



Foodi

The Food Taxi!
(Purchasing app for restaurants)

Software Engineering Methodologies 1
Centennial College

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Group#5

Daison Hollingsworth (301043343)

Hyunjong Shin (300997369)

Jaehan Bae (301005189)

Kuerxi Sulitanjiang (301001397)

Ibrahim Ali (301022172)

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1. Introduction

1.1 Purpose

Introduction

Most restaurant owners tend to struggle when choosing good food wholesale suppliers, mainly due to lots of issues surrounding a lack of information. For example, which supplier's product is the best quality, which ingredients do they stock, what is the fastest method of delivery and so on. Even a restaurant that has been in the business for over 10 years, still meets challenges when sourcing items for its kitchen.

Communication Challenges

The most common methods for ordering and tracking deliveries, email and telephone communication, are somewhat unreliable. These methods leave a lot of room for human error and increases the likelihood of receiving the wrong item, receiving the wrong quantity or in some cases, not receiving anything at all.

Inventory Management Challenges

The food wholesale suppliers sales representatives sometimes have outdated information about the items and quantities they have in stock due to the lack of an inventory management software.

Delivery Challenges

As mentioned before, delivery of items to the restaurants can also introduce challenges with delays or situations where the restaurant is forced to purchase more items than required so that they meet a minimum requirement for delivery by the wholesale suppliers.

The Solution

We will develop a solution to all of these problems in the form of a web application that will integrate with other existing systems to facilitates the procurement process for restaurants, inventory management for wholesale suppliers, and increasing the customer base for delivery companies.

1.2 Document Conventions

Priority Definitions:

- 1 - High
- 2 - Medium
- 3 - Low

OMS - Order Management System

1.3 Intended Audience and Reading Suggestions

Intended audience:

- **Software Engineering Manager** - Uses this document as the overview of the developers' interpreted purpose and requirements of the project. The Software Manager, who is also the team leader, will give the final approval of this document before the team moves to the next phase.
- **Developers** - Uses this document as a guideline of the purpose, requirements and overview of the phases for the project.
- **Software Tester** - Use this document to guide the testing phase, resulting in a more targeted and organised testing process.
- **Restaurant and Wholesale Supplier Staff** - Uses this document for details on the purpose and features of the project.

1.4 Project Scope

Actually, group 5 has detected these problems but needs more study about their processing and delivery system. At the beginning of this project, the area will be restricted to Toronto and GTA. The target of this application is food supply companies and restaurant owners.

1.5 References

2. Overall Description

2.1 Product Perspective

In modern society, everything has changed to an auto system. However, group 5 found delivery processing which is between food suppliers and the customers (restaurant owners) has many problems and high risks for both. Group 5 will solve those problems at the same time. Besides, the suppliers would compete for 'better quality and low prices'. The customers would have a better choice and more comfortable.

2.2 Product Features

Customer:

- Listing food ingredients
- Display stock shortage information
- Listing items for ordering
- Display a list of suppliers and information on items
- Ordering ingredients

Supplier:

- Listing customers' information
- Posting/advertising product
- Taking orders
- Cancel orders
- Sending a message about estimated delivery time to customer
- Analyzing customers' demand

Delivery Company:

- Listing customers' information
- Taking orders
- Canceling orders
- Sending a message about estimated delivery time to customer
- Analyzing customers' demand

2.3 User Classes and Characteristics

2.4 Operating Environment

2.5 Design and Implementation Constraints

2.6 User Documentation

2.7 Assumptions and Dependencies

3. System Features

3.1 System Features

Requirements List			
Requirement ID	Short Description	Priority	Requestor
FR01	<p><u>Search for Item</u></p> <p>The restaurant manager or authorized restaurant staff will be presented with a search box where they can enter the name or description of the item they require. Executing the search will return a list of matching items with information about the supplier carrying the item and the average rating for the quality of that item. Other information from the search results includes an estimated delivery time based on availability and quantity required.</p>	1	Restaurant Manager
FR02	<p><u>Order Item</u></p> <p>When the restaurant manager is ready to make an order, they will can select the items, required quantity and the delivery method (normal or express). These will be added to a virtual shopping cart, which can be updated before the final order is placed. The restaurant manager will also have the option to save favorite items to their personal account so that the can find the items faster and easier in the future.</p>	1	Restaurant Manager
FR03	<p><u>Pay Order</u></p> <p>The application will allow the restaurant to pay for an order using the following methods:</p> <ul style="list-style-type: none"> • VISA, MasterCard, Amex • Paypal • e-Transfer (Transac) • Debit 	1	Restaurant Manager
FR04	<p><u>Display Order List</u></p> <p>The app displays a list of orders created by the restaurant</p>	1	Restaurant Manager
FR05	<p><u>Post Item on the Product List</u></p> <p>The wholesale manager or an authorized staff of the wholesale supplier will have an option to add items to their online inventory. They must enter a name and description for each item, but can optionally add photos.</p>	1	Wholesale Manager

FR06	<p><u>Receive Order</u></p> <p>On an order list screen, where a list of requested orders from participating restaurants will be displayed with an option to individually to accept or reject each. If they accept the order, the relevant information is forwarded to the inventory clerk as a job task. If an order is rejected, the warehouse manager must input a reason, and the restaurant manager is notified.</p>	1	Wholesale Manager
FR07	<p><u>Update Order Status</u></p> <p>The wholesale manager can update the status of the order, e.g (Change from Pending to Processing, Change from Processing to Shipped) Based on the workload, the wholesale manager can also enter an estimated shipping date and time.</p>	2	Wholesale Manager
FR08	<p><u>Dispatch Order</u></p> <p>The delivery manager will be presented with a screen that lists all orders where the delivery company was selected. The delivery manager has the option to accept or reject each order. The choice will be communicated to both the wholesale suppliers and the restaurant. Rejecting the order will prompt the restaurant manager to select another option for delivery. Delivery manager can allocate truck.</p>	1	Delivery Manager
FR09	<p><u>Update Truck Info.</u></p> <p>The manager can update the online database of available fleet (add or remove vehicles). This would ensure the delivery company to be displayed as an option for all relevant delivery sizes.</p>	3	Delivery Manager
FR10	<p><u>Update Delivery Status</u></p> <p>The delivery manager can change the status of the order (e.g “out for delivery” after driver confirms that they collected the order from the wholesale supplier). The driver or the delivery manager can also change the order when the order is successfully delivered. The software uses historic data as well as live traffic data to show an ETA of the delivery.</p>	2	Delivery Manager / Driver
FR11	<p><u>Retrieve Customer's Info.</u></p> <p>The app presents the delivery company with relevant information about the wholesale suppliers and the restaurants (such as address and operational hours).</p>	1	Delivery Manager / Driver
FR12	<p><u>Display Task List</u></p> <p>Display a list of orders as tasks.</p>	1	Wholesales Manager, Delivery

			Manager, Delivery Driver
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Abstract Requirements List			
Requirement ID	Short Description	Priority	Requestor
FRA01	<u>Login to the system</u> Login function will prompt the user to enter his employee Id and password and verifies the input in order to successfully complete the login.	1	Restaurant Manager Wholesale Manager Delivery Driver

3.2 Use Case

Use cases			
Use Case name	List of related Requirements ID	Actor (s)	Brief Description
Order Item	FR01 FR02	Restaurant Manager	<ol style="list-style-type: none"> 1. System prompts the restaurant manager to log in. 2. Restaurant manager enters user ID and password. 3. System verifies the login information. 4. The restaurant manager will be presented with a search box where they can enter the name or description of the item they require. 5. Executing the search will return a list of matching items with information about the supplier carrying the item and the average rating for the quality of that item. 6. When the restaurant manager is ready to make an order, they will can select the items, required quantity and the delivery method (normal or express). 7. The item will be added to a virtual shopping cart, which can be updated before the final order is placed. 8. Restaurant manager has the option to save favorite items to their personal account so that the can find the items faster and easier in the future.

Pay Order	FR01 FR03	Restaurant Manager	<ol style="list-style-type: none"> 1. System prompts the restaurant manager to log in. 2. Restaurant manager enters user ID and password. 3. System verifies the login information. 4. When finished ordering, Restaurant Manager will be presented with the payment option page. 5. The manager will choose one of payment option; credit card, paypal, e-transfer, and debit. 6. Foodi will be holding the money until processing will be done. 7. After processing, the wholesale supplier company will get the money except app service charge.
Post Item on the Product list	FR01 FR04	Wholesale Manager	<ol style="list-style-type: none"> 1. System prompts the wholesale manager to log in. 2. Wholesale manager enters user ID and password. 3. System verifies the login information. 4. The Wholesale Manager must check the number of item which will be posted to the online inventory. 5. He or she post with mandatory information and optional information. <ul style="list-style-type: none"> • Mandatory information : Price, quantity, description, expired date, and quality. • Optional information : pictures, packing condition, and how to keep it. 6. If customer takes a item, the quantity would be automatically decreased.
Receive Order	FR01 FR05	Wholesale Manager	<ol style="list-style-type: none"> 1. System prompts the wholesale manager to log in. 2. Wholesale manager enters user ID and password. 3. System verifies the login information. 4. The Wholesale Manager will receive a notification on the application where it will show an order list of requests. 5. After checking the list by scrolling up and down, he will then have a choice to either accept or reject an individual request by swiping right to accept and left to reject or reject all through option reject order. 6. If any accepted, the accepted requests will add up on the cart and then will go to inventory clerk as a job task. 7. If any rejected, the rejected requests will add up on rejected requests' cart where then he will be prompted to add a comment for individual request in a text

			<p>box that will be sent as an email to the restaurant's manager.</p> <p>8. For reject order option, a single text box will be appeared prompting him to add a comment where then it will be sent as an email to the restaurant's manager.</p>
Update Order Status	FR01 FR06	Wholesale Manager	<ol style="list-style-type: none"> 1. System prompts the wholesale manager to log in. 2. Wholesale manager enters user ID and password. 3. System verifies the login information. 4. As soon as the inventory clerk finishes the task, he will then update the application as task done. 5. The Wholesale Manager will receive the task done notification. 6. The Wholesale Manager will update the order as order done. 7. The delivery company will receive notification of new delivery. 8. The Wholesale Manager will submit the order package to the delivery company personnel and update the application as order package shipped (from the Wholesale store).
Dispatch Order	FR01 FR07	Delivery Manager	<ol style="list-style-type: none"> 1. System prompts the delivery manager to log in. 2. Delivery manager enters user ID and password. 3. System verifies the login information. 4. System displays all ordered lists on the screen, which include order information item, weight, quantity, delivery time, location, contact number. 5. Each list has "Accept" and "Reject" button 6. Delivery manager select "Accept" button. <ol style="list-style-type: none"> a. Acceptance message is sent to wholesales and restaurant with delivery confirmation numbers, ETA(estimated time of arrival). b. Shipping information is sent to an available driver 7. Delivery manager select "Reject" button. <ol style="list-style-type: none"> a. System sends a message to inform the delivery request is rejected. b. The item rejected disappear from ordered lists

Update Truck Info.	FR01 FR09	Delivery Manager	<ol style="list-style-type: none"> 1. System prompts the delivery driver to log in. 2. Delivery Driver enters user ID and password. 3. System verifies the login information. 4. Delivery manager select "Managing Vehicles" button. 5. System displays information on delivery route of each truck, space to load product ordered additionally. 6. System updates location of each delivery truck so that restaurant manager can check status of delivery. 7. Delivery manager select "Add/Remove Vehicle" <ol style="list-style-type: none"> a. System shows list of all registered trucks. b. Delivery manager input information on new truck, and select "Add" button. c. System adds new truck on database and update it on the screen d. Delivery manager selects trucks which will be removed, and select "Remove" button. e. System removes selected trucks on database and update it on the screen.
Update Delivery Status	FR01 FR10	Delivery Manager/ Driver	<ol style="list-style-type: none"> 1. System prompts the delivery manager to log in. 2. Delivery manager/ Driver enters user ID and password. 3. System verifies the login information. 4. System presents the delivery manager / driver with the main menu screen. 5. If driver, system goes to step 6. If delivery manager, system goes to step 7. 6. If Driver: <ol style="list-style-type: none"> a. Driver selects "Work Order List" b. System presents a list of assigned orders to the driver. c. Driver selects the relevant order and scans the unique QR code on the package. d. The system verifies the QR code and changes the delivery status to "Out for Delivery". e. System returns to the main menu screen after login. 7. The Delivery Manager: <ol style="list-style-type: none"> a. Delivery manager chooses the option to view accepted orders.

			<ul style="list-style-type: none"> b. System presents a list of accepted orders. c. Delivery manager selects the appropriate order. d. System presents order details. e. Delivery manager chooses “Update Delivery Status”. f. System gives the appropriate options. (Waiting on package, Out for delivery, Canceled, etc) g. Delivery Manager selects “Out for Delivery” and enters the unique order code for verification. h. The system verifies the code and changes the status of the order to “Out for Delivery”. i. System returns to the main screen after login.
Retrieve customer’s Info.	FR01 FR11	Delivery Manager/ Driver	<ul style="list-style-type: none"> 1. System prompts the delivery manager to log in. 2. Delivery manager/ Driver enters user ID and password. 3. System verifies the login information. 4. System presents the delivery manager / driver with the main menu screen. 5. If driver, system goes to step 6. If delivery manager, system goes to step 7. 6. Driver: <ul style="list-style-type: none"> a. Driver selects “Work Order List” b. System presents a list of assigned orders to the driver. c. Driver selects the relevant order. d. System displays the delivery address, contact information and special delivery instructions for the selected order. e. Driver selects “Close” to exit the delivery information screen and go back to the Work Order List. 7. Delivery Manager: <ul style="list-style-type: none"> a. Delivery manager chooses the option to view accepted orders. b. System presents a list of accepted orders. c. Delivery manager selects the appropriate order. d. System displays the delivery address, contact information and special delivery

			<p>instructions for the selected order.</p> <p>e. Delivery manager selects “Close” to exit the delivery information screen and go back to the list of all accepted orders.</p>
Deliver Order	FR01 FR11 FR12	Delivery Driver	<ol style="list-style-type: none"> 1. System prompts the delivery driver to log in. 2. Delivery Driver enters user ID and password. 3. System verifies the login information and then displays the main menu items. 4. Delivery driver selects display task list 5. Delivery driver can either accept or reject the task after viewing them 6. If delivery driver accepts the task, he will then work on that task which means he will have to go and receive the package from wholesale company and confirm receive order 7. As soon as delivery driver receives the package, he will then have to deliver the package to the restaurant company

● Formal Use Case Description

Use Case Name	Order Item	
Primary Actor(s)	Restaurant Manager	
Goal in Context	To find the needed items and order it	
Preconditions	Restaurant manager must login first and the items must be available	
Trigger	Clicking on search item button	
Scenario Details	Restaurant Manager	System
	<ol style="list-style-type: none"> 1. Restaurant manager logs into Foodi application 2. Restaurant manager selects search item function 3. Restaurant manager search 	<ol style="list-style-type: none"> 1. After successful login, the system will show a list of major functions. 2. System displays a search box. 3. System produces a list of

	<p>for items</p> <p>3b. Restaurant manager will pick the ones that are needed for the restaurant by swiping right to the item</p> <p>4. Restaurant manager selects to continue or to quit.</p> <p>5. The restaurant manager opens the virtual shopping cart and verifies the items and their quantities before confirming the order.</p> <p>6. Restaurant manager then selects the delivery option</p> <p>7. Finally, the restaurant manager pays for the order.</p>	<p>items that match the search criteria</p> <p>3b. The system will add the swiped items to the cart.</p> <p>4. System shows a dialog confirming.</p> <p>5. The system displays a list of items that were added to the cart.</p> <p>6. System displays a list of available delivery options.</p> <p>7. The system directs the user to 3rd party payment website.</p>
Exceptions	If the order happened to be defective and there is no refund method	
Priority	High	
When Available	First iteration	
Frequency of Use	Frequent	
Open Issues	None	

Use Case Name	Deliver Order	
Primary Actors	Delivery Driver	
Goal in Context	Update status of the delivery order while delivering the order	
Preconditions	The delivery manager creates a worklist for the driver based on accepted orders that are ready for pickup. This worklist also includes the required truck to	

	be used for each delivery.	
Trigger	Delivery driver receives a worklist at the start of their shift.	
Scenario Details	Delivery Driver	System
	<ol style="list-style-type: none"> 1. Driver logs into the app at the start of the shift. 2. Driver selects option to display the task list. 3. Driver selects an order in the list. 4. Driver accepts the order and drives to the order location to retrieve the order. 5. Driver receives the order and verifies the requirements of the package are met. 6. Driver delivers the order and accepts a signature as proof of receipt. 	<ol style="list-style-type: none"> 1. After successful login, the system displays a list of major functions. 2. System displays a list of deliveries assigned to the driver. 3. System displays details about the location and contact information for that order. 4. System updates the status of the order with the ETA of its delivery. 5. System updates the status of the order to "Out for Delivery" and updates the ETA. 6. System updates order status to "Delivered".
Exceptions	<ol style="list-style-type: none"> 1. Driver could not login due to an account not being created for the employee. 2. Driver rejects the order when they arrive to pick it up due to it not meeting the shipping requirements. 3. Restaurant rejecting an order that is deemed unacceptable (incorrect items, damaged items). 	
Priority	High	
When Available	Second iteration	

Frequency of Use	Frequently (used with every order)	
Open Issues	None	

Use Case Name	Update Order Status	
Primary Actors	Wholesale Manager	
Goal in Context	Update Order's status	
Preconditions	A restaurant manager has ordered items	
Trigger	1. After wholesale manager sign-in, and then accept the order list which are from restaurant managers. 2. When wholesale manager clicks button to post new item.	
Scenario Details	Wholesale Manager	System
	1. Wholesale manager logs into the app at the start of the shift. 2. Wholesale manager selects update orders 3. Wholesale manager checks the items, if ready, and add to task list 4. Wholesale manager checks the items, if defective, and update order status 5. Wholesale manager selects picked items list. 6. Wholesale manager selects submit delivery.	1. After successful login, the system displays a list of major functions. 2. System will display the list of orders 3. System will add the item to tasks cart 4. System displays comment box 5. System will display picked items list and prompt for confirmation 6. System will update the status of the order as ready for delivery
Exceptions	Unexpected out of stock with	

	some reasons (defective condition, expiration date, and so on.)	
Priority	High	
When Available	After restaurant manager orders item or Wholesale manager post item	
Frequency of Use	Frequent	
Open Issues	How the product information is accurate i.g) quality, quantity, description, and so on.	

4. External Interface Requirements

4.1 User Interfaces

4.2 Hardware Interfaces

4.3 Software Interfaces

4.4 Communications Interfaces

5. Other Non-functional Requirements

5.1 Performance Requirements

Requirement List			
Requirement ID	Short Description	Priority	Requestor
NFR01	<u>Connect to company's system</u> The app can connect to multiple types of database systems, allowing it to be easily integrates with each company' existing databases.	1	Wholesale Manager / Restaurant Manager / Delivery Company Manager
NFR02	<u>Build Database</u> The application creates an internal database that stores information such as the location and the frequency of delivery.	3	Wholesale Manager / Restaurant Manager / Delivery Company Manager
NFR03	<u>Integrate GPS</u> The software can receive and process GPS data from the delivery trucks to assist with the calculation of the delivery ETA.	1	Wholesale Manager / Restaurant Manager / Delivery Company Manager

5.2 Safety Requirements

Requirement List			
Requirement ID	Short Description	Priority	Requestor
NFR01	<u>Back-Up feature</u> Information on the internal database will be backed up on a secure server every hour.	1	Wholesale Manager / Restaurant Manager / Delivery Company Manager

5.3 Security Requirements

Requirement List			
Requirement ID	Short Description	Priority	Requestor
NFR01	<u>Sign-in verification</u> The application will use an account system based on a telephone number as the unique user ID. This would make it easy for any interested companies to sign up since all companies already have telephone numbers.	1	Wholesale Manager / Restaurant Manager / Delivery Company Manager

5.4 Software Quality

Requirement List			
Requirement ID	Short Description	Priority	Requestor
NFR01	<u><i>Access to different versions</i></u> The software will be written as a web application so that it can be accessed on android, iphone, windows, mac, and linux.	1	Wholesale Manager / Restaurant Manager / Delivery Company Manager

Attributes

Appendix A: Glossary

Appendix B: Team Minutes of meeting

Minutes of meetings log between team members					
No.	Date (dd/mm/yyyy)	Time	Names of attendees	Type	Key actions agreed upon
01	14/01/2019	14:30 ~16:30	Daison Hollingsworth	Over the internet	<ul style="list-style-type: none"> • Select item • Discuss key features • Assign each part
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
02	23/01/2019	14:30 ~16:30	Daison Hollingsworth	Over the internet	<ul style="list-style-type: none"> • Modify 1.2, 1.3 • Make a questionnaire (5 for each) • Add a table for stakeholder register
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
03	25/01/2019	11:00 ~12:00	Daison Hollingsworth	Meeting	<ul style="list-style-type: none"> • Modify 'Stakeholder register' • Remove 'Farmer' as a stakeholder because he is not a target of this application • Add Function Requirements • To discuss Non-Functional Requirements at next meeting
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
04	01/02/2019	10:00 ~ 10:30	Daison Hollingsworth	Class Meeting	<ul style="list-style-type: none"> • Modify the requirements description upon professor's comment
			Hyunjong Shin		

					<ul style="list-style-type: none"> Adjust the requirements priorities upon professor's comment
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
05	08/02/2019	10:30 ~ 12:00	Daison Hollingsworth	Meeting	<ul style="list-style-type: none"> Final review and modification prior to submission Update the application's name
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
06	22/02/2019	10:30 ~ 12:30	Daison Hollingsworth	Meeting WhatsApp	<ul style="list-style-type: none"> Discuss about activity diagrams Adjust the name conventions upon professor's comment Verify and adjust constantly until desired outcome
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		

07	01/03/2019	14:30 ~16:30	Daison Hollingsworth	Online chatting via WhatsApp	<ul style="list-style-type: none"> Select item Discuss key features Assign each part
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
08	08/03/2019	11:00 ~12:00	Daison Hollingsworth	Meeting	<ul style="list-style-type: none"> Create Interview questions Create stakeholder registration
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
09	15/03/2019	11:00	Daison Hollingsworth	Meeting	<ul style="list-style-type: none"> Modified Use Case Description

		~12:00	Hyunjong Shin		<ul style="list-style-type: none"> Added First Cut Class diagram
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
10	22/03/2019	11:00 ~12:00	Daison Hollingsworth	Meeting	<ul style="list-style-type: none"> USER CASE MODEL CRC Modeling Class diagram CRC CARDS
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
11	22/03/2019	11:00 ~12:30	Daison Hollingsworth	Meeting	<ul style="list-style-type: none"> Class responsibility and Collaboration Added Sequence diagram
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
12	05/04/2019	11:00 ~12:30	Daison Hollingsworth	Meeting WhatsApp	<ul style="list-style-type: none"> Domain Class Diagram Modified CRC responsibility and Collaboration Modified sequence diagram and state machine diagram as per professor's comments
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
13	10/04/2019 12/04/2019	12:30~2:30 11:00 ~12:30	Daison Hollingsworth	Meeting WhatsApp	<ul style="list-style-type: none"> Filled the presentation powerpoint Assigned role for the presentation Added Domain Class first cut
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		
14	16/04/2019	8:40 ~9:30	Daison Hollingsworth	Meeting WhatsApp	<ul style="list-style-type: none"> Added "Party Analysis Pattern" class diagram Constructed a paragraph indicating why the analysis works perfectly
			Hyunjong Shin		
			Jaehan Bae		
			Kuerxi Sulitanjiang		
			Ibrahim Ali		

Appendix C: Stakeholder Register

Stakeholder Register					
Stakeholder Name	Stakeholder Position	External/Internal	Stakeholder Contact Details	Operational/Executive	Interest
Alfred Pennyworth	Software Engineering Manager / Team Leader	Internal	alfred.pennyworth@connection.com	Executive	High
Axel Rodd	Software Developer	Internal	axel.rodd@connection.com	Executive	High
Peter Parker	Software Developer	Internal	peter.parker@connection.com	Executive	High
Martin Birde	Software Tester	Internal	martin.birde@connection.com	Executive	Medium
Maxwell Farrah	Restaurant Manager	External	maxwell.farah@fastsupply.com	Operational	High
Wang Wei	Chef/ Kitchen Staff	External	wang.wei@fastsupply.com	Operational	Medium
Min-Seo Gwok	Wholesale Sales Representative	External	minseo.gwok@thebest.com	Operational	High
Danny Rand	Wholesale Inventory clerk	External	danny.rand@thebest.com	Operational	Medium
Bruce Wayne	Wholesale Manager	External	bruce.wayne@thebest.com	Operational	High
Jackie Chan	Delivery Manager	External	jackie.chan@speedlight.com	Operational	High
Chris Brown	Driver	External	chris.brown@speedlight.com	Operational	Medium

Appendix D: Interview questions

Interview Questions		
Question	Stakeholder position	Answer

1a. How do you record your food inventory?	Kitchen Manager	1a. At the end of the day I roam around the kitchen while having pencil and paper on my hands and try to write down anything that is missing.
1b. Could you be able to list all of the items in the food inventory that you check for?	Kitchen Manager	1b. Yes. These are the food items we try to keep in the kitchen...
1c. What are the minimum required quantities of each item that you try to maintain? And what would be the ideal quantities?	Kitchen Manager	1c. For eggs, we try to keep at least 50 crates...
2a. What do you do after you record your missing inventory on the paper?	Kitchen Manager	2a. I go to my computer and once again and write it down as a message to restaurant's owner so that he can order some more.
2b. What email address do you send the message to? Do you use a specific subject/title	Kitchen Manager	2b. I send the email to: maxwell.farah@mycentennialcollege.ca with the subject: "Attention: Daily Order Request (date of email)"
3a. After you receive an email from kitchen manager about the inventory list what do you do?	Restaurant Manager	3a. As soon as I receive the email, I contact my daily supplier and order it from him so that he can prepare the order in the morning.
3b. What email address do you send the message to? Do you use a specific subject/title	Restaurant Manager	3b. I send the email to: order@fastsupply.com with the subject: "(name of restaurant) Order Request (date of email)"
4a. How do you usually get the order? Delivery or pick up?	Restaurant Manager	4a. Actually, we always get our orders from the supplier by delivery around 9-10am.
4b. What is the length of time between the moment of the email is sent and the moment the items are received?	Restaurant Manager	4b. It usually takes 2 days for items that are ordered to be delivered.
5. How many suppliers are you in contact with?	Restaurant Manager	5. I only deal with two suppliers where one of them is the farmer where I get all my vegetables, and second is the wholesale where I get all my meats and toppings.
6. What do you do when you get the order from the restaurant owner?	Wholesale Manager	6. As soon as I receive the email, I send an email to wholesale inventory clerk who checks to confirm that we have the items in stock.
7. How do you manage to get the order ready when receiving and email from manager?	Wholesale Inventory Clerk	7. After I check whether we have the items in stock or not, I let the wholesale clerks collect the items and confirm the order by myself at the end and then give the order to delivery personnel.
8. Which factors are important for you to choose suppliers?	Restaurant Manager	8. There are many factors, for instance, price, quality, delivery time, and so on.

9. How would you give specific information of the product to a customer?	Wholesale Manager	9. We have gotten all the information about the product from a producer like farmers, fishermen. i.g) size of shrimp, the weight of salmon, expired day, and so on.
10. Can you delivery at night time?	Wholesale Manager	10. It depends on the order. If a customer orders lots of stuff, it is possible.
11. Are you willing to pay an extra charge for fast delivery?	Restaurant Manager	11. Yes, we have often encountered out of stock for some reasons so, it is necessary for us.
12. Can you arrive at the restaurant on time you promised?	Driver	12. Almost except some bad situations like traffic jam or natural disaster.
13. Do you always have the list of product which you are giving to the customer	Driver	13. Yes, we always take invoice paper then I am checking the list of items with the manager.
14a. Can you give the number of stocks in real time?	Wholesale Manager	14a. Yes, we are using a auto system which is giving the number of items in real time.
14b. If it is possible, can you share the information?	Wholesale Manager	14b. Yes, we can..
15. How do you usually pay your suppliers?	Restaurant Owner	15. To be honest, it depends on the supplier companies. Some of them want to pay with cash, but we prefer e-transfer or cheque.
16. How would you handle returned products with defects?	Wholesale Manager	16. This is really serious problem. At first, we need feedback from the customer then, will choose whether discard it or not.
17. Are you willing to offer discounts on products with close expiry date?	Wholesale Manager	17. Sure, it is the best choice if we can sell products with close expiry date.
18. Can you order all the stuff which you need?	Restaurant Manager	18. It is bit hard for the restaurant. In order to order what we need, we have to ask many companies whether they handle the product or not. Some products they do not have.
19a. There are many suppliers which can supply better ingredients with cheaper price. Why do you not purchase them from various suppliers?	Restaurant Manager	19a. First, we don't have enough information on wholesale companies, for example, items that they trade, price of each item, location of those companies. In addition, we want to buy just small amount of some products frequently for freshness; however, most suppliers don't want to delivery small amount everyday because of cost.
19b. Do you offer the vegetables fresh on a daily basis?	Wholesale Manager	19b. We always make sure that we get the vegetables fresh daily from the farmer.
20. If there is an application or a website which gives you lists to compare price and estimated delivery time, are you willing to use it?	Restaurant Manager	20. Yes, if price, quality and delivery time is reasonable, there is no reason not to use it. But I'm not sure that wholesales companies can supply small quantity of items often.

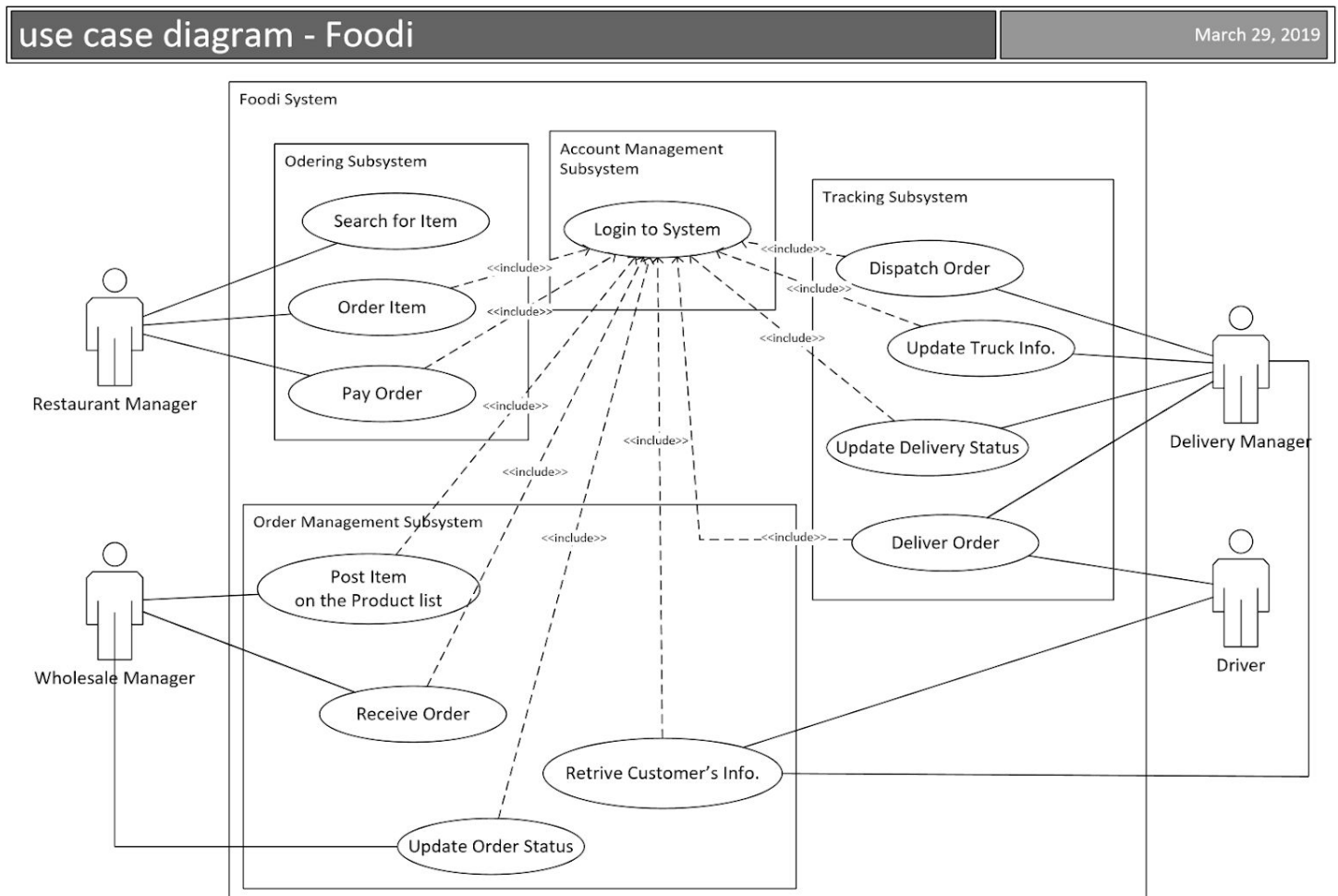
21. Even if a customer is not your long-term contractor, can you supply various but small quantity of items? If not, which factors make you not to do?	Wholesale Manager	We normally make a contract with our customer because it makes us to predict demands and we can prepare suitable quantity of products, which can save space of our warehouse, and it guarantee the quality of products, and it will reduce cost as well. If those factors are resolved, we think we can consider supplying our products to restaurants that are not long-term contractors.
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Appendix E:

Analysis Models

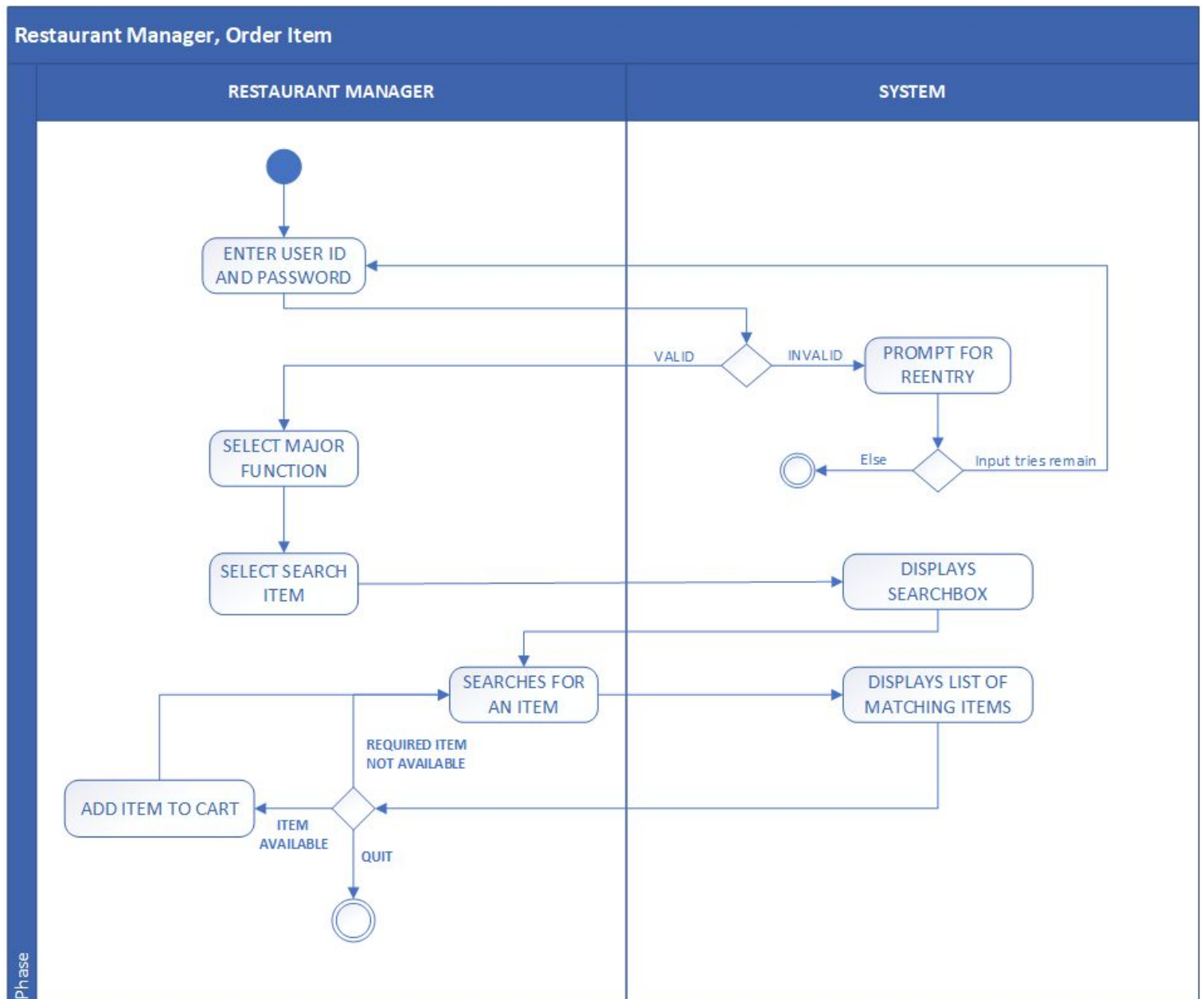
Use Case Templates

Use Case diagrams

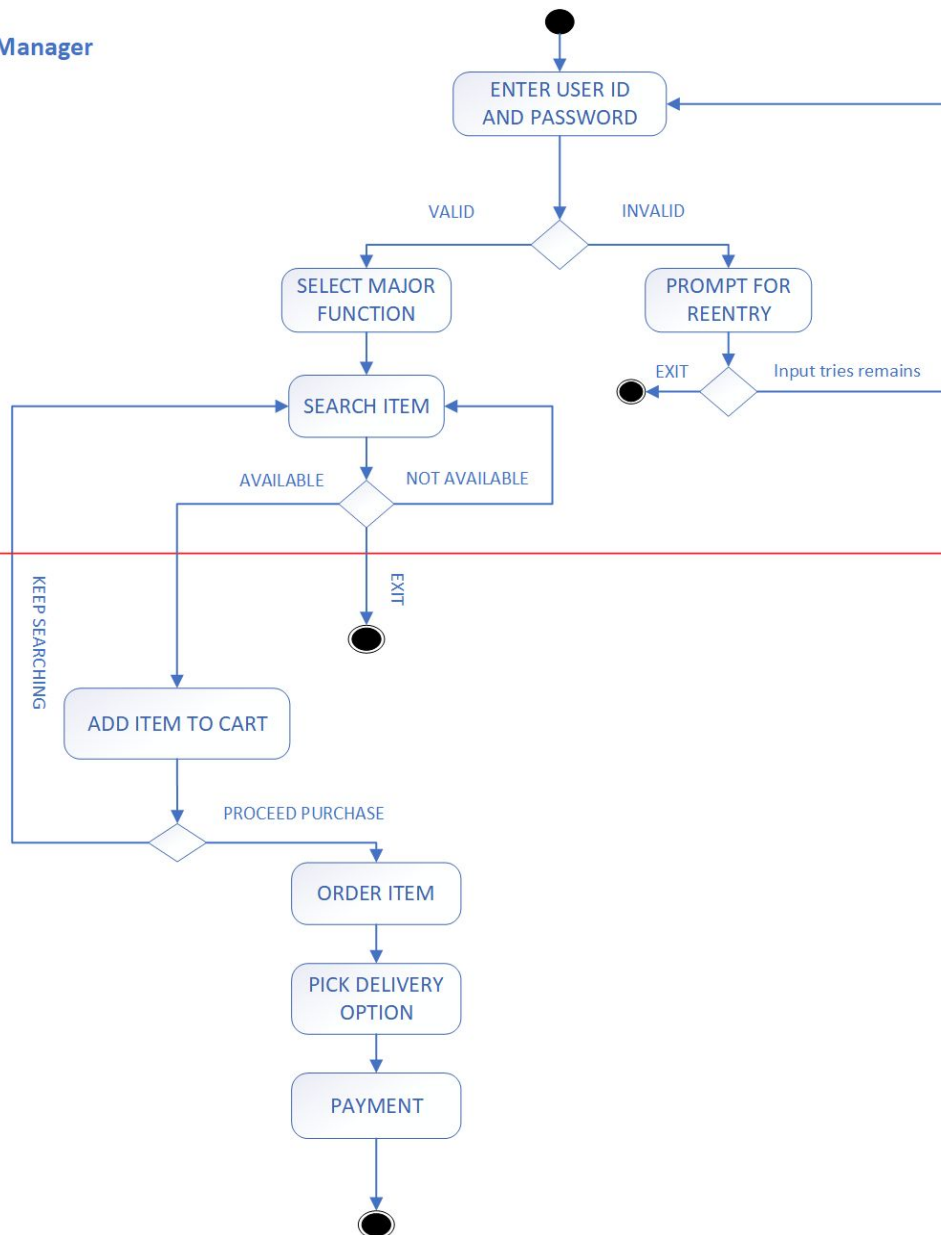


Activity diagrams

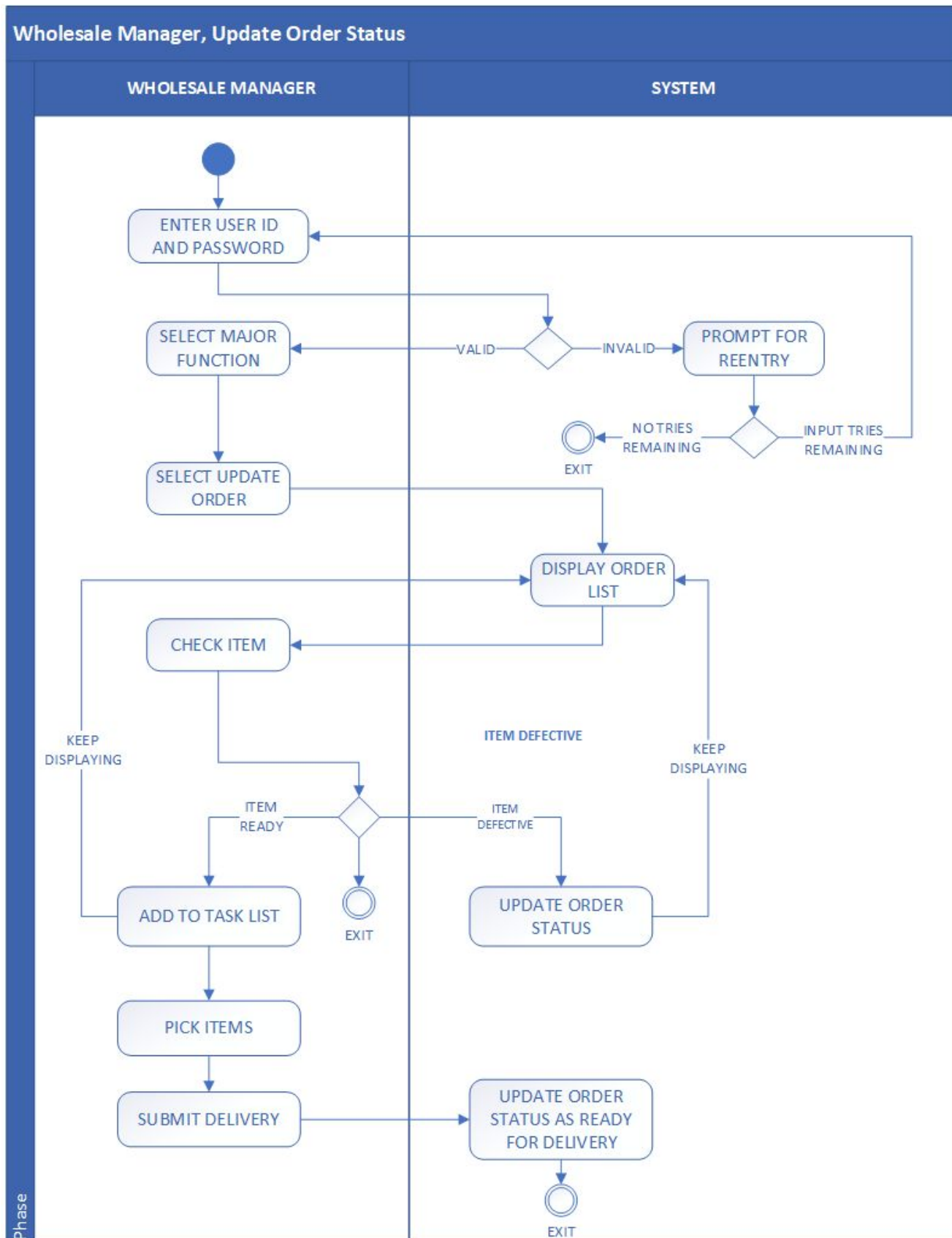
Order Item:



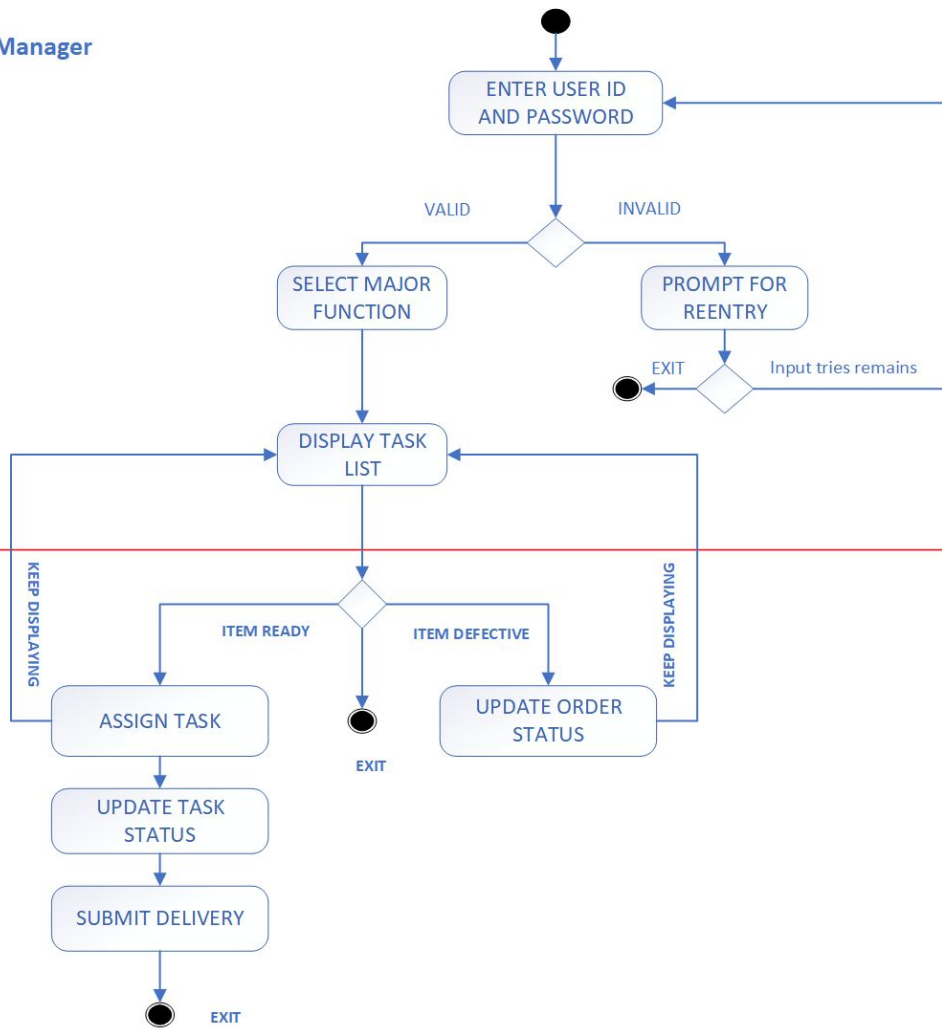
Resturant Manager



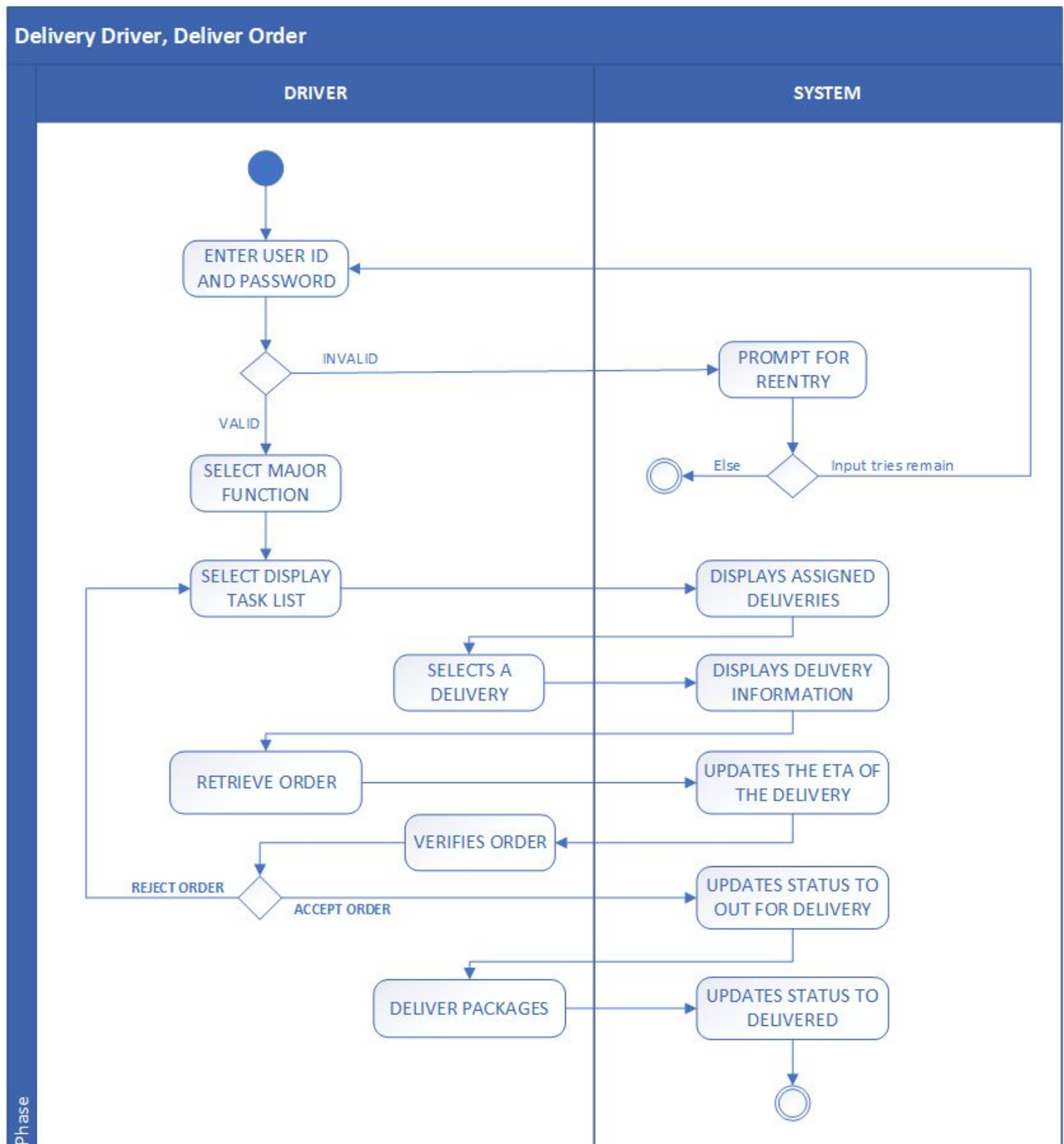
FIRST ACTIVITY DIAGRAM

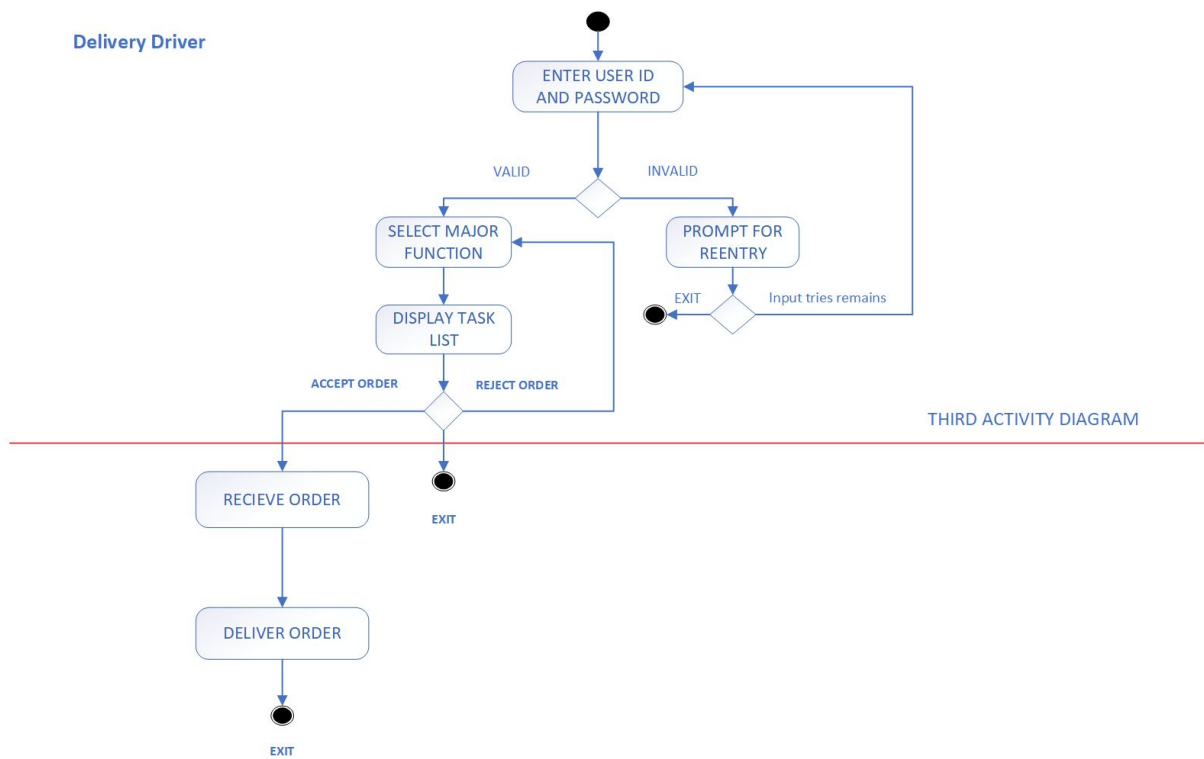
Update Order Status:

Wholesale Manager



SECOND ACTIVITY DIAGRAM

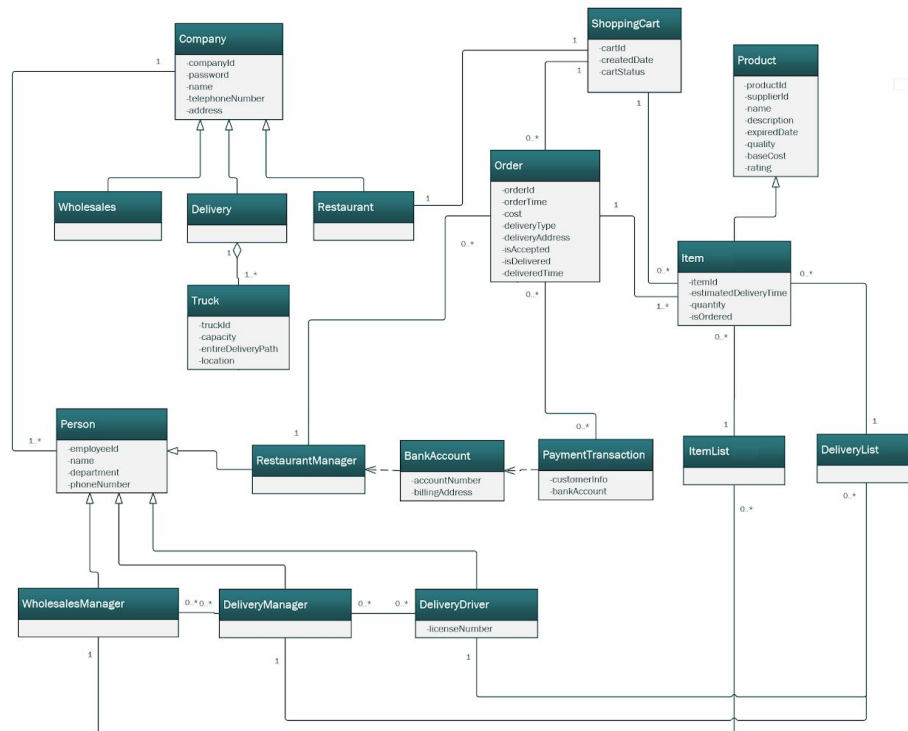
Deliver Order:



Class diagrams

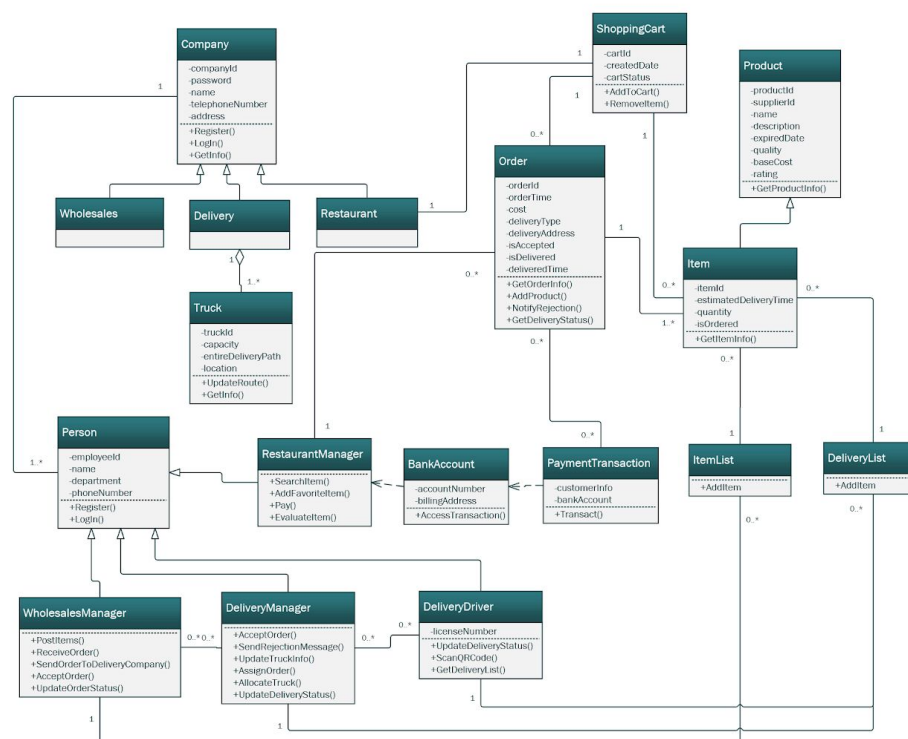
1. First Cut Class Diagram

Foodi – class diagram April 5, 2019

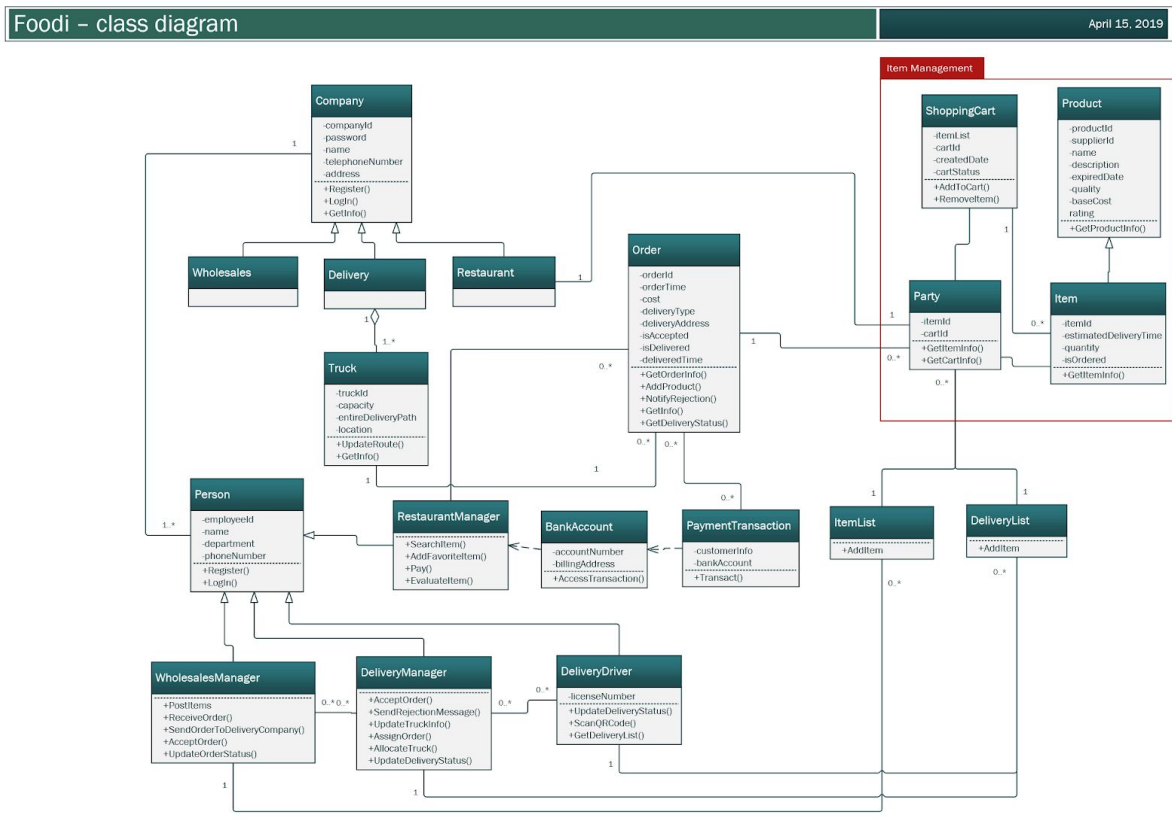


2. Domain Class Diagram with methods

Foodi – class diagram April 15, 2019



3. Patry Analysis Pattern



Party Analysis Pattern Paragraph

- As shown in the above class diagram, we have updated the class diagram according to the "Party Analysis pattern". The value of using this pattern is for the fact that it can be published and used by any other business models who share same concept in terms of having shopping cart, products and items. Plus, the pattern can be modified according to the business specifics. This will reduce the amount of time spent in design and this will make sure the business model to do not forget any aspect of the concept because when they try to build their own pattern this will make them prone to forget some key factors for the perfect design.

CRC Index Cards

Class: Order	
Description: This class is a kind of an order sheet which includes order#, customer's information, product list and delivery status. Also, It includes the location of product to be used for 'Tracking System'.	
Responsibility:	Collaborator:
Assign order#	
Add product list	Product, ShoppingCart
Record order time	
Calculate total cost of ordered items	
Get delivery type	
Get delivery address	RestaurantManager
Get acceptance from wholesales	Wholesales
Get the result of delivery	Wholesales, DeliveryManager, DeliveryDriver
Get delivery time	DeliveryDriver
Notify rejection of order	Wholesales, DeliveryManager, RestaurantManager
Get the location of product	Truck

Class: Truck	
Description: This class is responsible for overall truck's required information for it to operate.	
Responsibility:	Collaborator:

Updates destination location	Delivery
Assigns the capacity of the order	Order
Shows the entire delivery path	Order
Assigns truck id number	Delivery
Assigns truck's location	Delivery
Gives back truck's information	

Class: Shopping Cart	
Description: This is a class that provides customer accumulate a list of items for purchase,save and remove.	
Responsibility:	Collaborator:
Add item to the cart	RestaurantManager, Product
Remove item from the cart	
Save item from cart	
Purchase Item from cart	RestaurantManager, Order

Class: BankAccount	
Description: Account class is a class that controls the accessing privilege	
Responsibility:	Collaborator:
Login/Register	RestaurantManager

Link billing address	RestaurantManager
Set up payment option	RestaurantManager

Class: RestaurantManager	
Description: This is a class that shows the right and role of restaurant manager	
Responsibility:	Collaborator:
Manage Order list	
Search Items	
Add favorite item	ShoppingCart
Pay	Order, BankAccount
Evaluate Item	Order

Class: DeliveryManager	
Description: This class shows the attributes and responsibilities of the delivery manager	
Responsibility:	Collaborator:
Defines the customer ID, name, address and telephone number of the delivery manager.	
Defines a list of accepted orders	
Accept an order and add it to the order list	Wholesales
Rejects an order and send a message with the reason for rejection	Wholesales
Update information about a truck in the fleet	Truck
Assign an order to a delivery driver	DeliveryDriver
Assign an order to a truck	Truck
Update the status of an order	Item

Class: DeliveryDriver	
Description: This class shows the attributes and responsibilities of the delivery driver	
Responsibility:	Collaborator:
Defines the customer ID, name, license number, address and telephone number of the delivery driver.	
Defines a list of orders to be delivered	
Update the status of the order	Item
Scan the QR code of the order package	Item
Receive and accept a list of orders for delivery	DeliveryManager

Class: WholesaleManager	
Description: This class represents functions and responsibilities of Wholesale manager.	
Responsibility:	Collaborator:
Posts items on the application	Item
Accepts order lists which are from customers	Item
Receives order lists from customers	Item
Gives to order items to delivery Company	DeliveryManager
Updates order status after processing	Customer, DeliveryManager

Class:Company	
Description: This class represents role and information of customer.	

Responsibility:	Collaborator:
Registers the application	
Log-in to application to access application	
gets a information of customer	Wholesale, DeliveryCompany, Restaurant Manager

Class: Item	
Description: This class represents role and information of customer.	
Responsibility:	Collaborator:
Gets information of a item	

Class: Product	
Description: This class represents a product which exists on the application of product.	
Responsibility:	Collaborator:
Gets information of a item	Item
Requests to order a current item	Order, Item
Get acceptance from wholesale	Wholesale
Get information of item status	Item

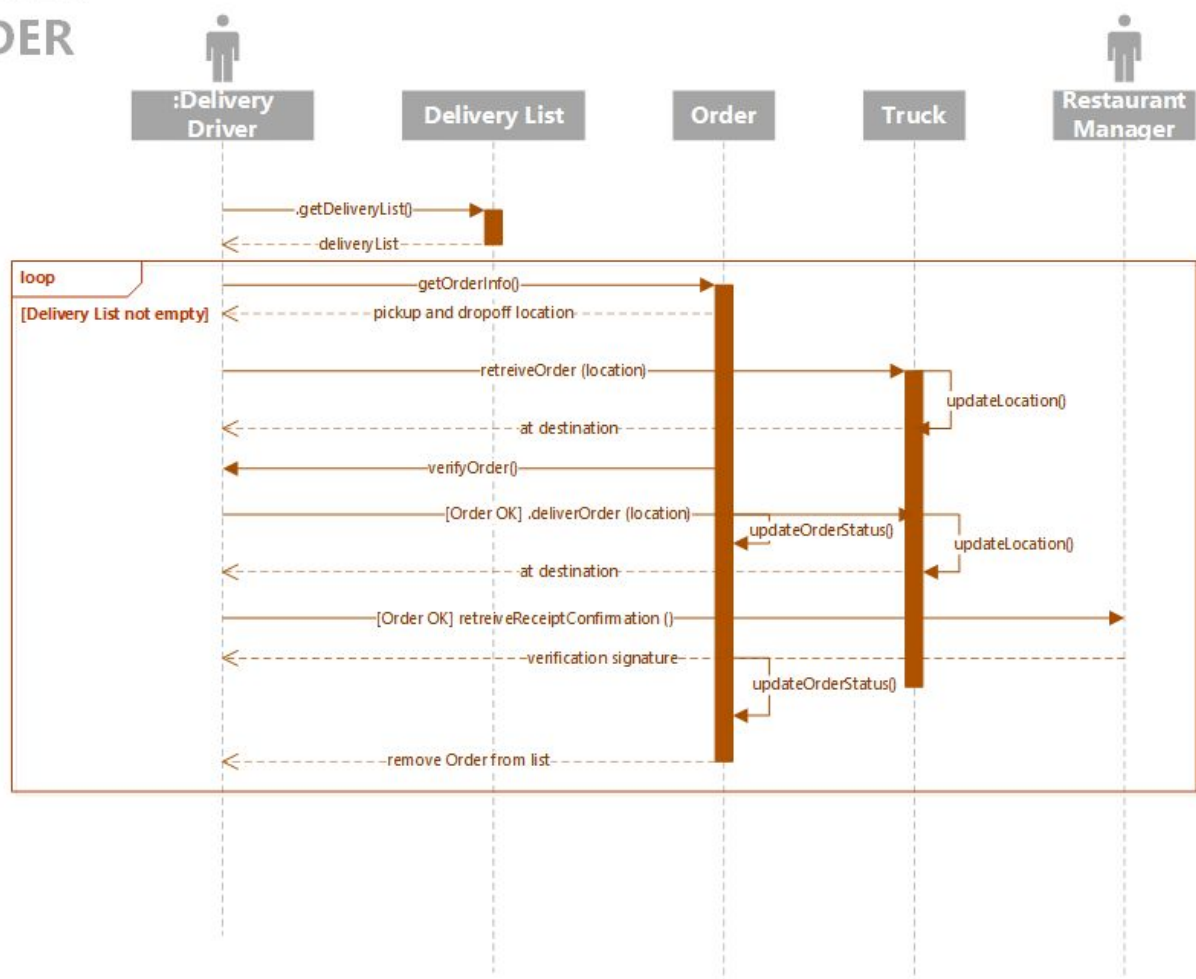
Class: Person	
Description: This class represents employees who use this application for specific tasks in each company.	
Responsibility:	Collaborator:
Register the application	
Log-in to application to access application	

Class: PaymentTransaction	
Description: This class represents	
Responsibility:	Collaborator:
Get information on customer and bank account	BankAccount, Order, ShoppingCart
Execute transaction process	

Sequence diagrams

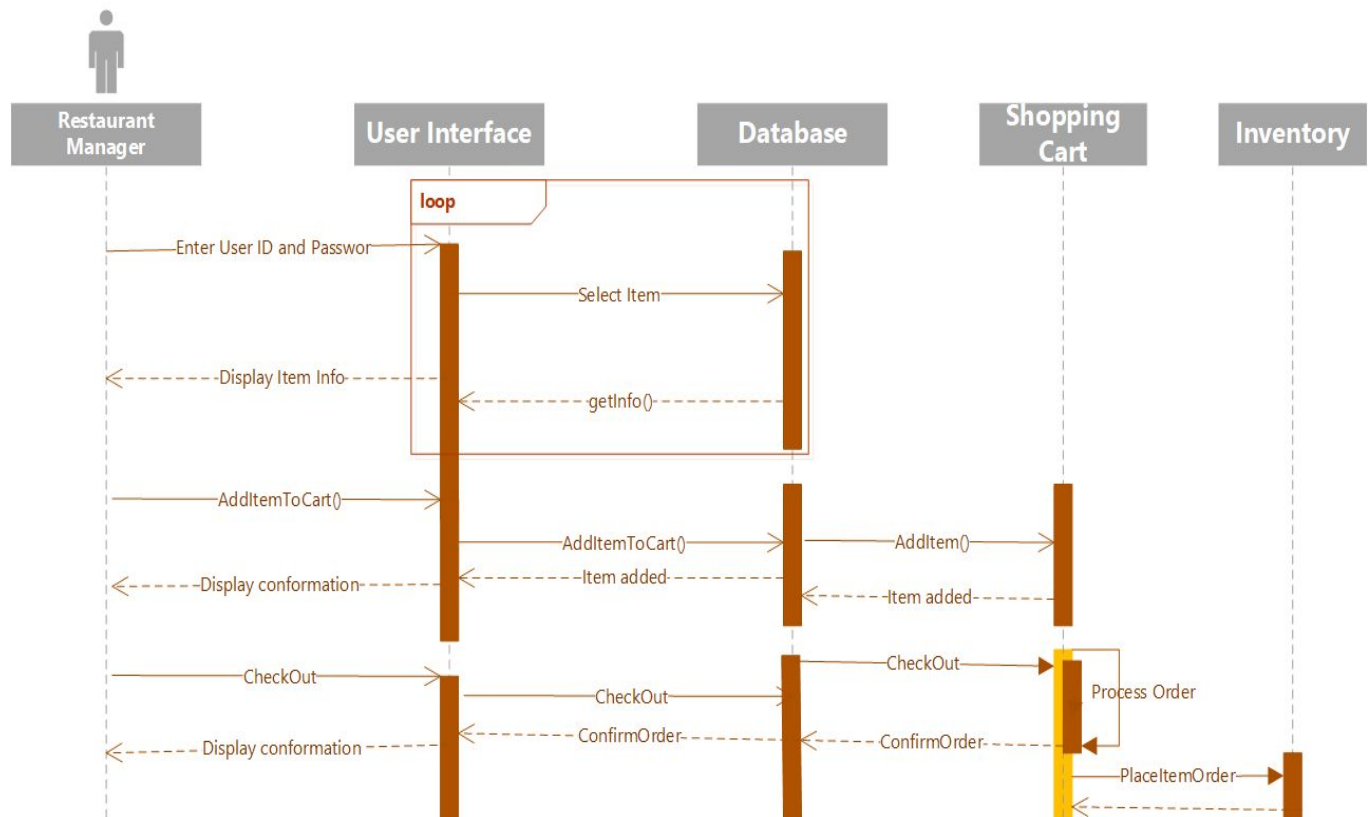
Use Case: Deliver Order

DELIVER ORDER



Place Order (SD)

Place Order Scenario



State diagrams

