VIETNAM NATIONAL UNIVERSITY HO CHI MINH CITY
HCM UNIVERSITY OF TECHNOLOGY
FACULTY OF COMPUTER SCIENCE AND ENGINEERING

SOFTWARE ENGINEERING (CO3001)

Assignment

Restaurant Pos 2.0

(Week1 & Week 2)

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Member list:

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Contents

1 Introducing

Point of sale (POS) or point of purchase is the time and place where a retail transaction is completed. At the point of sale, the merchant calculates the amount owed by the customer, indicates that amount, may prepare an invoice for the customer, and indicates the options for the customer to make payment. In restaurant business, POS systems often include table reservation, ordering food, alerts, billing, credit card processing and customer management. Even before the COVID-19 crisis, POS systems had gained traction across the industry. During the coronavirus pandemic, restaurants face greater peril than ever. Such systems are expected to increase business intelligence, reduce wasted effort and opportunity to scale to a large business. Moreover, the systems should support take-away options Our customers have multiple restaurants and have a need to develop a responsive web-based POS system that implement the current business flow as described in Figure 1. (The current POS terminal can be replaced in this web-based solution).
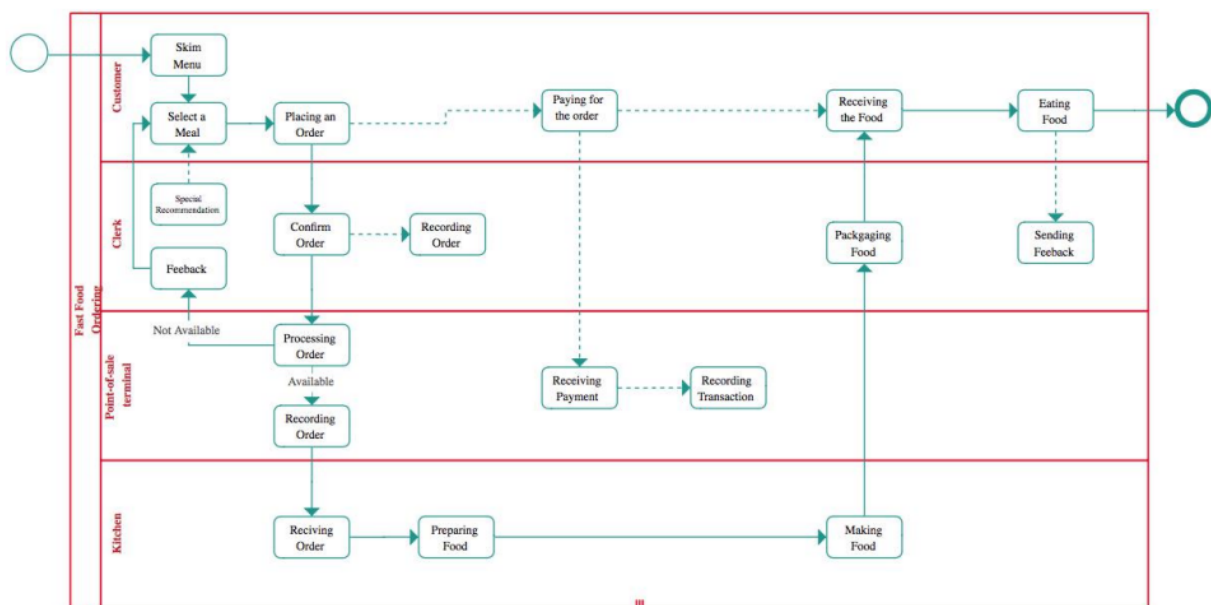

Figure 1: Customer-drawing workflow

The restaurant owners express several special demands for the new system:

- The system should allow non-direct contact between Clerks and Customers.

- The system should be implemented using Web technology and QR code, so customers will not have to install apps.

- The system should be usable from a mobile device, a tablet device or a normal computer/laptop.

- The system should be extendable to use in multiple restaurants in the future.

- The current transactions is about 300 orders per day.

2 Implementation

2.1 Task 1.1:

1. Identify the context of this project. Who are relevant stakeholders? What are expected to be done? What are the scope of the project?

- Context: Restaurant POS System.

- Stakeholders: Restaurant Manager, Customer, Chef, System Operator.

- What are expected to be done?

  - The system can receive orders and customers can make online table reservations on the website.

  - After getting paid, the order will be sent directly to the sales staff and then to the chef to prepared.

  - Customers can book for table on the website within 7 days.

  - Restaurant manager can add or remove food from the menu and the system can recommend the best-sellers to the customer.

  - The customer can give feedbacks to the website after purchasing the product.

- Scope of project:

  - Place orders from 6AM to 10PM.

  - Server can handle up to 300 orders per day.

  - Responsive

  - Web-based

  - UI user-friendly

2.2 Task 1.2:

2. Describe all functional and non-functional requirements of the desired system. Draw a use-case diagram for the whole system.

- Functional requirements:

1. Main features:

+ Food ordering.
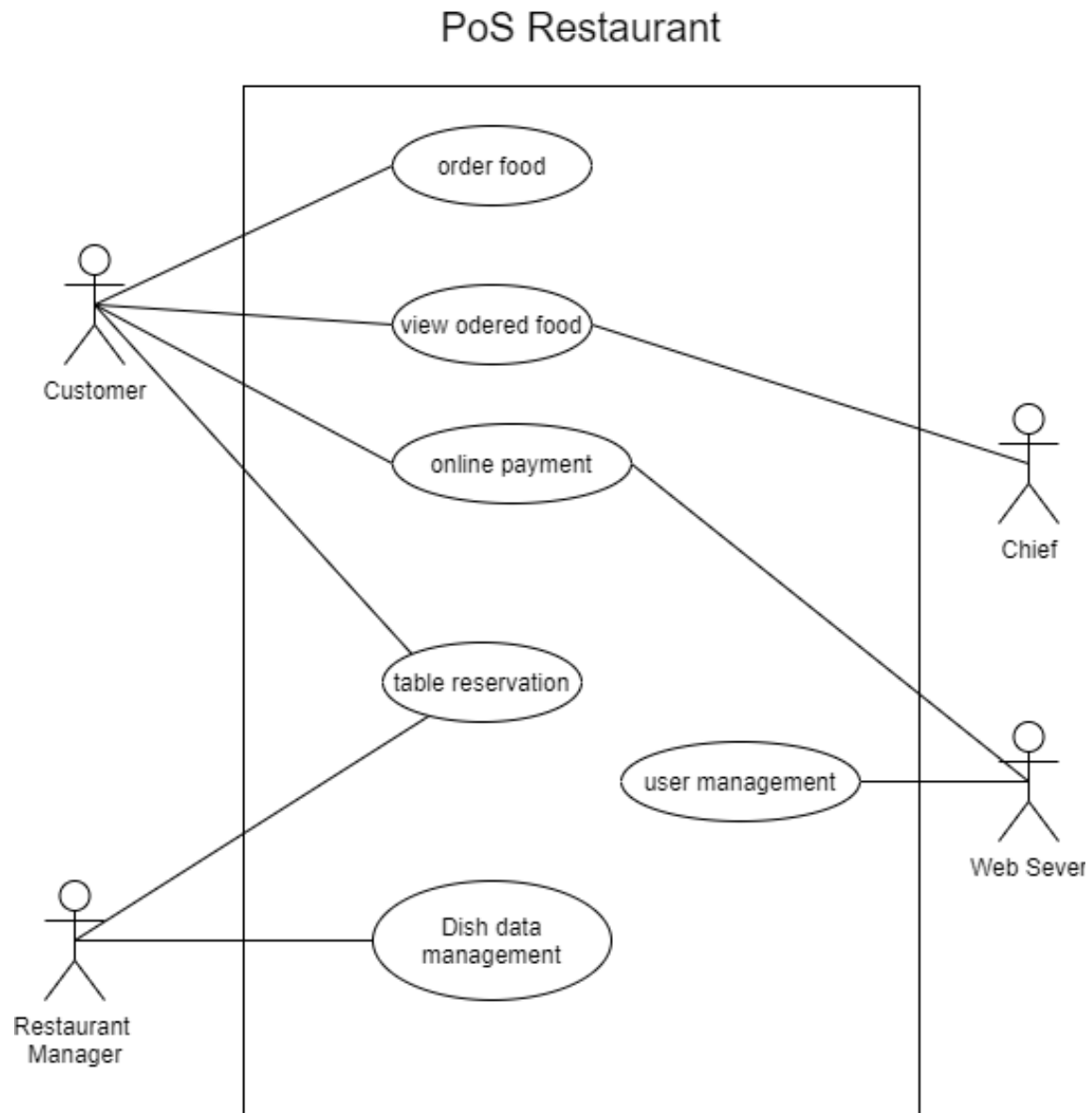
+ Table Reservation.

+ User management.

+ Online payment.

2. Other features:

+ Register/Log in user accounts.

+ Recover password for customers who forgot their password.

+ Recommend/Feedback.

+ Restaurant manager can add/remove dishes, give recommend for customers.

- Non-functional requirements:

+ User data confidentiality.

+ Fast responding time.

+ The system can handle up to 300 orders per day.

- Use-case diagram for the whole system:
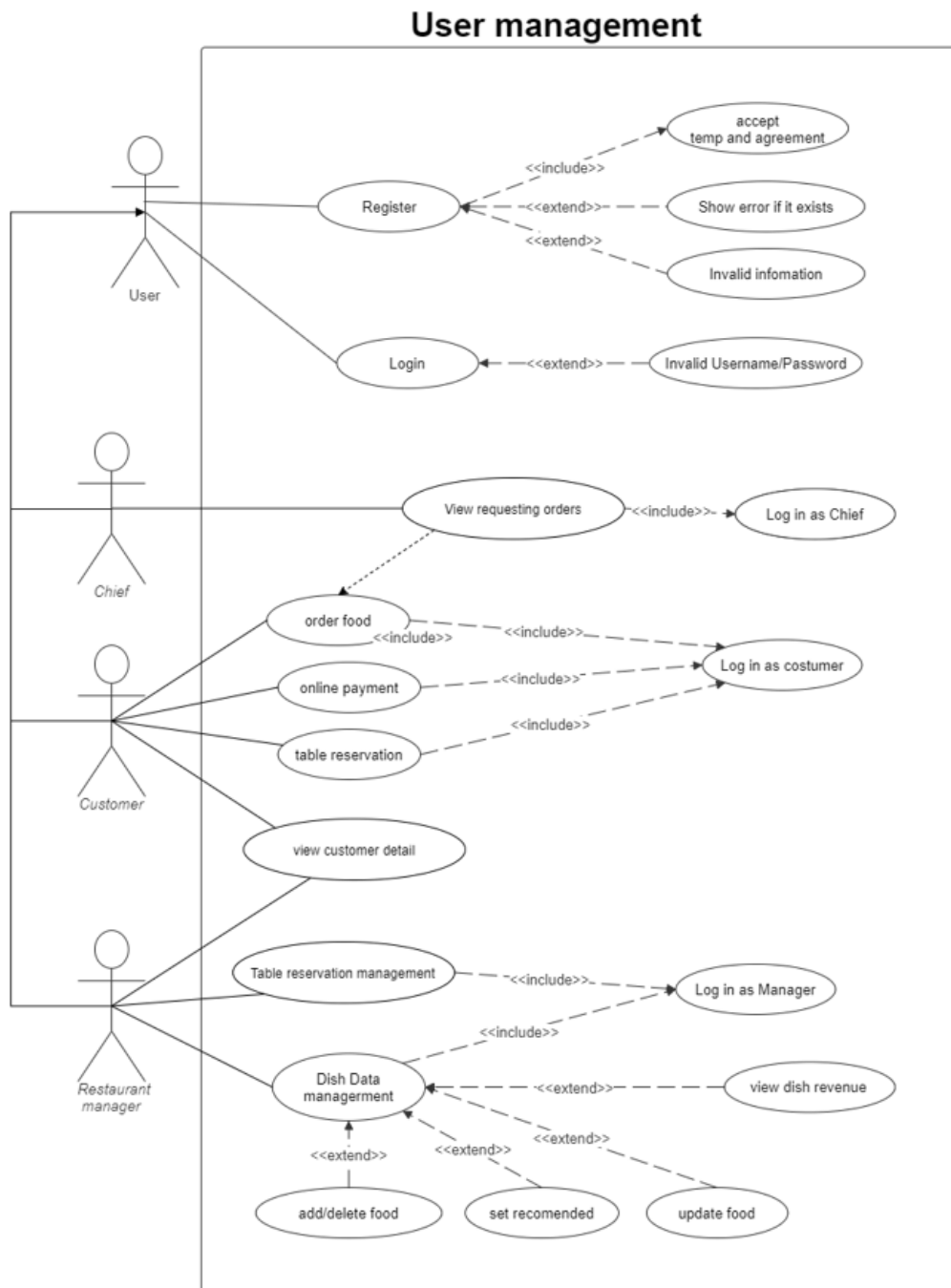
PoS Restaurant

2.3   Task 1.3:

3. Choose one specific feature, i.e. food ordering, table reservation, customer management. Draw its use-case diagram and describe the use-case using a table format.

 - Customer management:

   + Use-case diagram:

User management

+ **Table format:**

Use Case Name	Register
Use Case Overview	To register for the application and provide a logon id and password.
Actor(s)	User
Preconditions	Website is available and connect to data base
Trigger	Select Register link
Steps	1. Select Register link 2. Enter user details 3. Summit
Post Conditions	1. Personal details are entered into the user database table 2. New user is created 3. Message is sent back to the screen stating a new user has been created
Exception Flow	1. If an existing user exists then a "User already exists" message displayed. 2. If information is missing or wrong format "Invalid Information" message is displayed.

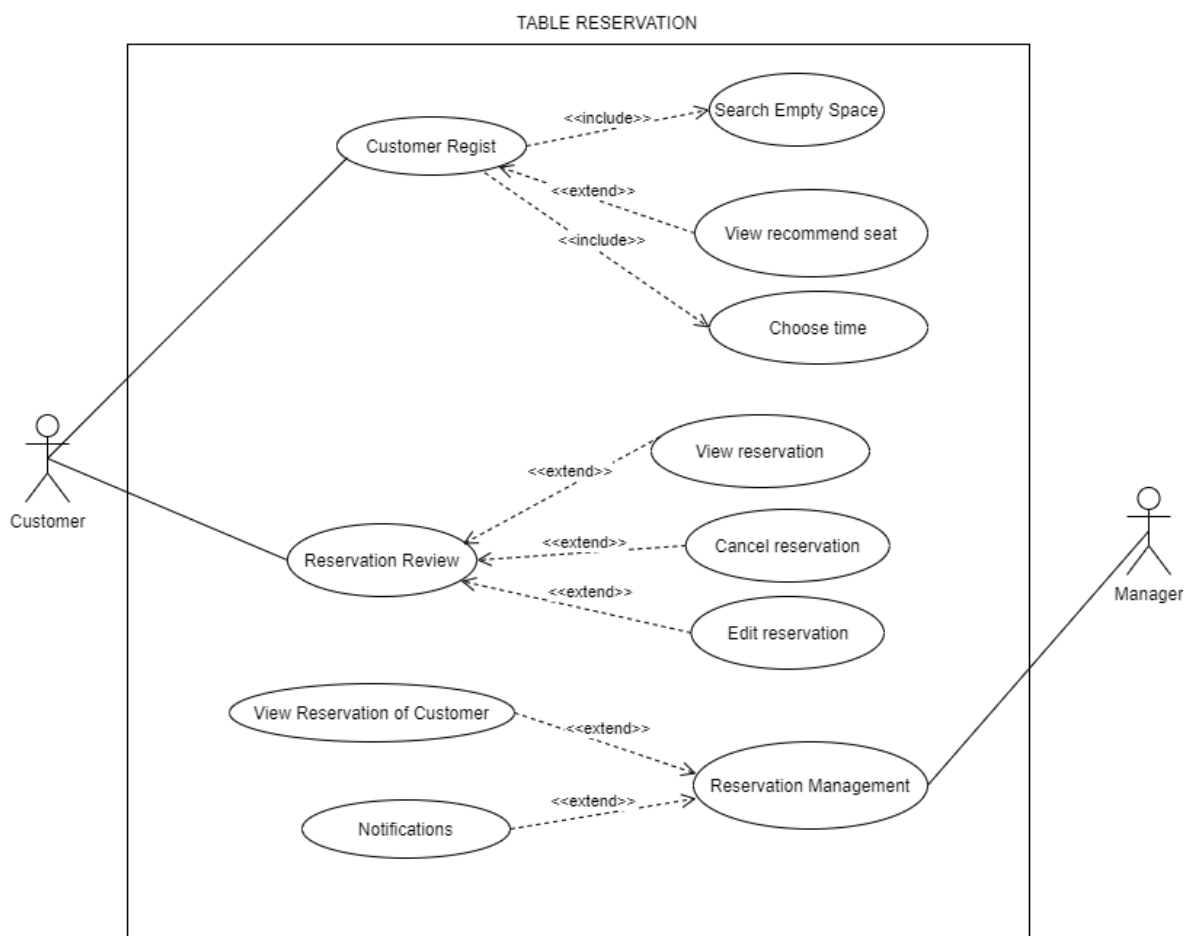| Use Case Name	Login
Use Case Overview	To login into the application
Actor(s)	Users
Preconditions	Website is available and connect to data base
Trigger	Select Register link
Steps	1. Select Login link 2. Enter username and password 3. Summit
Post Conditions	User login to sever
Exception Flow	1. If username and password are wrong then a "Invalid username/password" message displayed. 2. Requested to re-enter username/ password details.

Use Case Name	Dish Data Management
Use Case Overview	To help Restaurant manager manage dish data
Actor(s)	Restaurant manager
Preconditions	Website is available and connect to data base, Login as Restaurant manager
Trigger	Select View dish data link,login as Restaurant manager
Steps	1. Select View dish data link 2. Choose a dish from list to modify 3. Modify dish data 4. Confirm change 5. Go back to View dish data site
Post Conditions	Data in database get modified
Exception Flow	1. If information when add dish is missing or wrong format "Invalid Information" message is displayed.

Use Case Name	View Requesting orders
Use Case Overview	Help Chief know what dish to make
Actor(s)	Chief
Preconditions	Website is available and connect to data base
Trigger	Login as Chief
Steps	1. Select Requesting orders link 2. Select order from a list of orders 3. Confirm done 4. The order get delete
Post Conditions	Chief view all requesting orders
Exception Flow	

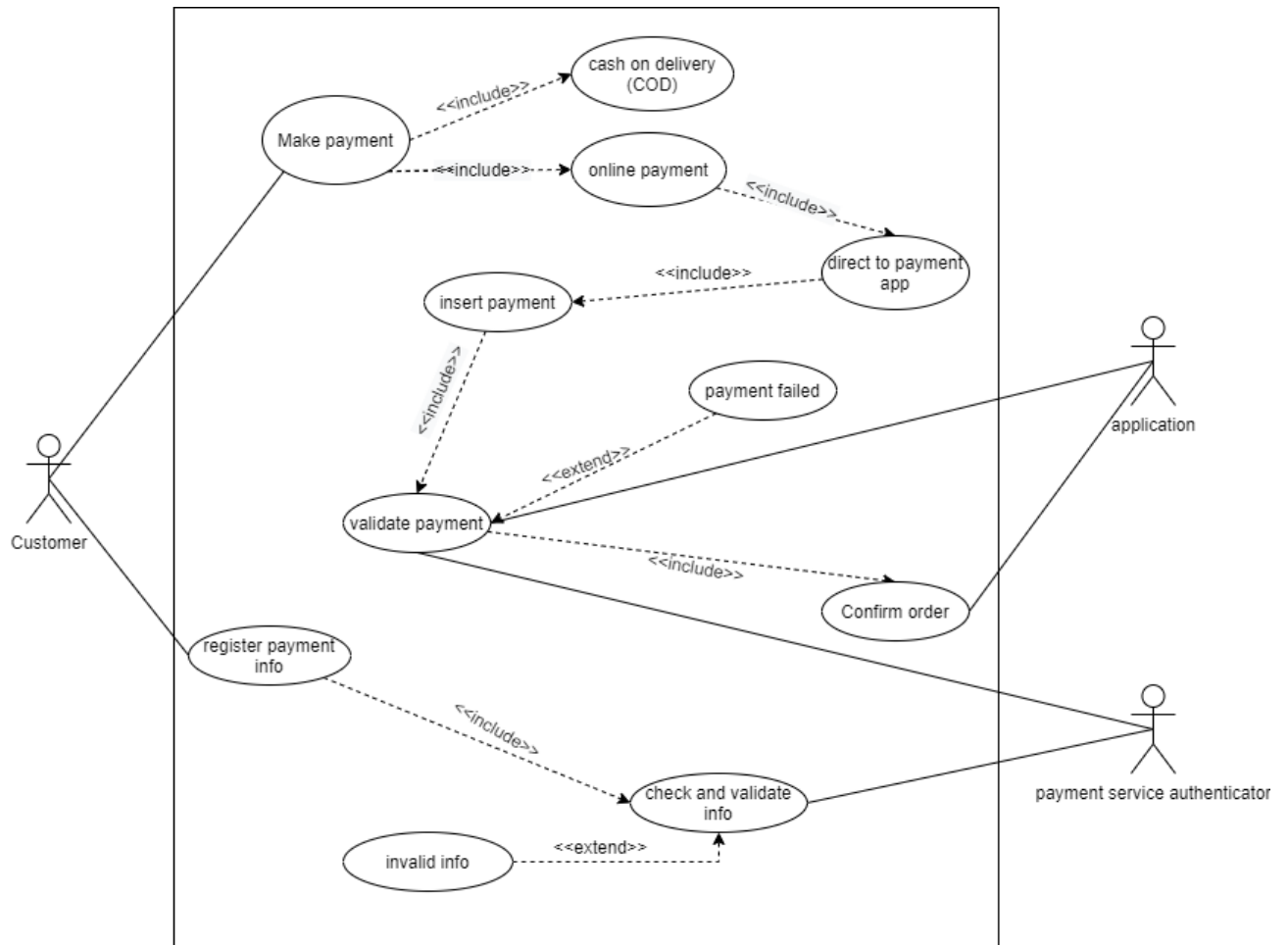| Use Case Name	View customer details
Use Case Overview	To help Restaurant manager manage customer
Actor(s)	Restaurant manager
Preconditions	Website is available and connect to data base, Login as Restaurant manager
Trigger	Select View detail data link
Steps	1. Select View detail data link 2. Manager select a customer in the list to view their details 3. Manager close customer details pages
Post Conditions	Restaurant manager can see all customer details
Exception Flow	

- Table reservation:

+ Use-case diagram:

+ Table format:

Use Case Name	Table Reservation for the restaurant manager
Use Case Overview	The restaurant manager can manage data of reservation
Actor(s)	Customers, Manager
Preconditions	Website is available and connect to database
Trigger	Login as Manager and view data of the table reservation
Steps	1. View table reservation 2. Consider the data 3. Modify (If need) 4. Confirm
Post conditions	Show all reserved and non-reserved place; Control the data of table reservation
Exception Flow	

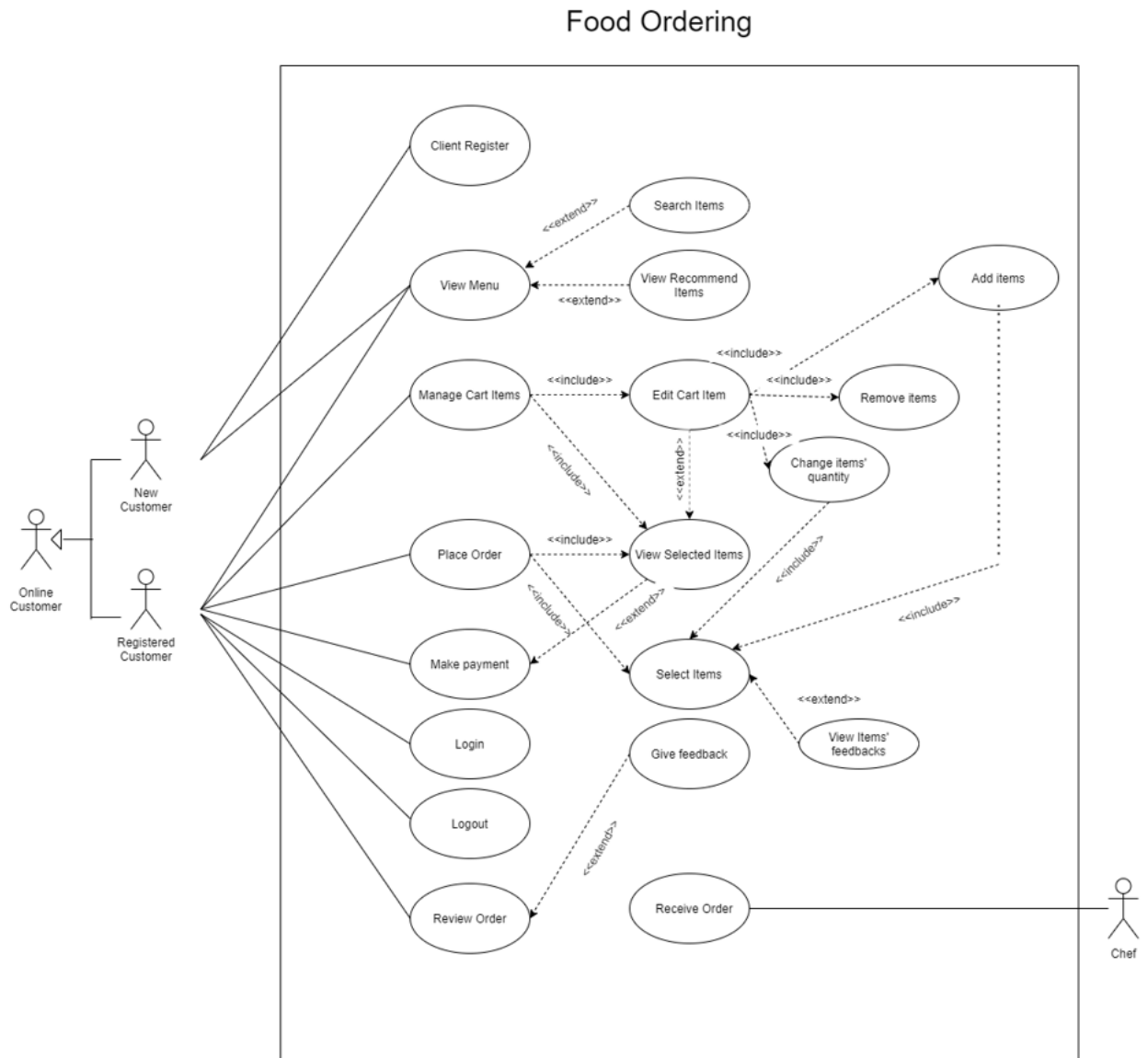| Use Case Name	Table Reservation for Customers
Use Case Overview	Help the guests make reserve
Actor(s)	Customers
Preconditions	Website is available and connect to database
Trigger	See all seats in reservation frame
Steps	1. Choose a suitable place 2. Select time 3. Confirm
Post Conditions	Show the reserved place of customers
Exception Flow	If customers choose a reserved place, message is displayed

- Online payment:

+ Use-case diagram:

+ Table format:

Use Case Name	Make payment
Use Case Overview	To make payment for the order that has been made recently.
Actor(s)	Customer
Preconditions	Website and payment service is available and connect to data base
Trigger	Select Make payment

Steps	1. Choose payment method :
	   A. Online payment.
	   B. Cash on delivery (COD).
	   C. Exit.
	Case A:
	2. Direct to payment app
	3. Insert payment on-app
	4. Validate payment by payment service authenticator
	5. Confirm order.
	Case B:
	2. Confirm order.
	Case C:
	2. Exit.

Post Conditions	1. Payment has been successfully made. 2. Order confirmed.
Exception Flow	If payment failed then notify to the customer

Use Case Name	Register payment info
Use Case Overview	For customer to register the payment information.
Actor(s)	Customer, Payment service authenticator
Preconditions	Website and payment service is available and connect to database, Log in as customer.
Trigger	Log in as Customer, select register Payment info
Steps	1. Select register Payment info 2. Register Payment info with credit card or e-wallet. 3. Submit 3. Payment service authenticator will check and validate the given information. 4. Send a message to the screen state that registration information is recorded.
Post Conditions	Registration information is recorded to the database.
Exception Flow	If information when register is missing, in wrong format or not exist. "Invalid Information" message is displayed.

- **Food orderring:**

+ **Use-case diagram:**

Food Ordering

+ Table format:

Use Case Name	Food Ordering
Use Case Overview	Help Customer order the food.
Actor(s)	Customer, Chef
Preconditions	Website is available and connected to Database
Trigger	Enter the website
Steps	1. Login to the website 2. View the menu 3. Search for food (if need) 4. Place order 5. Manage cart items 6. Confirm selected items 7. Make payment 8. Review Order 9. Chef receives and confirms requested order
Post Conditions	Order is recorded to the database successfully
Exception Flow	1a. If Customer doesn't have an account, he/she can only view the menu

Use Case Name	Manage Cart Items
Use Case Overview	Help Customer manage their Cart
Actor(s)	Customer
Preconditions	Website is available and connected to Database Login as Customer
Trigger	Press the Cart button
Steps	1. View Shopping Cart 2. Edit the Cart (if need) by Adding new items, Removing or Changing the quantity of existed items. 3. View Selected Items 4. Confirm
Post Conditions	Cart is modified succesfully and recorded to the database
Exception Flow	2a. If an item reachs maximum quantity or is out of stock, Customer can't increase the quantity of it. 2b. If Cart is full, Customer can't add more items

Use Case Name	Place Order
Use Case Overview	Help Customer to place order
Actor(s)	Customer
Preconditions	Website is available and connected to Database Login as Customer
Trigger	Add any item to their cart
Steps	1. Select Item 2. Read other customers' feedback (if need) 3. Change items' quantity 4. Add items to cart 5. View Selected Items 6. Confirm 7. Make payment
Post Conditions	Cart is modified succesfully and recorded to the database Proceed to Payment page
Exception Flow	3a. If an item reachs maximum quantity or is out of stock, Customer can't increase the quantity of it. 4a. If Cart is full, Customer can't add more items

3   References

1. https://www.youtube.com/watch?v=5Ul_rUuoUZE

2. https://www.uml-diagrams.org/examples/online-shopping-use-case-diagram-example.html?

3. https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-use-case-diagram/?