



TERM PROJECT

CSE307

FACULTY: Sabrina Alam

NASTAR BAKSHO

(Customized Snack Box)

TEAM:

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Section 1:

1. Introduction

In human culture and society food is fundamental and vital. For many of us food is what encourages us to go forward and to be happy. Breakfast, lunch and dinner are all important, but we also snack. At breaktime, when we are bored, when we are not that hungry but still want to satisfy our taste buds- we snack. It's a common partaking between friend circles, family occasions and in the workplace.

Everyone has their preferred snack. What NastarBaksho does is essentially make it easier for our customers to get their personalized snack each time when they are ordering from us and make their ordering process easier by recording what they like, so they just have to press a button to get their favorite snack.

2. History leading to project request

The concept of customized NastarBaksho was inspired from the pandemic, when getting out of the house to buy small essentials was discouraged and unsafe. Many businesses failed and many bloomed. Among the booming ones were ecommerce businesses. The idea blossomed from watching a Japanese brand snack box that allowed users to order Japanese snacks online from anywhere in the world. What the team wants with NastarBaksho is to make Bengali food recognizable all over the world. We want to normalize the Bengali snack, that allows both local and international to recognize and enjoy Bengali cuisine. And we intend to do that starting with winning the hearts of the Bengali populace.

3. Identify Problem, opportunity

Problems	Solutions
Nowadays, people often prefer to get imported snacks due to it being hassle free and their ease of access. Thus, sellers of Bangladeshi snacks are losing business	The system will make it easy for the customer to customize their snack box. They will be offered snack options to add to their box and each box will have a set

and the cultural partaking of Bengali food is dwindling.	number of items. The customer can add multiples of one product or many unique products as they wish. If the customer is indecisive or wants to try something new, there are also standard featured boxes which will have set snacks and may include seasonal specialties.
A store like Nastar Baksho with a unique concept would be hard to get customers to trust.	The system will include feedback forms and a review section so that the customers can feel confident in ordering from NastarBaksho.
Bangladeshi street food is often sold in unhygienic conditions.	When adding a new product, the system will require information such as nutritional values, which will be available to the customer.
Keeping track of stock is prone to errors due to human error	Automated documentation in the system would make the overall business processes much more efficient and cost effective

Opportunities:

- There are no current online systems for a store that focuses on selling Bangladeshi snacks and the unique presentation of customizing boxes will garner interest from customers
- Customers can select from customized boxes or featured standard boxes. For custom boxes, the account the customer creates will remember their previous order and the ratings from their feedback form. The next time they order, the system will offer the personalized box with the products they liked as well as suggest a few similar products.
- Customers can order and pay directly in the system
- Customers can review orders and view reviews, which will help the business promote products, understand the preferences of their buyers and create a feeling of community
- Removes the middle man when processing orders, making it more efficient and require less manpower, allowing business to focus time on other opportunities
- This system allows for future business expansion such as snack boxes of different countries around the world
- The business can partner with Bengali snack brands like Golden Harvest and local sellers

4. Project goal and objectives

Project Objectives:

- Introduce the concept of NastarBaksho in an exciting manner through engaging UI

- Provide customers opportunity to order Bengali snacks directly online
- Make ordering snacks easy for customers with only a few clicks
- Keep order history data bank so that customer preferences can be used for future business opportunities
- Enhance shopping experience by allowing customers to select products to add to boxes or a standard box. For each case, they'll receive a feedback form of the order where they can rate the products. The system will remember the information to create suggestions for their next order.

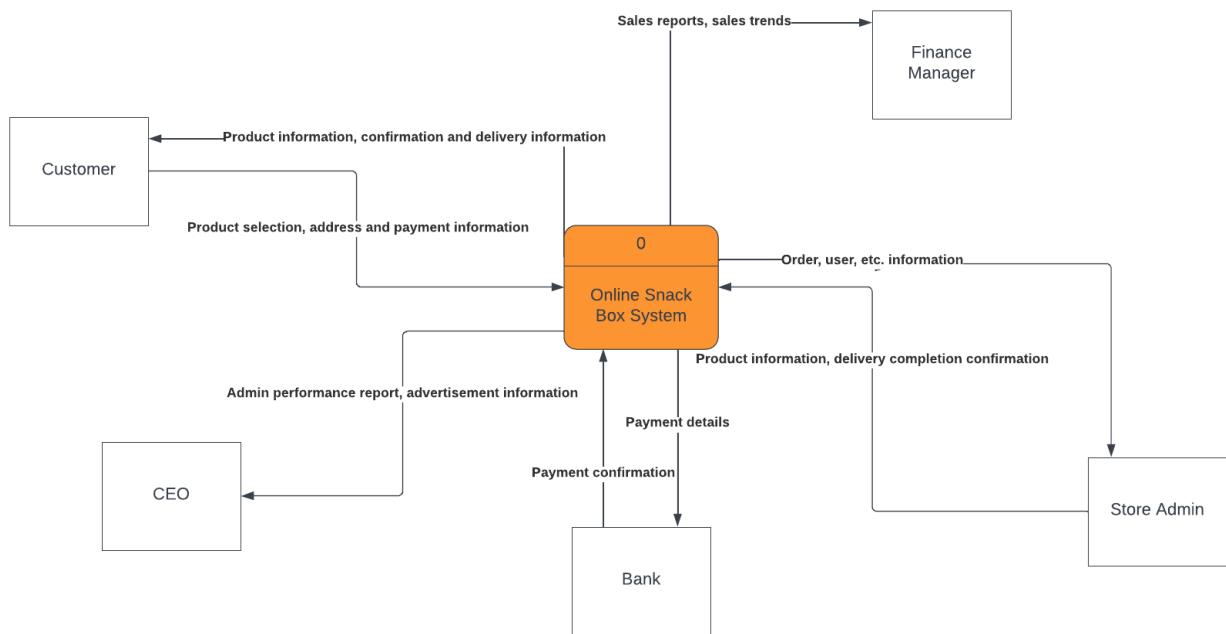
Section 2:

5. Product Description

In Nastar Baksho, we want our customers to order snacks as easily as possible. After ordering a particular snack box, we want your feedback so that we can custom tailor your snack box with specific items based on your feedback profile.

1. SELECT PREFERRED BOX & FREQUENCY
2. RECEIVE YOUR BOX & LEAVE FEEDBACK
3. YOUR NEXT BOX GETS PERSONALIZED

6. System Context diagram



7. Hardware detail (Include Rich Picture)

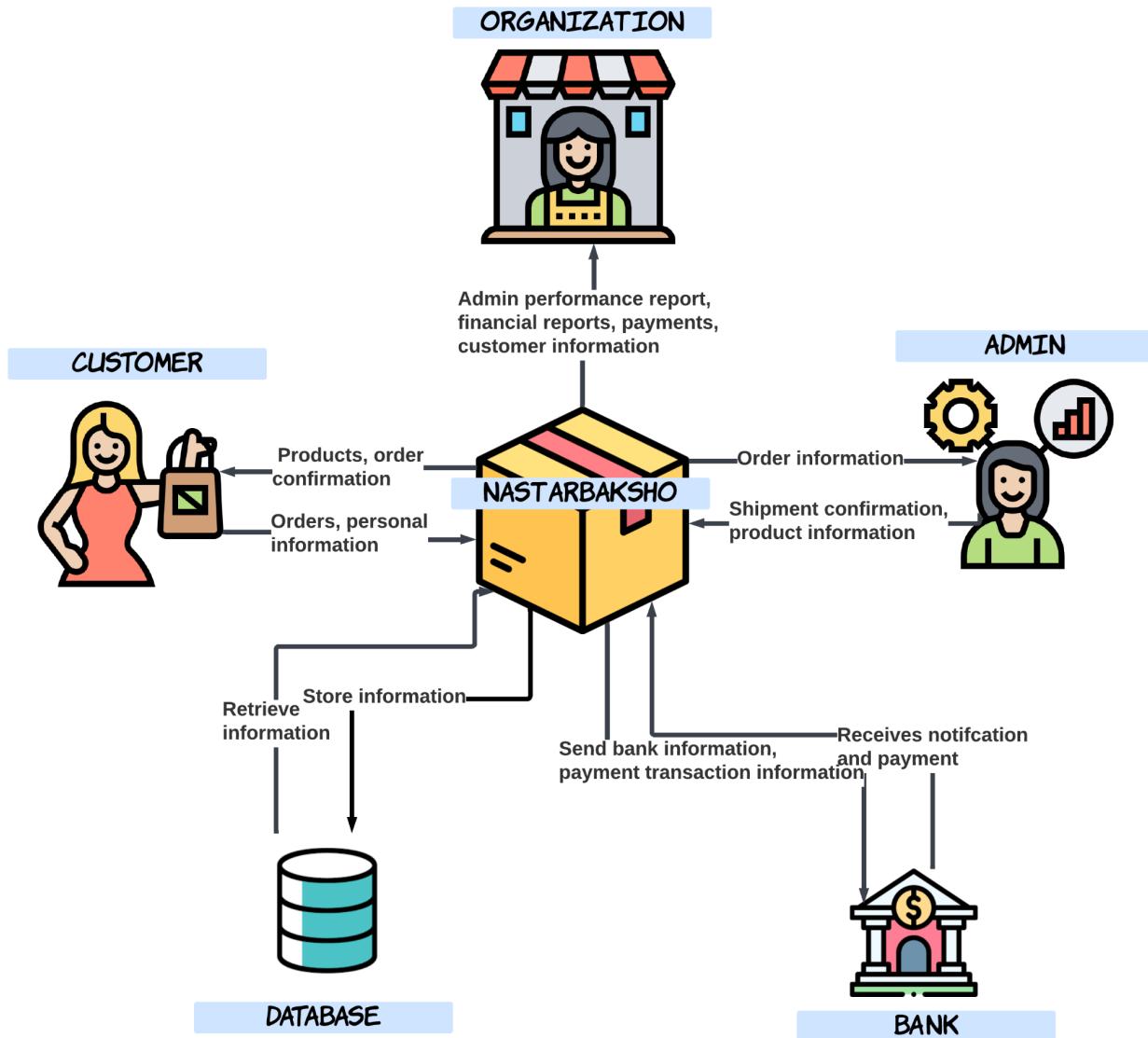
Frontend:

- Smartphone, laptop, PC
- An internet connection
- A web browser or an app

Backend:

- Servers capable of handling at least 1000 users concurrently
- A suitable language capable of handling requests fast and efficiently (Java, python, etc)
- A relational database e.g MySQL, sqlite, etc.

Rich picture:



8. Key Technical Features of Software

- HTML, CSS and JavaScript is the frontend languages for the website and Java is used for the app
- Backend uses php as it's used for dynamic web pages
- There is an authentication code system to ensure sensitive data is not revealed.

- In login, the system will be able to differentiate between admin and customer and direct them to the appropriate page

Section 3:

9. Information Gathering methods (At least three methods)

As the concept of NastarBaksho store is unique and the focus is on the relationship with customers and employees, the data gathering methods selected are based on interaction and the sample size is relatively small.

The following are the methods carried out in detail:

1. Interviews with Organization:

Before **interviewing**, we have five steps in preparation:

1. READ BACKGROUND MATERIAL

- Research existing markets like Bengal meat, Pran and other competitive food markets to understand their marketing appeal to grasp an understanding of current food trends.
- Look into top ten existing ecommerce website that sells food and observe their webpage structure to understand why customers prefer them over others
- Current prices of existing food ecommerce websites

2. ESTABLISH INTERVIEWING OBJECTIVES

- Food menu of current trending Nasta in Bangladesh
- How to appeal to customers with marketing and advertising.
- On the website what sort of options do customers prefer, so that the UI end is interactive and user friendly.

3. DECIDE WHOM TO INTERVIEW

The selection for the interviews could be said to be purposive sampling as it consists of only the organization. To figure out what the organization hopes to achieve with this software, a series of interviews were conducted amongst the three managerial levels that were likely to be users: strategic, middle management and operational. For strategic management, the CEO was requested for an interview, the finance manager was the middle management, and the admin was interviewed as the operational employee.

4. PREPARE THE INTERVIEWEE

Send emails to the employees

5. DECIDE ON QUESTION TYPES AND STRUCTURE

The basic interview outline was followed in a funnel structure, to warm up the interviews and get some general information before getting specific. Therefore, the questions asked at the end are specific to the interviewee's managerial level.

Questions:

Could you describe how the organization wishes to operate?

What do you think an online system should look like for your organization?

How would you like to communicate with customers, through AI chatbots or dedicated customer service?

Do you have any concerns regarding how the organization will work with the implementation of an online store?

What features would you like to see incorporated into the system?

What are your thoughts if the landing page were to explain the concept of NastarBaksho?

For CEO:

What sort of data would you like to collect from the system for future business?

To what extent would you allow advertising on your website?

Would you like to get reports on admin activity to make sure they are performing well?

For Finance Manager:

In what form would you like to view payment reports? If graphical, which sort of graphs would be most helpful?

For Operational Employees:

When would you like to be notified about stock running out? For example should it be when there are around 10 items left?

2. Questionnaires

Questionnaires for Foodies:

Among current food critics like food bloggers and foodies, questionnaires are distributed with the help of social platforms in which they are active and also emailed. The questions will be about the current trending Natsar menu and what is liked among people to understand what appeals to them about Bengali snacks. From that, the food menu to offer is decided. This helped to understand the customer's side as well as improve the vision of the organization's work for the system.

Customer Questionnaire:

How regularly do you shop for snacks?

- Each week
- Thrice a month
- Twice a month
- Once a month

Do you prefer Bangladeshi or Western food menus in Nashata?

- Bangladeshi
- Western

How many Nastar menus do you shop for at once?

- One to Two
- Three to Four
- Four to Five
- Five to Six

If you find a convenient system that customizes your Nashtar order and it makes the ordering process easier, would you try it ?

- Quite willing
- Willing to try
- Neutral
- Not opposed
- Not interested

What are 3 things you like most about the concept described?

What are 3 most lacking aspects of the concept described?

Is there anything you would like to see us add to the system?

Employee Questionnaire:

Select your position:

- CEO
- Store Manager
- Floor Employee
- Cashier
- System Admin

How long have you been involved with this organization?

- More than a year
- 6 months
- Less than 6 months but more than 3 months
- About a month

What device do you most frequently use?

- Phone
- PC
- Laptop
- Tablet

How willing are you to adapt to the online system as described for checking off order list of customers?

- Quite willing
- Willing to try
- Neutral
- Not opposed
- Not interested

Would you be interested to attend workshops to train for working with the system?

- Yes
- No

What method of training would be most suitable for you?

- Live demonstrations
- Guide manual book
- Video tutorial
- Other

What 3 other processes should be automated other than seeing order lists for customers as system admin?

What are 3 things you like most about the system described?

What are 3 most lacking aspects of the system described?

Is there anything you would like to see us add to the system?

3. JAD with the development team:

Following the previous round of information collection, a JAD session was held over a period of one work week to discuss and flesh out the details of the functionalities and UI of the system according to the opinions we had gathered. The JAD began with an orientation session led by the analyst in charge of the project and a brief rundown was given to everyone in attendance. Then the most desired functionalities and UI aspects were highlighted to the team. A brainstorming session was conducted, and the development team narrowed our options down. They worked with the finance team to work out the costs and feasibility of each of the requirements. The needs of the development team for whether outsourcing some parts of the work would be necessary or not were also discussed. After much deliberation over the first half of the work week, the team settled on a scalable system that worked within our constraints and incorporated as much of the users' needs as possible. The latter half was used to work on what non-functional requirements we were looking into as well as conceptualizing the UI. At the end of the week, we had come up with a prototype that would be further developed and perfected over the next developmental phases.

10. Major functionalities offered by the system

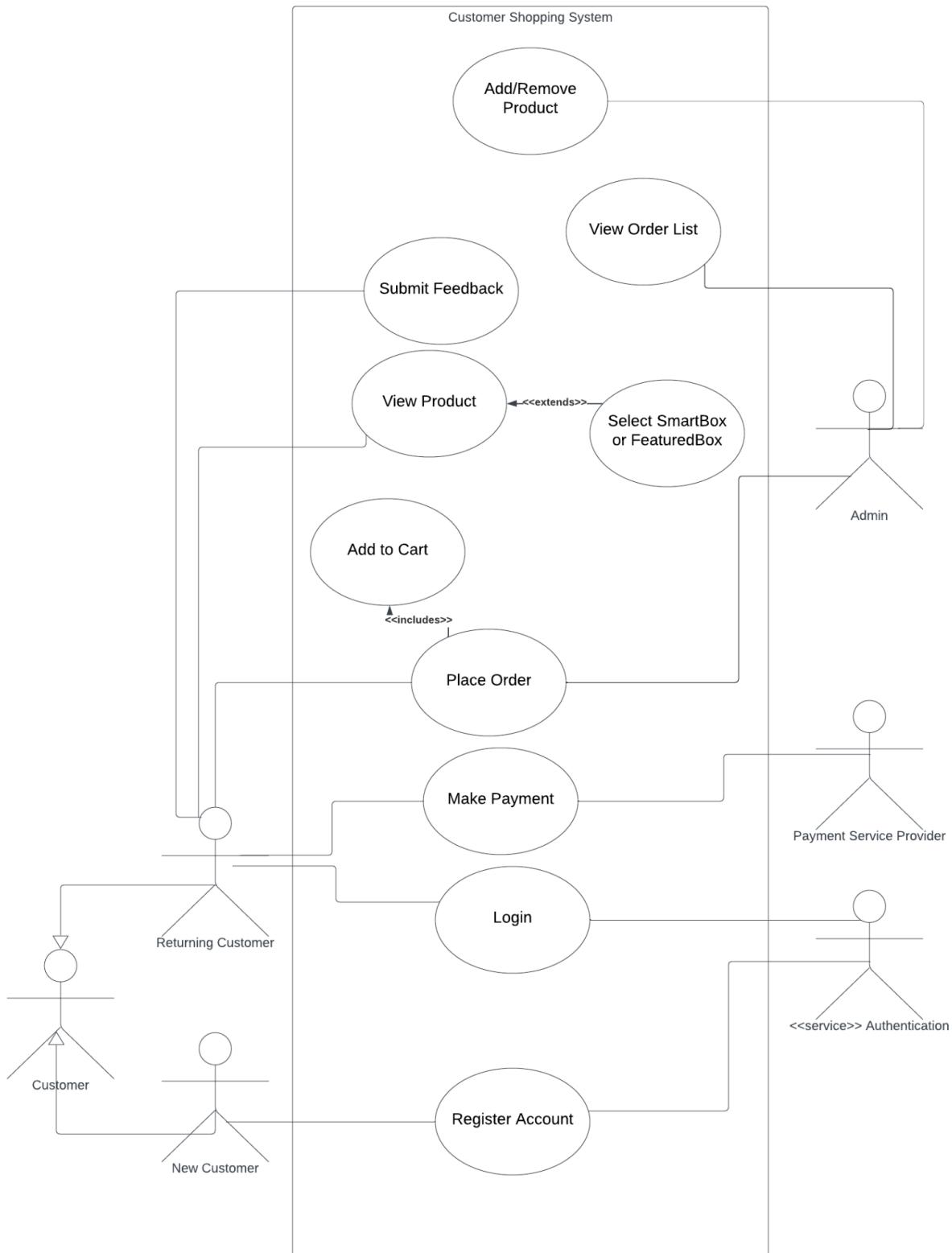
In Nastar Baksho, the customer has 2 options, a featured box and smart box.

- Featured boxes of sets of combinations of snacks ready for order
- Smart box customization by selecting quantities of each desired snack
- Customers will receive feedback forms with ratings for each product, within the window of a week after delivery, so the system knows which products to suggest and which to forego
- The customization will be stored in the database so in the future they don't have to choose again. This suggestion will also be affected by the feedback in their

customer profile. This allows the customer to check out immediately without much time required

- Admin can view the order list and check them as shipped
- Admin can see the updated stocks after every order so they know when to source more products

11. Use Case Diagram



12 & 13. Normal Scenarios & Alternate Scenarios (At least 2)

Use Case Name: Select from 3 Featured Boxes	Unique ID: 00
Area: Featured Box Page	
Actor(s): Customer	
Stakeholder: Admin, Organization	
Description: User browses through three featured boxes and can select them for order.	
Triggering Event: Click on the featured box button on the landing page or menu of the website	
Trigger Type: External	
Steps Performed (Main Path):	Information Required for Steps:
<ol style="list-style-type: none"> 1. Click on the Featured Box button. 2. Browse through 3 different featured boxes and the snacks they include. 3. Complete selection then click on the add to cart button. 4. Redirected to cart and payment page. 	3-4 Selection
Alternative Scenario:	
<ol style="list-style-type: none"> 1. User clicks on the Featured Box button. 2. Browses through all the featured boxes. 3. Selects one but some items of the featured box are out of stock. 4. User is asked whether they want to get a different box or if they want to add replacement products to the box. 5. According to their choice, the user is redirected to the specific page. 	
Preconditions:	
<ul style="list-style-type: none"> ● Required internet connection. ● Users must enter the website. ● Users must have a customer account or create an account before they are redirected to the order page. 	
Postconditions:	
<ul style="list-style-type: none"> ● User has successfully added products to cart. ● Users can proceed to order. 	
Assumptions:	

<ul style="list-style-type: none"> • User selections are properly registered into the system. • Users can access the website.
Success Guarantee: User can view selection in cart details.
Minimum Guarantee: User can proceed to the cart page.
Requirements Met: Users can browse and select desired products for order.
Outstanding Issues: <ul style="list-style-type: none"> • Can users make customizations out of featured boxes?

Actor(s): Customer				
Stakeholder: Organization, Finance Department, Investors				
Description: Customer completes an online payment transaction.				
Triggering Event: Click on the online payment button on the order confirmation page.				
Trigger Type: External				
<table border="1"> <thead> <tr> <th>Steps Performed (Main Path):</th> <th>Information Required for Steps:</th> </tr> </thead> <tbody> <tr> <td> <ol style="list-style-type: none"> 1. Log in to the system as a customer. 2. Click on either custom box or standard featured box. 3. Add desired products to cart. 4. Confirm the products in the cart by clicking place order. 5. On the order confirmation page, click on the online payment button. 6. Fill out required information. 7. Press payment and wait for confirmation. 8. Confirmation received. </td> <td> <ol style="list-style-type: none"> 1. User ID and password. 2-6 Selected product information. 7. Payment method information. </td></tr> </tbody> </table>	Steps Performed (Main Path):	Information Required for Steps:	<ol style="list-style-type: none"> 1. Log in to the system as a customer. 2. Click on either custom box or standard featured box. 3. Add desired products to cart. 4. Confirm the products in the cart by clicking place order. 5. On the order confirmation page, click on the online payment button. 6. Fill out required information. 7. Press payment and wait for confirmation. 8. Confirmation received. 	<ol style="list-style-type: none"> 1. User ID and password. 2-6 Selected product information. 7. Payment method information.
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Alternative Scenario:				
<ol style="list-style-type: none"> 1. Payment confirmation failed due to authentication error. 2. User receives a message to reenter information or try different payment methods. 				
Preconditions: <ul style="list-style-type: none"> • User is logged in. • User has a valid payment method such as a bank account or mobile banking account. 				
Postconditions:				

Actor(s): Customer
<ul style="list-style-type: none"> User has paid successfully and receives the order delivery timeline.
Assumptions:
<ul style="list-style-type: none"> User details are valid and authenticated.
Success Guarantee: User receives order delivery timeline.
Minimum Guarantee: User receives confirmation of payment
Requirements Met: Customer makes online payment.
Outstanding Issues:
<ul style="list-style-type: none"> Should the user be able to cancel orders after payment?

14. Functional Requirements

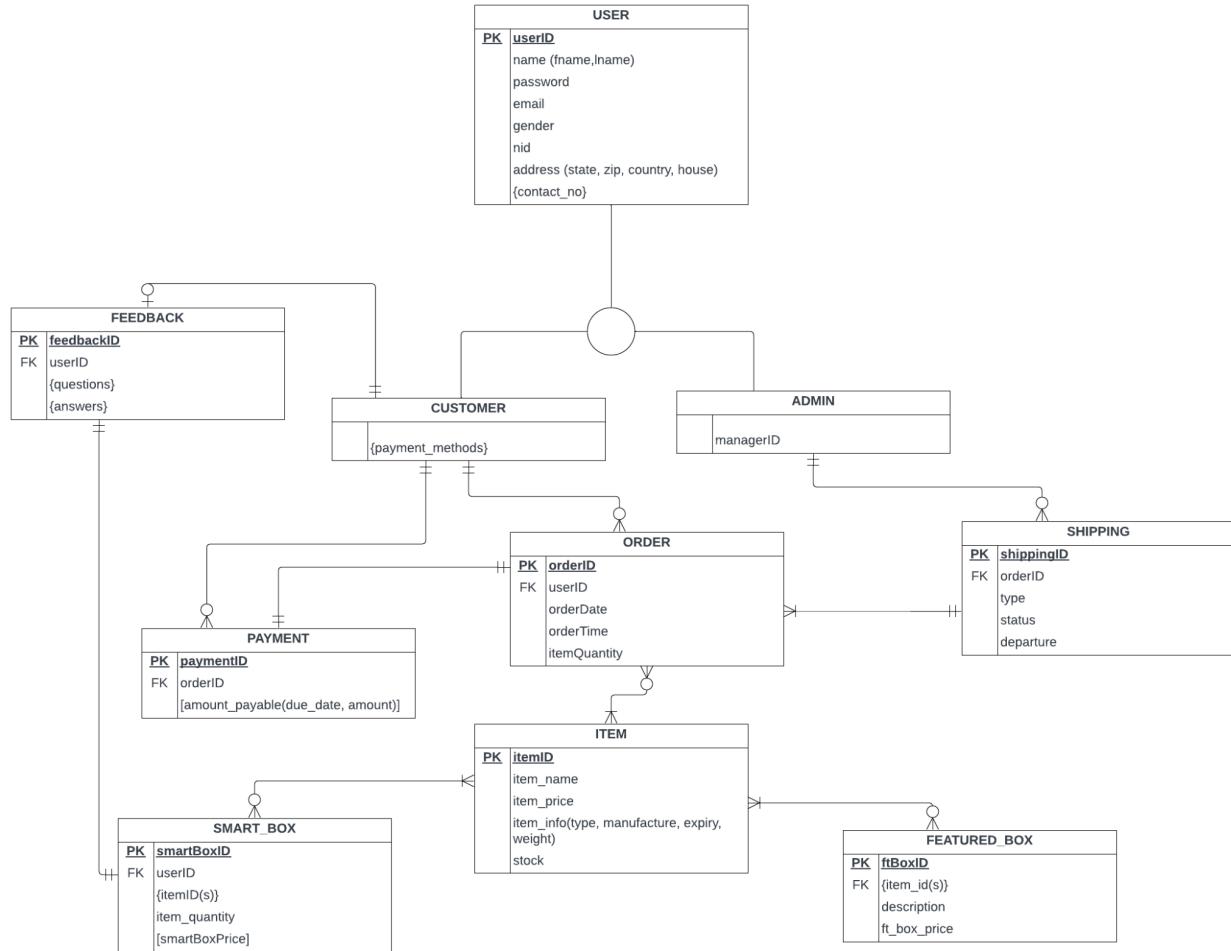
Administrators	Customers
Manage order and deliveries by clicking on order list	Order featured NastarBaksho box with offered set of menu
Manage product information and their storage <ol style="list-style-type: none"> Add product in database and website Edit product and view product in database and website Delete product and view product in database and website 	Order customized NastarBaksho by selecting quantity of desired products
Manage customer's information like <ol style="list-style-type: none"> Insert them in database Edit them Delete them 	Feedback on received order
Handle cancellation of order	Edit/ Delete product in cart
Login/ logout	Cancel order
Add new user in database like new employee	Login and register

15. Non-Functional Requirements (At least 5)

- The system can track product sales trends.
- To protect client information, the data is encrypted for all user information.
- Both English and Bangla language are supported for a variety of users.
- A tutorial on how to use the software is in-built into it and defaultly starts the tutorial on first use after downloading. It remains accessible in the app afterwards.
- The data a user can access should be restricted and appropriate based on their role in the organization through user roles.

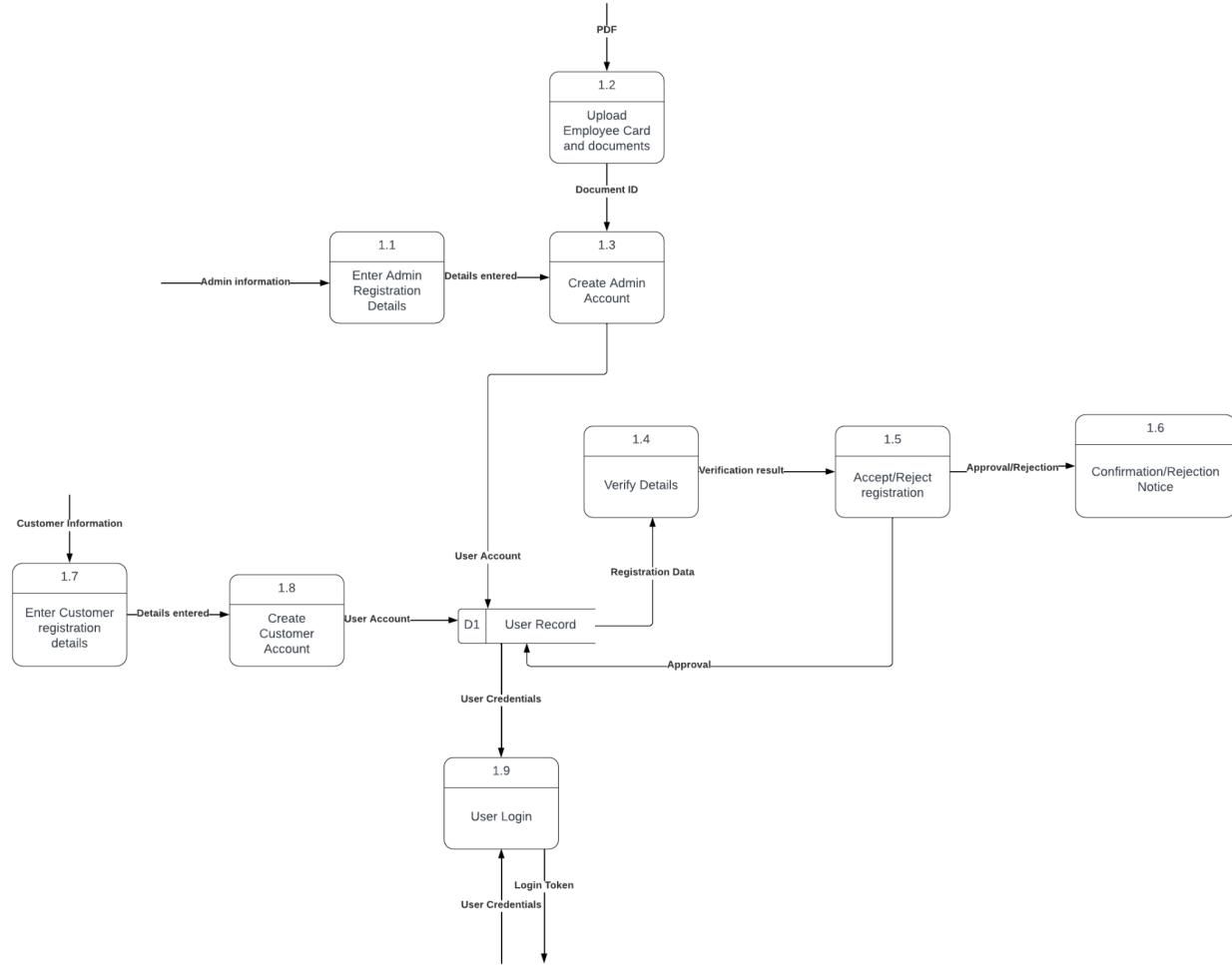
Section 4:

16. Entity Relationship Diagram

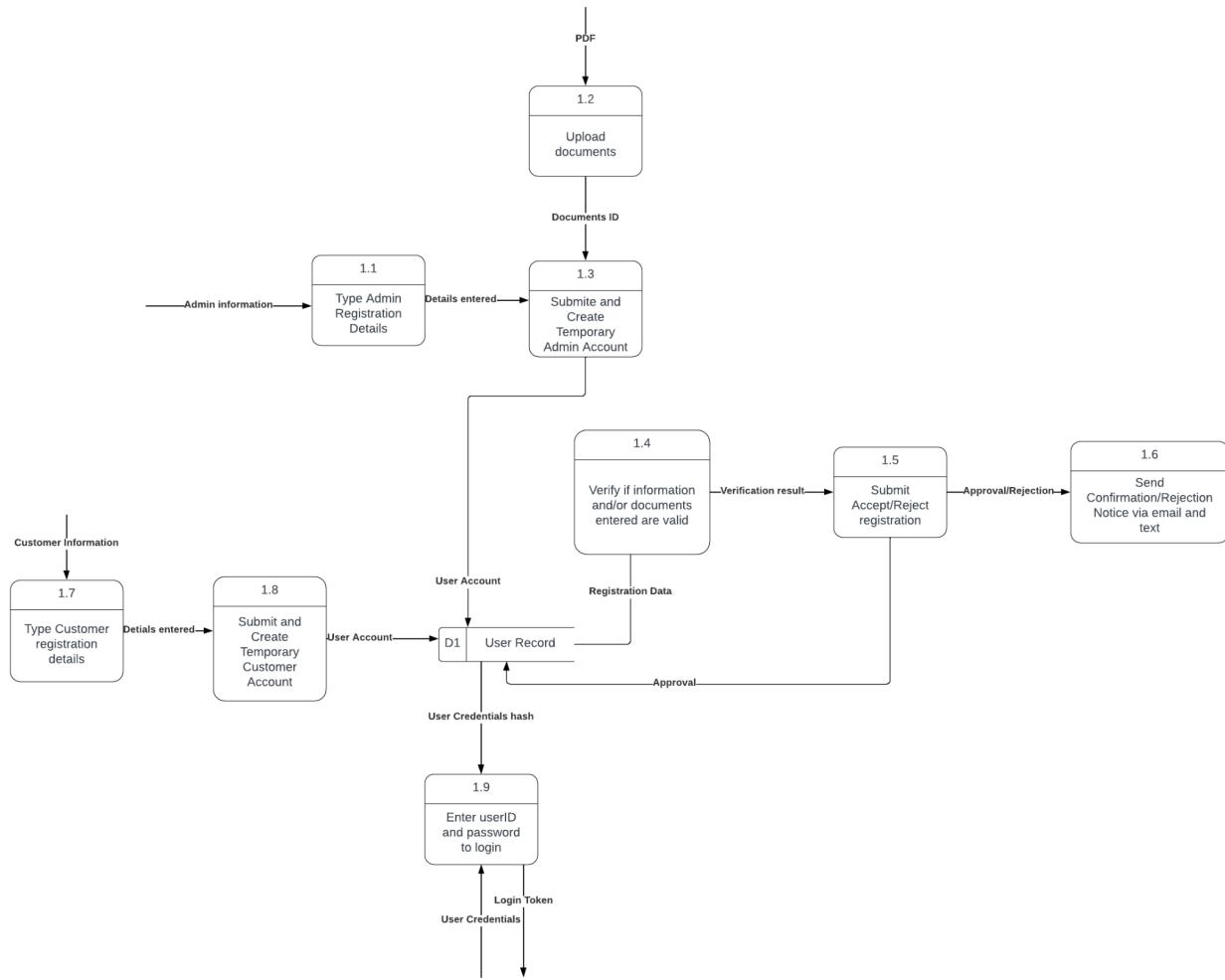


17 & 18. Logical Data Flow diagram & Physical Data Flow diagram

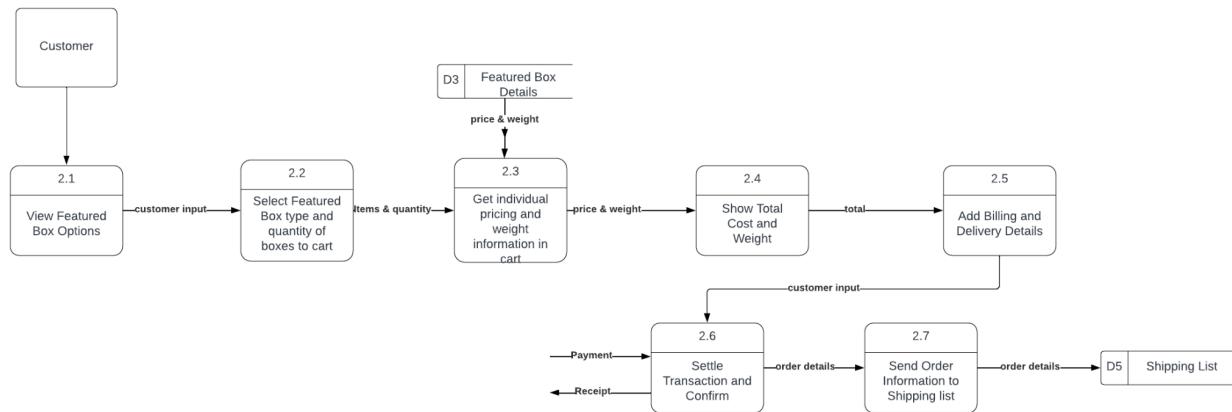
Logical DFD of User Registration:



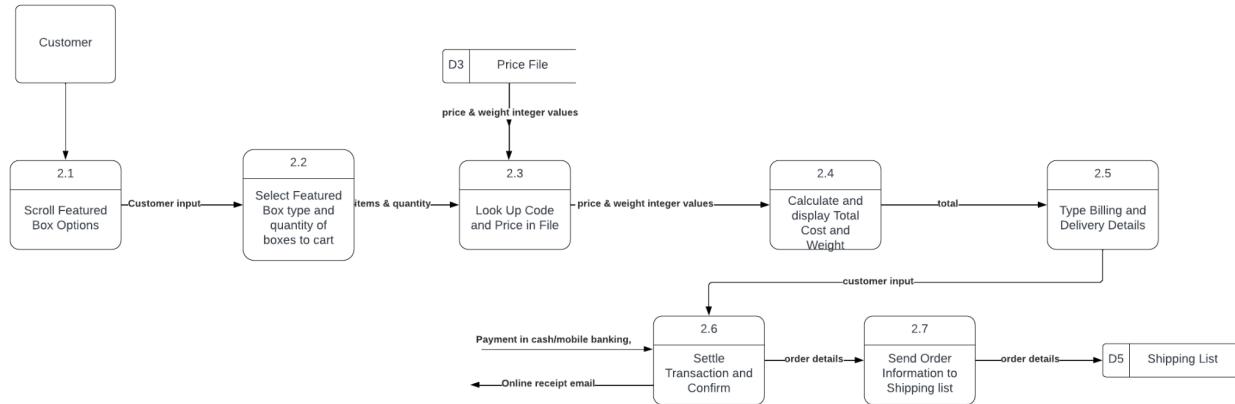
Physical DFD of User Registration:



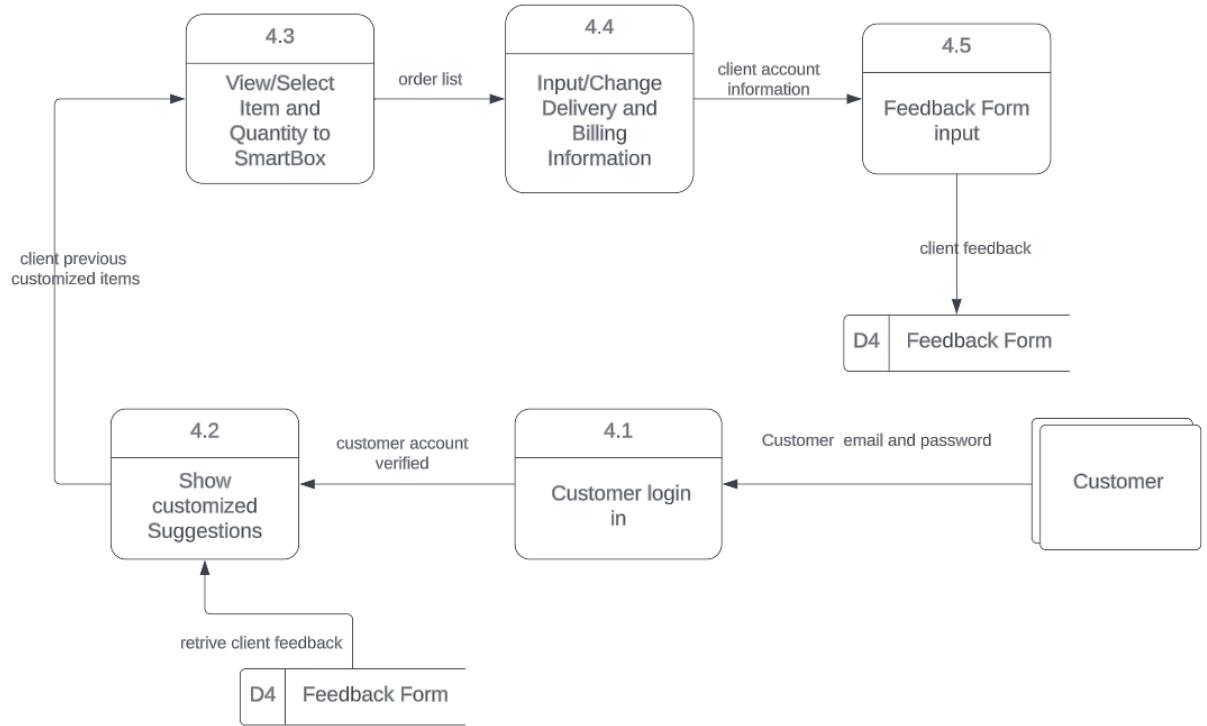
Logical DFD of Featured Box Order



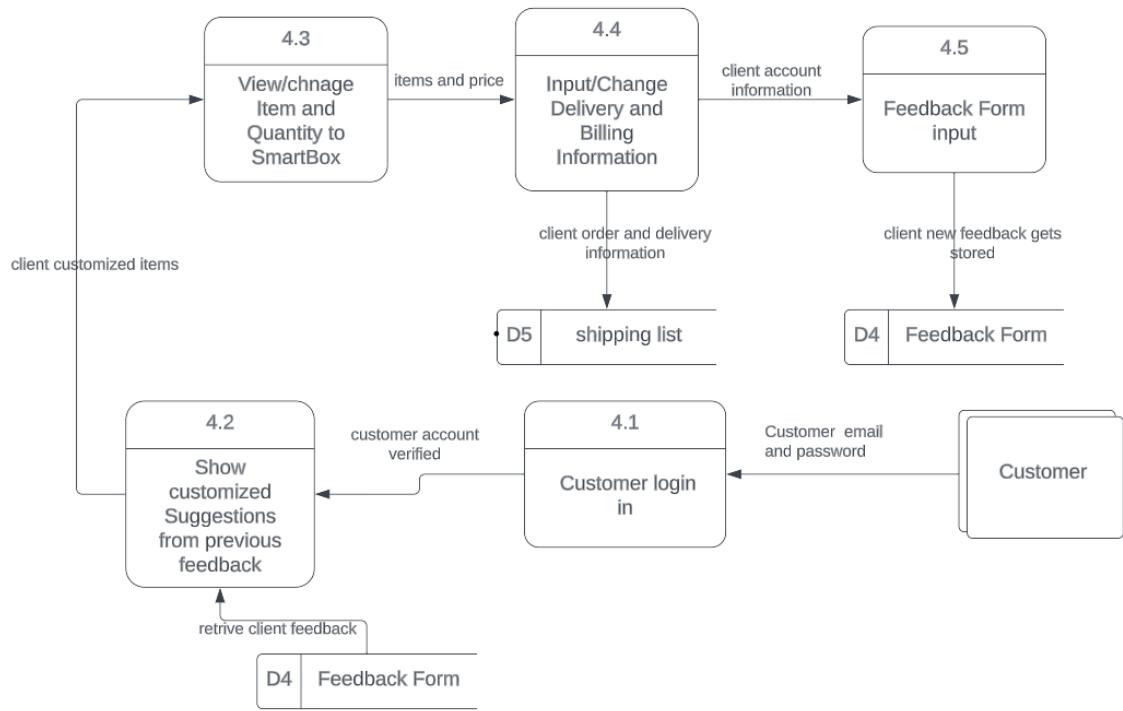
Physical DFD of Featured Box Order



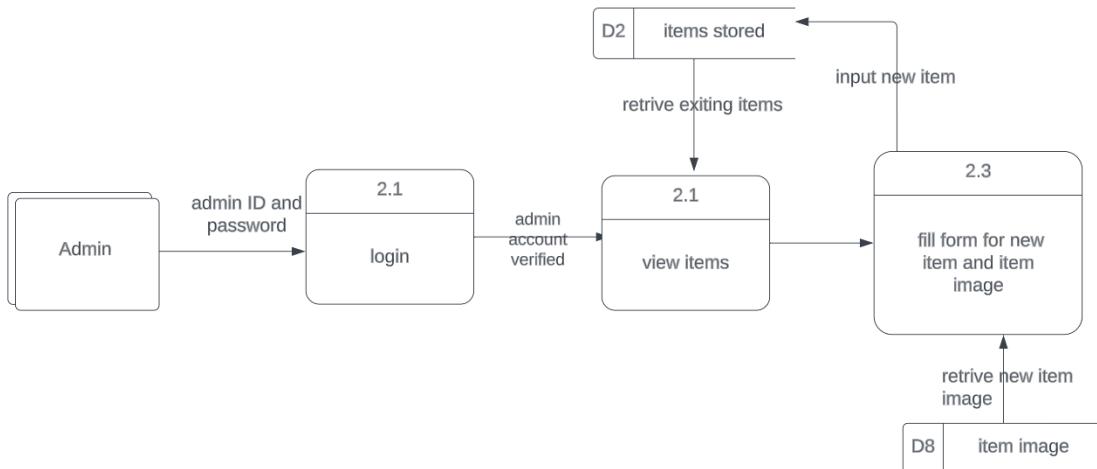
Logical DFD of Smart Box Order



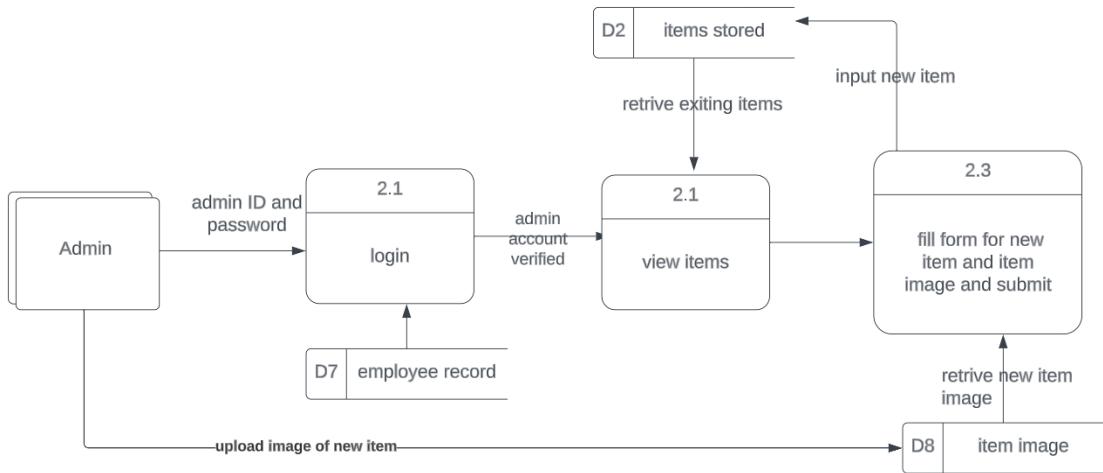
Physical DFD of Smart Box Order



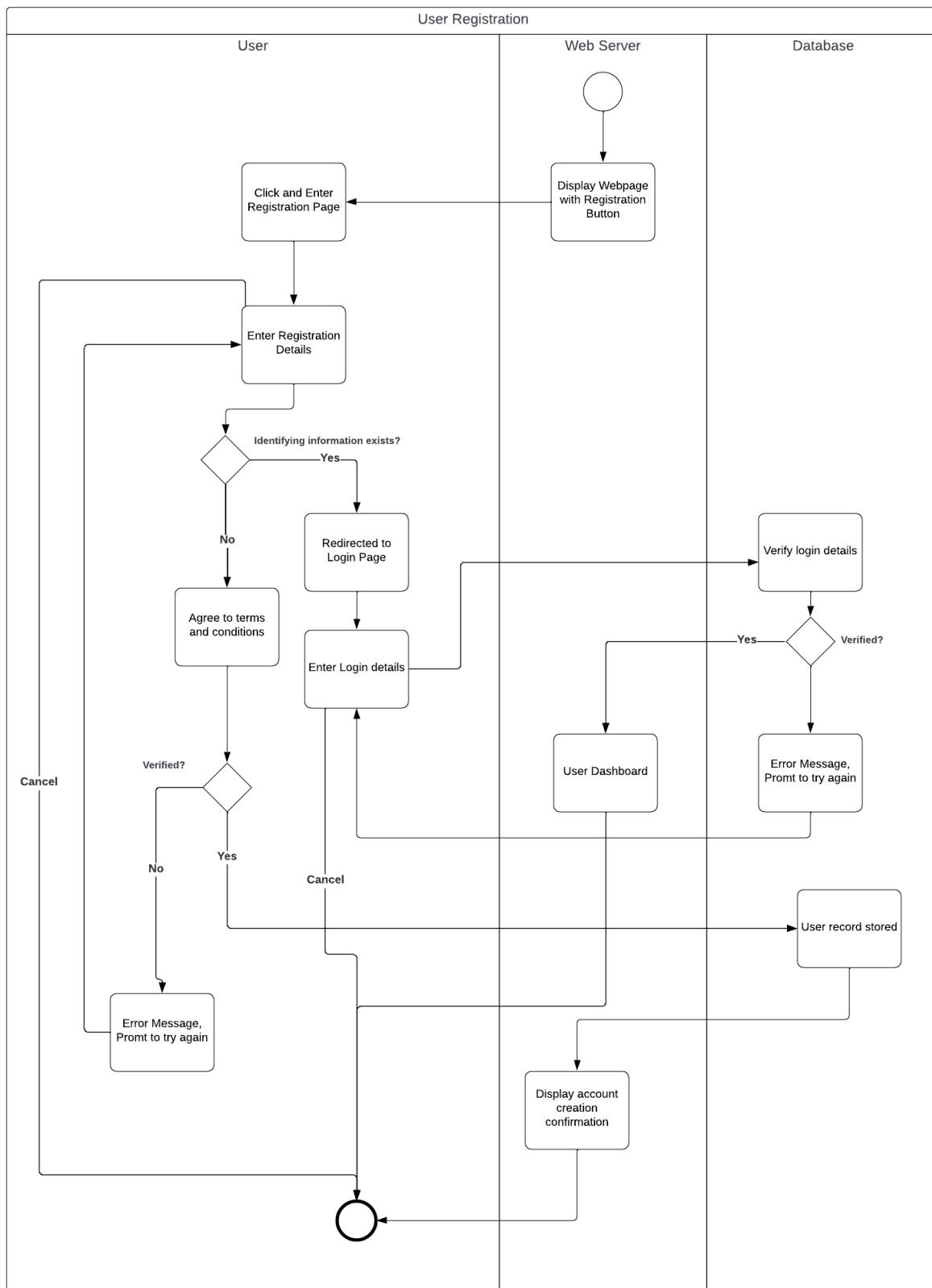
Logical DFD of Add Product

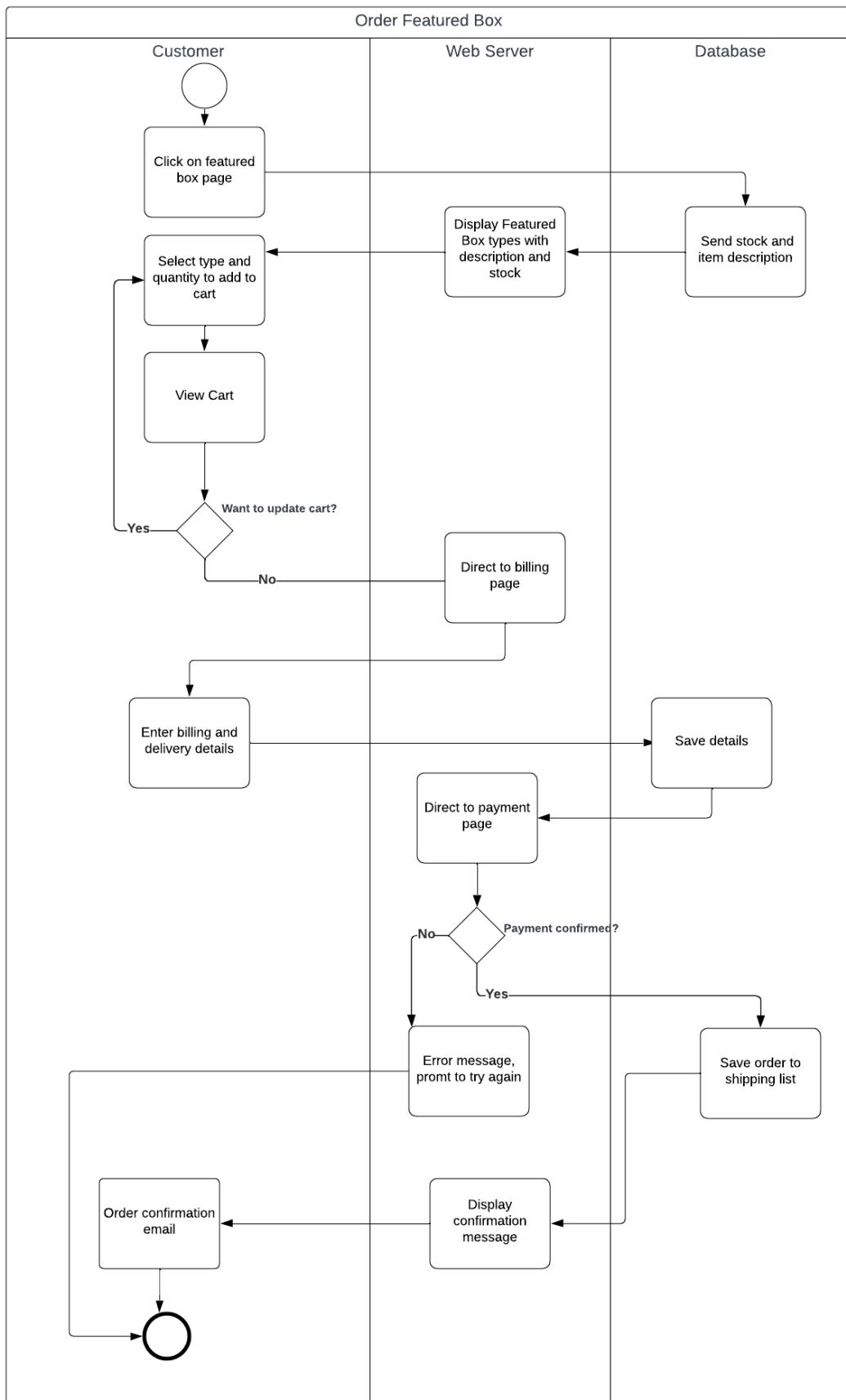


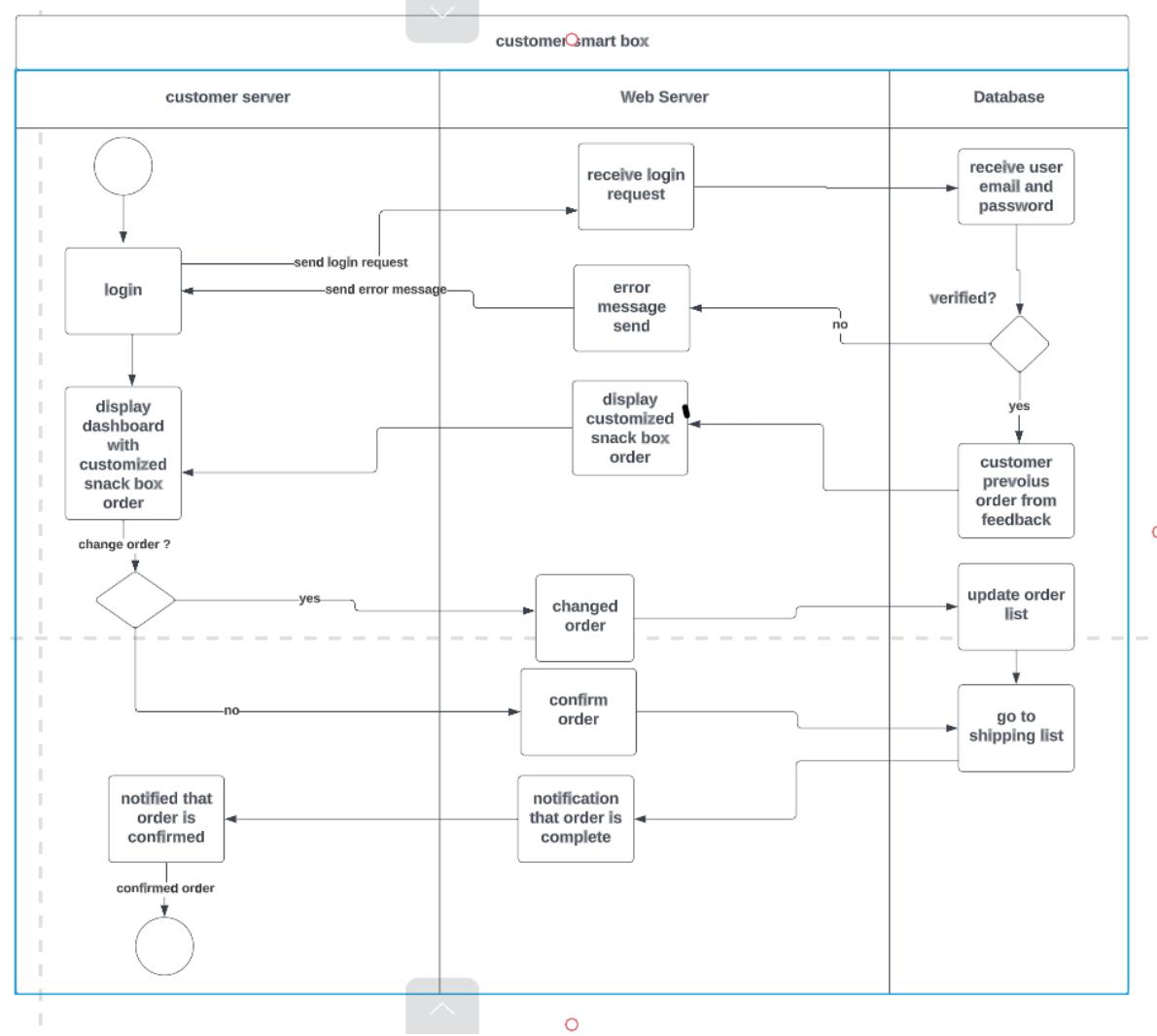
Physical DFD of Add Product

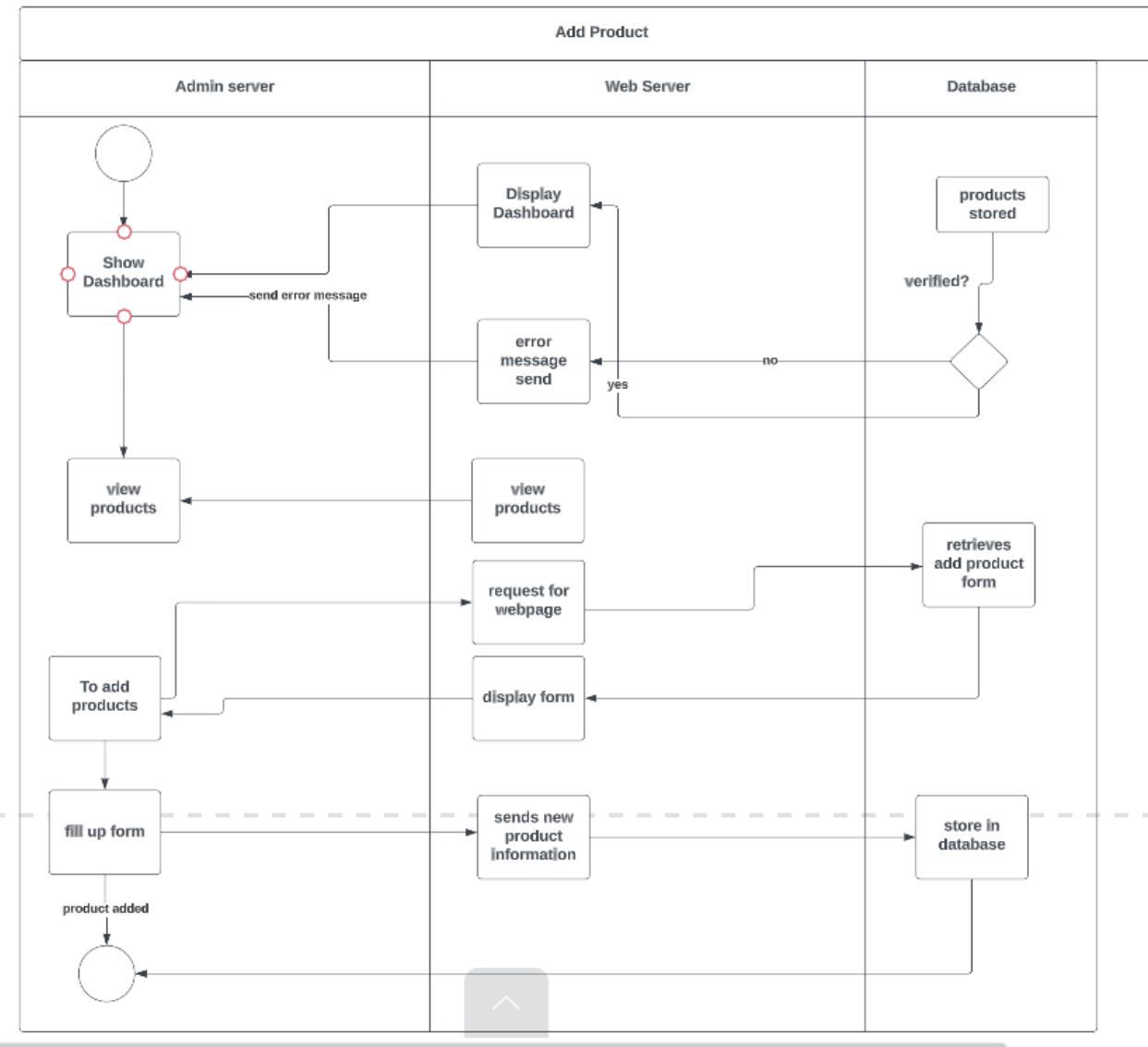


19. Activity diagrams





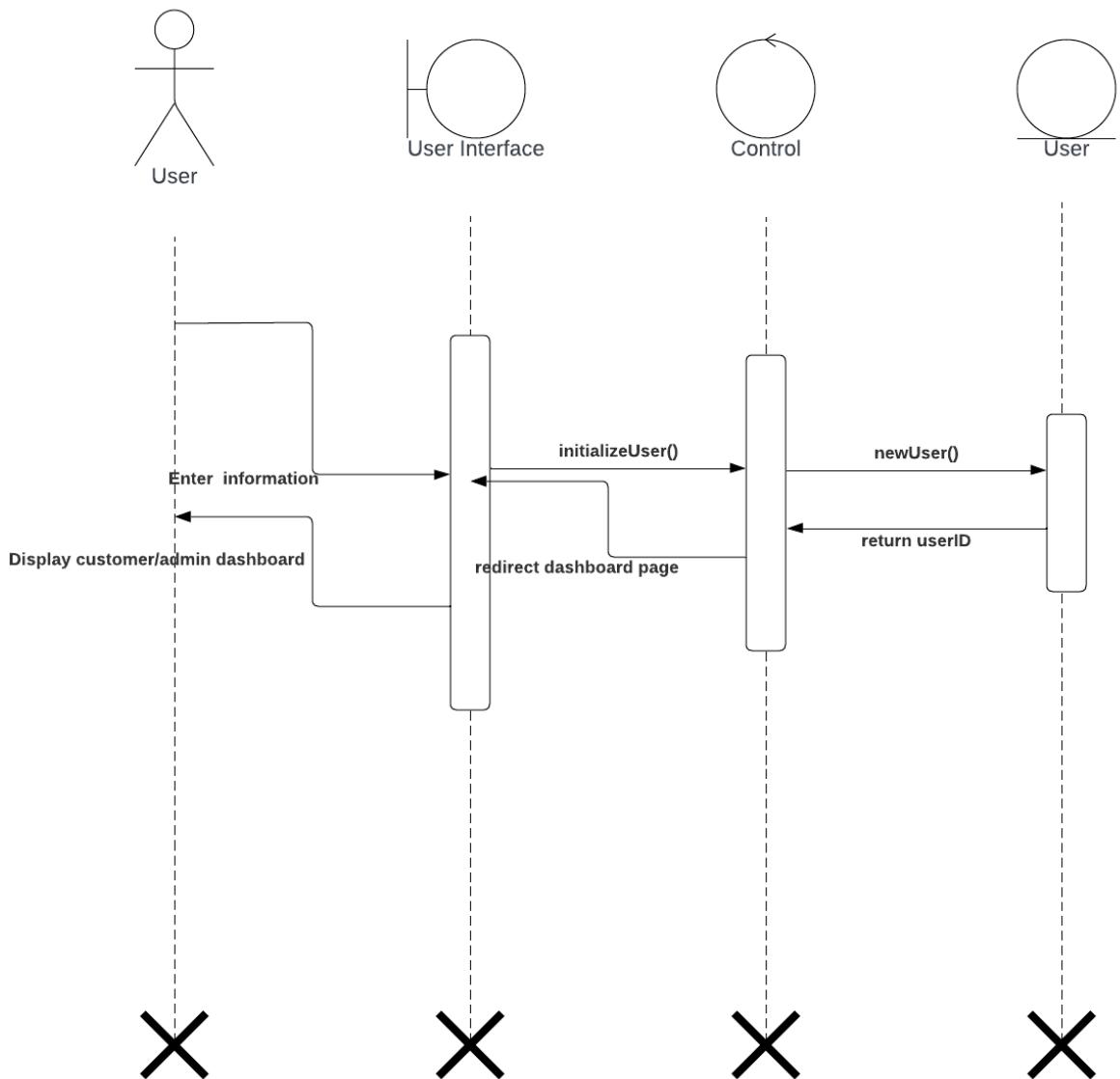




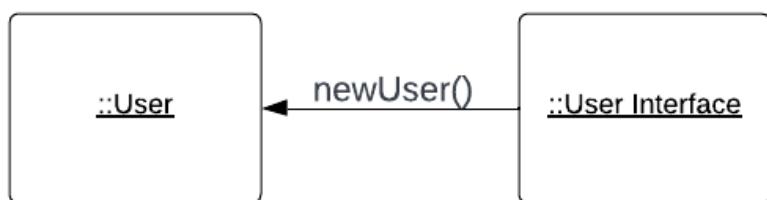
20 & 21. Sequence diagrams & Communication diagrams

User registration:

Sequence diagram:

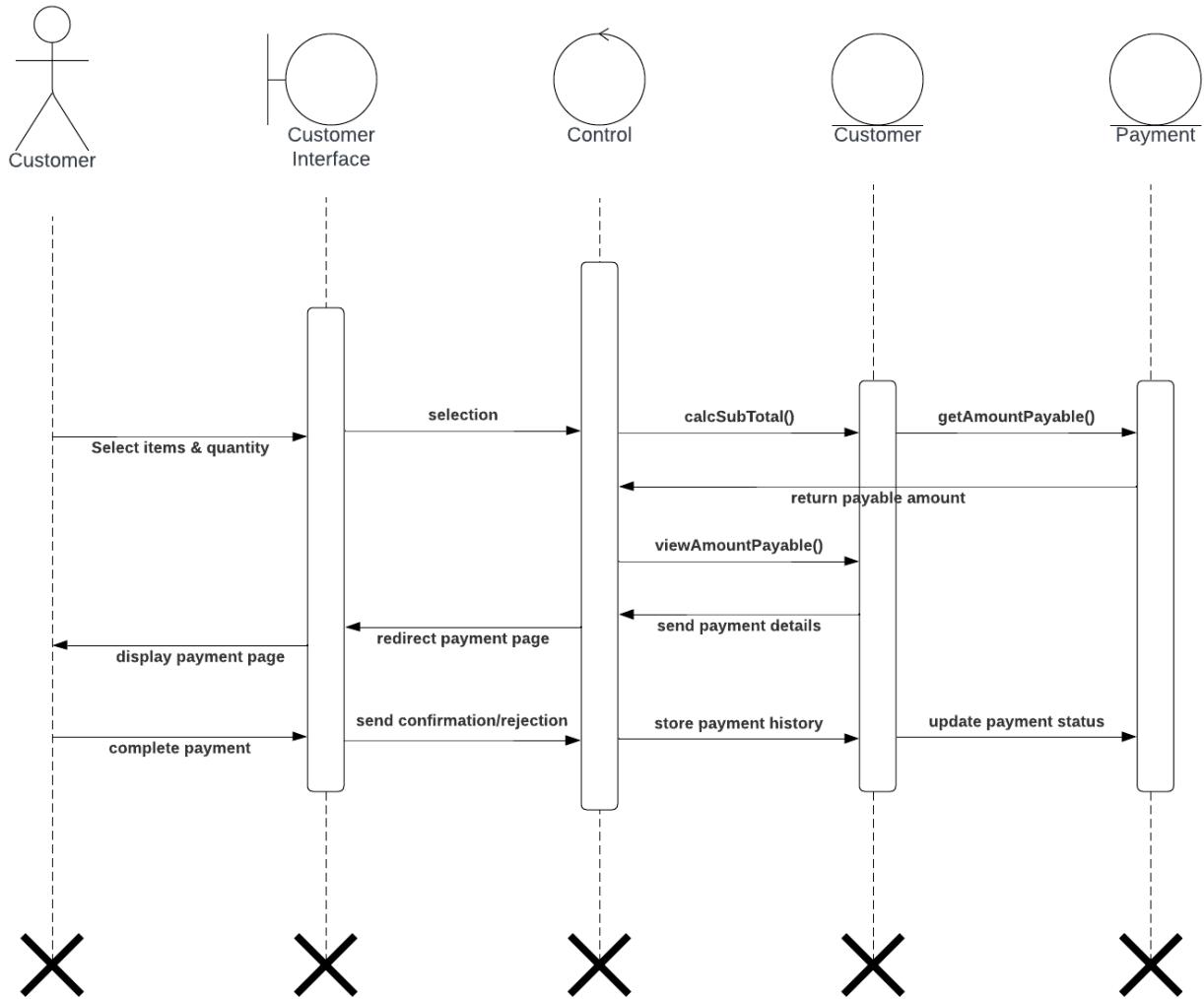


Communication diagram:

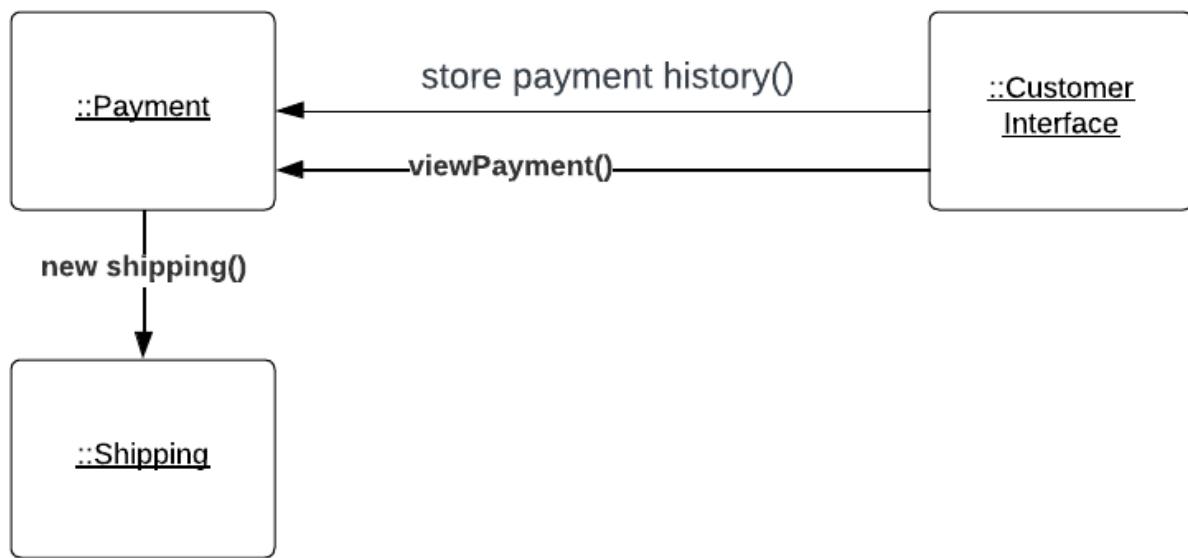


Payment:

Sequence diagram:

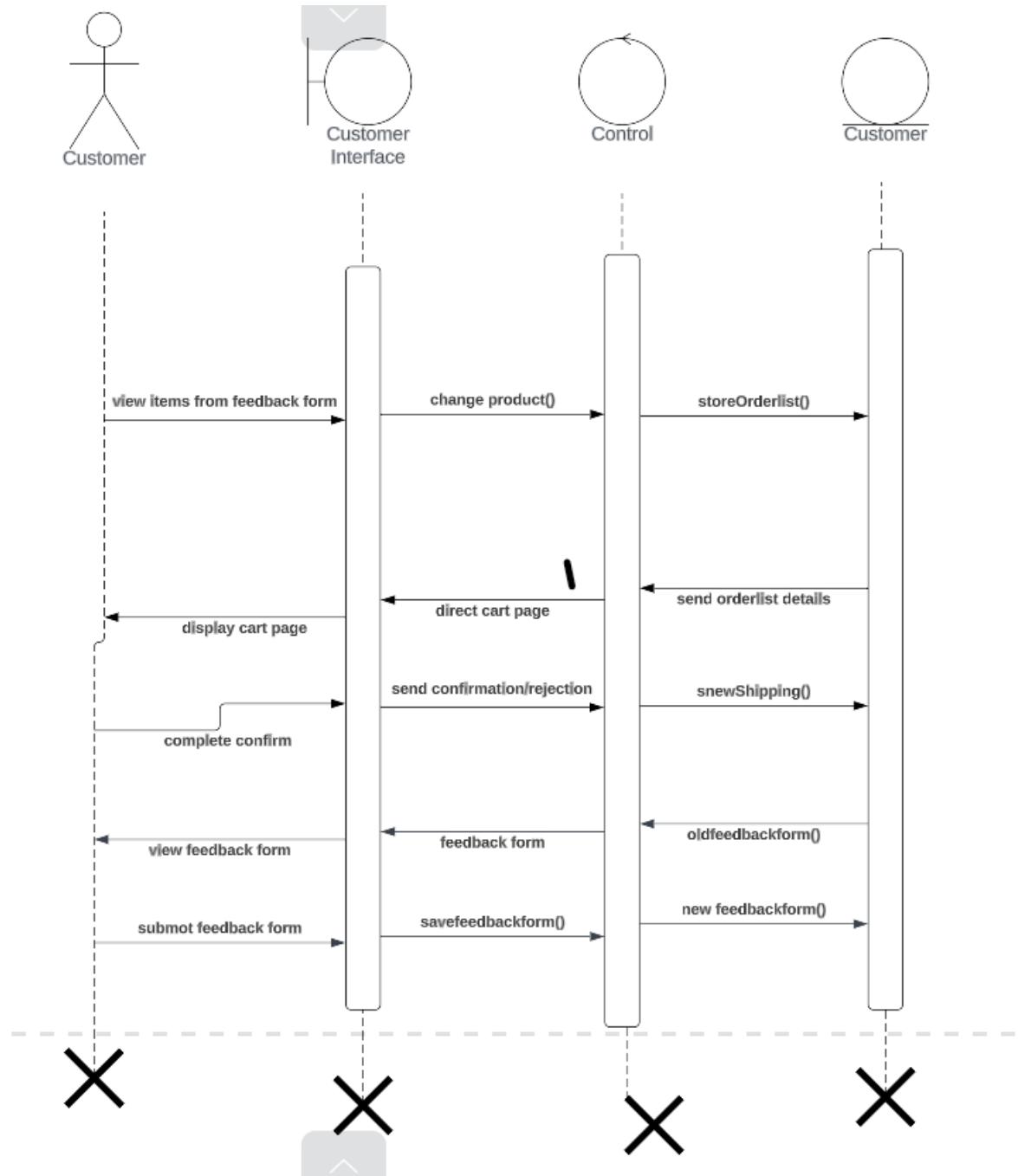


Communication diagram:

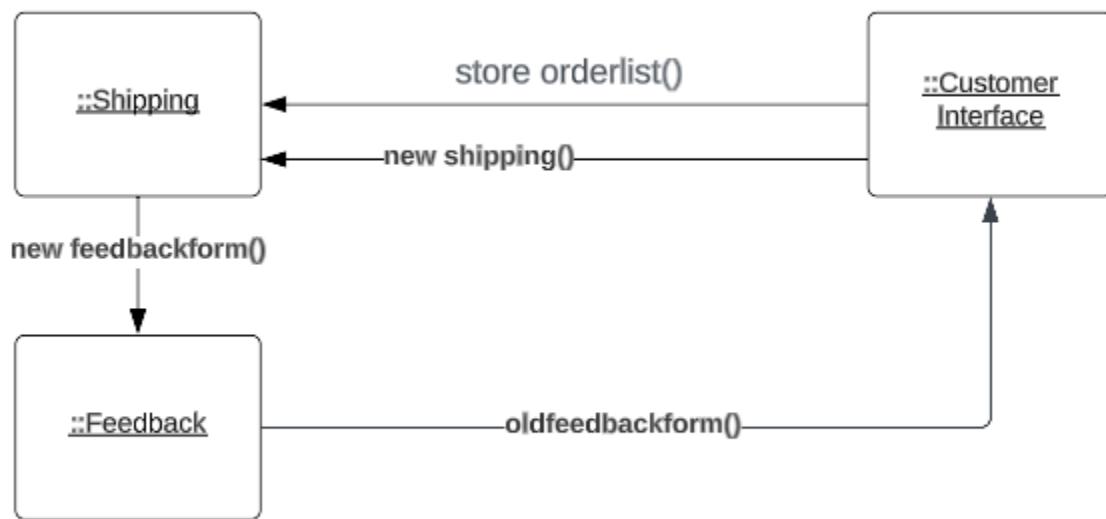


Smart Box:

Sequence diagram:

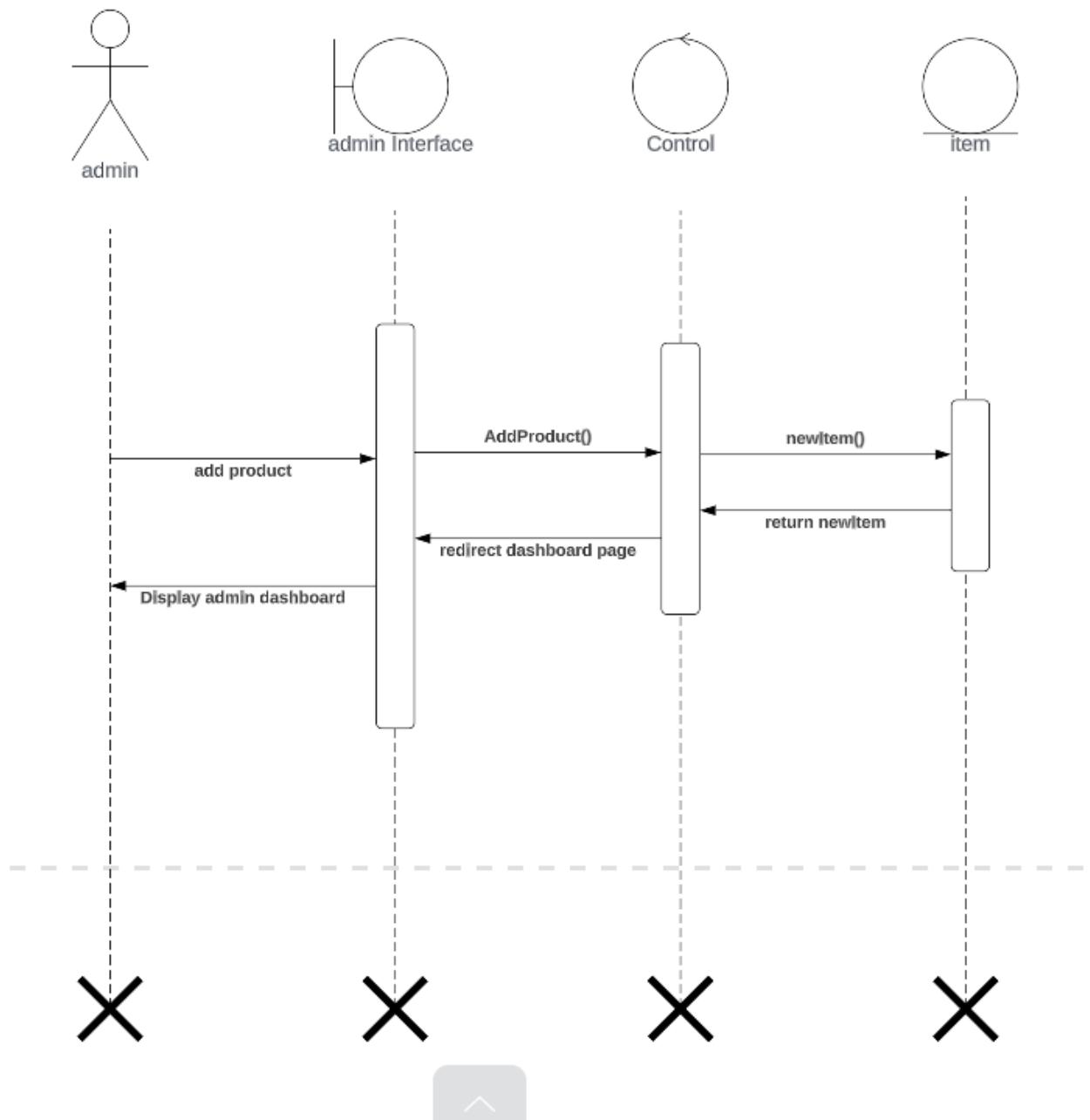


Communication diagram:



Add Product:

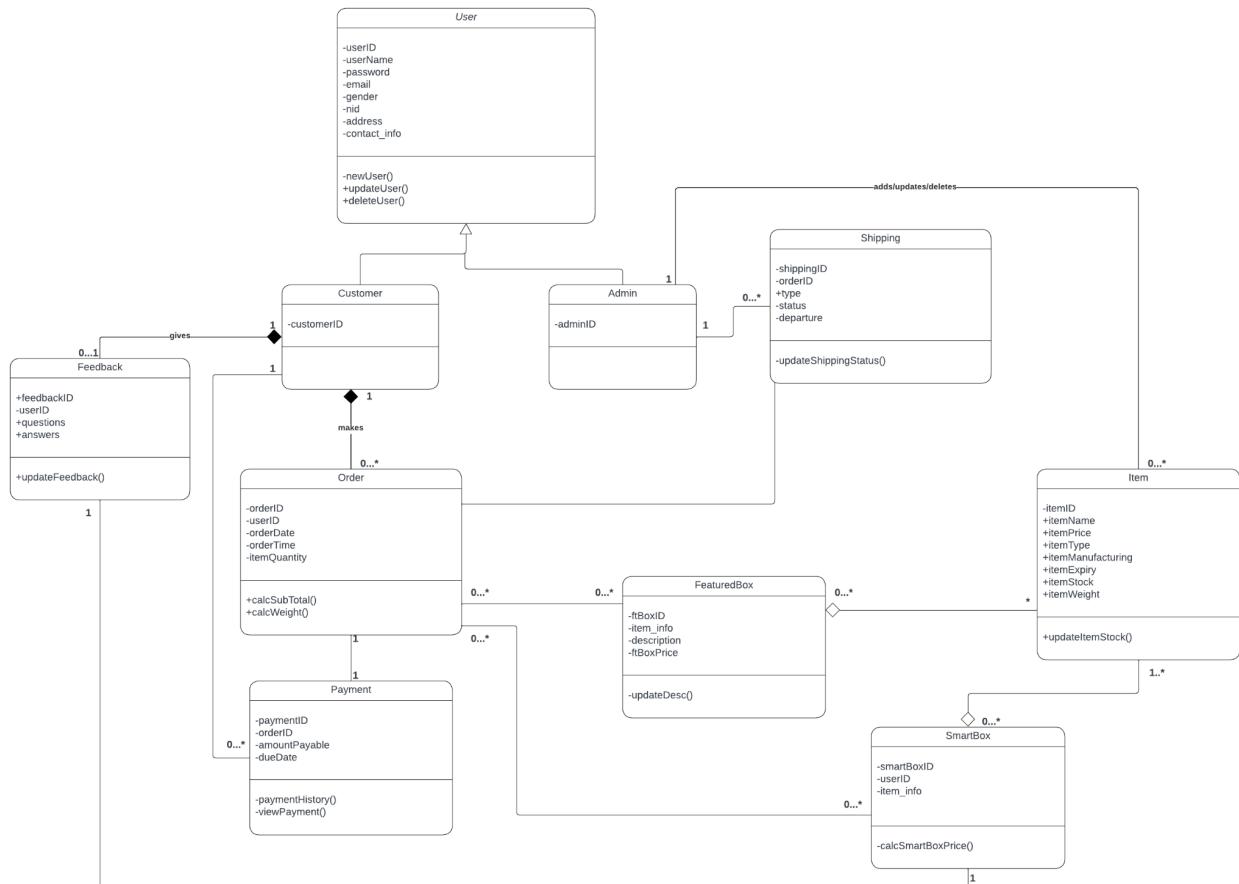
Sequence diagram:



Communication diagram:



22. Class diagrams



23. State-chart diagrams

Customer:



Payment:



Smart Box:



Add Product:



24. CRUD matrix

Payment process:

ACTIVITY	CUSTOMER	ADMIN	BANK	PAYMENT
User registration	C			
User login	R			
Provide identification	CU	R	R	

Provide delivery details	CU	RU		
Provide billing details	CU	R	RU	
Read payment instructions	R	R	R	
View payable amount	R	R	RU	
Pay amount	U	R	RUD	U
Send confirmation email	R	R	U	D

Smart Box:

ACTIVITY	CUSTOMER	ADMIN
Enter customer details	U	R
Create customer account	C	
Customer log in	R	R
View payment details	R	R
Make payment	CU	R
Make smart orders	CU	R
Fill up feedback form	CU	R

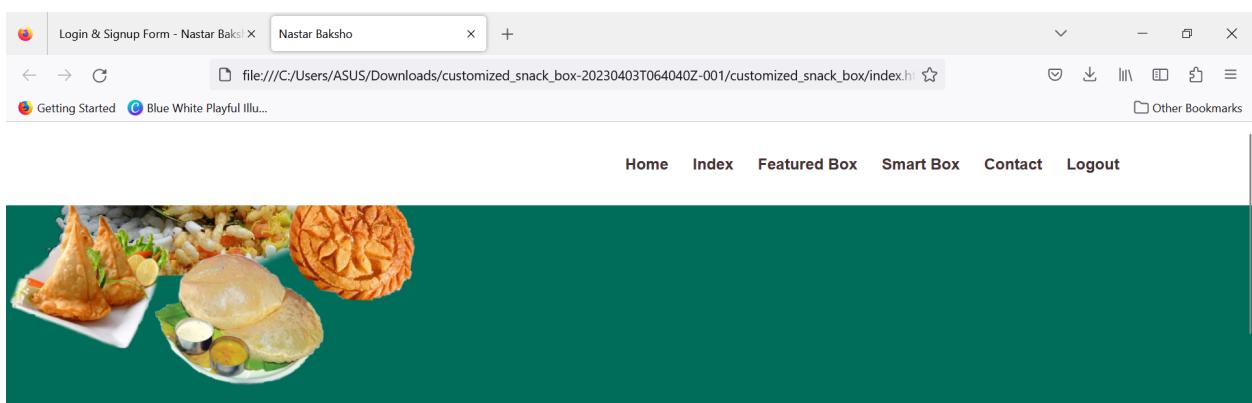
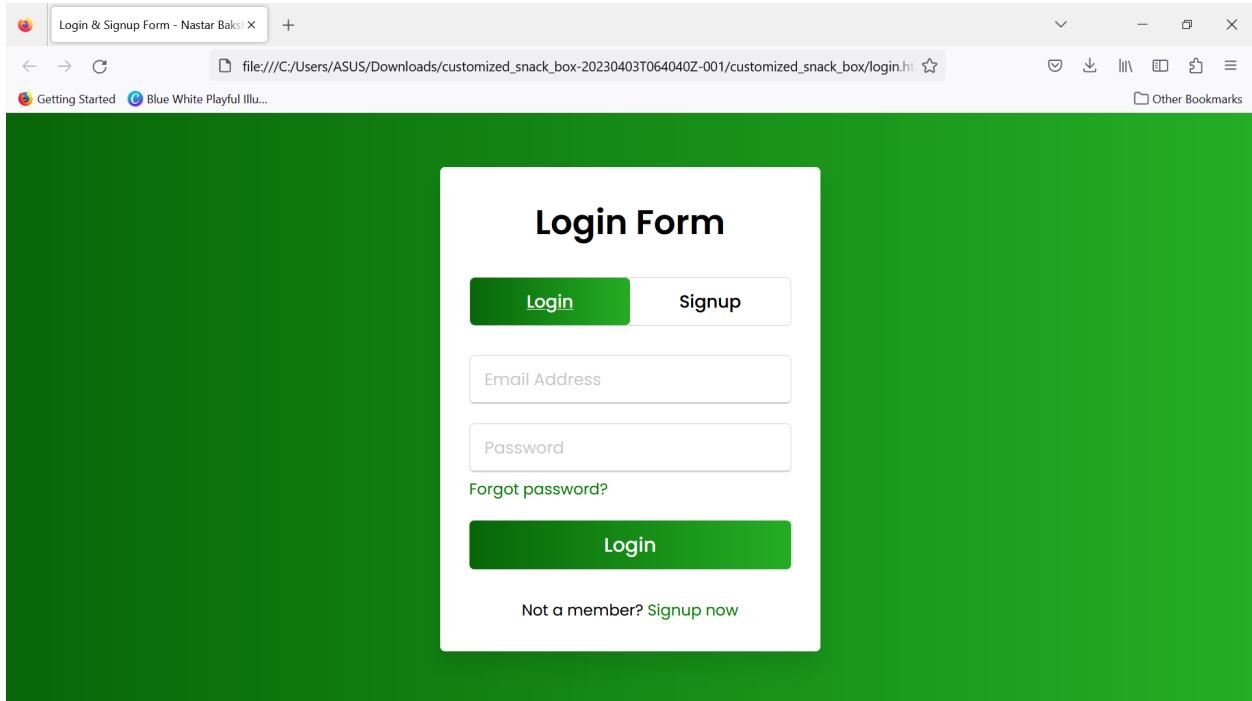
Add product:

ACTIVITY	CUSTOMER	ADMIN

Enter admin details		CU
Admin log in		R
View shipping details		R
View payment		R
Ship smart orders		RDU
See feedback form	CU	R

Section 5:

25. Prototype the user interface



Explore SmartBox



Login & Signup Form - Nastar Baksho X Nastar Baksho X +

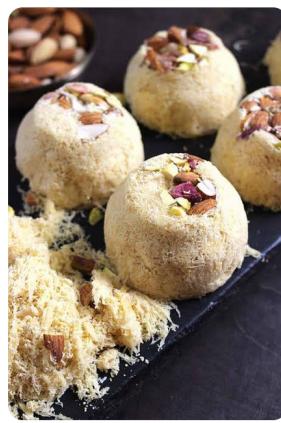
file:///C/Users/ASUS/Downloads/customized_snack_box-20230403T064040Z-001/customized_snack_box/index.htm

Getting Started Blue White Playful Illu... Other Bookmarks

Explore SmartBox



Singara



Pandi



Noskhi Pitha

Login & Signup Form - Nastar Baksho X Nastar Baksho X +

file:///C/Users/ASUS/Downloads/customized_snack_box-20230403T064040Z-001/customized_snack_box/ 90%

Getting Started Blue White Playful Illu... Other Bookmarks

How It Works

1. Select box & Quantity

2. When complete, press
add to cart

3. Fill in personal
information and Submit

4. Give us your feedback
so that your next order is
customized

Smart Box Menu



Samosa

TK35

Made of pastry with a savoury filling such as spiced potatoes, onions, and peas.

Quantity

1



Chanachur

TK30

Made of fried lentils, peanuts, chickpeas, chickpea flour ganthiya, corn, vegetable oil, fried onion and curry leaves.

Quantity

1

Firefox Login & Signup Form - Nastar Baksho X Nastar Baksho X Nastar Baksho - Admin X +

Getting Started Blue White Playful Illu... Other Bookmarks

Orders

Add Product

Filter

Items #	Category #	Status #	Sales #	Stock #	Price #
002	Featured Box 2	• Shipped	3	30	TK550
Beef Kolija Singara	SmartBox Item	• Confirmed	6	46	TK30
001	Featured Box 1	• Shipped	5	39	TK450
Samosa	SmartBox Item	• Confirmed	26	66	TK35
002	Featured Box 2	• Shipped	2	33	TK550
Chanachur	SmartBox Item	• Confirmed	22	44	TK30
002	Featured Box 2	• Shipped	1	34	TK550
002	Featured Box 2	• Shipped	5	35	TK550
001	Featured Box 1	• Shipped	2	44	TK450

Joyita F. ...

Login & Signup Form - Nastar Baksho X Nastar Baksho X Nastar Baksho - Admin +

Getting Started Blue White Playful Illu... Other Bookmarks

Orders

Search

Add Product Filter

Home Order List

002 Beef Kolija Singara Category: Featured Box 2 Status: * Shipped Sales: 3 Stock: 30 Price: TK550

001 Samosa Category: SmartBox Item Status: * Confirmed Sales: 6 Stock: 46 Price: TK30

001 Samosa Category: Featured Box 1 Status: * Shipped Sales: 5 Stock: 39 Price: TK450

002 Beef Kolija Singara Category: SmartBox Item Status: * Confirmed Sales: 26 Stock: 66 Price: TK35

Joyita F. ...

Login & Signup Form - Nastar Baksho - Admin

Nastar Baksho

Nastar Baksho

Nastar Baksho

Nastar Baksho

file:///C:/Users/ASUS/Downloads/customized_snack_box-20230403T064040Z-001/customized_snack_box/features.html

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Other Bookmarks

Explore Foods



Featured Box 1
TK450
Chanachur, Pitha and Pandi, one packet of each.

Quantity: 1



Featured Box 2
TK550
Samosa,Puri and Singara, one packet of each.

Quantity: 1

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file:///C:/Users/ASUS/Downloads/customized_snack_box-20230403T064040Z-001/customized_snack_box/order.html

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Other Bookmarks

Fill this form to confirm your order.

Order Summary

 featured box 1	All selected items TK1000 Patishapta Pitha,Samosa,Singara
Quantity	<input type="text" value="1"/>

Delivery Details

FULL NAME E.g. Joyita Faruk
Phone Number E.g. 9843xxxxxx
Email E.g. hi@vijaythapa.com
Address E.g. Street, City, Country