In partial fulfillment of the requirement for
System Development
420-940-VA section 05808
Vanier College

Use Cases & UML Diagrams

3rd Deliverable

Customer Name:
Delhi Kabab

Team Name:
Green Team

Team Leader:
Bing Bai

Team members:

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1. STATEMENT OF PREVIOUS WORK EXPERIENCE

In this deliverable, our team members utilized certain skills in implementing a UML class diagram. In the previous project. A UML class diagram was done in order to show class relationships and properties. This diagram helped them in making a running java application for a previous project done.

Table 1: Prior projects with similar experiences in Deliverable 3

Projects Made	Skills	Contributor/s
Aircraft Production Simulator	UML Class Diagram	Ibrahim, Mark

2. EXECUTIVE OVERVIEW

In this deliverable, the team was able to know more about the client. The team was able to get an appointment with the customer via telephone. The client was able to answer most of our questions in our questionnaire **(see Appendix A)**. The information gathered from this deliverable was very helpful in visualizing Delhi Kabab's operation, particularly with their inventory management system.

The team created a UML case diagram, based on the gathered information, this really helped the team to understand how user interacts with the system. The team was also able to produce a use case form which shows more detailed process of certain use cases from the UML case diagram **(see Appendix B & C)**.

The team was also able to provide a sequence and activity diagram in this deliverable. The activity diagram helped us understand the workflow of Delhi Kabab's inventory management system **(see Appendix D)**. On the other hand, the sequence diagram helped the team visualize the order of actions taking place in the system **(see Appendix D)**.

A use case diagram, regarding Delhi Kabab's inventory management system, is include in this deliverable. This diagram gave the team an in-depth knowledge how all objects within the system interacts. It also showed the relationship of an object with another object. This diagram also helped the team identify the properties and functions of each object **(see Appendix E)**. The team also provided a state diagram which will show the behavior of their system **(see Appendix F)**.

Lastly the team was able to attach a sample order list from the client and a blurred excel monitoring sheet for their inventory tracking **(see Appendix G & H)**. Unfortunately, they refused to hand out other documents used in their operation for confidentiality.

3. DESCRIPTION OF CLIENT

The Team's client, Delhi Kabab, is an Indian restaurant located in Brossard. It is a cozy, sit-down restaurant plating tandoori chicken, spicy curries, and traditional Indian dishes (Delhi Kebab, n.d.). This fine Indian cuisine also serves variety of French food and various delicious desserts. The business is being operated by two partners with 6 employees. This business has been operating for more than 5 years. The restaurant is open everyday from 4:00PM till 9:00PM, they have their own delivery service, and they also are using 3rd party delivery services such as Doordash, SkipTheDishes, and Uber Eats **(see Appendix I).**

The owners can perform basic tasks on the computer. This includes navigating browser, operating system, and using some applications. For the past 5 years, the owners use Windows Operating System and Microsoft Excel in keeping track of work schedules, employees' salaries, and for their inventory.

4. BUSINESS PROBLEM

Delhi Kabab has an inefficient system in monitoring their inventories. The restaurant is using a notepad to list necessary items to be ordered such as ingredients for their food preparations, cleaning items, toilet supplies etc. According to the client, they often lose their list and sometimes forget to update the list of ordered items in their system. In consequence, the restaurant's inventory record often produces inconsistent information. This type of system leads to increase in spoilage and loss if inventories like ingredients are not tracked and monitored properly. The system also takes a lot of time tracking and reviewing their inventory. There is no way to view a comprehensive report easily, such as the ingredient supply level.

Customer satisfaction is sometimes affected by the inconsistencies in their inventory management system. There are times where customers want to order something, but the food is not available because some ingredients are missing. This leaves unsatisfied customers which could affect the bottom line of the business.

Another problem the team found out, the excel file for tracking inventories is not encrypted or password protected. This can be easily access and modify by anyone within the organization. The owner realized that this type of system can lead to pilferage without him knowing it. Someone can just manipulate the stock level and steal some inventories used in the restaurant.

The restaurant doesn't really use a Standard Operation Procedure (SOP) in doing their inventory management system.

5. NARRATIVE DESCRIPTION OF CURRENT INFORMATION SYSTEM

Since Delhi Kabab is just a small Indian Restaurant, inventory management is being done by the owner. The owner who happens to be the chef of the restaurant oversees the inventories of the restaurant. The owner checks the stockroom, fridge, and kitchen shelves to check Delhi Kabab's inventories. In this stage the owner removes expired items if there are any.

After checking and removing expired inventories, the owner accesses the restaurant's excel inventory monitoring sheet where he updates inventory stock level and checks for items that need to be replenished **(see Appendix H)**. Once the owner identifies the items that needs to be ordered, he prepares a list in a paper or notepad **(see Appendix G)**. When the list of items to be replenished is done, the owner buys needed items in a store or demand for additional quantity to the supplier for delivery. The supplier supplies fixed quantity of meat and seafood to Delhi Kabab once a week. Once order has been received the owner will issue a check and deposit it directly to the supplier's bank. If quantity of the items that needs to be replenished is low or if the restaurant needs these items immediately, the owner just buys them in these stores (Gordon, service alimentaire, T-Mart food services, Can-Am food services, Costco). **(See Appendix A question #3 about the system)**

Once order has been received or bought from the store, they store each item in their designated area and then the owner updates their inventory excel file.

6. REFERENCES

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7. APPENDIX A: ANSWERED QUESTIONNARIE

General Questions

1.) Could you tell us something about how you started the business? What was the inspiration behind Delhi Kabab?

It was a dream come true for me to be able to set up this business ever since I was young, I dreamt of owning a restaurant business. I incorporate 25 years of experience in cooking. My family has been my inspiration ever since especially my children. Back then, there were not as many Indian restaurants as today and few of them served food as authentic as where I grew up. I used to cook for my family and often invited friends to try my cooking and they truly loved it. They encouraged me to bring the foods to more people and let dinners have chance to know how tasty the decent Northern Indian cuisine is.

2.) Do you have any plans branching out or opening your restaurant for franchise in the future? If yes, what is your target number of branches and location?

No plans for expansion especially right now that all prices are increasing, and inflation rate is high. I remain pessimistic about the market, and this might last for more than a year. I don't want to take risk at this moment, it is just not the right time.

3.) Who do you consider as your primary competitors?

There are 2 Indian restaurants located approximately 1.3km away from Delhi Kabab, Le Tandoor and Shaan Tandoori.

4.) Could you describe how many customers on the average eat at your restaurant and make orders for delivery per day?

Around 7-25 pax and 4-9 deliveries on regular days while 20-45 persons and 10-20 during holidays (Christmas, Thanksgiving, etc.)

5.) Do you have any computers you use within the restaurant? If yes, where do you use it for and could you also state the specifications of the computer system you are using?

We are using a computer with Windows 10 operating system. We just use it for keeping our excel file.

6.) Do you have a Wi-Fi in this restaurant? If yes, is it available to the customers?

Yes, we have a Wi-Fi in the restaurant, and it is available to our customers as added service.

7.) How can you keep up with the raising cost nowadays due to high inflation rate?

It's difficult. We have updated the price of our menu because of higher cost of food materials and ingredients. We don't want to downgrade the quality of our dishes by cutting the budget on raw materials. On the other hand, we landed on more delivery platforms, which somehow can lower the cost of restaurants operation.

8.) How many employees do you have? What are their roles? Could you also tell us something about your employee turn over rate?

We have 5 employees. 1 cashier, 2 waiters, 2 in the kitchen.

About the system

1.) Could you discuss us the step-by-step process on how you do your inventory management? With this system, what are the problems you encountered before and how did you manage to fix it?

I check my physical inventories once or twice a week. I check the restaurant's stock room, fridge and kitchen shelves and removes expired items after this I check the excel file to see inventories that have low stock level. From here I make a list of inventories needed to be replenished then I buy some ingredients from certain stores. Once orders from supplier received (once a week) or after buying the needed ingredients from a store. I paycheck to the supplier directly to their bank update the inventory excel file.

2)Have you encountered spoilage of food due to poor tracking or monitoring? If yes, could you elaborate and discuss it briefly.

Yes, for sure, due to our poor tracking of our inventories. We really do not have a system in placed in tracking inventories since we are just a small restaurant. But I'm looking at streamlining this business process. This might reduce our costing.

3) Where do you buy all your supplies or ingredients and how frequent do you order your supplies?

We receive once a week delivery from supplier and if we need to buy ingredients, we just buy it in these stores (Gordon, service alimentaire, T-Mart food services, Can-Am food services, Costco).

4)What are the inventories you track in your inventory system? How do you track your inventories and how often do you monitor them?

Basically, all raw ingredients used to prepare the dishes like raw meat, seafood, etc. I am just usin an excel file to check stock level of my inventory.

5) Since your inventory management system is not automated, do you think this system is secured? Is pilferage a concern in this restaurant? If yes, how do you manage it?

I think it is not secured because it easily accessible in the computer. About pilferage, nothing that I'm aware of

6) Did you ever consider automating your inventory management system before? If yes, what are the reasons why it didn't materialize?
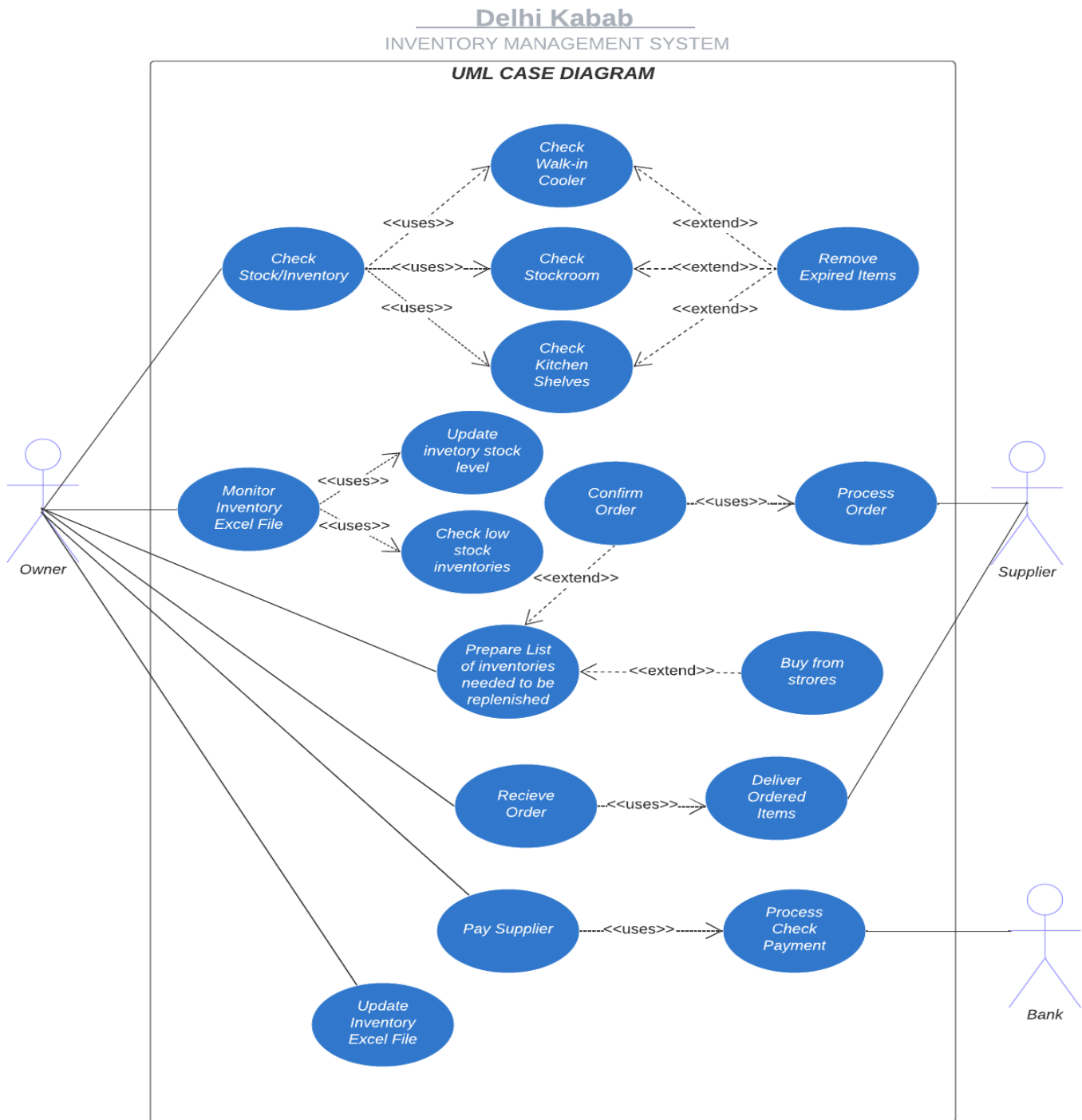
No since it is just a small business.

7) Who are the people in charge with you inventory management system? Do all of them has the same access level in the system? Could explain the roles or tasks of the people involved in your inventory management system.

One person just me the owner is handling this side of the system.

8) Besides your inventory system, do you think there are other business process that need to be streamlined or improve in your business. If yes, could you discuss it further?

For now, I'm just looking first at how we can improve our inventory management system.

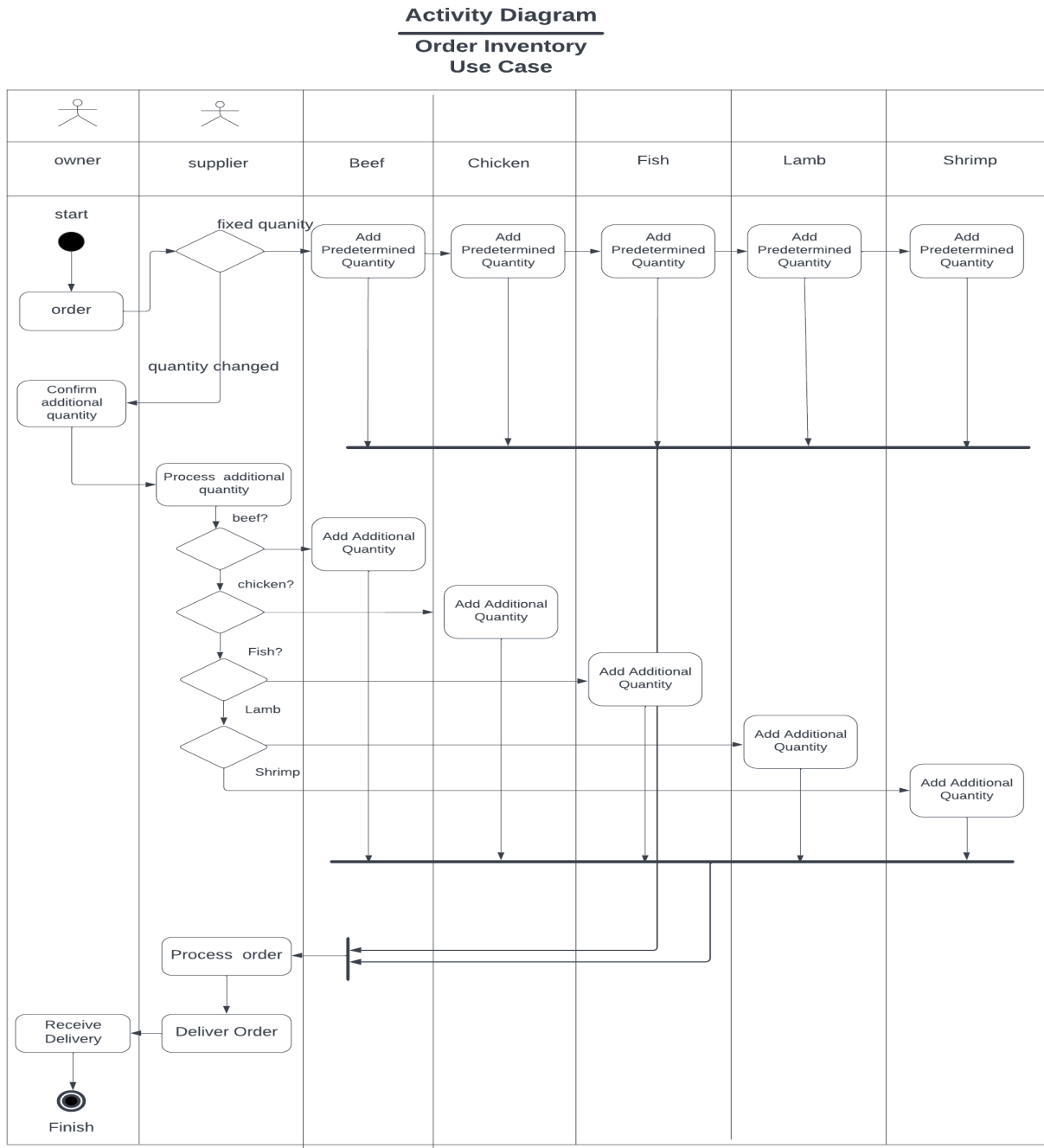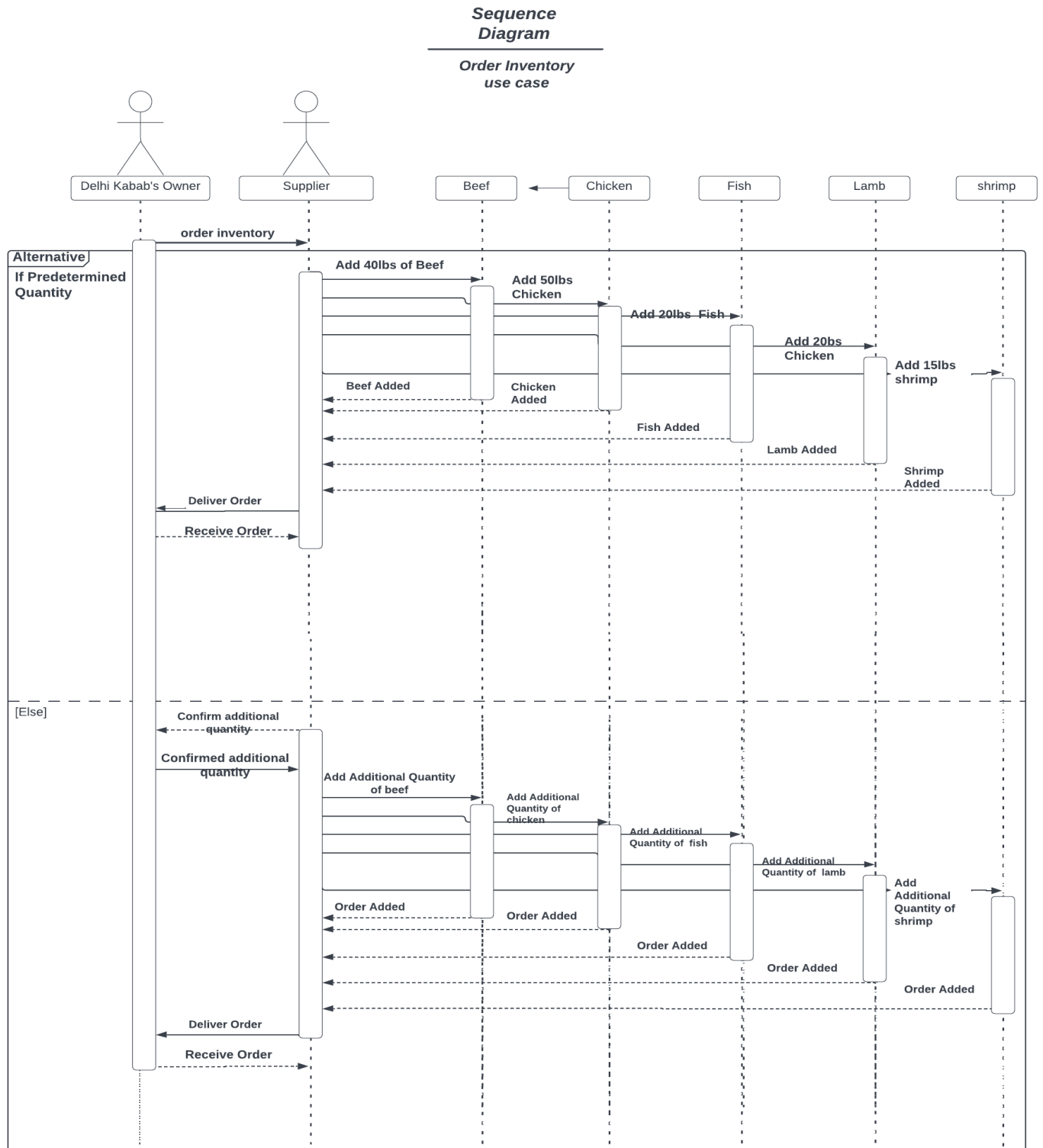## 8. APPENDIX B: UML USE CASE DIAGRAM

Delhi Kabab
INVENTORY MANAGEMENT SYSTEM
UML CASE DIAGRAM

9. APPENDIX C: USE CASE DESCRIPTION

Use Case Id:	UCIS - Check - SR		
Use Case Name:	Check stock room		
Created by:	Bing Bai Lei Wang	Last Updated By:	Bing Bai Lei Wang
Date Created:	2022-09-30	Last Revision Date:	
Actors:	Owner		
Description:	Check the status of the items in stock room		
Trigger:	Routine (once a week)		
Preconditions:	Not applicable		
Postconditions:	1. Stock room without expired items. 2. Cleaned and organized stock room.		
Normal Flows:	1. Walks into the stock room. 2. Check the inventory in the stock room. 3. Check the status of the item by reading the label, checking the package and observing items visually. → Remove expired items. → Clean and organize stock room. 4. Write down the expired items on a piece of paper. 5. Walk out the stock room and close the door.		
Alternative Flows:	1. Walks into the stock room. 2. Check the inventory in the stock room. 3. Check the physical condition of stock room and inventory 4. Walk out the stock room and close the door.		
Exceptions:	Not applicable		
Includes:	UCIS - Check - REI		
Frequency of Use:	Once a week or on demand		
Special Requirements:	Not applicable		
Assumptions:	Not applicable		
Notes and Issues:	Not applicable		

Use Case Id:	UCIS - Order - OI		
Use Case Name:	Confirm items to order		
Created by:	Bing Bai Lei Wang	Last Updated By:	Bing Bai Lei Wang
Date Created:	2022-09-30	Last Revision Date:	
Actors:	Owner and supplier		
Description:	Making orders from suppliers after checking inventory.		
Trigger:	Routine (Every Monday).		
Preconditions:	Not Applicable		
Postconditions:	Order has been submitted to the supplier.		
Normal Flows:	1. Confirm to supplier predetermined quantity of order: 50lbs Chicken, 40lbs Beef, 20lbs Lamb, 20lbs Fish, 15lbs Shrimp 2. Supplier will process the order 3. Proceed to use case: Deliver Order		
Alternative Flows:	(Additional Quantity needed) 1. Confirm to supplier additional quantity to order: 2. Supplier will process the additional quantity plus the predetermined quantity of order: (Predetermined Quantity) (Additional Quantity) 50lbs Chicken + Additional quantity needed 40lbs Beef + Additional quantity needed 20lbs Lamb + Additional quantity needed 20lbs Fish + Additional quantity needed 15lbs Shrimp + Additional quantity needed 3. Proceed to use case: Deliver Order		
Exception	1. Supplier can't supply additional quantity 2. Proceed to use case: Buy from stores		
Includes:	Not applicable		
Frequency of Use:	Every Monday or on demand		
Special Requirements:	Not applicable		
Assumptions:	Not applicable		
Notes and Issues:	Not applicable		

10. APPENDIX D: UML DIAGRAMS (ATIVIY AND SEUENCE DIAGRAM)

Activity Diagram
Order Inventory
Use Case

Sequence Diagram

Order Inventory use case

11. APPENDIX E: UML CLASS DIAGRAM
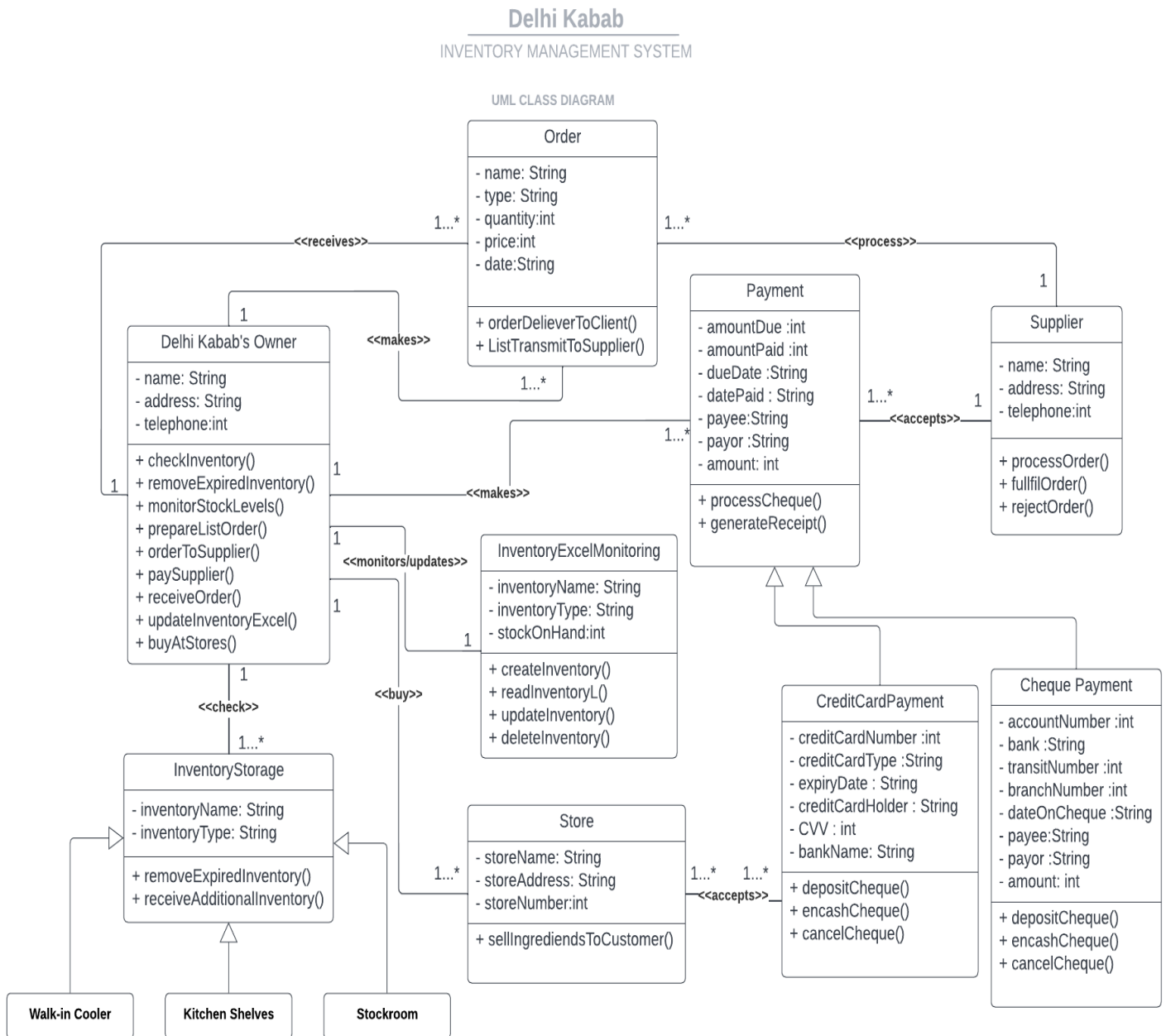
12. APPENDIX F: STATE CHART DIAGRAM FOR SIGNIFICANT CLASS

State Chart Diagram

Confirm Order Use Case
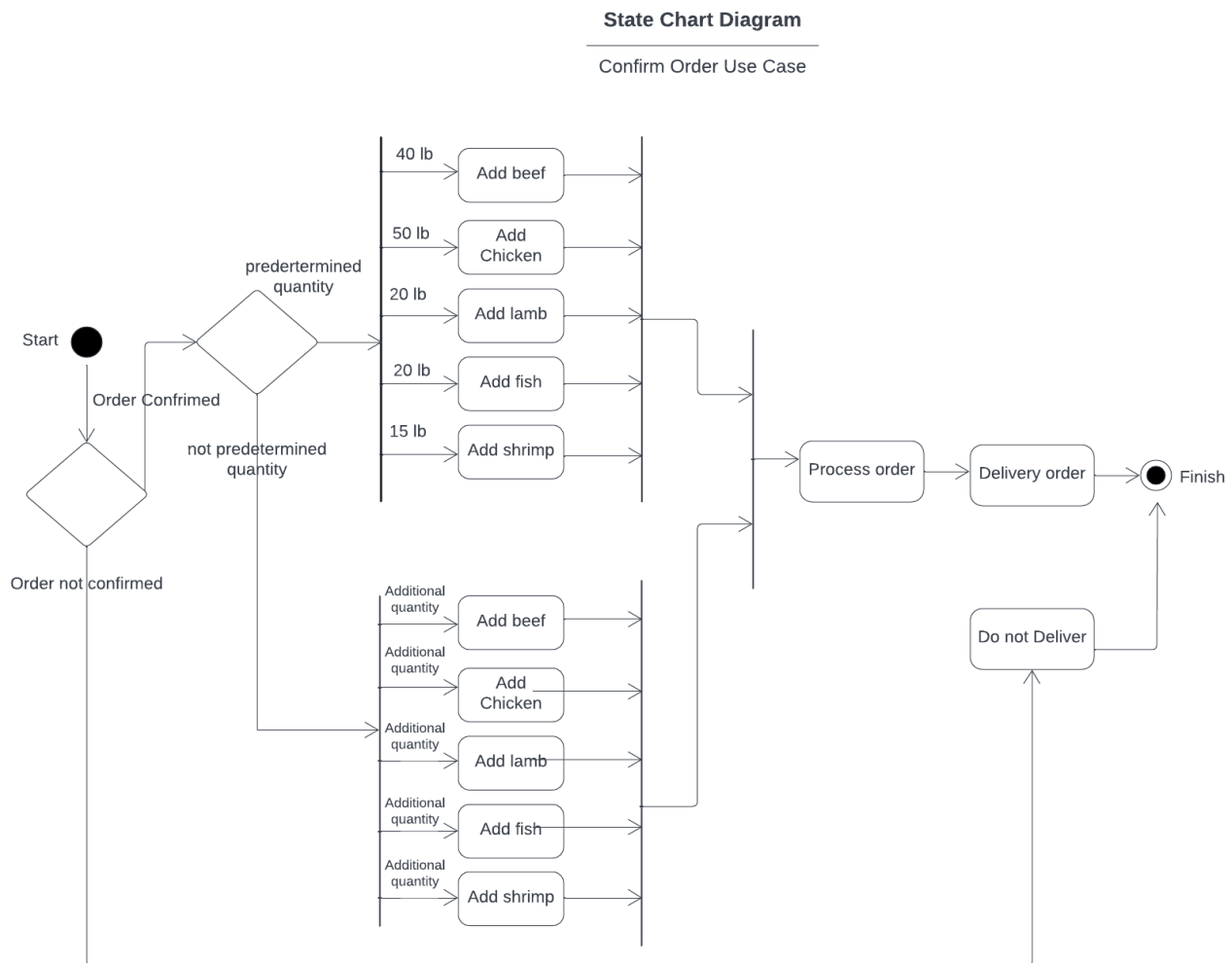
13. APPENDIX G: SAMPLE ORDER LIST
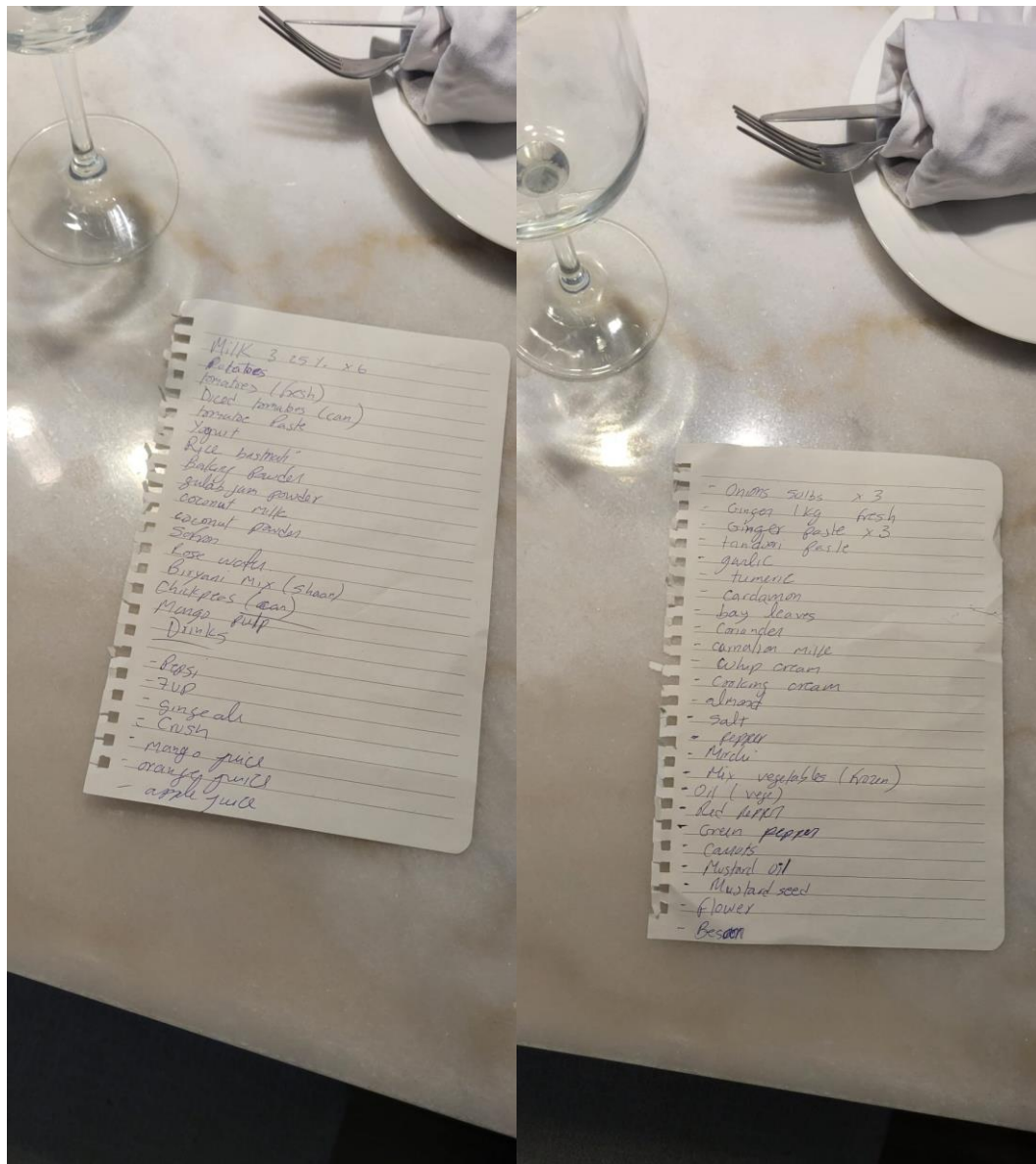
14. APPENDIX H: INVENTORY EXCEL FILE SCREENSHOTS

	Vegetables	Quantity
4	**Vegetables**	**Quantity**
5		
6	Lettuce	14
7	Onion	3 bags
8	Ginger	2 bags
9	Garlic	3 bags
10	Tomatos	5 bags
11	Green beans	10 bags
12	Red chili pepper	10 bags
13	Zucchini	20
14	Cucumber	10
15	Lentils	12 bags
16	kidney bean	8 bags
17	Coriander	11
18	Broccoli	3 bags
19		
20		
21		
22	**Spices**	
23		
24	Tumeric	22 bags
25	Cumin	14 bags
26	Green Cardamom	18 bags
27	Garam masale	8 boxes
28	Biryani masala	10 boxes
29	Meat masala	6 boxes
30	Paprika	13 bags
31	Ginger garlic paste	3 cans

	Drinks	
36	**Drinks**	
37		
38	Pepsi	3 cases
39	Coke	5 cases
40	7 up	1 cases
41	Orange Crush	1 cases
42	Mango Juice	6 packs
43	Orange Juice	1 packs
44	Apple Juice	3 packs
45		
46		
47		
48	**Can Items**	
49		
50	Coconut Milk	17 cans
51	Corn	8 cans
52	Chickpeas	3 cans
53	Carnation	10 cans
54	Pineapple	6 cans

15. APPENDIX I: PHOTOS

Figure 1 Delhi Kabab's Signage

Figure 2 Dining Area

Figure 4 Chicken Curry

Figure 5 Chicken Tikka on Sizzler

Figure 6 Shrimp Bhuna

Figure 3 Restaurant's Map

Figure 7 Opening Times and Delivery Partners