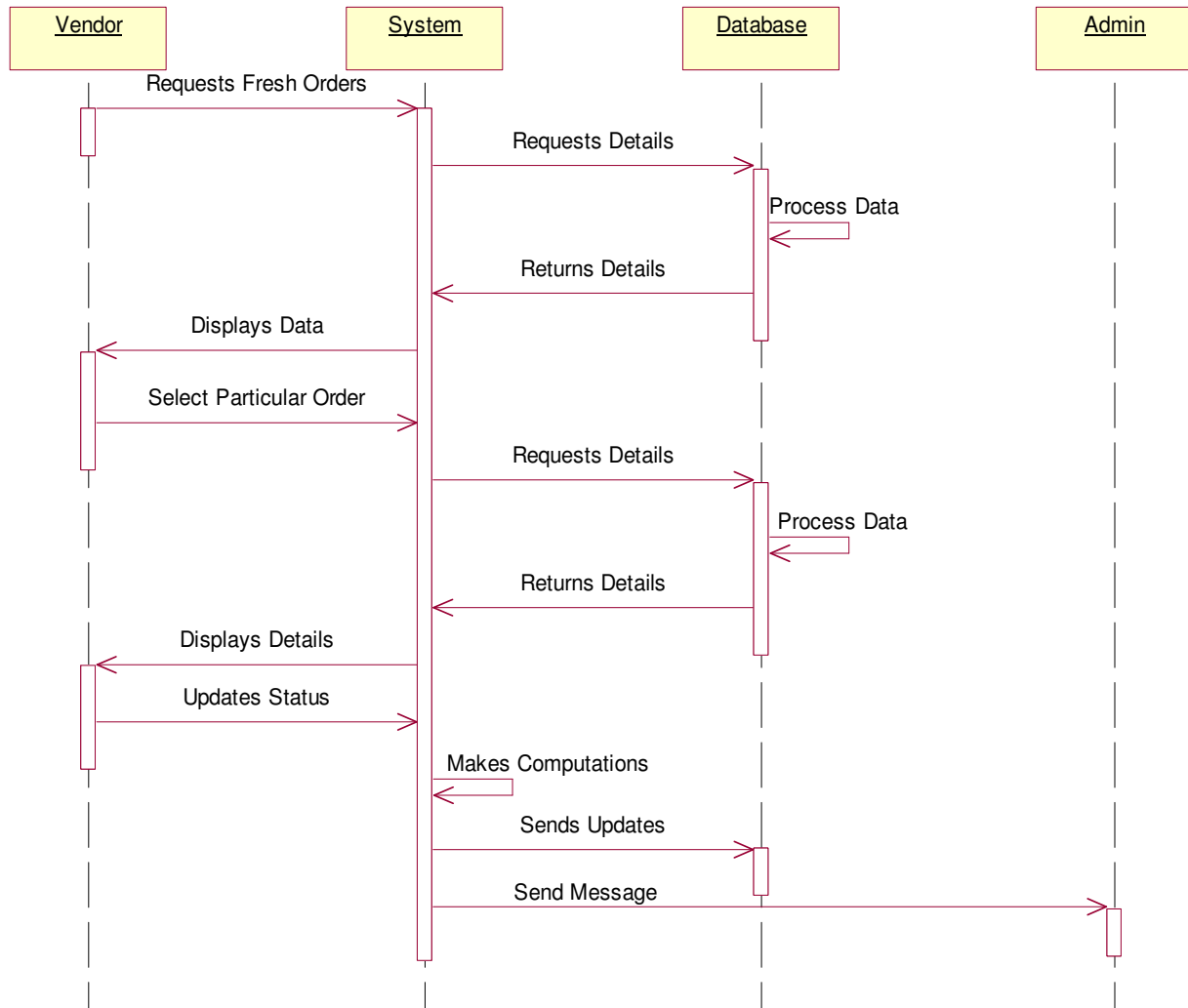
Vendor checks for the fresh orders. He selects a specific order, views details about it. If it matches the vendor protocols he accepts it, else he rejects it. If the order is accepted a confirmation message is sent to the admin. If he rejects a message is sent to admin.

3.4 Statechart Diagrams.

3.4.1 Statechart Diagram for Raise Purchase Order.
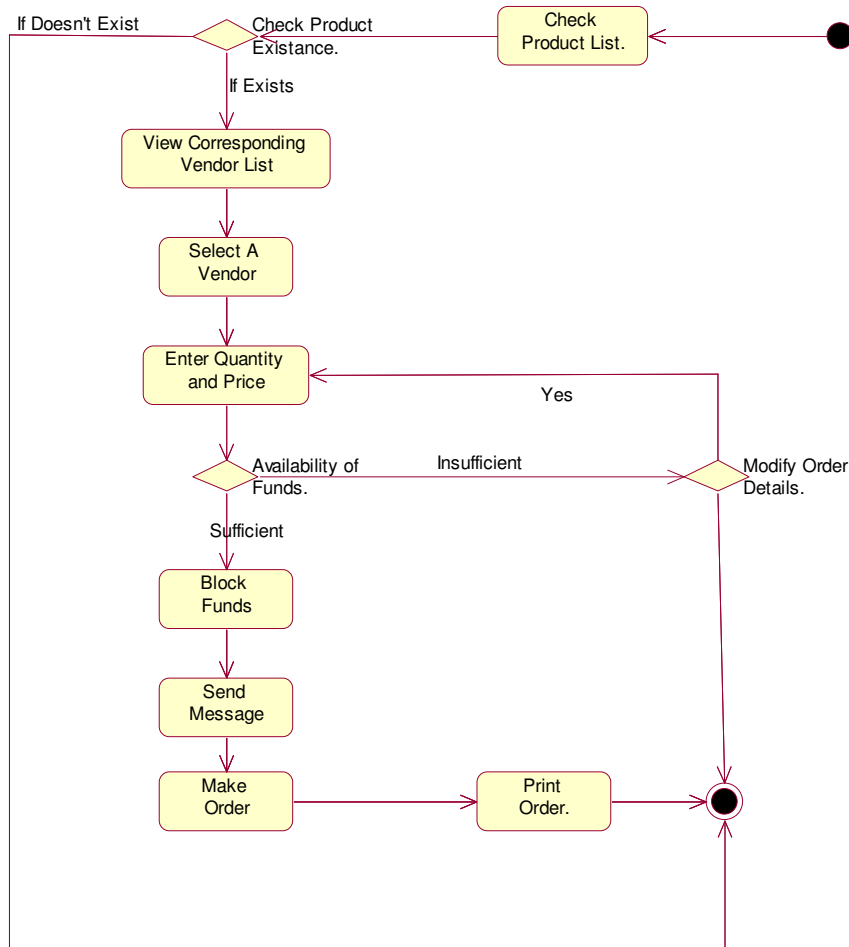
To raise a Purchase Order first admin checks the availability of the product if the product is available then he selects the vendor and inputs the qty and price at which he wants to buy. If funds are sufficient then the order is executed the funds are blocked preventing the admin to use the same funds for other purposes. A message is sent to the respective vendor and hard copy of order is generated and admin and take a print or just discard it. If the funds aren't sufficient then the user is prompted to alter the details the user can alter details or discard the order.

3.4.2 Statechart Diagram for Transferring Stock from Reserve to Active Inventory.
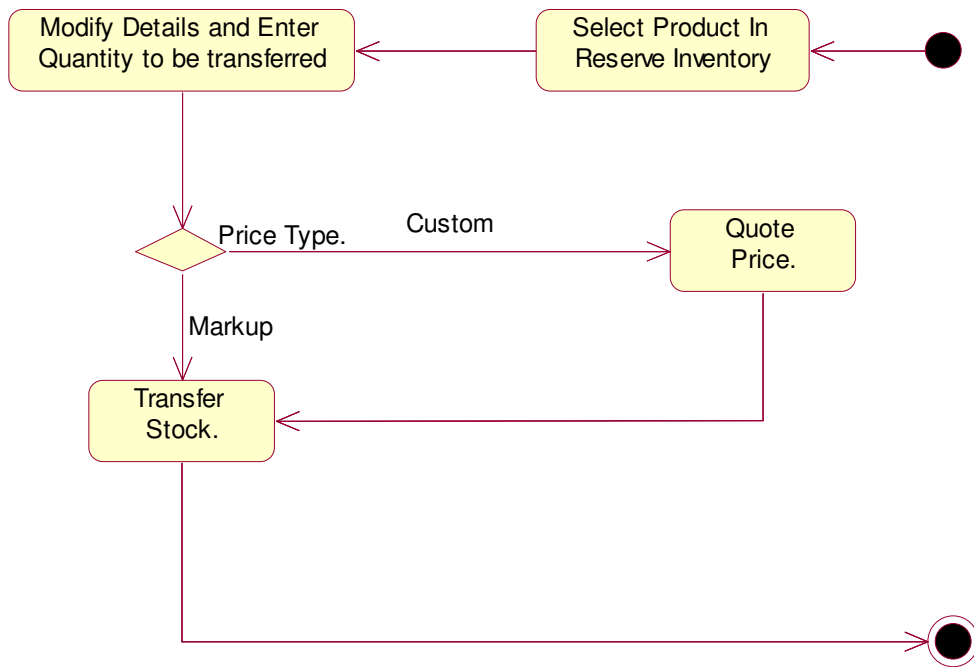
Admin can transfer stock from reserve inventory to active inventory to sell it. First the admin selects a product in reserve inventory modify details if necessary and inputs the quantity to be transferred here admin has two choices one to use default markup price or can quote a custom price. After the price is quoted stock is transferred from reserve inventory to active inventory.

3.4.3 Statechart Diagram for Approving Claims.
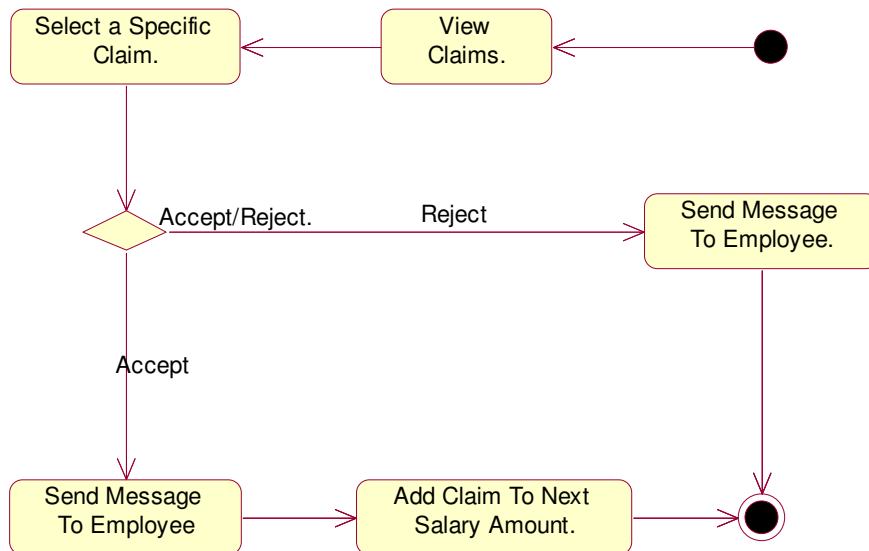
HR can approve/reject claims filed by the employees. First the HR Manager views claims then he selects a specific claim. Views the details of the claim which includes the claim amount and purpose of the claim. If the claim is approved by the HR Manager a message is sent to employee and claim amount is added to next salary payment. If the claim is rejected by the HR then a message is sent to the employee and it depends on the employee whether to file a new claim or not.

### 3.4.4 Statechart Diagram for Accepting Shipment.
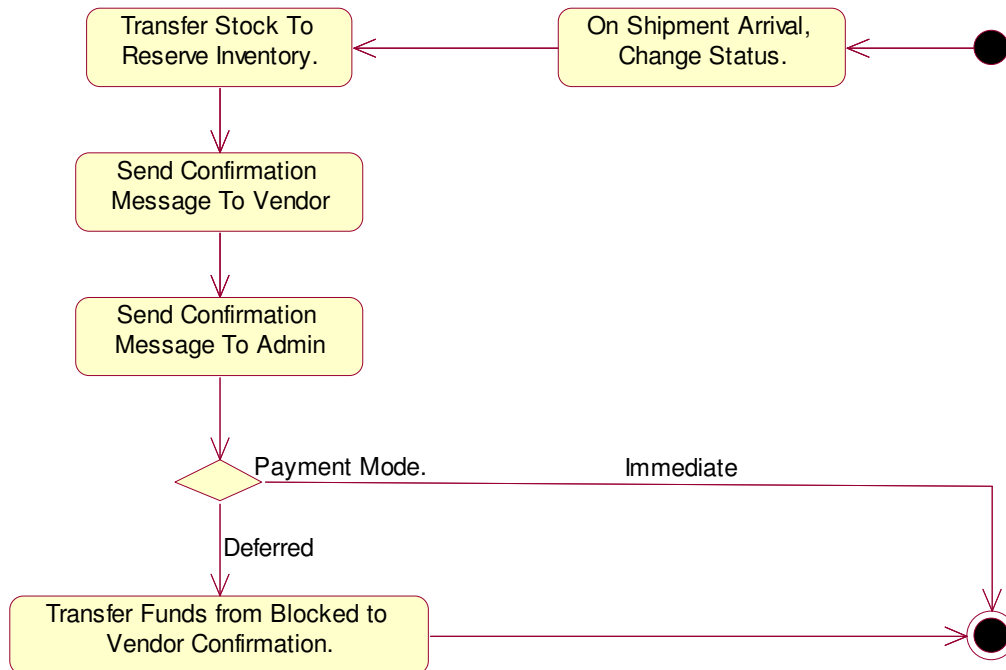
Logistics Manager is responsible for accepting a shipment from a vendor for a valid order. After the stock reaches the warehouse logistics manager updates status. When the status is updated the stock is transferred to reserve inventory. Confirmation messages are sent to admin as well as Admin. If payment mode is immediate the then PO is completed else funds in blocked status will be transferred to vendor confirmation.

### 3.4.5 Statechart Diagram for Sending Shipment.
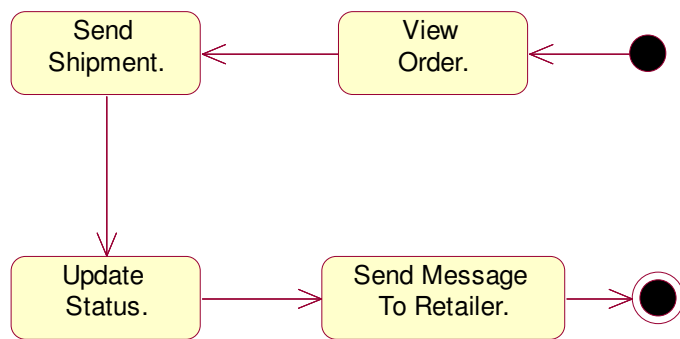
The Logistics manager view pending orders. He selects a specific order ships the material physically and changes the status as soon as the shipping status changes a message is sent to the retailer.

3.4.6 Statechart Diagram for Buy Products.
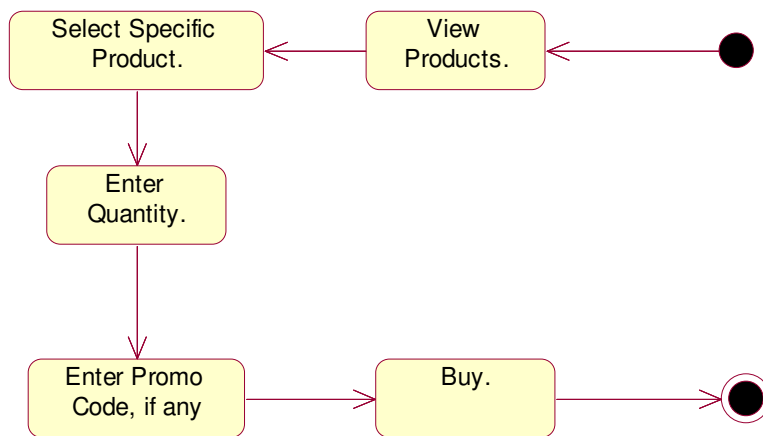
The major activity of a retailer is to buy a product from the firm. Retailer first looks for the required product. He then selects the product and enters quantity and promo code is entered is applicable and then order is placed. The buy activity indicates entire process right from transferring funds to receiving order confirmation message.

3.4.7 Statechart Diagram for Accepting Fresh Purchase Orders.
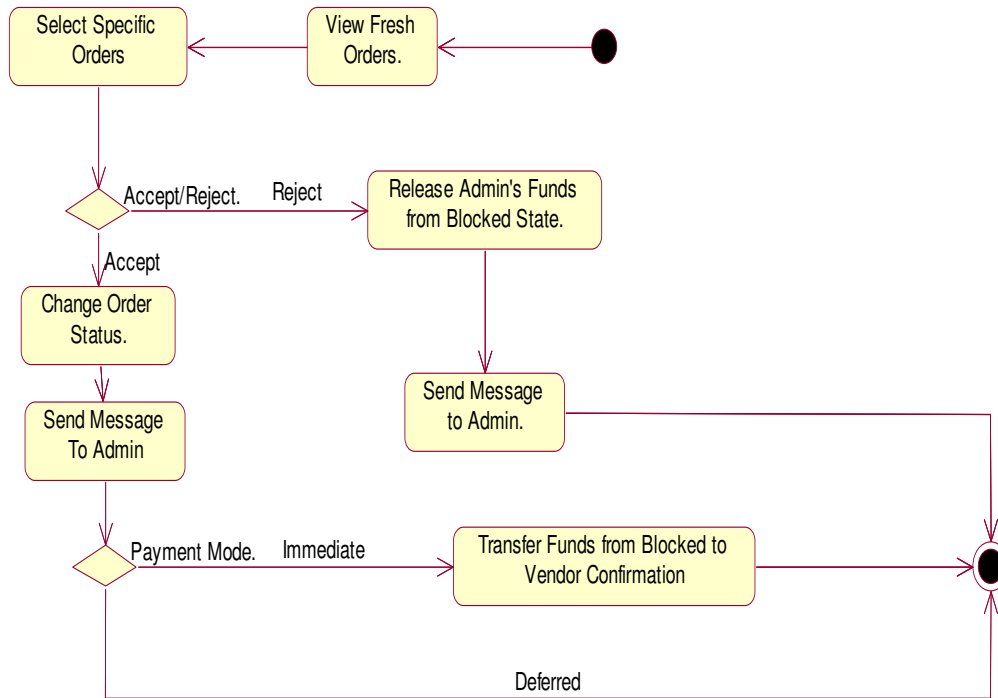
Vendor can accept order placed by admin. First the vendor checks for fresh orders select a specific order. If the order matches the protocols of the vendor he accepts it else he rejects it. If order is accepted then there arises two cases in payment modes if payment mode is immediate then funds of firm will be immediately transferred from blocked status to vendor confirmation and message is sent to admin about order acceptance. If payment mode is deferred then just a message is sent to admin about order acceptance. If order is rejected by the vendor the funds are released from blocked state and a order decline message is sent to admin.

3.5 Collaboration Diagram.

## 3.5.1 Collaboration Diagram for Raising Purchase Order.
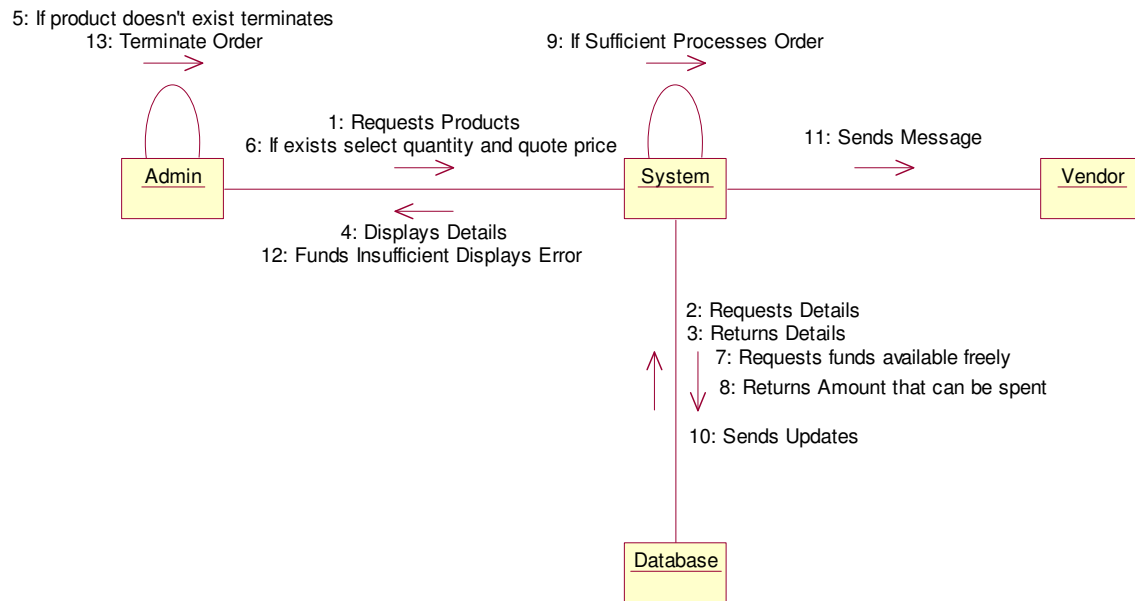
In raise PO page the admin has to select the product he wishes to order from the list of products. The System shows the list of all vendors who supply the product. Admin selects one such vendor, enters price and quantity in the respective text boxes and clicks on order button. The order is directed to respective vendor and a confirmation message is sent to both vendor and admin.

3.5.2 Collaboration Diagram for Transferring Stock.
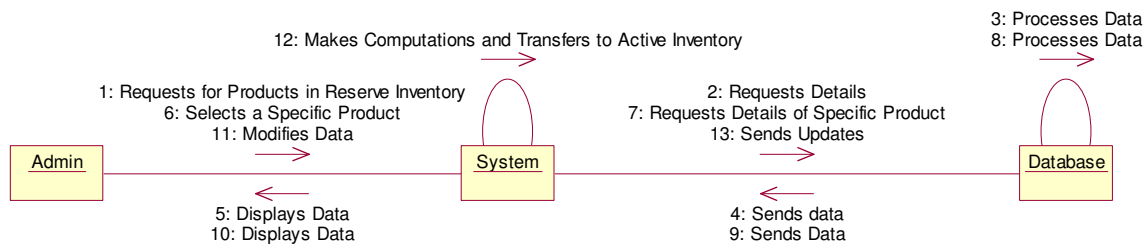
Admin first checks the products in reserve inventory and clicks on transfer. Admin can modify details of the product by placing information in respective textboxes. He has a choice of selecting a markup price or quote custom price. Once he clicks on transfer button the stock gets transferred.

3.5.3 Collaboration Diagram for Approving Claims.
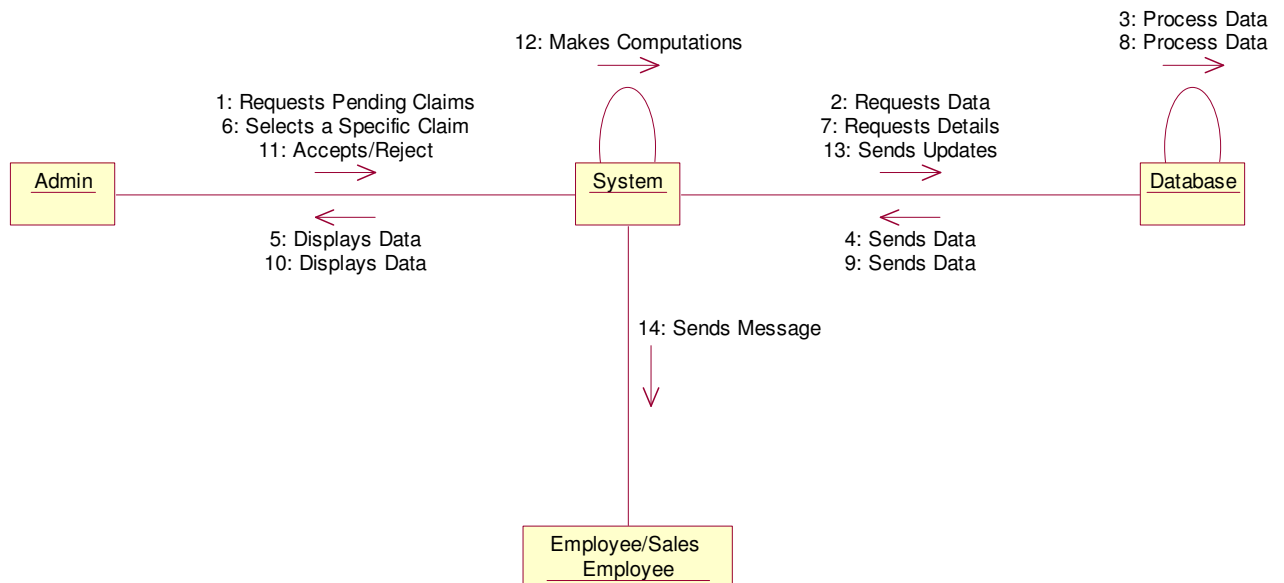
HR views the list of pending claims to be approved. He selects a specific claim and information about that particular claim is retrieved from the database and displayed. The HR Manager views the details and decides whether to approve the claim or not. If HR manager approves the claim, a message is sent to employee about claim approval. If the claim is rejected, HR Manager specifies the reason for rejection and a message is sent to employee with specified reason of rejection.

3.5.4 Collaboration Diagram for Accepting Shipment.
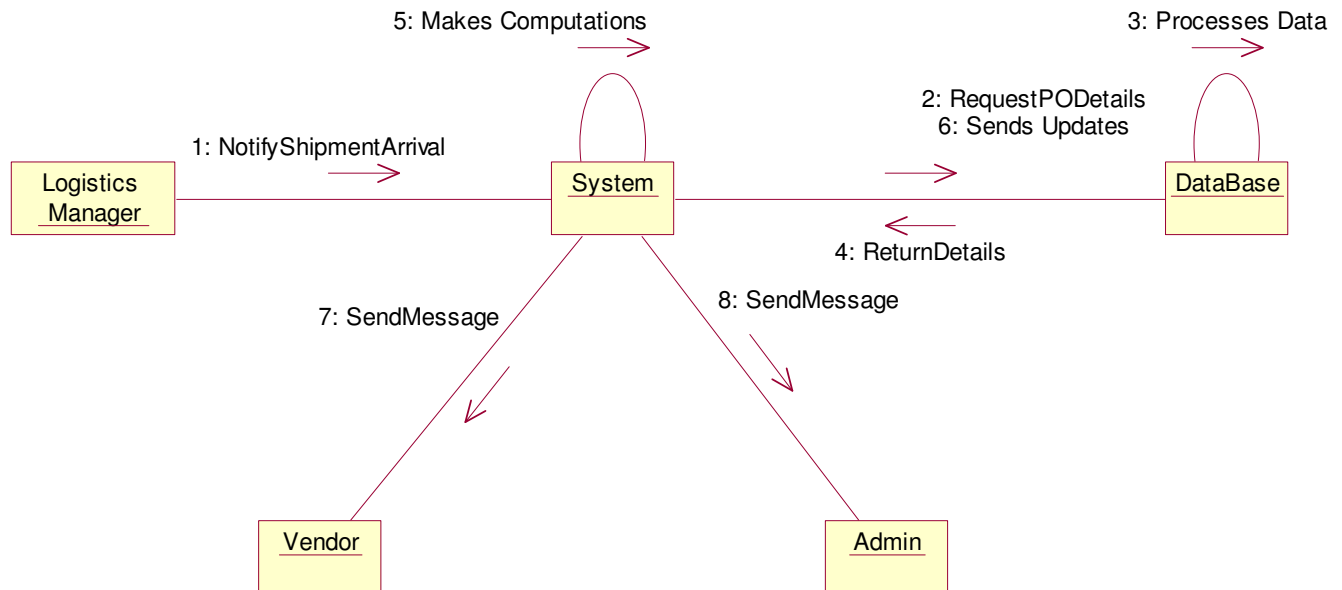
As soon as the shipment arrives at the warehouse the logistics manager checks for the orders that are yet to arrive. He selects the respective order and confirms its arrival. The stock would be transferred to reserve inventory.

3.5.5 Collaboration Diagram Sending Shipment.
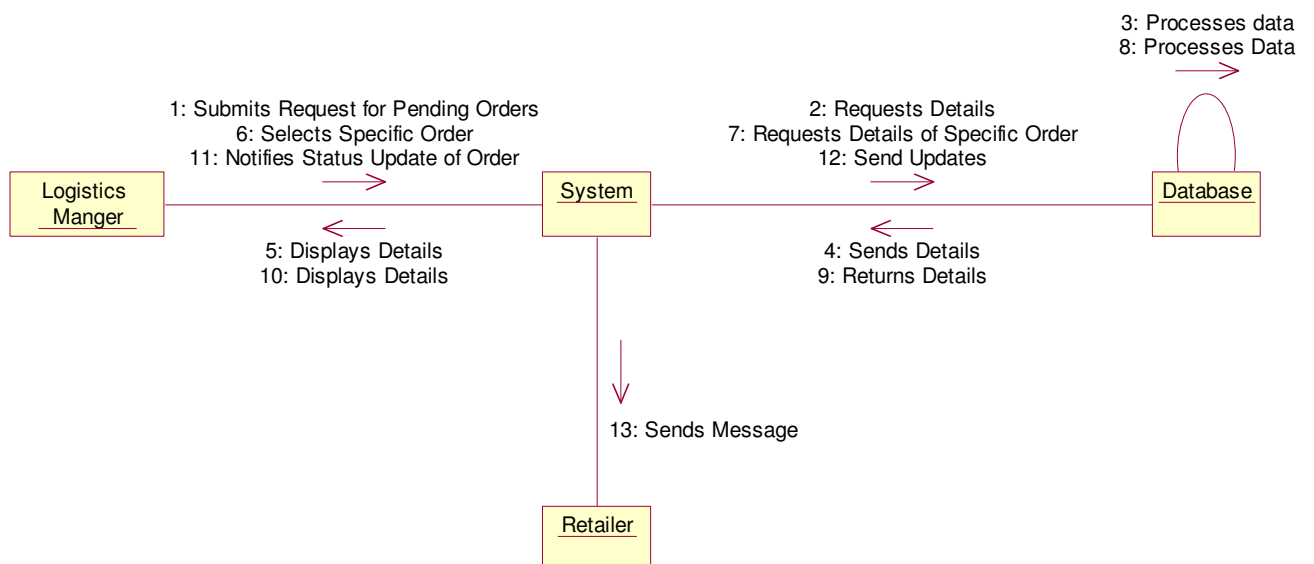
The logistics manager requests for the orders that are to be shipped. He selects a specific order, sends it physically using some sort of transport and updates its status.

3.5.6 Collaboration Diagram for Buying Products.
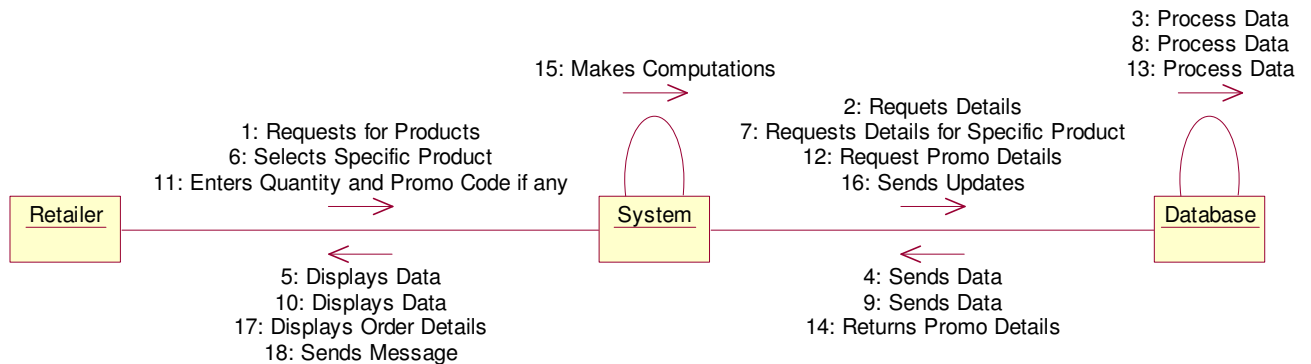
The retailer checks for the products available for sale. He selects a specific product, enters quantity and promo code (if any). He transfers money using a Payment gateway (which is not implemented in current project). A confirmation message is sent to the retailer.

3.5.7 Collaboration Diagram for Accepting Fresh Purchase Orders.
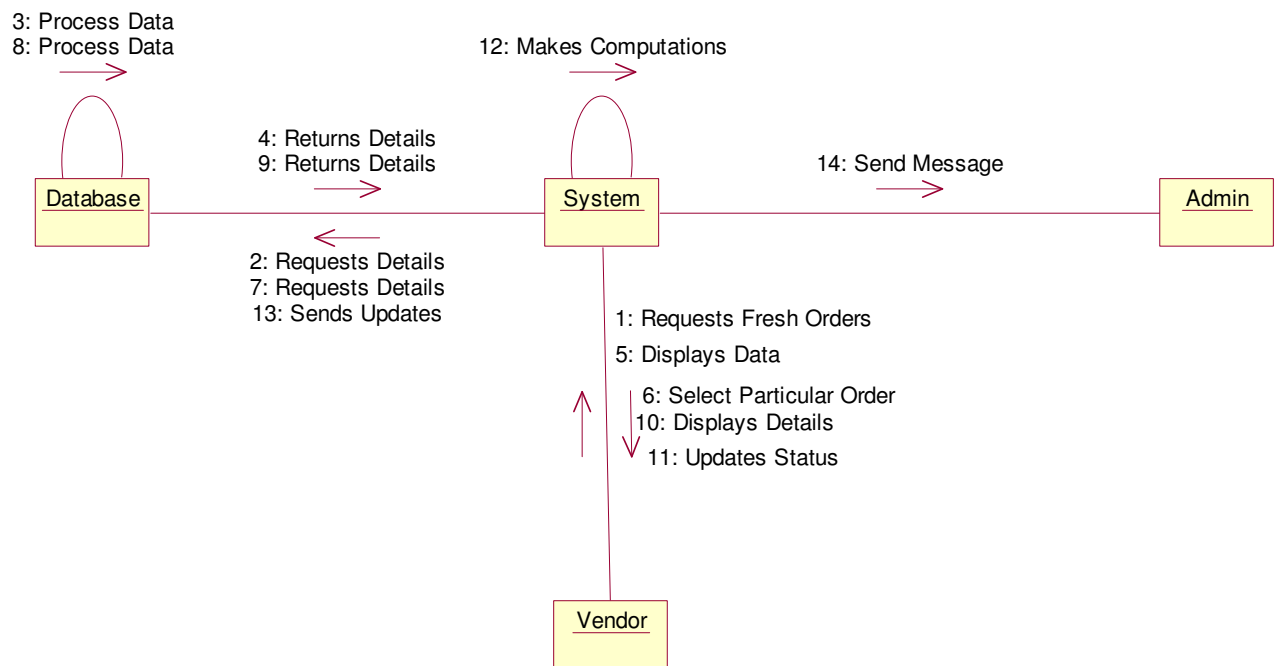
Vendor checks for the fresh orders. He selects a specific order, views details about it. If it matches the vendor protocols he accepts it, else he rejects it. If the order is accepted a confirmation message is sent to the admin. If he rejects a message is sent to admin.

3.6 Class Diagram.

Vendor
(from Logical View)

🔒 qty
🔒 price

◆ FreshOrdersDisplay()
◆ Accept_RejectFO()
◆ ViewTenders()
◆ View_ApproveClaims()
◆ ViewMessage()
◆ ReplyMessage()
◆ SendMessage()
◆ ModifyPortfolio()

Admin
(from Logical View)

◆ SendMessage()
◆ ViewMessage()
◆ ReplyMessage()
◆ PostTender()
◆ ViewEmployees()
◆ RaisePO()
◆ ViewPO()
◆ ApproveClaims()

SalesEmployee

◆ ViewTargets()
◆ SendMessage()
◆ ReplyMessage()
◆ ViewMessage()
◆ ViewRespectiveVendorList()
◆ FileCLaims()
◆ ViewClaim()
◆ ViewProfile()
◆ ViewAttendance()
◆ ViewSalaryBreak()

Employee

◆ SendMessage()
◆ ViewAttendance()
◆ ViewMessage()
◆ ReplyMessage()
◆ FileClaim()
◆ ViewClaim()
◆ ViewProfile()

HR

◆ ViewProfile()
◆ ViewAttendance()
◆ ViewSalary()
◆ SetSalary()
◆ AddEmployee()
◆ ModifyEmployee()
◆ ViewClaimsEm()
◆ ApproveEmClaims()
◆ SendMessage()
◆ ViewMessage()
◆ ReplyMessage()
◆ opname2()

LogisticsManager

◆ ViewProfile()
◆ AcceptShipment()
◆ SendShipment()
◆ ViewMessage()
◆ SendMessage()
◆ ReplyMessage()
◆ FileCLaim()

Retailer

◆ SendMessage()
◆ ViewMessage()
◆ ReplyMessage()
◆ Buy()
◆ FileClaim()
◆ ViewClaim()
◆ OrderHistory()
◆ OrderStatus()