20102104 Kim Sua
20102122 Jeong Hyoan
20102125 Pi Yujin

SERVICE

Re-dish

: Re-dish is a service that provides rental, pick-up and cleaning of reusable containers to reduce the use of disposable containers when ordering delivery food

Problem Description

뉴스웍스 | 4일 전

[핫네임] 일회용품 사용제한 확대

코로나19 유행에 따른 **배달** 음식 소비가 늘어다는 것을 생각하면 지금은 더 많이 늘어났을 가능성이 높다. 이런데도 뒷짐을 지고 있다면 직무유기다. 규제도 필요하지만 국민들도 **일회용품** ...

충청타임즈 | 2022.10.31.

일회용품 규제 코앞 ... 자영업자 대응 분주

/정윤채기자 충북 자영업자들이 오는 24일부터 시행되는 **일회용품** 규제 강화 준비에 바쁘다. 지난해 12월... 플라스틱 빨대나 비닐 캐리어(커피 운반 봉지나 틀)를 종이 재질 빨대나 캐리어...

'**일회**용 종이컵 못 쓴다' 카페·식당 우려... 이제는 '불편 감수' 일요서울 | 2022.10.31.

뉴스1 | 2020.04.08. | 네이버뉴스

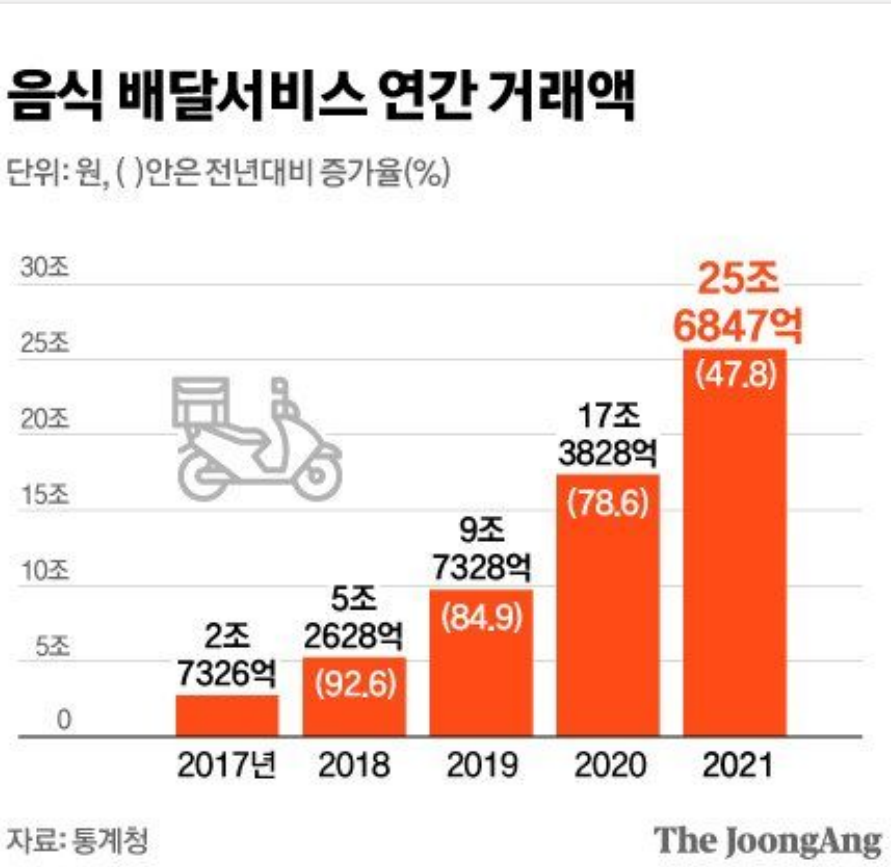
집콕 늘어나면서 배달 일회용품 쓰레기 증가

신종 코로나바이러스 감염증(코로나19) 여파로 온라인 쇼핑과 음식 **배달** 같은 비대면 소비가 늘면서 **일회용품 쓰레기** 배출량이 **증가**했다. 8일 오후 서울의 한 아파트 분리수거장에 **배달** 음...

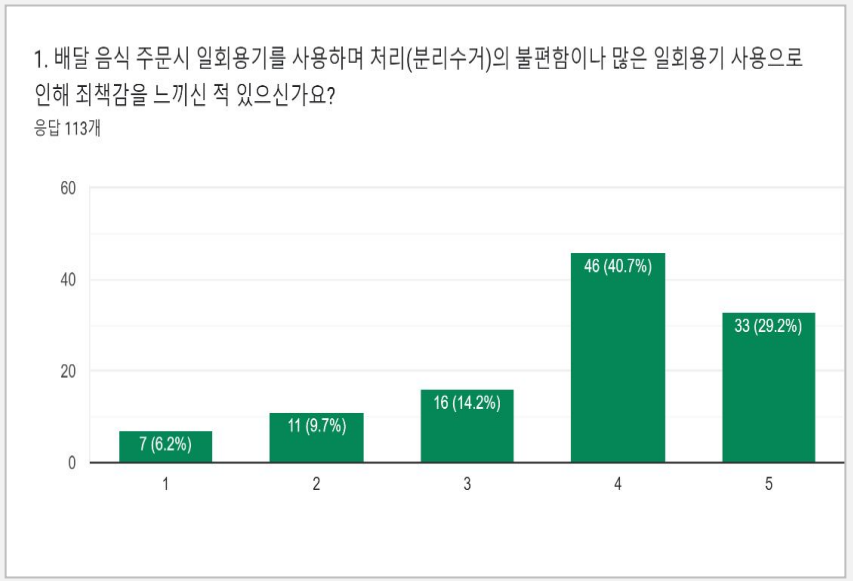
오마이뉴스 PICK | 1일 전 | 네이버뉴스

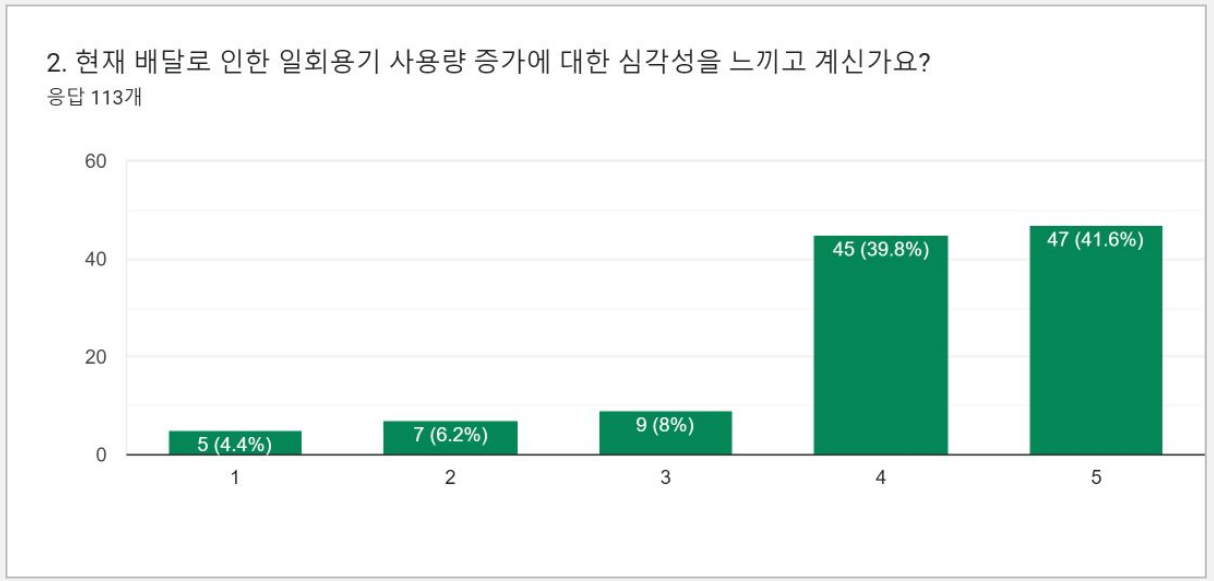
이게 힘들 줄이야... 일회용품 끊기 챌린지의 가장 큰 고비

물티슈 대신 행주, **배달**도 용기 들고 가 주문... 세밀한 제도보완 필요 ▲ 기자가 3일 동안 배출한... 사용하는 **일회용품**은 **일회**용 티슈, 테이크아웃 컵(종이컵), 나무젓가락 순으로 나타났다....



Results of survey





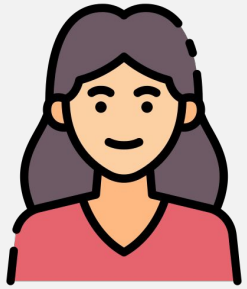
-) 79% of respondents felt guilty about using disposable device

-) 92% of respondents felt the seriousness of the increase in disposable container usage

Current problems & Necessity of 'Re-dish'

The **problem** of using reusable containers for restaurant

- Hassle of cleaning containers
- Long cleaning time
- Increased labor costs



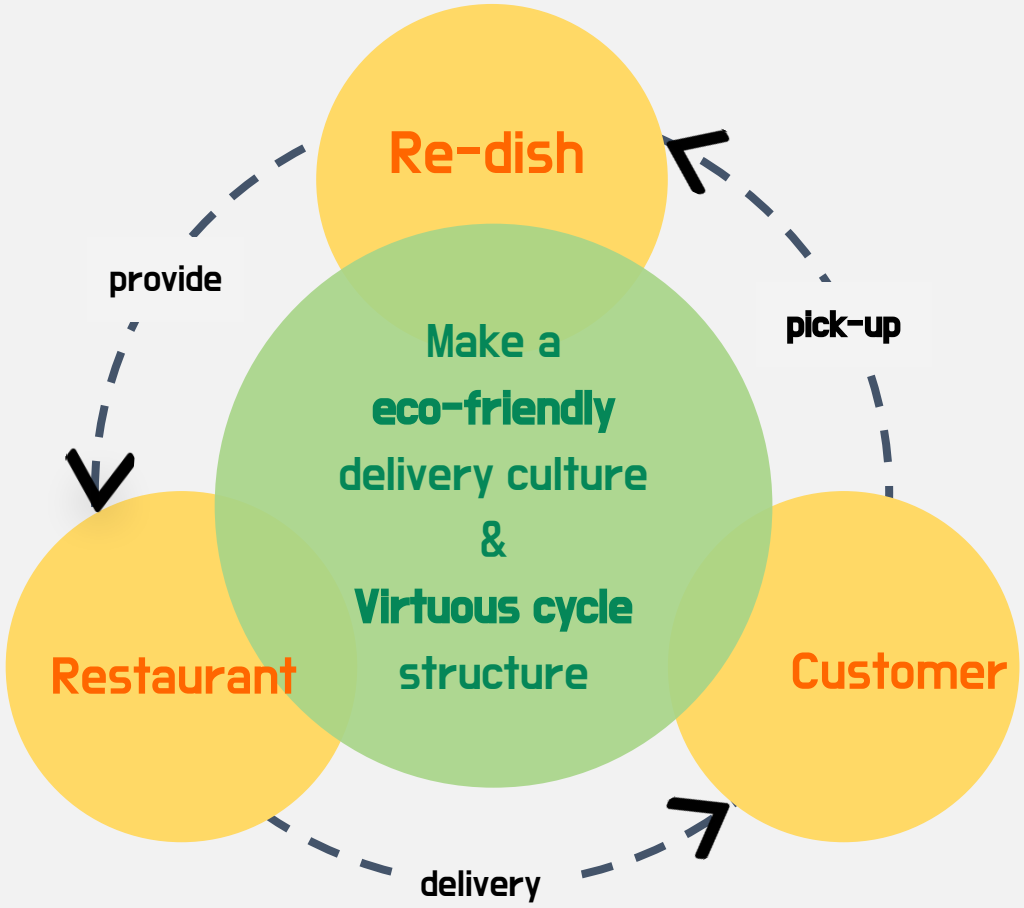
The **problem** of using disposable containers for customer

- many plastic trash is generated
- time-consuming and annoying of cleaning and disposal containers

When using 'Re-dish'

- Get an image of eco-friendly store
- Get delivery food warmer

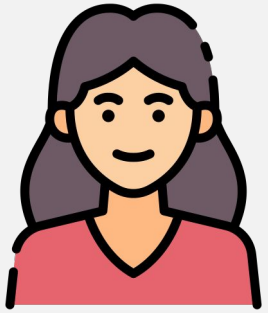
Services of Re-dish



1. **Provide** eco-friendly reusable containers to restaurants
2. **Delivery** reusable container with food to consumers
3. **Pick-up** used containers by Re-dish
4. **Clean** recovered containers in Redish

-> reusable containers are **owned by Re-dish**. and stores that use Re-dish services are rented. not purchased containers

Services of Re-dish



Customer

- Order food by looking at the list of stores that use reusable containers
- Search, category functionality makes it easy to find the restaurant user wants
- Reusable container pick-up requests
- Each order will earn 0.5% points of the order amount and points will be used as cash on the next order

Restaurant

- Register and modify menu
- When registering a menu, restaurant has to register container info for each menu
- Container order (rent) function
- Container inventory management
  : Inventory of containers can be determined by past orders and food orders

Re-dish Employee

- Check the store's container order
- Check restaurant return request
- Reflect pick-up and wash status
- Inventory management : The location and status of the container (washing, shipping, storage) and the quantity of the container by status can be checked

Functional Requirement

Category	Requirement Identifier	Requirement Name
Membership (Mem)	FR – Mem - 1	Customer Sign up
	FR – Mem – 2	Restaurant Sign up
	FR – Mem – 3	Login
	FR – Mem – 4	Logout
	FR – Mem - 5	Withdrawal
Store List (SL) - Customer's Main Page	FR – SL - 1	Search Restaurant
	FR – SL – 2	Show Restaurant List
	FR – SL – 3	Select Food Category
	FR – SL - 4	Filtering Restaurant
Food Order (FO)	FR – FO - 1	Show Menu Information
	FR – FO – 2	Show Restaurant Information
	FR – FO – 3	Customer's Shopping Basket
	FR – FO – 4	Specify Food Order
	FR – FO - 5	Payment for Food Order
	FR – FO - 6	Food Order Reception
	FR – FO - 7	Food Order Cancellation

Functional Requirement

Pick – up (PU)	FR – PU - 1	Food Order History
	FR – PU - 2	Pick-up Request
Map (M)	FR – M - 1	Show Food Category on Map
	FR – M - 2	Show Restaurant Information on Map
Post (P) -Restaurant's Main Page	FR – P - 1	Upload Menu Information
	FR – P – 2	Upload Restaurant Information
	FR – P – 3	Revise Menu Information
	FR – P – 4	Revise Restaurant Information
	FR – P - 5	Review Management
Container Order (CO)	FR – CO - 1	Container Information
	FR – CO – 2	Container Order History
	FR – CO – 3	Restaurant's Shopping Basket
	FR – CO – 4	Specify Container Order
	FR – CO - 5	Payment for Container Order
	FR – CO - 6	Container Order Cancellation

Functional Requirement

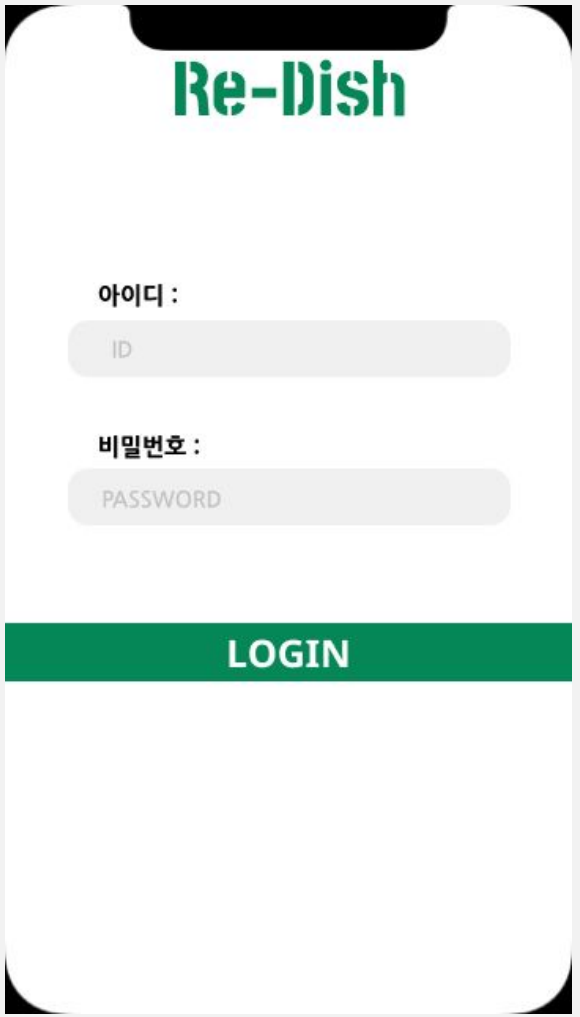
My Page – customer (MPC)	FR – MPC - 1	Show Customer Basic Information
	FR – MPC – 2	Revise Customer Basic Information
	FR – MPC – 3	Permission Settings
	FR – MPC – 4	My Review Management
	FR – MPC - 5	Visualize Usage
	FR – MPC - 5	Customer point
My page – restaurant (MPR)	FR – MPR - 1	Show Restaurant Basic Information
	FR – MPR – 2	Revise Restaurant Basic Information
	FR – MPR - 3	Sales History
	FR – MPR - 3	Restaurant point
Notification (N)	FR – N - 1	Pick – up Schedule Alarm
	FR – N – 2	Return Request Alarm
	FR – N – 3	Order Receipt Alarm
	FR – N - 4	Container Delivery Completion Alarm

Functional Requirement

Administration (A)	FR – A - 1	Container Order Management
	FR - A - 2	Container Pick- up Request
	FR - A - 3	Container Washing and Inventory
	FR - A - 4	Inventory management
	FR - A - 5	Container Location Tracking and Inventory Control

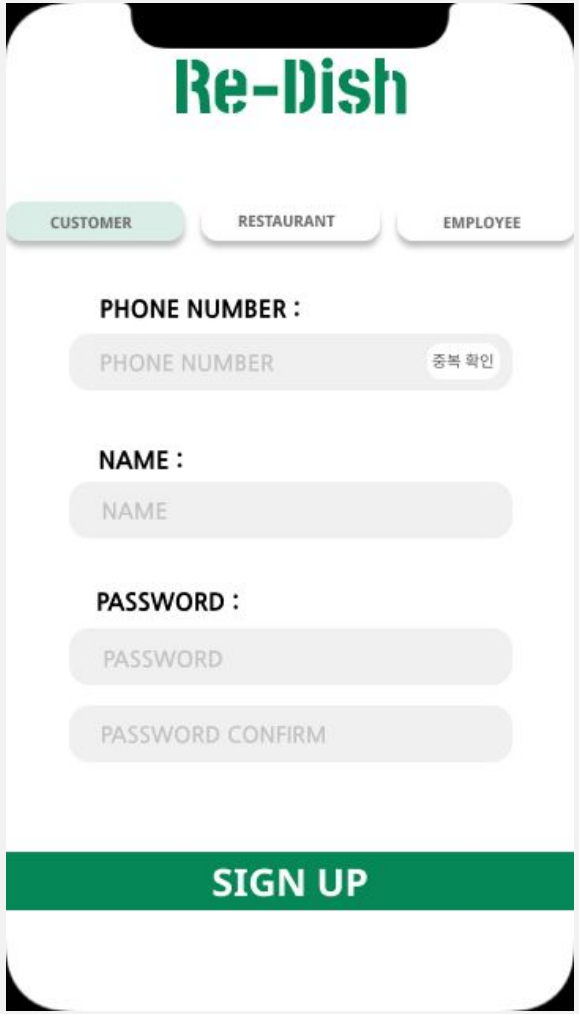
Functional Requirement

INTRO PAGE

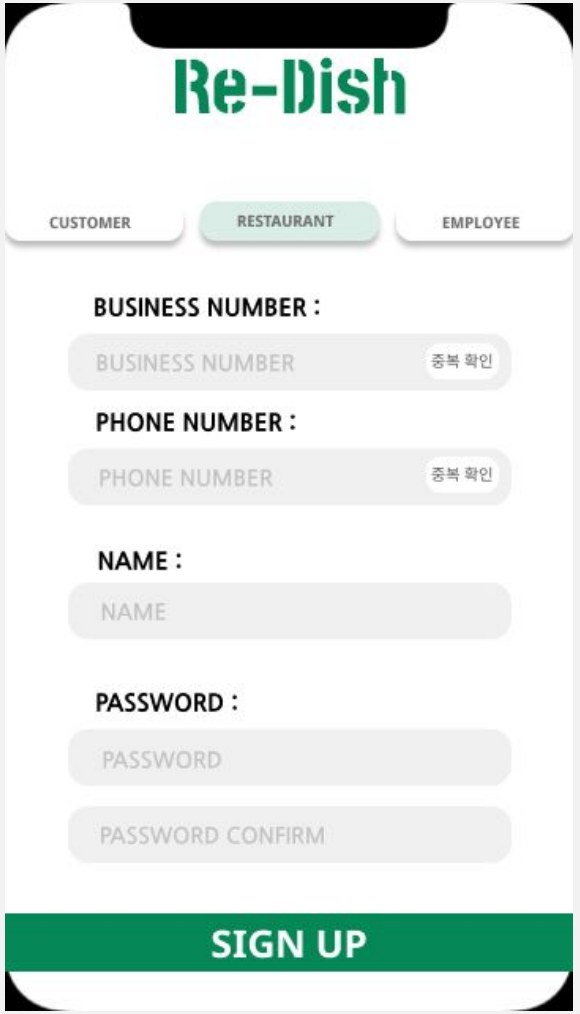


LOGIN PAGE

Functional Requirement



SIGNUP PAGE for Customer

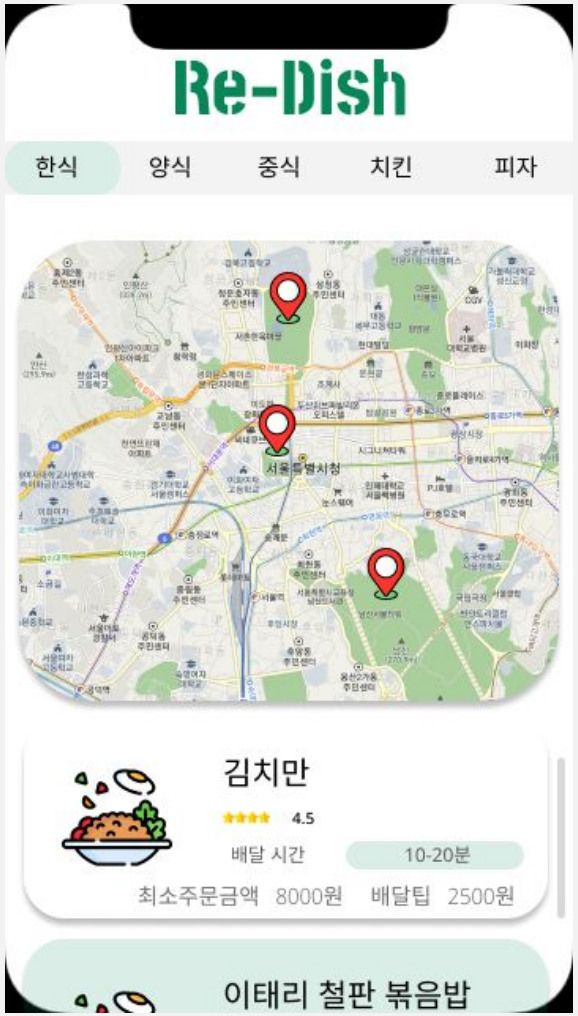


SIGNUP PAGE for Restaurant

Functional Requirement

Customer
main page

- search restaurant
- show restaurant list
- select food category
- filtering restaurant



restaurant list
on map

- show food category on map
- show restaurant information on map

Functional Requirement

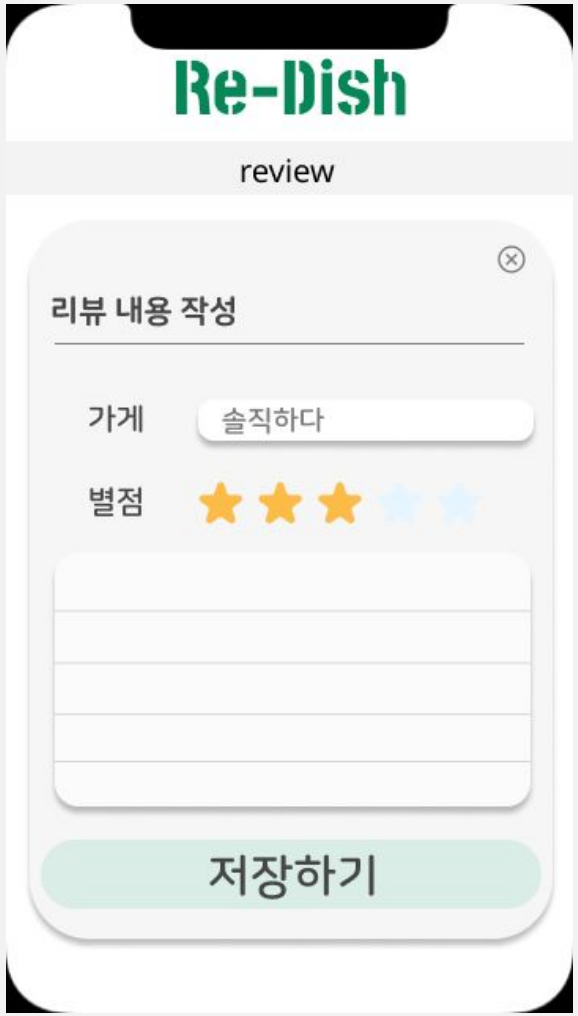
Menu Information Page
for Customer and Restaurant

- specific restaurant info
- show menu list
- customer's shopping basket about food order
- specify food order
- payment for food order

FOOD ORDER HISTORY
for Customer

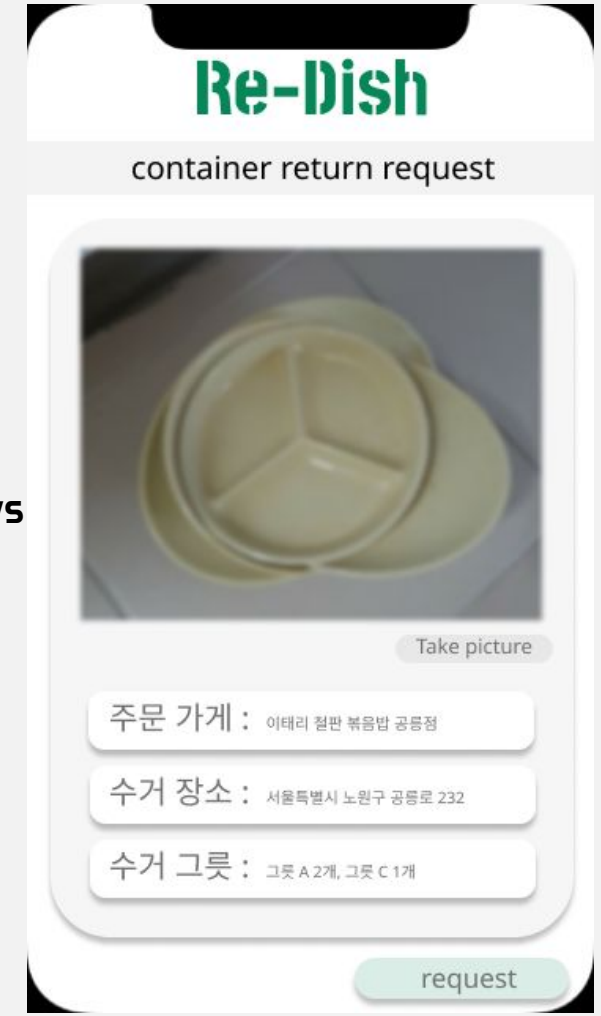
- show food order history
- Customer can request pick-up service
- Customer can write review for each order

Functional Requirement



WRITE REVIEW PAGE
for Customer

- For each specific order, user can write text reviews with start point.



WRITING REVIEW PAGE
for Customer

- Insert container picture
- Check pick-up location
- Check container information
- After requesting, user receive pick-up schedule alarm

Functional Requirement

container pick-up request

completed pick-up request

- page for employee (administrator)
- container washing and inventory
- container location tracking and inventory control

Functional Requirement

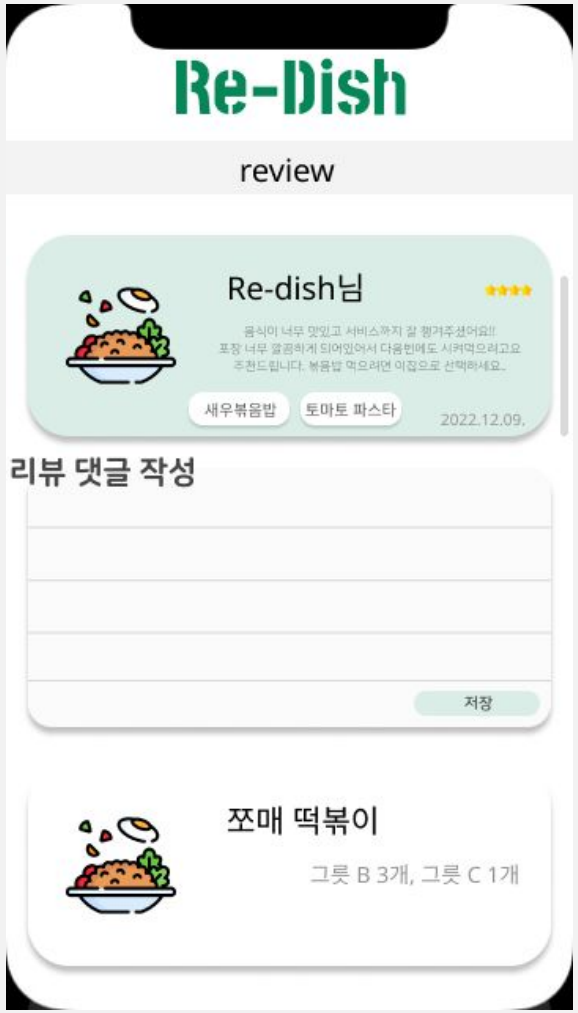
Restaurant
main page

- upload and revise menu & container by menu information
- upload and revise restaurant information
- review management

Functional Requirement

SALES HISTORY
for Restaurant

- Food order reception
- Food order cancellation
- Restaurant check food orders
- Only restaurant owner can cancel the order



REVIEW MANAGEMENT PAGE
for Restaurant

- Restaurant owner can check and reply to customer's review

Functional Requirement

SPECIFY CONTAINER ORDER PAGE for Restaurant

- Container information with name, size, type, price
- Set the number of containers
- Restaurant's shopping basket
- specify container order
- payment for container order

Functional Requirement

- Cancel container order before or after delivery in container order history
- Check container order information like date. container types. quantity. and total price
- order with same information of specific order history

CONTAINER ORDER HISTORY for Restaurant

- Set the type and the number of containers with reasons
- Choose cancel or change

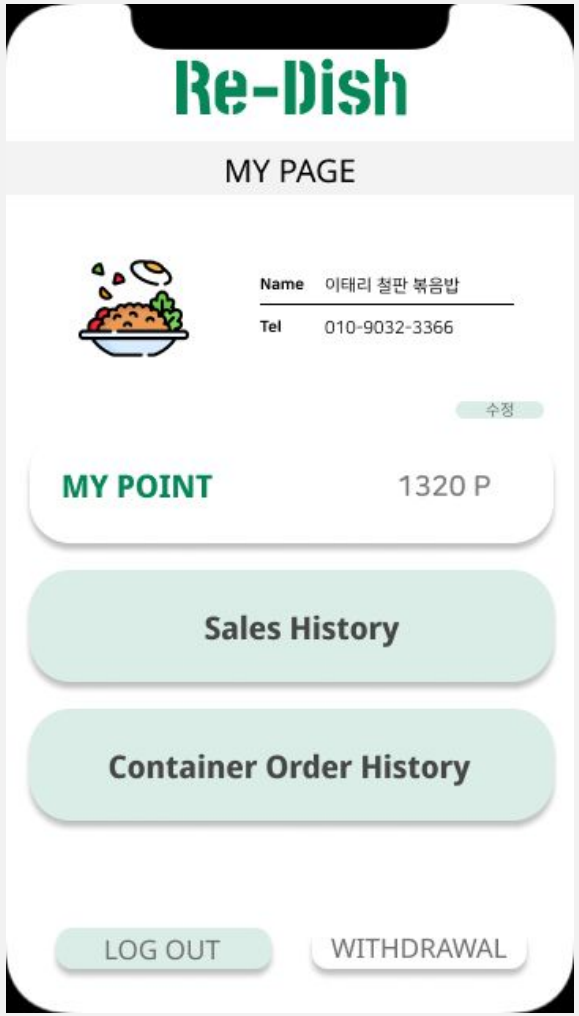
CONTAINER ORDER CANCELLATION PAGE for Restaurant

Functional Requirement

container order management

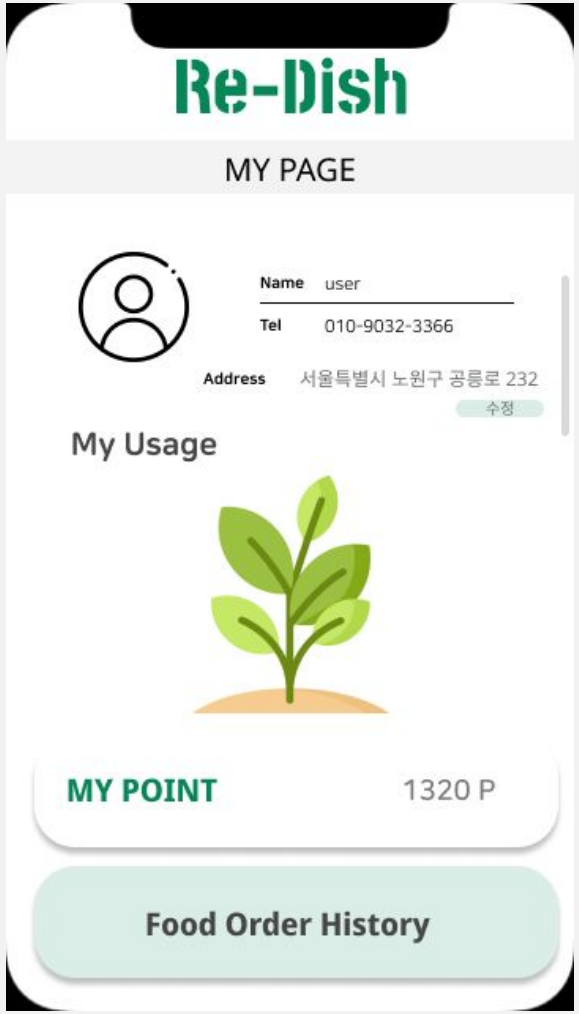
- page for employee (administrator)
- container order management depending on container inventory
- container location tracking and inventory control

Functional Requirement



Restaurant
MY PAGE

- show and revise basic information
- show sales history
- point earned from container order
- Logout and Withdrawal



Customer
MY PAGE

- show and revise basic information
- permission settings
- my review management
- visualize order amounts
- point depending on usage of food order
- Logout and Withdrawal

Functional Requirement

administrator
main page

pop up
container management

- page for employee (administrator)
- inventory management
- container inventory control
  in administrator(employee) page

NON Functional Requirement

Number	Category	Non - Functional Requirements	
NFR-1	Product requirements	Usability requirements	
NFR-2		Efficiency requirements	Performance requirements
NFR-3			Space requirements
NFR-4		Reliability requirements	
NFR-5		Portability requirements	
NFR-6	Organizational requirements	Delivery requirements	
NFR-7		Implementation requirements	
NFR-8		Standards requirements	
NFR-9	External requirements	Interoperability requirements	
NFR-10		Ethical requirements	
NFR-11		Legislative requirements	Privacy requirements
NFR-12			Safety requirements

Scenarios

Pick-up	
Actors	Customer user
Initial condition	- The customer user must have a container that hasn't been returned yet among the foods he ordered - The user's camera function and internet connection for photo upload should be possible
Final condition	The container pick up request is sent to the administrator.
Exceptional case	- When the user posts a picture other than a picture of a bowl - If the user selects a place that does not correspond to the pick-up area as the pick-up location
Process	1. User clicks specific order in 'Order History' 2. User confirms the restaurant information and pick-up location(take-out users enters a location) based on the specific order 3. User Permits to use camera and albums utilization. 4. The user takes a picture of the container and uploads it. 5. The user clicks the Pickup Request button 6. Administrator receives the message "그릇 회수 요청이 업로드 되었습니다." (pick up schedule alarm) 7. Customers receives the message when the next 'pick-up' time (pick up schedule alarm) 8. If customer does not request pick-up service within 3 hours after ordering, customer will get message "그릇 수거 요청을 해주세요." (return request alarm) 3 times for each order. (After 3 hours, 1 day, 3days) 9. The delivery man goes to retrieve the container, checks the type and quantity of the container, and then clicks the confirmation button. 10. The position of the container (state) is changed during recovery and is responsible for the container to him

Interface & Detailed Design

NO.	Function (method)	parameter	return	process
5	changeContainerStatus	String	void	Get the ID which changes the position of the container and reflects the information in the Re-dish database.
		FoodOrderID, ContainerOrderID, PickupRequestID	-	

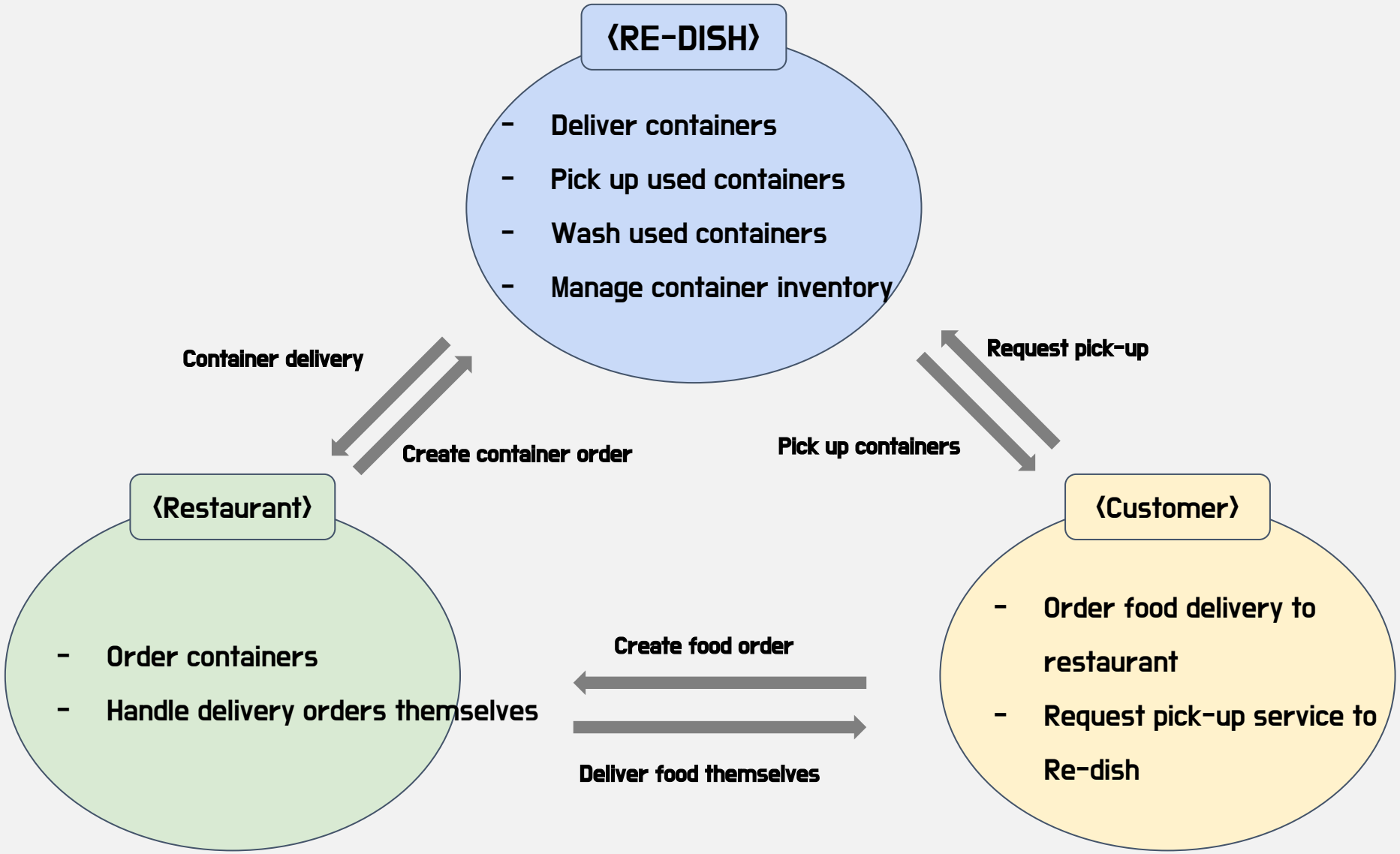
Class name	SpecificRestaurant		
Function	changeContainerStatus	Process	Store container status in Re-dish DB.
Input	FoodOrderID, ContainerOrderID,PickupRequestID	Output	-
Logic	Getting the current information of containers through orderID, reflect the status to the RedishCenter. UPDATE ContainerInfo SET Current == “FoodOrderID” OR “ContainerOrderID” OR “PickupRequestID”.		

Interface & Detailed Design

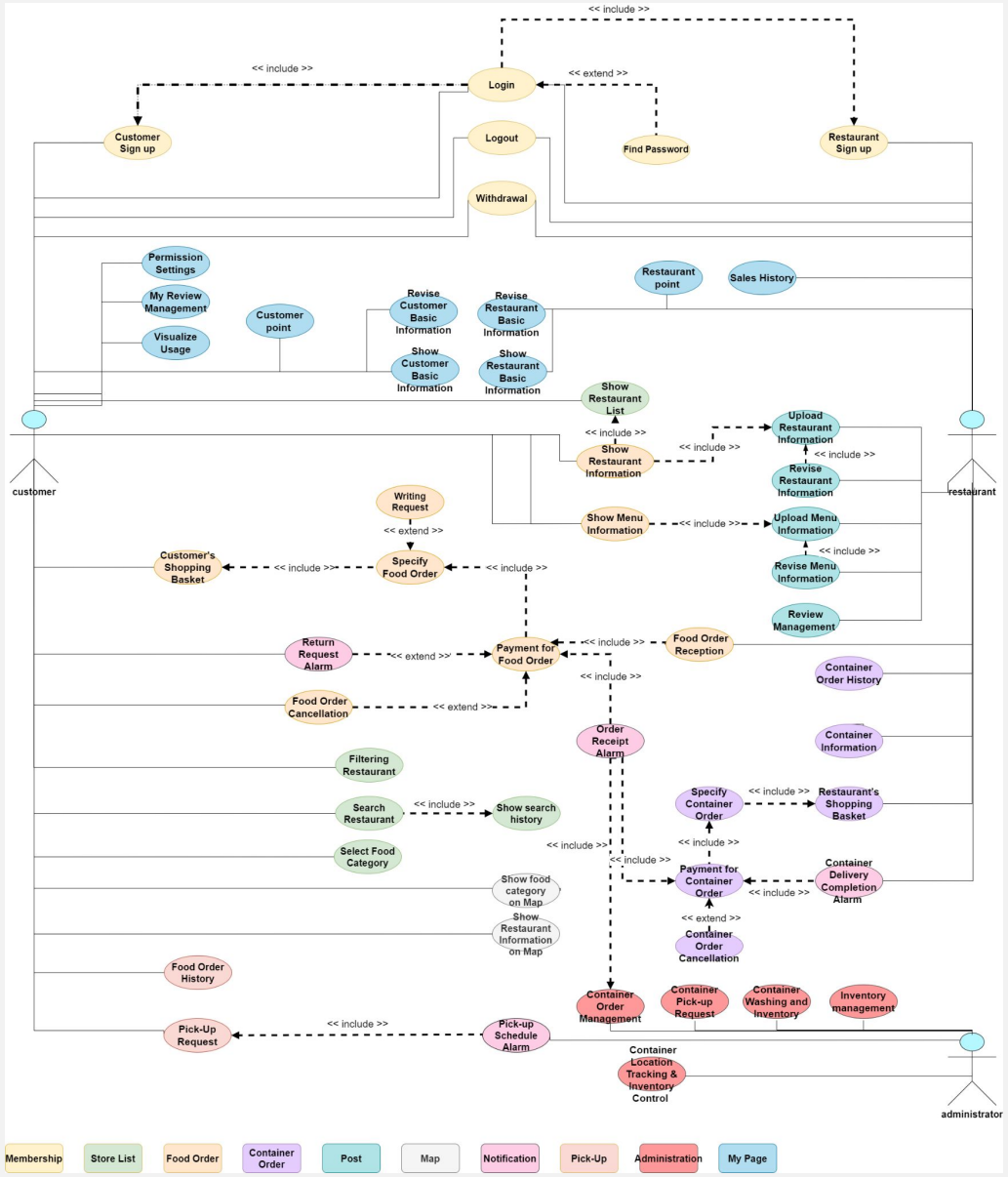
NO.	Function (method)	parameter	return	process
6	changeInventoryStatus	Dictionary	List	The changed container inventory is received as a parameter and reflected in the inventory list.
		Container	ContainerInventoryInfo	

Class name	SpecificRestaurant		
Function	changeInventoryStatus	Process	Reflect container add, delete, modification in Re-dish DB.
Input	Container Info	Output	-
Logic	Getting the addition or deletion information and reflecting the current inventory. INSERT CONTAINER(containerID, containerType, containerAmount) VALUES (#{containerID}, #{containerType}, #{containerAmount}) or DELETE CONTAINER(containerID, containerType, containerAmount) VALUES (#{containerID}, #{containerType}, #{containerAmount}) FROM REDISHCENTER		

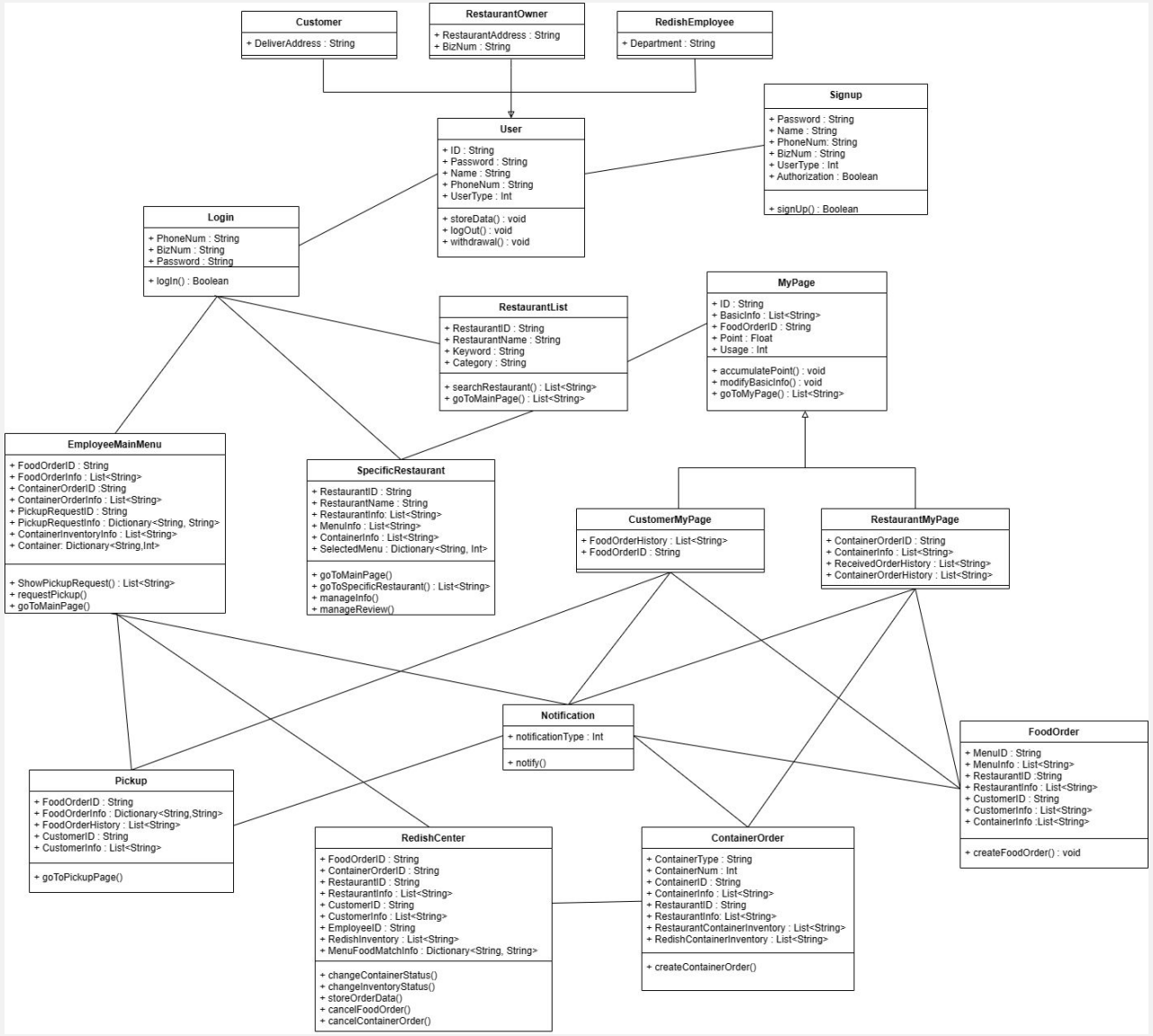
Container tracking



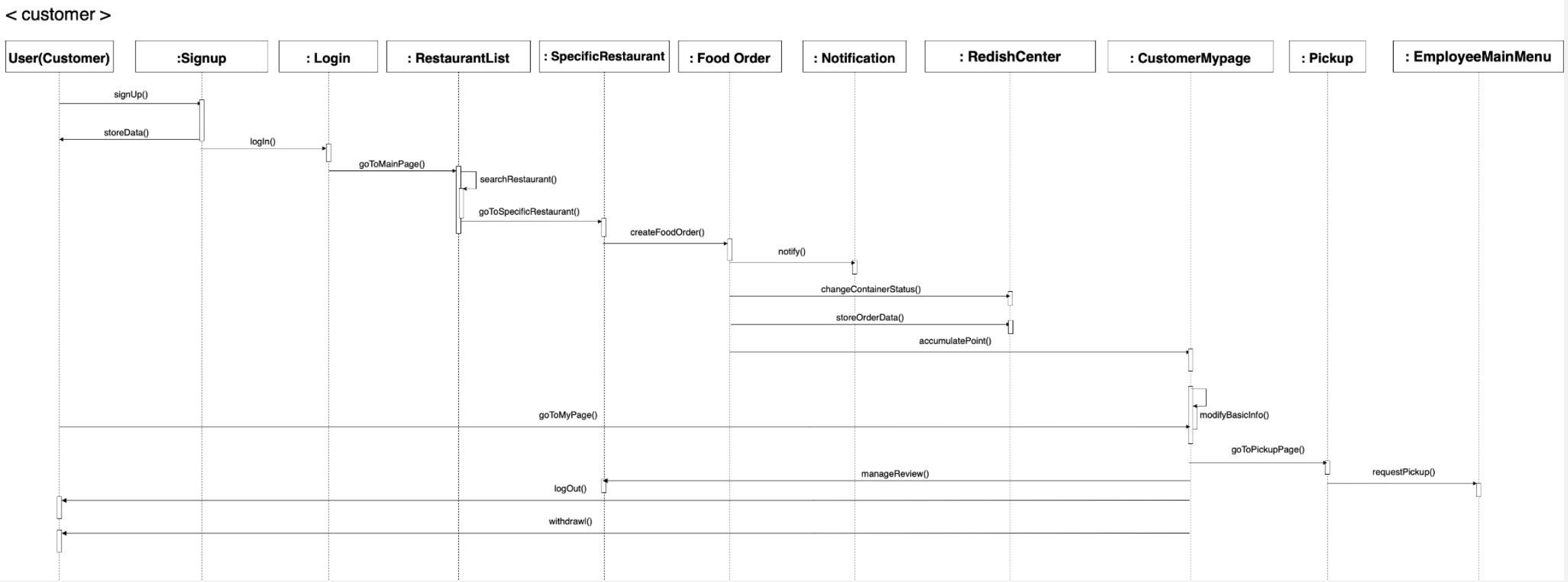
Use-case Diagram



Class Diagram



Sequence Diagram



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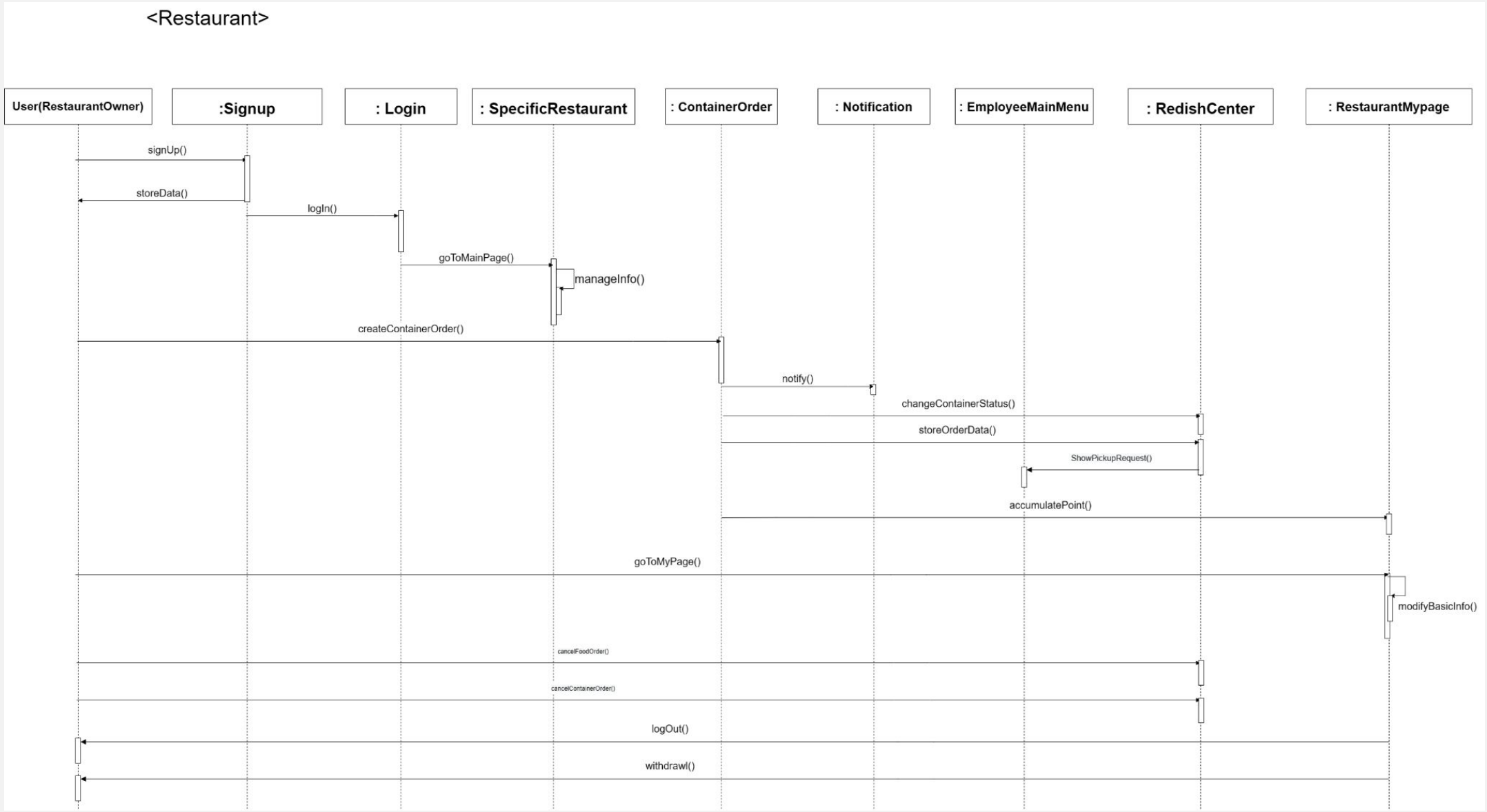

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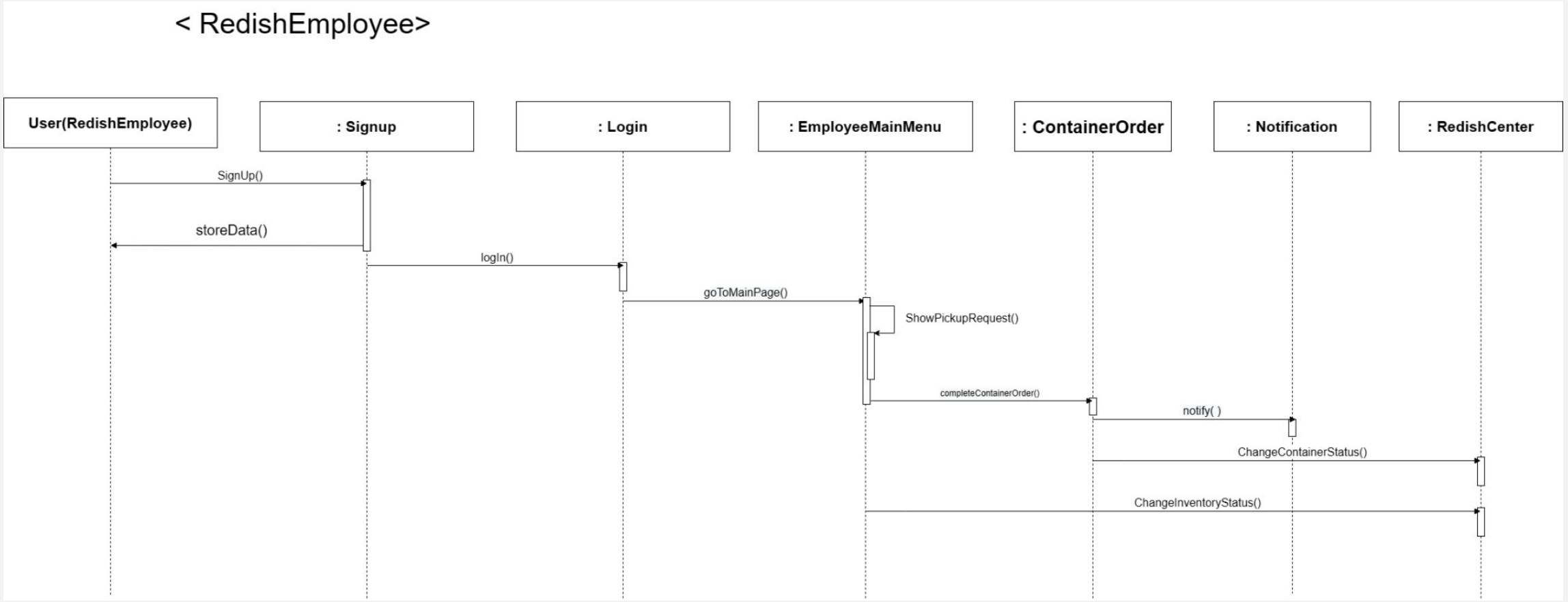
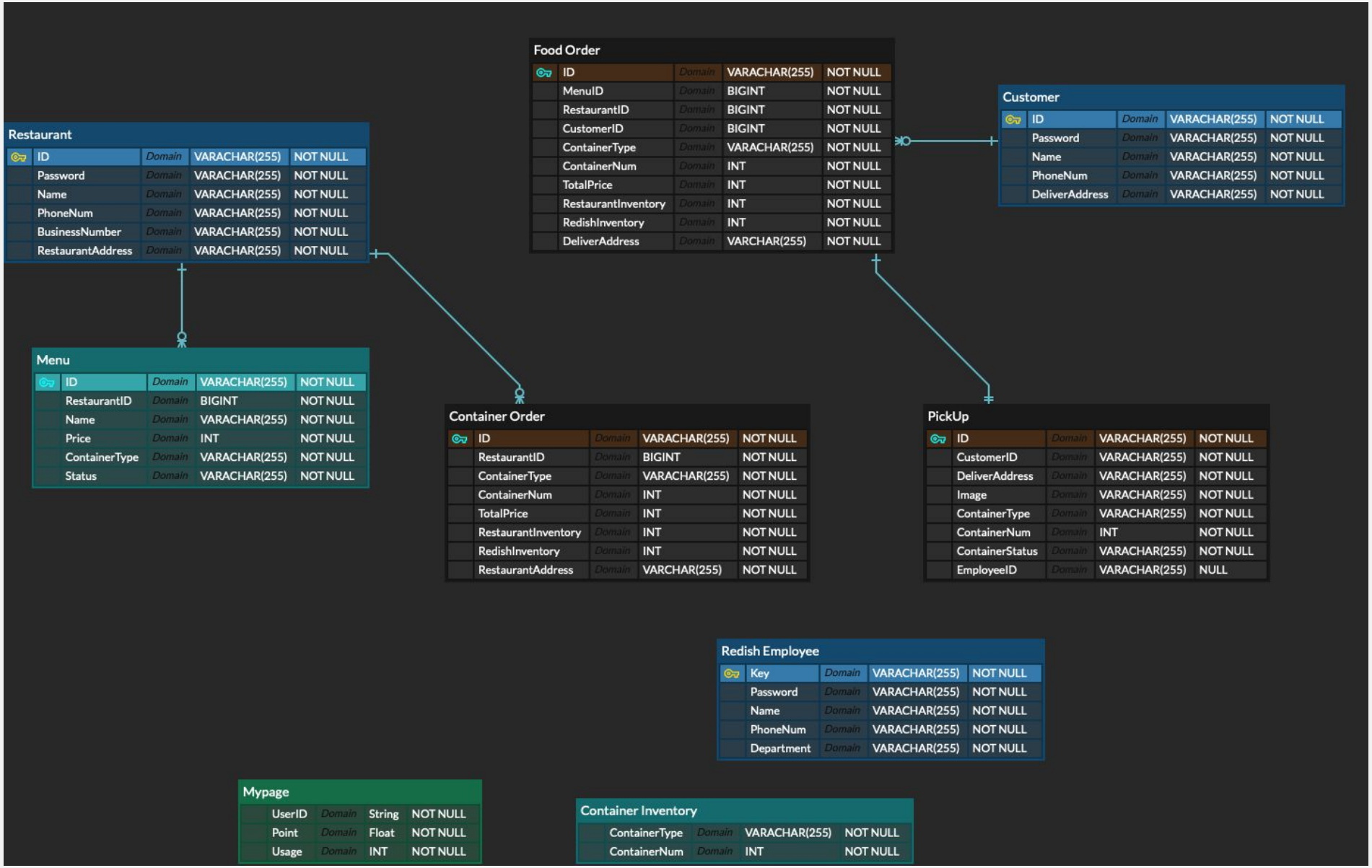


Entity Relationship Diagram



Goal

Disposable Waste Reduction

easy way to participate in environmental protection

Stabilize small business owners (stabilize brokerage fees)

Thank you