

Online Pizza Ordering System

<Domain Model>

소프트웨어공학 02분반

20171105 이민욱

20173875 정용준

20170223 신원준

20172609 여일구

20174438 정종민

20173156 김준기



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1. Domain Model Details

1.1 SubgroupA(PizzaOrder)

A-UC1 Add Menu To Cart

Extracting the Responsibility		
Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the retrieved records into an HTML document for sending to orderer's Web browser for display	D	Page Maker
HTML document that shows the orderer the current context, what actions can be done, and outcomes of the previous actions	K	Interface Page
Authenticate whether the user is logged in or not.	D	Login Checker
Container for the collection of menus and available options	K	Menu Storage
Container for the collection of menus with options in the orderer's cart	K	Cart Storage
Get menu data from Menu Storage	D	Menu Operator
Add menu data with options to Cart Storage	D	Cart Operator
Consist of routing information and page parameters	K	Page Request
Menu and option information for adding to orderer's cart	K	Add to Cart Request

Extracting the Associations		
Concept pair	Association description	Association name
Controller – Page Maker	Controller passes requests to page maker and receive back pages prepared for display	conveys request
Controller – Login Checker	Controller passes login-based requests to Login Checker to authenticate where the user is logged in or not	conveys request
Controller – Menu Operator	Controller passes whether a list of all menus or a specific menu information is needed to Menu Operator	conveys request
Controller – Cart Operator	Controller passes Add to Cart Request to Cart Operator for data manipulation	conveys request

Login Checker – Menu Operator	Login Checker provides user authentication data in or not to Menu Operator	authenticates user
Login Checker – Cart Operator	Login Checker provides user authentication data in or not to Cart Operator	authenticates user
Menu Operator – Menu Storage	Menu Operator retrieves menu data from Menu Storage	retrieves data
Cart Operator – Cart Storage	Cart Operator saves menu with options data to Cart Storage	saves data to
Page Maker – Interface Page	Page Maker prepares the Interface Page	prepares
Page Maker – Menu Operator	Menu Operator provides operation result data to Page Maker	provide data
Page Maker – Cart Operator	Cart Operator provides operation result data to Page Maker	provide data
Controller – Interface Page	Controller posts Interface Page to display for Web Browser	posts
Controller – Page Request	Controller receives Page Request for routing and rendering pages	receives
Controller – Add to Cart Request	Controller receives Add to Cart Request to insert new data to the orderer's cart	receives

Extracting the Attributes		
Concept	Attributes	Attribute description
Page Maker	data	Data needed to render page, which depends on each page
Page Request	Page name	name of page the user wants to go
	User's identity	User data for authentication
Add to Cart Request	Menu data	Menu data(name, size, options, ...) newly added to cart
	User's identity	User data for identifying cart owner

A-UC2 Manage Cart - generalize UC3, UC4

Extracting the Responsibility		
Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the retrieved records into an HTML document	D	Page Maker

for sending to orderer's Web browser for display		
HTML document that shows the orderer the current context, what actions can be done, and outcomes of the previous actions	K	Interface Page
Authenticate whether the user is logged in or not.	D	Login Checker
Container for the collection of menus with options in the orderer's cart	K	Cart Storage
Add menu data with options to Cart Storage	D	Cart Operator
Consist of routing information and page parameters	K	Page Request

Extracting the Associations		
Concept pair	Association description	Association name
Controller – Page Maker	Controller passes requests to page maker and receive back pages prepared for display	conveys request
Controller – Login Checker	Controller passes login-based requests to Login Checker to authenticate where the user is logged in or not	conveys request
Controller – Cart Operator	Controller passes Add to Cart Request to Cart Operator for data manipulation	conveys request
Login Checker – Cart Operator	Login Checker provides user authentication data in or not to Cart Operator	authenticates user
Cart Operator – Cart Storage	Cart Operator retrieves menu data in the orderer's cart from Cart Storage	retrieve data
Page Maker – Interface Page	Page Maker prepares the Interface Page	prepares
Page Maker – Cart Operator	Cart Operator provides operation result data to Page Maker	provide data
Controller – Interface Page	Controller posts Interface Page to display for Web Browser	posts
Controller – Page Request	Controller receives Page Request for routing and rendering pages	receives

Extracting the Attributes		
Concept	Attributes	Attribute description
Page Maker	data	Data needed to render page, which depends on each page
Page Request	Page name	name of page the user wants to go
	User's identity	User data for authentication

A-UC3 Modify Cart Item Quantity

Extracting the Responsibility		
Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the retrieved records into an HTML document for sending to orderer's Web browser for display	D	Page Maker
HTML document that shows the orderer the current context, what actions can be done, and outcomes of the previous actions	K	Interface Page
Authenticate whether the user is logged in or not.	D	Login Checker
Container for the collection of menus with options in the orderer's cart	K	Cart Storage
Add menu data with options to Cart Storage	D	Cart Operator
Consist of routing information and page parameters	K	Page Request
Item information and quantity value for changing cart item quantity	K	Modify Cart Item Quantity Request

Extracting the Associations		
Concept pair	Association description	Association name
Controller – Page Maker	Controller passes requests to page maker and receive back pages prepared for display	conveys request
Controller – Login Checker	Controller passes login-based requests to Login Checker to authenticate where the user is logged in or not	conveys request
Controller – Cart Operator	Controller passes Add to Cart Request to Cart Operator for data manipulation	conveys request
Login Checker – Cart Operator	Login Checker provides user authentication data in or not to Cart Operator	authenticates user
Cart Operator – Cart Storage	Cart Operator retrieves and manipulates menu data in the orderer's cart from Cart Storage	retrieves/manipulates data
Page Maker – Interface Page	Page Maker prepares the Interface Page	prepares

Page Maker – Cart Operator	Cart Operator provides operation result data to Page Maker	provides data
Controller – Interface Page	Controller posts Interface Page to display for Web Browser	posts
Controller – Page Request	Controller receives Page Request for routing and rendering pages	receives
Controller – Modify Cart Item Quantity Request	Controller receives Modify Cart Item Quantity Request to modify the quantity of cart item in the orderer's cart	receives

Extracting the Attributes		
Concept	Attributes	Attribute description
Page Maker	data	Data needed to render page, which depends on each page
Page Request	Page name	name of page the user wants to go
	User's identity	User data for authentication
Modify Cart Item Quantity Request	Item key	Identifier to find item from storage
	Quantity	Positive integer for which the orderer wants to set the item quantity.
	User's identity	User data for authentication

A-UC4 Remove Cart Item

Extracting the Responsibility		
Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the retrieved records into an HTML document for sending to orderer's Web browser for display	D	Page Maker
HTML document that shows the orderer the current context, what actions can be done, and outcomes of the previous actions	K	Interface Page
Authenticate whether the user is logged in or not.	D	Login Checker
Container for the collection of menus with options in the orderer's cart	K	Cart Storage
Add menu data with options to Cart Storage	D	Cart Operator
Consist of routing information and page parameters	K	Page Request

Item information for deleting from cart	K	Remove Cart Item Request
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Extracting the Associations		
Concept pair	Association description	Association name
Controller – Page Maker	Controller passes requests to page maker and receive back pages prepared for display	conveys request
Controller – Login Checker	Controller passes login-based requests to Login Checker to authenticate where the user is logged in or not	conveys request
Controller – Cart Operator	Controller passes Add to Cart Request to Cart Operator for data manipulation	conveys request
Login Checker – Cart Operator	Login Checker provides user authentication data in or not to Cart Operator	authenticates user
Cart Operator – Cart Storage	Cart Operator retrieves and manipulates menu data in the orderer's cart from Cart Storage	retrieves/manipulates data
Page Maker – Interface Page	Page Maker prepares the Interface Page	prepares
Page Maker – Cart Operator	Cart Operator provides operation result data to Page Maker	provides data
Controller – Interface Page	Controller posts Interface Page to display for Web Browser	posts
Controller – Page Request	Controller receives Page Request for routing and rendering pages	receives
Controller – Remove Cart Item Request	Controller receives Remove Cart Item Request to remove an item of cart item from the orderer's cart	receives

Extracting the Attributes		
Concept	Attributes	Attribute description
Page Maker	data	Data needed to render page, which depends on each page
Page Request	Page name	name of page the user wants to go
	User's identity	User data for authentication
Remove Cart Item Request	Item key	Identifier to find item from storage
	User's identity	User data for authentication

A-UC5 Order

Extracting the Responsibility		
Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the retrieved records into an HTML document for sending to orderer's Web browser for display	D	Page Maker
HTML document that the orderer the current context	K	Interface Page
Form the request for getting orderer's address	K	GetAddressRequest
Form the request for ordering to Clerk	K	OrderRequest
Authenticate whether the user is logged in or not.	D	LoginChecker
Container for the user information	K	UserInformationStorage
Send request for adding the order information	D	OrderOperator
Container for orderer's authentication information	K	OrdererInformation

Extracting the Associations		
Concept pair	Association description	Association name
Controller – page maker	Controller passes requests to page maker and receive back pages prepared for display	Conveys request
Page maker – interface page	Page maker prepared the interface page	Prepares
Controller – Interface Page	Controller post InterfacePage containing orderer's address	Post
Controller - OrderRequest	Controller receives OrderRequest that contains orderer's order information	Receives
Controller – GetAddressRequest	Controller receives request that contains orderer's identity	Receives
Controller – LoginChecker	Controller request authentication to LoginChecker and receives back whether the orderer is logged in or not.	Conveys request
Controller – Orderer Information	Controller obtains orderer information	obtains
LoginChecker – Orderer Information	Login Checker check whether the orderer is logged in or not.	Authenticate
Controller – UserInformationStorage	Controller retrieves orderer's address	retrieves address
Controller – OrderOperator	Controller passes OrderRequest to	Conveys request

	OrderOperator.	
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Extracting the Attributes		
Concept	Attributes	Attribute description
GetAddressRequest	Orderer's identity	Orderer's identity for checking login
OrderRequest	Order parameters	Menu information(pizza, size, toppings), order information (id, name, phone-number, address, extra requirement, payment information)
UserInformationStorage	User information	Data of User (id, name, phone-number, address)
Orderer Information	Orderer's authentication information	Whether orderer is logged in or not

A-UC6 View Order History

Extracting the Responsibility		
Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the retrieved records into an HTML document for sending to orderer's Web browser for display	D	Page Maker
HTML document that the orderer the current context	K	Interface Page
Form the request for getting orderer's order history	K	GetOrderHistoryRequest
Container for the collection of order history	K	OrderHistoryStorage

Extracting the Associations		
Concept pair	Association description	Association name
Controller – page maker	Controller passes requests to page maker and receive back pages prepared for display	Conveys request
Page maker – interface page	Page maker prepared the interface page	Prepares
Controller – Interface Page	Controller post InterfacePage containing orderer's order history	Post
Controller – GetOrderHistoryRequest	Controller receives GetRequest for getting orderer's order history	Receive

Controller - OrderHistoryStorage	Controller retrieves orderer's order history	Retrieves order history
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Extracting the Attributes		
Concept	Attributes	Attribute description
GetOrderHistoryRequest	Orderer's Id	For searching orderer's order history by orderer id
OrderHistoryStorage	Order Information	the collection of order history (order Id, orderer information, selected menus, order time)

A-UC7 Cancel Order - include UC6

Extracting the Responsibility		
Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the retrieved records into an HTML document for sending to orderer's Web browser for display	D	Page Maker
HTML document that the orderer the current context	K	Interface Page
Form the request for getting information about whether orderer is logged in or not	K	AuthenticationRequest
Form the request for getting detail of order	K	OrderDetailReqeust
Authenticate whether the user is logged in.	D	LoginChecker
Container for orderer's authentication information	K	Orderer Information
Container for the order history information	K	OrderHistoryStorage

Extracting the Associations		
Concept pair	Association description	Association name
Controller – page maker	Controller passes requests to page maker and receive back pages prepared for display	Conveys request
Page maker – interface page	Page maker prepared the interface page	Prepares
Controller – Interface Page	Controller post InterfacePage containing orderer's order detail	Post
Controller – AuthenticationRequest	Controller receives AuthenticationRequest for getting information about whether orderer is logged in or not	Receive
Controller -	Controller receives OrderDetailRequest for	Receive

OrderDetailRegeust	getting detail of order	
Controller – LoginChecker	Controller request authentication to LoginChecker and receives back whether the orderer is logged in or not.	Conveys request
Controller – Orderer Information	Controller obtains orderer information	obtains
LoginChecker – Orderer Information	Login Checker check whether the orderer is logged in or not.	Authenticate
Controller - OrderHistoryStorage	Controller retrieves orderer's order history	Retrieves order history

Extracting the Attributes		
Concept	Attributes	Attribute description
OrderDetailRequest	Order Id	For searching detail of order by order id
OrderHistoryStorage	Order information	the collection of order history associated with orderer id
Orderer Information	Orderer's authentication information	Whether orderer is logged in or not
Authentication Request	Orderer infomation	Orderer's identity

A-UC8 Pay Online

Extracting the Responsibility		
Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the retrieved records into an HTML document for sending to orderer's Web browser for display	D	Page Maker
HTML document that the orderer the current context	K	Interface Page
Form the request to cacle order	K	CancleOrderRequest
Send request to cacle the order to Clerk	D	CancleOrderOperator

Extracting the Associations		
Concept pair	Association description	Association name
Controller – page maker	Controller passes requests to page maker	Conveys request

	and receive back pages prepared for display	
Page maker – interface page	Page maker prepared the interface page	Prepares
Controller – Interface Page	Controller post InterfacePage containing result of canceling order	Post
Controller – CancelOrderRequest	Controller receives CancelOrderRequest to cancel the order	Receive
Controller – CancelOrderOperator	Controller pass the request to CancelOrderOperator	Conveys request

Extracting the Attributes		
Concept	Attributes	Attribute description
CancelOrderOperator	Order Id	To cancel the order.

1.2 SubgroupB(Management)

B-UC1 AuthenticateUser

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role

Concept pair	Association description	Association name
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	Role checker authenticates with the Role	Authenticate with entity

Concept	Attributes	Attribute Description
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.

B-UC2 ManageMenus

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Form requesting for applying modified data by the option(add, update, delete) manager selected.	K	ManageRequest
Retrieve menu list from Menulist or request for applying the modified data to Menulist..	D	MenuConnection
Send request for applying modified data to menu list.	D	ManageMenuOperator
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role

Concept pair	Association description	Association name
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	Role checker authenticates with the Role	Authenticate with entity
Controller<->ManageRequest	Controller receives ManageRequest which contains Option parameter and Modified data.	Receives requests

Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
Controller<->InterfacePage	Controller posts InterfacePage containing menu list	Posts page
PageMaker<->MenuConnection	PageMaker requests MenuConnection to post menu list.	Requests data
Page Maker<->InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller<->ManageMenuOperator	Controller passes ManageRequests to ManageMenu Operator.	Conveys requests
ManageMenuOperator<->MenuConnection	ManageMenuOperator requests MenuConnection to apply the modified data of menu list	Requests apply

Concept	Attributes	Attribute Description
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.
ManageRequest	Option parameter	Add, Update, Delete
	Modified data	Modified data of menu list by the option(add, update, delete).

B-UC3 AddMenu

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render text blanks into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form requesting for adding data that manager entered on the blanks.	K	AddRequest
Send request for adding the data to Menulist.	D	AddMenuOperator
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Prepare a query that matches the actor's request or retireve	D	MenuConnection

menu list from Menulist.		
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role
Form requesting for redirect to Menulist.	K	RedirectRequest

Concept pair	Association description	Association name
Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
PageMaker<->InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller<->AddMenuOperator	Controller passes AddRequests to AddMenuOperator.	Conveys requests
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	Role checker authenticates with the Role	Authenticate with entity
Controller<->AddRequest	Controller receives AddRequest which contains added data.	Receives requests
Controller<->InterfacePage	Controller posts InterfacePage containing menu list	Posts page
PageMaker<->MenuConnection	PageMaker requests MenuConnection to post menu list.	Requests data
AddMenuOperator<->MenuConnection	AddMenuOperator requests MenuConnection to apply the added data of menu list	Requests apply
AddMenuOperator<->RedirectRequest	AddMenuOperator generates RedirectRequest	Generates
RedirectRequest<->PageMaker	RedirectRequest requests PageMaker to remake page	Requests remake

Concept	Attributes	Attribute Description
AddRequest	Entered data	Data of menu information entered by manager.
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.

RedirectRequest	What to draw	Data of page information what to draw.
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B-UC4 UpdateMenu

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render text blanks into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form requesting for updating data that manager edits.	K	UpdateRequest
Form requesting for information of particular menu.	K	MenuInformationRequest
Send request for updating the data to Menulist.	D	UpdateMenuOperator
Prepare a query that matches the actor's request or retrieve menu list from Menulist.	D	MenuConnection
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role
Form requesting for redirect to Menulist.	K	RedirectRequest

Concept pair	Association description	Association name
Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
PageMaker<->InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller<->UpdateMenuOperator	Controller passes UpdateRequests to UpdateMenuOperator.	Conveys requests
Controller<->MenuConnection	Controller passes MenuInformationRequest to MenuConnection.	Conveys requests
MenuConnection<->PageMaker	MenuConnection provides menu data to PageMaker.	Provides data
Controller<->MenuInformationRequest	Controller receives MenuInformationRequest.	Receives requests

Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	Role checker authenticates with the Role	Authenticate with entity
Controller<->UpdateRequest	Controller receives UpdateRequest which contains edited data.	Receives requests
Controller<->InterfacePage	Controller posts InterfacePage containing menu list	Posts page
PageMaker<->MenuConnection	PageMaker requests MenuConnection to post menu list.	Requests data
UpdateMenuOperator<->MenuConnection	UpdateMenuOperator requests MenuConnection to apply the edited data of menu list	Requests apply
UpdateMenuOperator<->RedirectRequest	UpdateMenuOperator generates RedirectRequest	Generates
RedirectRequest<->PageMaker	RedirectRequest requests PageMaker to remake page	Requests remake

Concept	Attributes	Attribute Description
UpdateRequest	Edited data	Data of menu information edited by manager.
MenuInformationRequest	Menu ID	ID of menu that manager clicked for editing.
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.
RedirectRequest	What to draw	Data of page information what to draw.

B-UC5 DeleteMenu

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render text blanks into an HTML document for sending to actor's Web browser for display.	D	PageMaker

Form requesting for deleting menu item manager selected.	K	DeleteRequest
Send request for deleting the data to Menulist.	D	DeleteMenuOperator
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Prepare a query that matches the actor's request or retrieve the menu list from Menulist.	D	MenuConnection
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role
Form requesting for refresh page.	K	RefreshRequest

Concept pair	Association description	Association name
Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
PageMaker<->InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller<->DeleteMenuOperator	Controller passes DeleteRequests to DeleteMenuOperator.	Conveys requests
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	Role checker authenticates with the Role	Authenticate with entity
Controller<->DeleteRequest	Controller receives DeleteRequest which contains deleting data.	Receives requests
Controller<->InterfacePage	Controller posts InterfacePage containing menu list	Posts page
PageMaker<->MenuConnection	PageMaker requests MenuConnection to post menu list.	Requests data
DeleteMenuOperator<->MenuConnection	DeleteMenuOperator requests MenuConnection to apply the deleted data of menu list	Requests apply
DeleteMenuOperator<->RefreshRequest	DeleteMenuOperator generates RefreshRequest	Generates
RefreshRequest<->PageMaker	RefreshRequest requests PageMaker to remake page	Requests remake

Concept	Attributes	Attribute Description
DeleteRequest	Menu ID	ID of menu that manager selected to delete.
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.
RefreshRequest	What to draw	Data of page information what to draw.

B-UC6 ManageUsers

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render the user list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Form requesting for applying modified data by the option(add, update, delete) user selected.	K	ManageRequest
Prepare a query that matches the actor's request or retrieve the data from User.	D	UserConnection
Send request for applying modified data to user list.	D	ManageUserOperator
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role

Concept pair	Association description	Association name
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	Role checker authenticates with the Role	Authenticate with entity

Controller<->ManageRequest	Controller receives ManageRequest which contains Option parameter and Modified data.	Receives requests
Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
Controller<->InterfacePage	Controller posts InterfacePage containing user list	Posts page
PageMaker<->UserConnection	PageMaker requests UserConnection to post user list.	Requests data
Page Maker<->InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller<->ManageUserOperator	Controller passes manage requests to ManageUser Operator.	Conveys requests
ManageUserOperator<->UserConnection	ManageUserOperator requests UserConnection to apply the modified data of user list	Requests apply

Concept	Attributes	Attribute Description
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.
ManageRequest	Option parameter	Add, Update, Delete
	Modified data	Modified data of user list by the option(add, update, delete).

B-UC7 AddUser

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render text blanks into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form requesting for adding data that manager entered on the blanks.	K	AddRequest
Send request for adding the data to Userlist.	D	AddUserOperator
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest

Prepare a query that matches the actor's request or retrieve the data from User.	D	UserConnection
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role
Form requesting for redirect to Userlist.	K	RedirectRequest

Concept pair	Association description	Association name
Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
PageMaker<->InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller<->AddUserOperator	Controller passes AddRequests to AddUserOperator.	Conveys requests
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	Role checker authenticates with the Role	Authenticate with entity
Controller<->AddRequest	Controller receives AddRequest which contains added data.	Receives requests
Controller<->InterfacePage	Controller posts InterfacePage containing user list	Posts page
PageMaker<->UserConnection	PageMaker requests UserConnection to post user list.	Requests data
AddUserOperator<->UserConnection	AddUserOperator requests UserConnection to apply the added data of user list	Requests apply
AddUserOperator<->RedirectRequest	AddUserOperator generates RedirectRequest	Generates
RedirectRequest<->PageMaker	RedirectRequest requests PageMaker to remake page	Requests remake

Concept	Attributes	Attribute Description
AddRequest	Entered data	Data of user information entered by manager.
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification

		information.
RedirectRequest	What to draw	Data of page information what to draw.

B-UC8 UpdateUser

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render text blanks into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form requesting for updating data that manager edits.	K	UpdateRequest
Form requesting for information of particular user.	K	UserInformationRequest
Send request for updating the data to Userlist.	D	UpdateUserOperator
Prepare a query that matches the actor's request or retrieve the data from User.	D	UserConnection
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role
Form requesting for redirect to Userlist.	K	RedirectRequest

Concept pair	Association description	Association name
Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
PageMaker<->InterfacePage	Page Maker prepares the InterfacePage.	Prepares
Controller<->UpdateUserOperator	Controller passes Update requests to UpdateUserOperator.	Conveys requests
Controller<->UserConnection	Controller passes UserInformationRequest to UserConnection.	Conveys requests
UserConnection<->PageMaker	UserConnection provides user data to PageMaker.	Provides data
Controller<-	Controller receives UserInformationRequest.	Receives requests

>UserInformationRequest		
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	Role checker authenticates with the Role	Authenticate with entity
Controller<->UpdateRequest	Controller receives UpdateRequest which contains edited data.	Receives requests
Controller<->InterfacePage	Controller posts InterfacePage containing user list	Posts page
PageMaker<->UserConnection	PageMaker requests UserConnection to post user list.	Requests data
UpdateUserOperator<->UserConnection	UpdateUserOperator requests UserConnection to apply the edited data of user list	Requests apply
UpdateUserOperator<->RedirectRequest	UpdateUserOperator generates RedirectRequest	Generates
RedirectRequest<->PageMaker	RedirectRequest requests PageMaker to remake page	Requests remake

Concept	Attributes	Attribute Description
UpdateRequest	Edited data	Data of user information edited by manager.
UserInformationRequest	User ID	ID of user that manager clicked for editing.
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.
RedirectRequest	What to draw	Data of page information what to draw.

B-UC9 DeleteUser

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render text blanks into an HTML document for sending to	D	PageMaker

actor's Web browser for display.		
Form requesting for deleting user item manager selected.	K	DeleteRequest
Send request for deleting the data to Userlist.	D	DeleteUserOperator
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Prepare a query that matches the actor's request or retrieve the data from User.	D	UserConnection
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role
Form requesting for refresh page.	K	RefreshRequest

Concept pair	Association description	Association name
Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
PageMaker<->InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller<->DeleteUserOperator	Controller passes DeleteRequests to DeleteUserOperator.	Conveys requests
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	Role checker authenticates with the Role	Authenticate with entity
Controller<->DeleteRequest	Controller receives DeleteRequest which contains deleting data.	Receives requests
Controller<->InterfacePage	Controller posts InterfacePage containing user list	Posts page
PageMaker<->UserConnection	PageMaker requests UserConnection to post user list.	Requests data
DeleteUserOperator<->UserConnection	DeleteUserOperator requests UserConnection to apply the deleted data of user list	Requests apply
DeleteUserOperator<->RefreshRequest	DeleteUserOperator generates RefreshRequest	Generates
RefreshRequest<->PageMaker	RefreshRequest requests PageMaker to remake page	Requests remake

Concept	Attributes	Attribute Description
DeleteRequest	User ID	ID of user that manager selected to delete.
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.
RefreshRequest	What to draw	Data of page information what to draw.

B-UC10 DisplaySales

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Form specifying the search parameters for sales list retrieval	K	SearchRequest
Retrieve the sales list that matches the actor's search criteria from Orderlist.	D	OrderlistConnection
Send request for retrieving the sales list from Orderlist.	D	DisplaySalesOperator
Authenticate whether the user's role matches with the system's required role	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role

Concept pair	Association description	Association name
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	RoleChecker authenticates with the Role	Authenticate with entity
Controller<->	Controller receives SearchRequest which contains	Receives requests

>SearchRequest	search parameters.	
Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
Controller<->InterfacePage	Controller posts InterfacePage containing sales list.	Posts page
PageMaker<->OrderlistConnection	Orderlist passes the retrieved sales list to PageMaker to render them for display	Provides data
PageMaker<->InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller<->DisplaySalesOperator	Controller passes SearchRequest to DisplaySalesOperator..	Conveys requests
DisplaySalesOperator<->OrderlistConnection	DisplaySalesOperator requests for retrieving sales list that matches manager's search parameters to OrderlistConnection	Requests retrieve

Concept	Attributes	Attribute Description
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.
SearchRequest	Search parameters	Start date, end date, menu

B-UC11 DisplayByPizza

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Form requesting sales list of selected menu.	K	BypizzaRequest
Retrieve the sales list that matches the actor's search criteria from Orderlist.	D	OrderlistConnection
Send request for retrieving the sales list of selected pizza	D	DisplayByPizzaOperator

from Orderlist.		
Authenticate whether the user's role matches with the system's required role	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role

Concept pair	Association description	Association name
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	RoleChecker authenticates with the Role	Authenticate with entity
Controller<->ByPizzaRequest	Controller receives ByPizzaRequest which contains search parameters.	Receives requests
Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
Controller<->InterfacePage	Controller posts InterfacePage containing sales list.	Posts page
PageMaker<->OrderlistConnection	Orderlist passes the retrieved sales list to PageMaker to render them for display	Provides data
PageMaker<->InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller<->DisplayByPizzaOperator	Controller passes ByPizzaRequest to DisplayByPizzaOperator..	Conveys requests
DisplayByPizzaOperator<->OrderlistConnection	DisplayByPizzaOperator requests for retrieving sales list of menu manager selected to OrderlistConnection	Requests retrieve

Concept	Attributes	Attribute Description
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.
BypizzaRequest	Menu ID	Menu ID for retrieving sales list of the menu.

B-UC12 DisplayByPeriod

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Form requesting sales list of specific period.	K	ByperiodRequest
Retrieve the sales list that matches the actor's search criteria from Orderlist.	D	OrderlistConnection
Send request for retrieving the sales list of specific period from Orderlist.	D	DisplayByPeriodOperator
Authenticate whether the user's role matches with the system's required role	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role

Concept pair	Association description	Association name
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	RoleChecker authenticates with the Role	Authenticate with entity
Controller<->ByPeriodRequest	Controller receives ByPeriodRequest which contains search parameters.	Receives requests
Controller<->PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
Controller<->InterfacePage	Controller posts InterfacePage containing sales list.	Posts page
PageMaker<->OrderlistConnection	Orderlist passes the retrieved sales list to PageMaker to render them for display	Provides data
PageMaker<->InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller<->DisplayByPeriodOperator	Controller passes ByPeriodRequest to DisplayByPeriodOperator..	Conveys requests

DisplayByPeriodOperator<->OrderlistConnection	DisplayByPeriodOperator requests for retrieving sales list of specific period to OrderlistConnection	Requests retrieve
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Concept	Attributes	Attribute Description
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.
ByperiodRequest	Period parameters	Start date and end date that user entered for retrieving sales list between that dates.

B-UC13 SwitchOpening

Responsibility Description	Type	Concept Name
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Form requesting for switching state of store.	K	SwitchRequest
Switch state of store.	D	SwitchOperator
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role

Concept pair	Association description	Association name
Controller<->SwitchOperator	Controller passes SwitchRequest to SwitchOperator.	Conveys requests
Controller<->RoleChecker	Controller passes requests to RoleChecker and receives back whether the user has the privilege to access.	Conveys requests
Controller<->AuthenticateRequest	Controller receives AuthenticationRequest which contains Manager's identification information.	Receives requests
Controller<->Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker<->Role	RoleChecker authenticates with the Role	Authenticate with entity
Controller<->SwitchRequest	Controller receives SwitchRequest.	Receives requests

Concept	Attributes	Attribute Description
AuthenticateRequest	Manager's identity	Manager's identification information which used to retrieve role.
Role	Manager's role	Manager's role according to its identification information.
SwitchOperator	state	State of store(opened, closed)

1.3 SubgroupC(OrderStatus)

C-UC1 Accept order

Responsibility Description	Type	Concept Name
Form requesting whether the clerk change the order status.	K	AcceptRequest
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Authenticate whether the user's role matches with the system's required role.	D	AuthenticateUser
Form tracking order for maintaining log.	K	OrderLogRequest
Contact information of the order list who accepts complaints and requests for further investigation.	K	Notifier
Connect to database for consistency.	D	DatabaseConnection
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Authenticate whether the user's role matches with the system's required role	D	RoleChecker
Container for user's role data, such as manager, order, clerk, delivery man	K	Role
Concept pair	Association description	Association name
AcceptRequest ↔ Controller	Controller receives AcceptRequest which contains order ID.	Receives requests
Controller ↔ AuthenticateRequest	Controller generates AuthenticateRequest which contains	Generate AuthenticateRequest

	userKey.	
Controller ↔ Role	Controller obtains Role of the Manager	Obtains entity
RolerChecker ↔ Role	RoleChecker authenticates with the Role	Authenticate with entity
Controller ↔ OrderLogRequest	Controller generates logs for maintaining.	Generate Log
DatabaseConnection ↔ Notifier	Contact information of the order list who accepts complaints and requests for futher investigation.	Notify changes
Controller ↔ PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
DatabaseConnection ↔ PageMaker	Connection passes the retrieved sales list to PageMaker to render them for display	Provides data
PageMaker ↔ InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller ↔ InterfacePage	Controller posts InterfacePage	Posts page

Concept	Attributes	Attribute Description
AuthenticateRequest	User's identity	User's identification information which used to retrieve role.
AcceptRequest	Order's Identity	Order's identification is used to determin which order's status will change.
	User's identity	User's identification information which is used to generate Authenticate Request.
OrderLogRequest	Order's Identity	Order's identification is used to determin which will be tracked by OrderTracker.
Role	Clerk's role	Clerk's role according to its identification information.

C-UC2 Complete Cook

Responsibility Description	Type	Concept Name
Form requesting whether the clerk change the order status.	K	CompleteRequest

Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Form tracking order for maintaining log.	K	OrderLogRequest
Contact information of the order list who accepts complaints and requests for further investigation.	D	Notifier
Connect to database for consistency.	D	DatabaseConnection
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role

Concept pair	Association description	Association name
CompleteRequest ↔ Controller	Controller receives CompleteRequest which contains order ID.	Receives requests
Controller ↔ AuthenticateRequest	Controller generates AuthenticateRequest which contains userKey.	Generate AuthenticateRequest
Controller ↔ Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker ↔ Role	RoleChecker authenticates with the Role	Authenticate with entity
Controller ↔ OrderLogRequest	Controller generates logs for maintaining.	Generate Log
Notifier ↔ DatabaseConnection	Contact information of the order list who accepts complaints and requests for further investigation.	Notify changes
Controller ↔ PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
DatabaseConnection	Connection passes the retrieved sales list to	Provides data

↔ PageMaker		PageMaker to render them for display	
PageMaker ↔ InterfacePage		PageMaker prepares the InterfacePage.	Prepares
Controller ↔ InterfacePage		Controller posts InterfacePage	Posts page

Concept	Attributes	Attribute Description
AuthenticateRequest	User's identity	User's identification information which used to retrieve role.
CompleteRequest	Order's Identity	Order's identification is used to determin which order's status will change.
	User's identity	User's identification information which is used to generate Authenticate Request.
OrderLogRequest	Order's Identity	Order's identification is used to determin which will be tracked by OrderTracker.
Role	Clerk's role	Clerk's role according to its identification information.

C-UC3 Handle emergency

Responsibility Description	Type	Concept Name
Form requesting whether the clerk change the order status.	K	CheckInvalidRequest
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Form tracking order for maintaining log.	K	OrderLogRequest
Contact information of the order list who accepts complaints and requests for futher investigation.	D	Notifier
Connect to database for consistency.	D	DatabaseConnection
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage

Container for user's role data, such as manager, ordrer, clerk, delivery man		K	Role
Concept pair	Association description	Association name	
CheckInvalidRequest ↔ Controller	Controller receives CheckInvalidRequest which contains order ID.	Receives requests	
Controller ↔ AuthenticateRequest	Controller generates AuthenticateRequest which contains userKey.	Generate AuthenticateRequest	
Controller ↔ Role	Controller obtains Role of the Manager	Obtains entity	
RolerChecker ↔ Role	RoleChecker authenticates with the Role	Authenticate with entity	
Controller ↔ OrderLogRequest	Controller generates logs for maintaining.	Generate Log	
Notifier ↔ DatabaseConnection	Contact information of the order list who accepts complaints and requests for futher investigation.	Notify changes	
Controller ↔ PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page	
DatabaseConnection ↔ PageMaker	Connection passes the retrieved sales list to PageMaker to render them for display	Provides data	
PageMaker ↔ InterfacePage	PageMaker prepares the InterfacePage.	Prepares	
Controller ↔ InterfacePage	Controller posts InterfacePage	Posts page	

Concept	Attributes	Attribute Description
AuthenticateRequest	User's identity	User's identification information which used to retrieve role.
CheckInvalidRequest	Order's Identity	Order's identification is used to determin which order's status will change.
	User's identity	User's identification information which is used to generate Authenticate Request.
OrderLogRequest	Order's Identity	Order's identification is used to determin which will be tracked by OrderTracker.
Role	Clerk's role	Clerk's role according to its identification

		information.
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C-UC4 Start Delivery

Responsibility Description	Type	Concept Name
Form requesting whether the delivery man change the order status.	K	AcceptDeliveryRequest
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Form tracking order for maintaining log.	K	OrderLogRequest
Contact information of the order list who accepts complaints and requests for further investigation.	D	Notifier
Connect to database for consistency.	D	DatabaseConnection
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Container for user's role data, such as manager, orderer, clerk, delivery man	K	Role
Concept pair	Association description	Association name
AcceptDeliveryRequest ↔ Controller	Controller receives AcceptDeliveryRequest which contains order ID.	Receives requests
Controller ↔ AuthenticateRequest	Controller generates AuthenticateRequest which contains userKey.	Generate AuthenticateRequest
Controller ↔ Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker ↔ Role	RoleChecker authenticates with the Role	Authenticate with entity
Controller ↔ OrderLogRequest	Controller generates logs for maintaining.	Generate Log
Notifier ↔	Contact information of the order list who	Notify changes

DatabaseConnection		accepts complaints and requests for further investigation.	
Controller ↔ PageMaker		Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
DatabaseConnection ↔ PageMaker		Connection passes the retrieved sales list to PageMaker to render them for display	Provides data
PageMaker ↔ InterfacePage		PageMaker prepares the InterfacePage.	Prepares
Controller ↔ InterfacePage		Controller posts InterfacePage	Posts page

Concept	Attributes	Attribute Description
AuthenticateRequest	User's identity	User's identification information which used to retrieve role.
AcceptDeliveryRequest	Order's Identity	Order's identification is used to determin which order's status will change.
	User's identity	User's identification information which is used to generate Authenticate Request.
OrderLogRequest	Order's Identity	Order's identification is used to determin which will be tracked by OrderTracker.
Role	Delivery man's role	Clerk's role according to its identification information.

C-UC5 Complete Delivery

Responsibility Description	Type	Concept Name
Form requesting whether the delivery man change the order status.	K	CompleteDelivery
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Authenticate whether the user's role matches with the system's required role.	D	RoleChecker
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Form tracking order for maintaining log.	K	OrderLogRequest

Contact information of the order list who accepts complaints and requests for further investigation.	D	Notifier
Connect to database for consistency.	D	DatabaseConnection
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Container for user's role data, such as manager, order, clerk, delivery man	K	Role

Concept pair	Association description	Association name
CompleteDeliveryRequest ↔ Controller	Controller receives CompleteDeliveryRequest which contains order ID.	Receives requests
Controller ↔ AuthenticateRequest	Controller generates AuthenticateRequest which contains userKey.	Generate AuthenticateRequest
Controller ↔ Role	Controller obtains Role of the Manager	Obtains entity
RoleChecker ↔ Role	RoleChecker authenticates with the Role	Authenticate with entity
Controller ↔ OrderLogRequest	Controller generates logs for maintaining.	Generate Log
Notifier ↔ DatabaseConnection	Contact information of the order list who accepts complaints and requests for further investigation.	Notify changes
Controller ↔ PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page
DatabaseConnection ↔ PageMaker	Connection passes the retrieved sales list to PageMaker to render them for display	Provides data
PageMaker ↔ InterfacePage	PageMaker prepares the InterfacePage.	Prepares
Controller ↔ InterfacePage	Controller posts InterfacePage	Posts page

Concept	Attributes	Attribute Description
AuthenticateRequest	User's identity	User's identification information which used to retrieve role.
CompleteDeliveryRequest	Order's Identity	Order's identification is used to determine which order's status will change.
	User's identity	User's identification information which is used to generate Authenticate Request.
OrderLogRequest	Order's Identity	Order's identification is used to determin which will be tracked by OrderTracker.
Role	Clerk's role	Clerk's role according to its identification information.

C-UC6 Track order

Responsibility Description	Type	Concept Name
Form requesting log to track order.	K	OrderLogRequest
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Form requesting log to track order with lastUpdateTime.	K	UpdatingRequest
Connect to database for consistency.	D	DatabaseConnection
Concept pair	Association description	Association name
OrderLogRequest ↔ Controller	Controller receives UpdateRequest which contains order ID and user ID.	Receives requests
Controller ↔ UpdatingRequest	Controller generate UpdatingRequest for tracking order.	Generate
UpdatingRequest ↔ DatabaseConnection	Connection receive UpdatingRequest	Conveys requests

Concept	Attributes	Attribute Description
OrderLogRequest	Order's Identity	Order's identification is used to determin which will be tracked by OrderTracker.
UpdatingRequest	Order's Identity	Order's identification is used to determin which will be tracked by OrderTracker.
	Last updated Time	Last updated Time is generated by system. Last updated Time is current time in passing controller.

C-UC7 Logout

Responsibility Description		Type	Concept Name
Form requesting to logout, which contains userKey.		K	logoutRequest
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.		K	InterfacePage
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.		D	Controller
Render the menu list into an HTML document for sending to actor's Web browser for display.		D	PageMaker
Form requesting whether the user has the privilege to access.		K	AuthenticateRequest
ExpireRequest contains expired user key to authenticated user.		K	ExpireRequest
Authenticate whether the user's role matches with the system's required role.		D	RoleChecker
Expire user and invalidate all certification contains userKey.		D	Expire User
Container for user's role data, such as manager, orderer, clerk, delivery man		K	Role
Concept pair	Association description	Association name	
LogoutRequest ↔ Controller	Controller receives LogoutRequest which contains order ID.	Receives requests	
Controller ↔ AuthenticateRequest	Controller generates AuthenticateRequest which contains userKey.	Generate AuthenticateRequest	
Controller ↔ Role	Controller obtains Role of the Manager	Obtains entity	
RoleChecker ↔ Role	RoleChecker authenticates with the Role	Authenticate with entity	
ExpireUser ↔ ExpireRequest	ExpireUser receives ExpireRequest to expire specific user, which contains userID.	Expire User	
Controller ↔ ExpireRequest	Controller generates ExpireRequest to pass Authenticator	Generate ExpireRequest	
Controller ↔ PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page	
PageMaker ↔ InterfacePage	PageMaker prepares the InterfacePage.	Prepares	

Controller ↔ InterfacePage	Controller posts InterfacePage	Posts page
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Concept	Attributes	Attribute Description
logoutRequest	User's identity	User's identification information which of user will be logout.
AuthenticateRequest	User's identity	User's identification information which used to retrieve role.
ExpireRequest	User's identity	User's identification information which of user will be logout.
Role	User's role	Clerk's role according to its identification information.

C-UC8 Sign up

Responsibility Description	Type	Concept Name
Form requesting to logout, which contains user information.	K	signupRequest
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form for signup Info, which contains id, pw, email, address and phone number.	K	signupInfo
Register User to authenticator for after login.	D	RegisterUser

Concept pair	Association description	Association name
SignupRequest ↔ Controller	Controller receives SignupRequest which contains user information.	Receives requests
Controller ↔ SignupInfo	Controller generates SignupInfo which contains id, pw, email, address and phone number.	Generate SignUpInfo
SignupInfo ↔ RegisterUser	RegisterUser receives SignupInfo.	Register User

Controller ↔ PageMaker	Controller posts InterfacePage	Requests page
Controller ↔ Interface Page	Controller posts InterfacePage	Posts page

Concept	Attributes	Attribute Description
SignupRequest	User's Id	User's Id for next login.
	User's Password	User's Password for next login. It does not encrypted.
	User's Email	User's Email is used in reset password step.
	User's Address	User's Address is used in order step.
	User's PhoneNumber	User's PhoneNumber is provided to delivery man.
SignupInfo	User's Id	User's Id for next login. It is unique.
	User's Password	User's Password for next login. It does not encrypted. It contains at least one number, upper/lower case and special character.
	User's Email	User's Email is used in reset password step.
	User's Address	User's Address is used in order step.
	User's PhoneNumber	User's PhoneNumber is provided to delivery man.

C-UC9 Display user's info page

Responsibility Description	Type	Concept Name
Form requesting to userinfo, which contains userKey to authenticate user.	K	UserInfoRequest
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form requesting whether the user has the privilege to access.	K	AuthenticateRequest
Form requesting to userinfo,	K	OrdererInfoRequest

Authenticate whether the user's role matches with the system's required role.		D	RoleChecker
Connect to database for consistency.		D	DatabaseConnection
Container for user's role data, such as manager, ordrer, clerk, delivery man		K	Role
Concept pair	Association description		Association name
UserInfoRequest ↔ Controller	Controller receives UserInfoRequest which contains user information.		Receives requests
Controller ↔ AuthenticateRequest	Controller generates AuthenticateRequest which contains userKey.		Generate AuthenticateRequest
Controller ↔ Role	Controller obtains Role of the Manager		Obtains entity
RolerChecker ↔ Role	RoleChecker authenticates with the Role		Authenticate with entity
Controller ↔ OrderInfoRequest	Controller generates ExpireRequest to pass Authenticator		Generate OrderInfoRequest
OrderInfoRequest ↔ DatabaseConnection	Controller requests for page to display to PageMaker and receives back the prepared page.		Requests page
DatabaseConnection ↔ PageMaker	Connection passes the retrieved sales list to PageMaker to render them for display		Provides data
PageMaker ↔ InterfacePage	PageMaker prepares the InterfacePage.		Prepares
Controller ↔ InterfacePage	Controller posts InterfacePage		Posts page
Concept	Attributes	Attribute Description	
AuthenticateRequest	User's identity	User's identification information which used to retrieve role.	
RequestUserInfo	User's identity	User's identification information which used to retrieve role.	
UserInfoRequest	User's identity	User's identification information which used to retrieve role.	
Role	User's role	Clerk's role according to its identification information.	

C-UC10 Display Orders

Responsibility Description		Type	Concept Name
Form requesting to OrderList(which of status is "accepted" and "complete").		K	UpdateRequest
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.		D	Controller
Render the menu list into an HTML document for sending to actor's Web browser for display.		D	PageMaker
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.		K	InterfacePage
Concept pair	Association description	Association name	
UpdateRequest ↔ Controller	Controller receives UserInfoRequest which contains order list.	Receives requests	
Controller ↔ InterfacePage	Controller posts InterfacePage	Posts page	
Controller ↔ PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.	Requests page	
PageMaker ↔ InterfacePage	PageMaker prepares the InterfacePage.	Prepares	

Concept	Attributes	Attribute Description
UpdateRequest	OrderList	OrderList will show on screen.

C-UC11 Login User

Responsibility Description	Type	Concept Name
Form requesting to login, which contains ID and PW.	K	loginRequest
HTML document that shows the actor the current context, what actions can be done, and outcomes of the previous actions.	K	InterfacePage
Coordinate actions of concepts associated with this use case and delegate the work to other concepts.	D	Controller
Render the menu list into an HTML document for sending to actor's Web browser for display.	D	PageMaker
Form contains constraint user id and password. The password	K	validateRequest

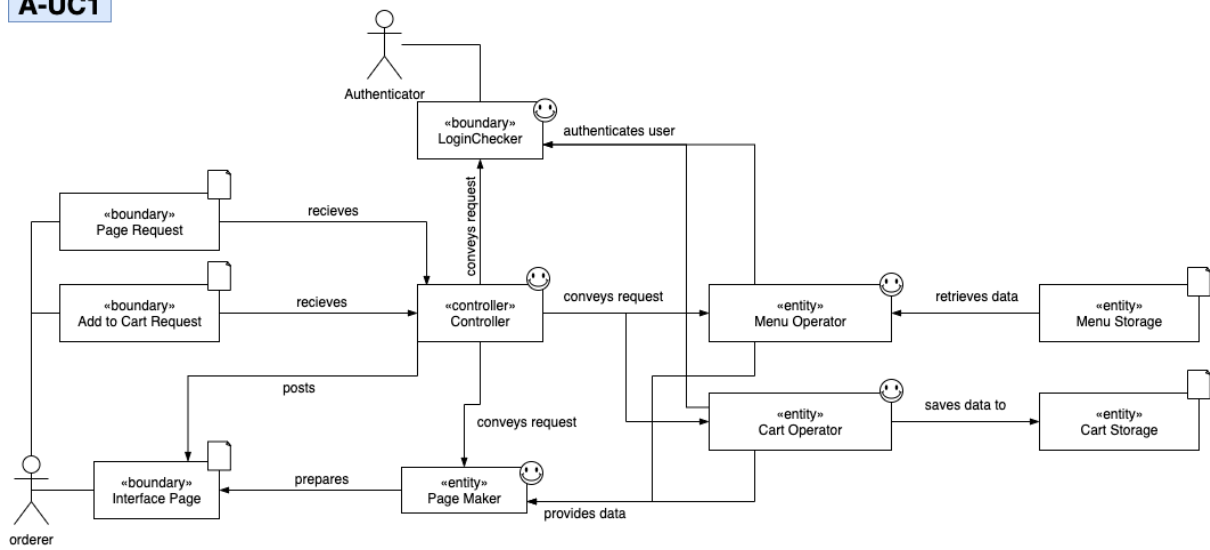
is encrypted.			
Form requesting whether the user has the privilege to access.		K	Certification
ValidateUserInfo published certification for next authentication.		D	ValidateUserInfo
Concept pair	Association description		Association name
LoginRequest ↔ Controller	Controller receives LoginRequest which contains order list.		Receives requests
Controller ↔ validateRequest	Controller generates validateRequest which contains userId and userPassword.		Generate validateRequest
ValidateRequest ↔ validateUserInfo	ValidateUserInfo receives validateRequest which contains userId and userPassword.		Validate UserInfo
ValidateUserInfo ↔ Certification	ValidateUserInfo generated userKey which contains userKey.		Generate Certification
Certification ↔ Controller	Controller receive certification from validateUserInfo.		Provides data
Controller ↔ PageMaker	Controller requests for page to display to PageMaker and receives back the prepared page.		Requests page
Controller ↔ InterfacePage	Controller posts InterfacePage		Posts page
PageMaker ↔ InterfacePage	PageMaker prepares the InterfacePage.		Prepares
Concept	Attributes	Attribute Description	
Certification	User's identity	User's identification information which used to retrieve role. It can transform to AuthenticateRequest.	
validateRequest	User's Id		
	User's Password	User's password is encrypted in validateRequest.	
loginRequest	User's Id	User's Id	
	User's Password	User's password is not encrypted in LoginRequest.	

2. Domain Model UML

2.1 SubgroupA(PizzaOrder)

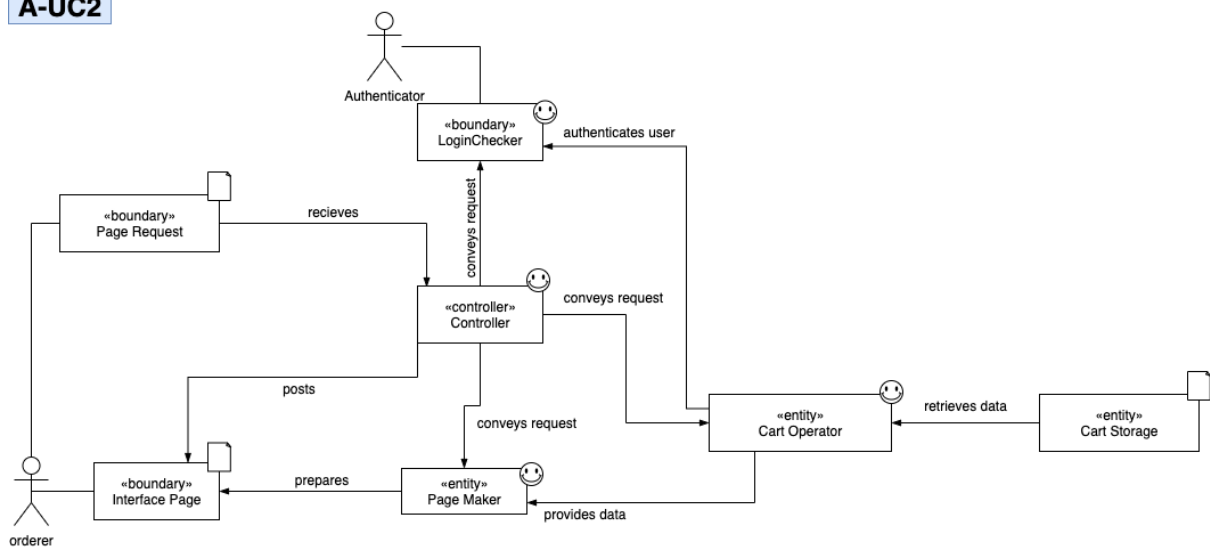
A-UC1 : Add Menu To Cart

A-UC1



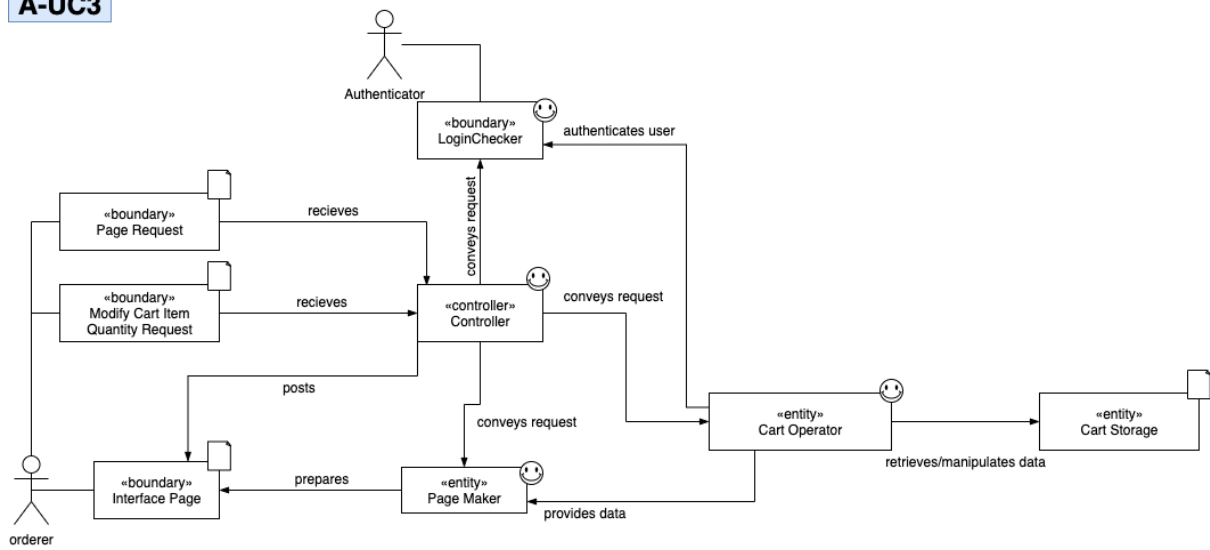
A-UC2 : Manage Cart - generalize UC3, UC4

A-UC2



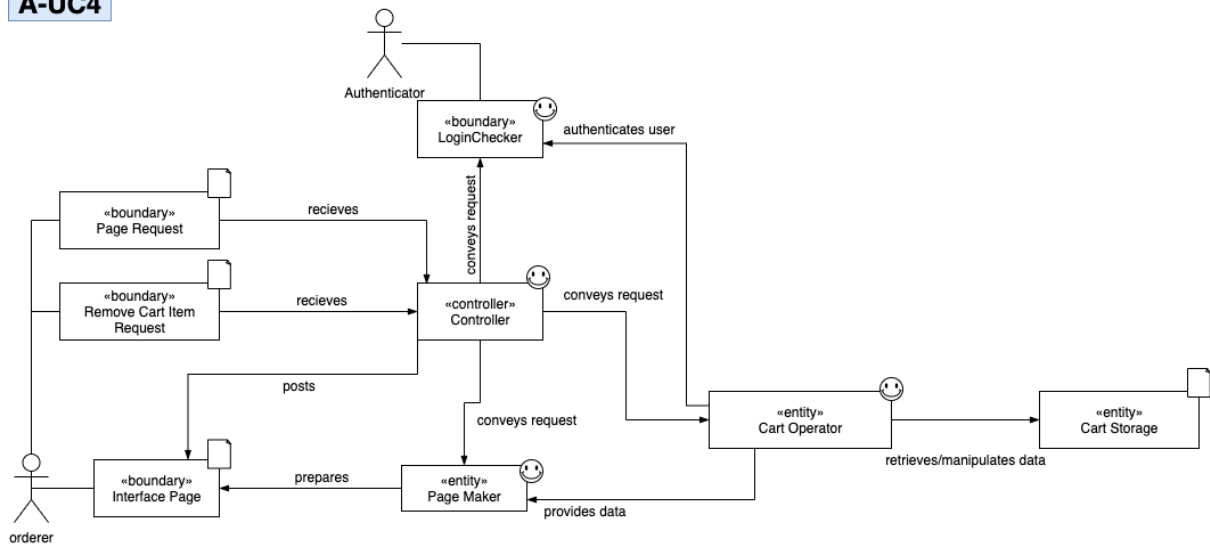
A-UC3 : Modify Cart Item Quantity

A-UC3



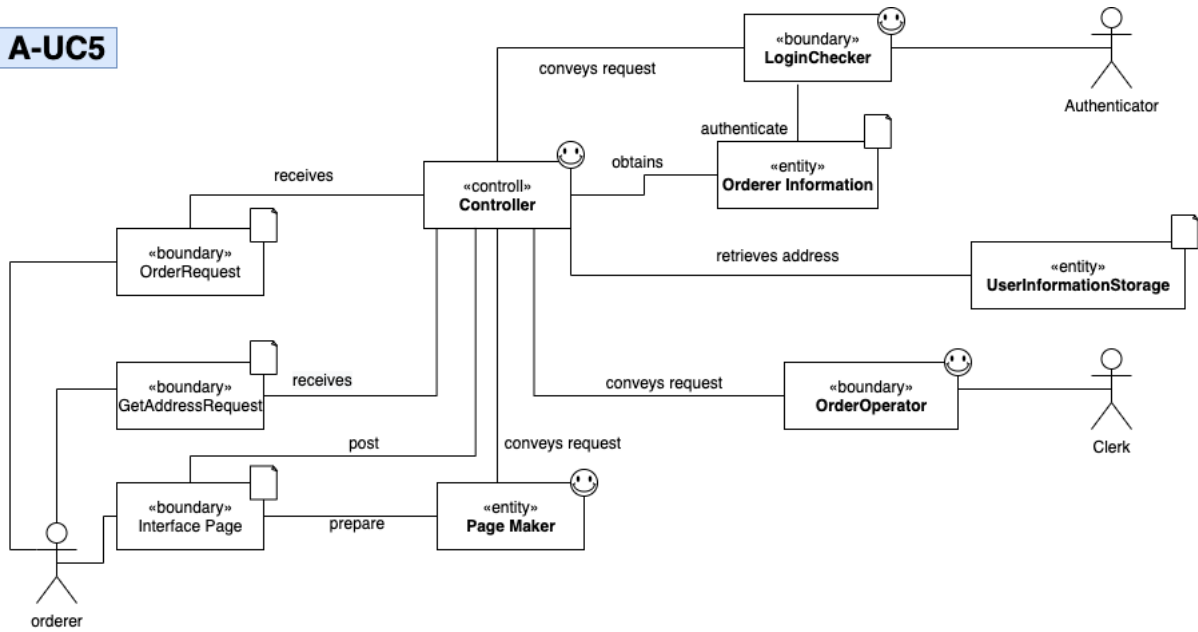
A-UC4 : Remove Cart Item

A-UC4



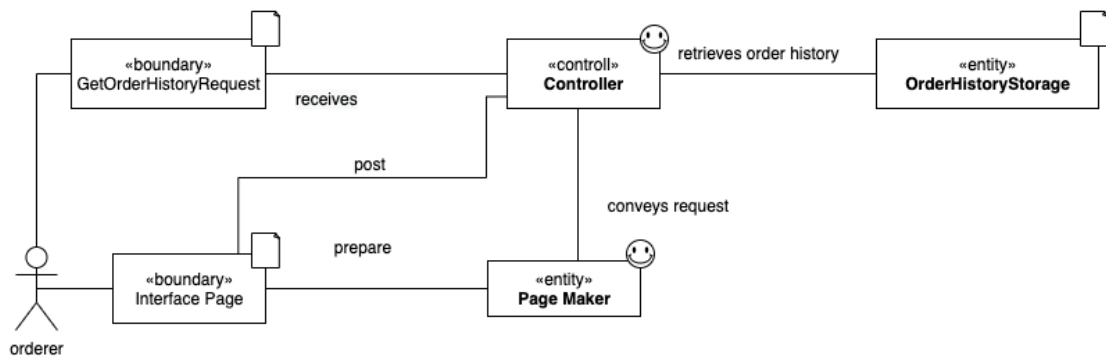
A-UC5 : Order

A-UC5



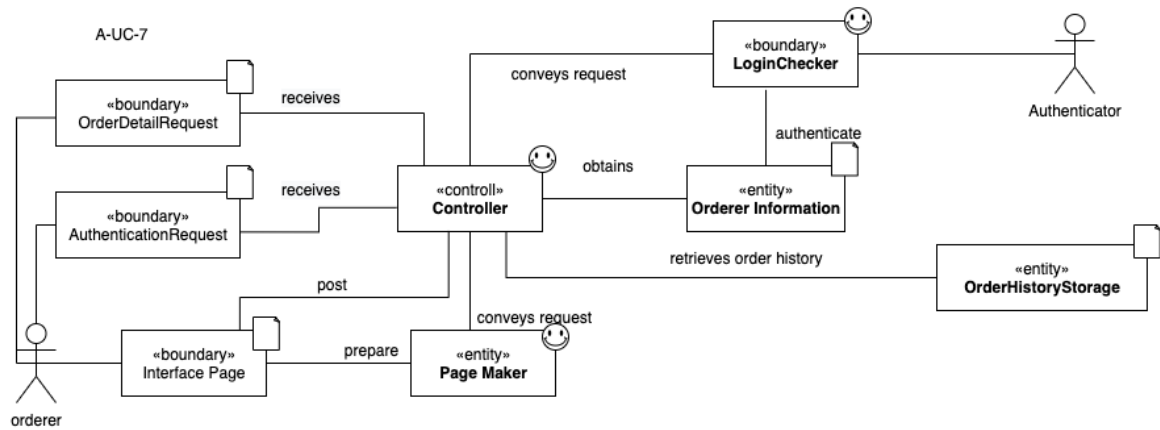
A-UC6 : View Order History

A-UC6



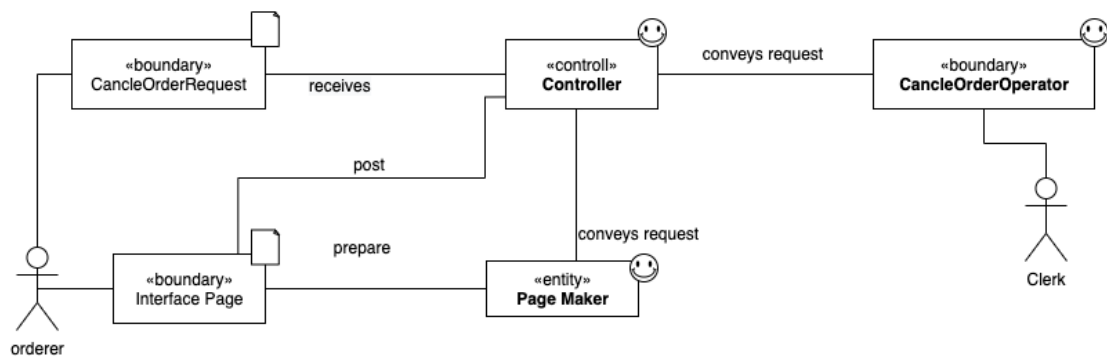
A-UC7 : Cancel Order - include UC6

A-UC7



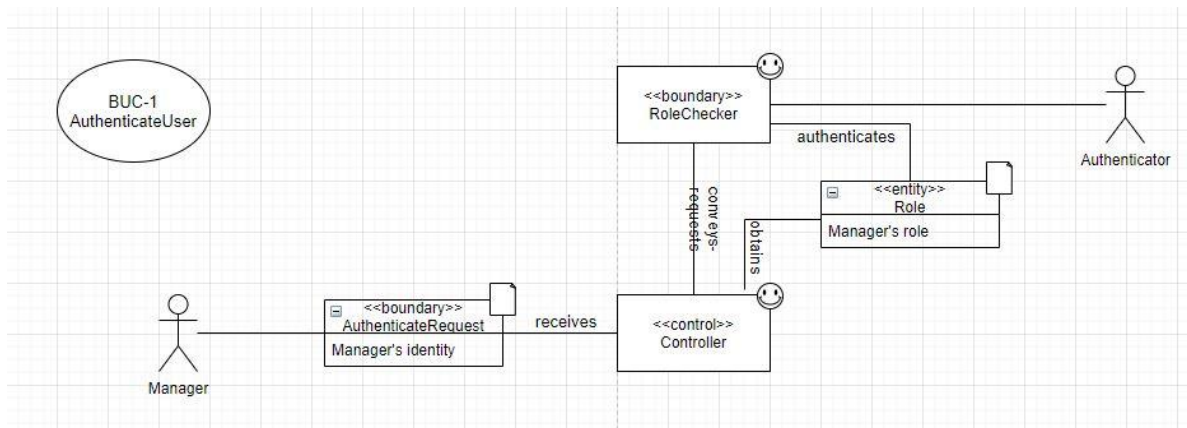
A-UC8 : Pay Online

A-UC8

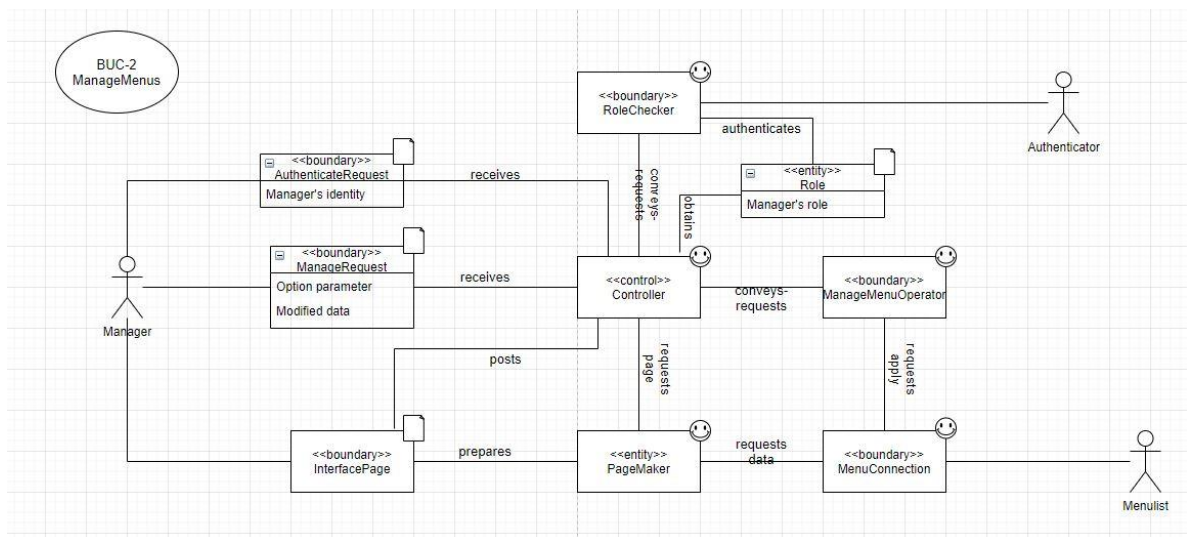


2.2 SubgroupB(Management)

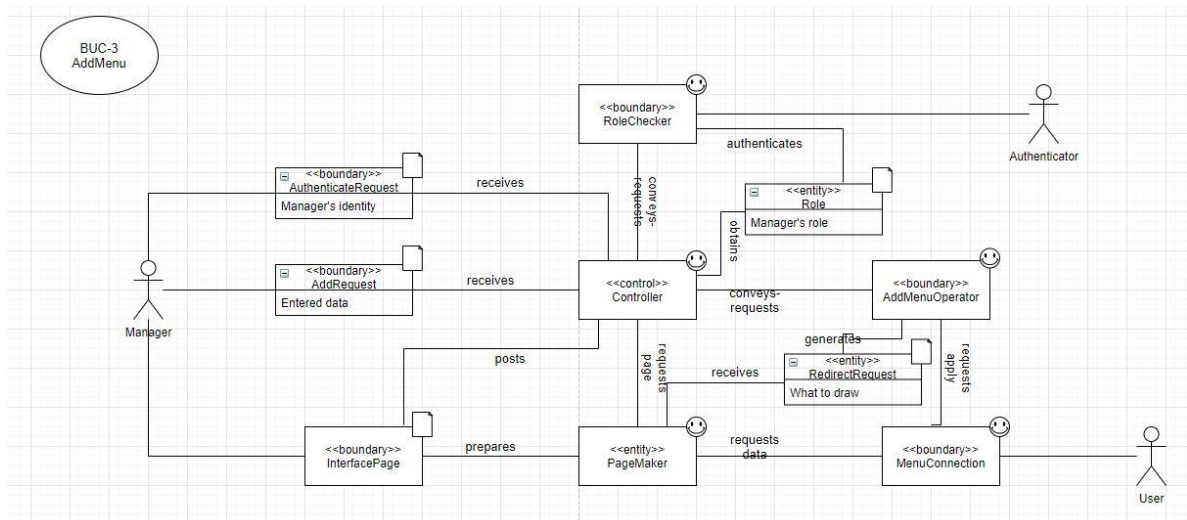
B-UC1: AuthenticateUser



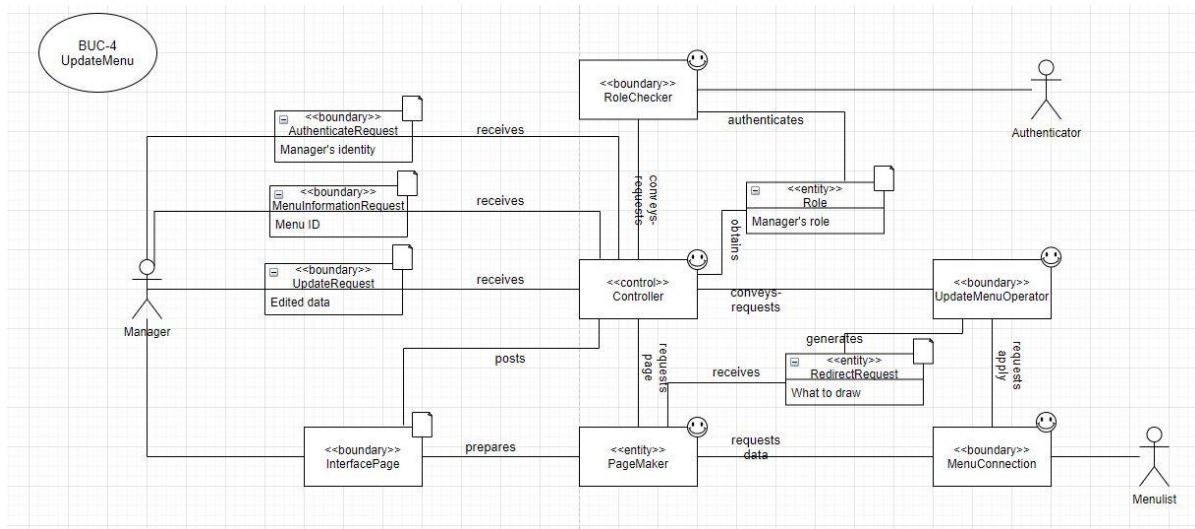
B-UC2:ManageMenus extends B-UC3~B-UC5 includes B-UC1



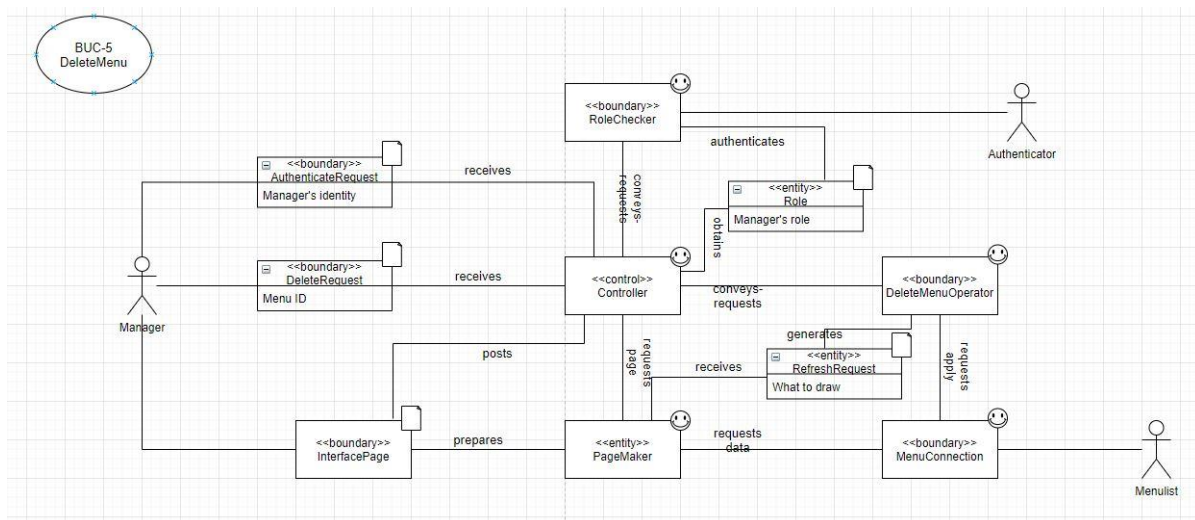
B-UC3:AddMenu



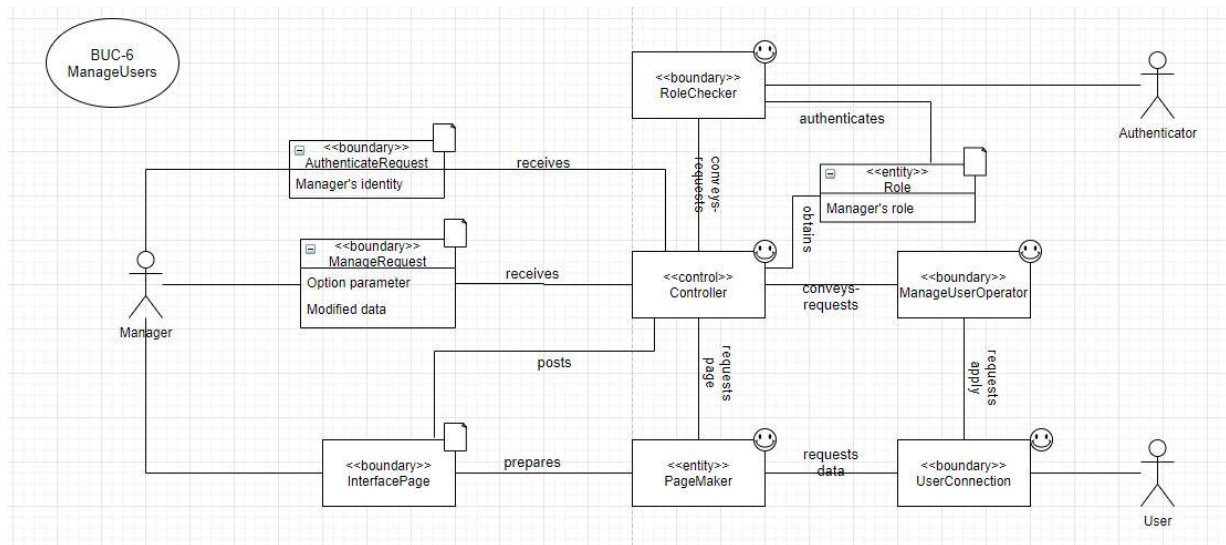
B-UC4:UpdateMenu



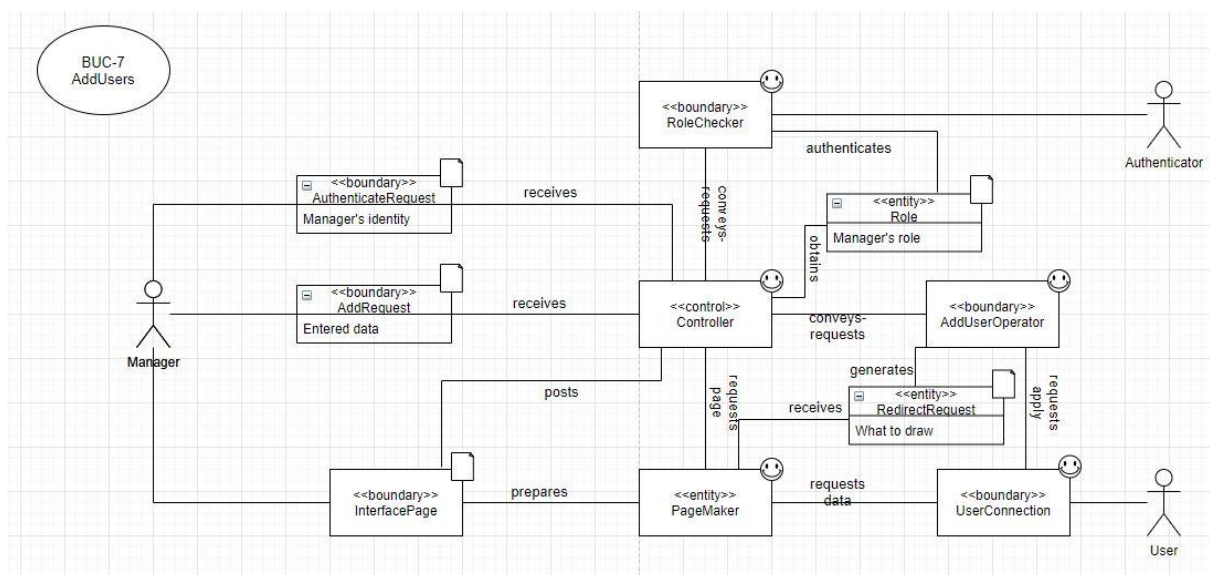
B-UC5:DeleteMenu



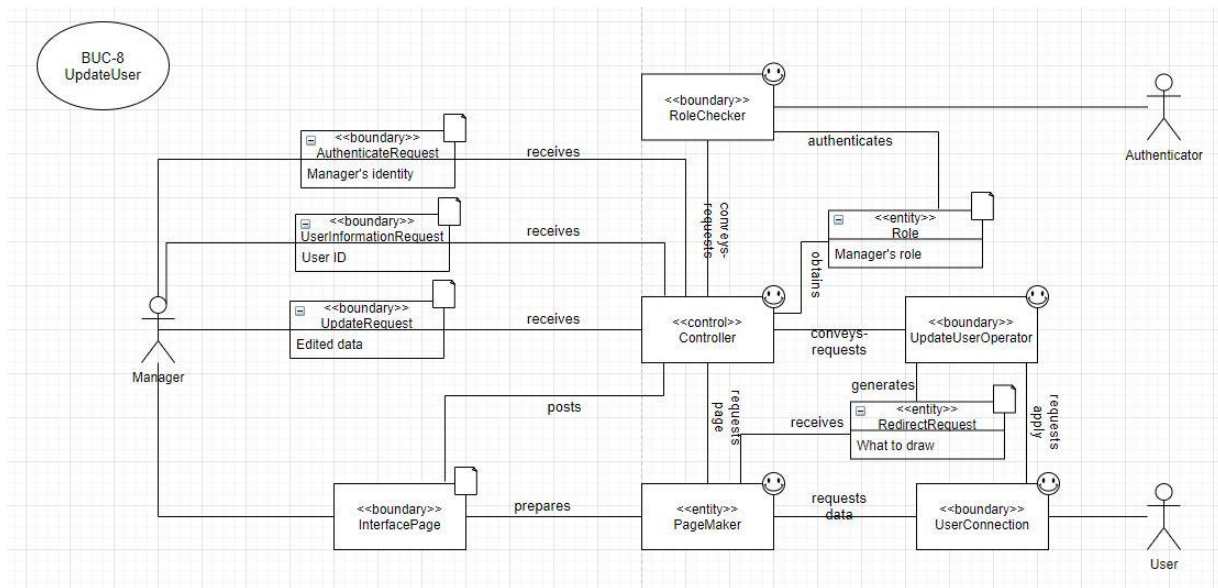
B-UC6:ManageUsers extends B-UC7~B-UC9 includes B-UC1



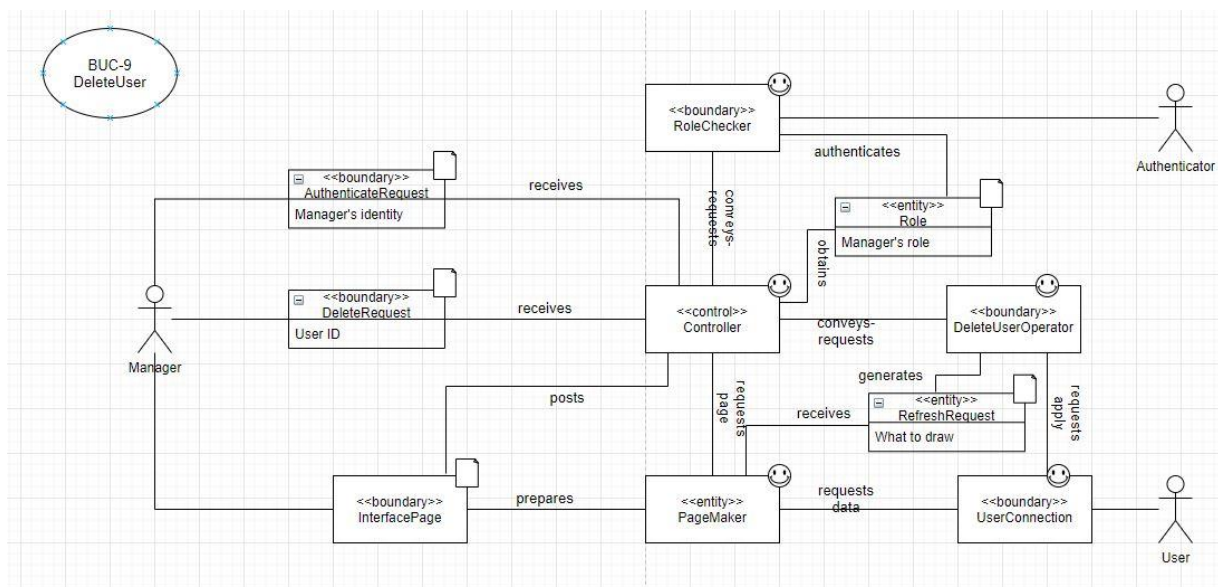
B-UC7:AddUser



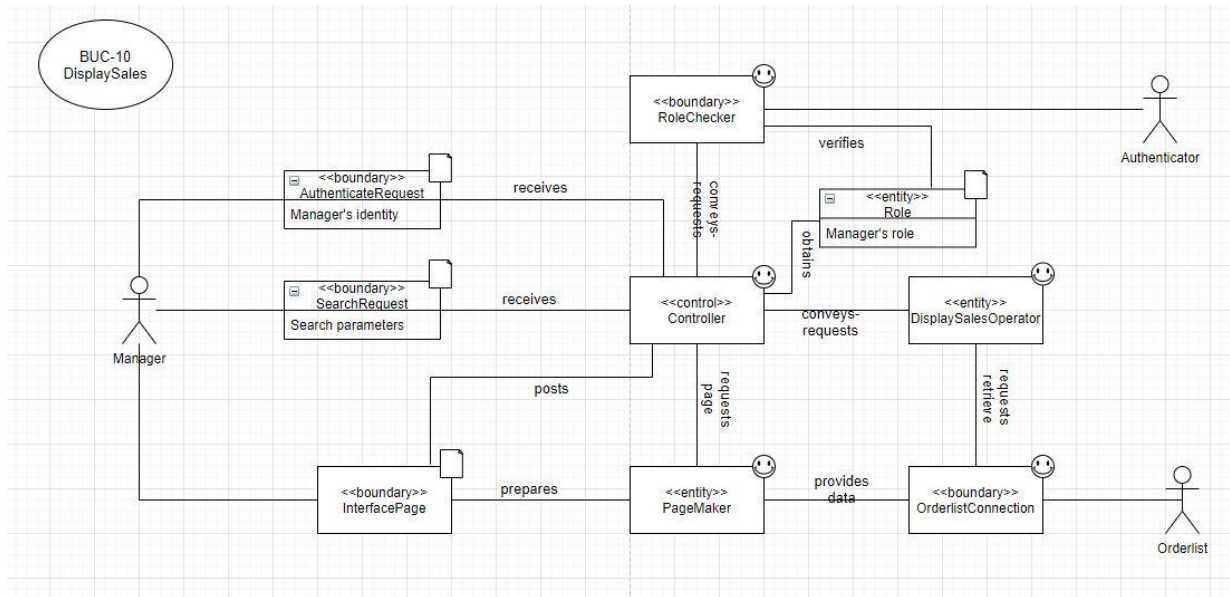
B-UC8:UpdateUser



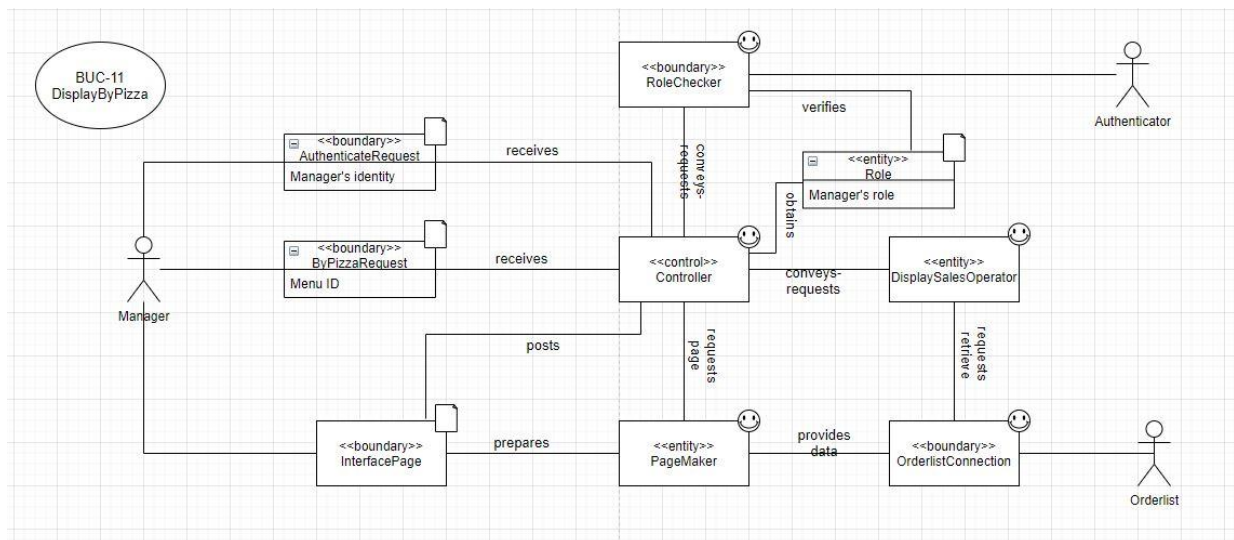
B-UC9:DeleteUser



B-UC10:DisplaySales extends B-UC11~B-UC12 includes B-UC1

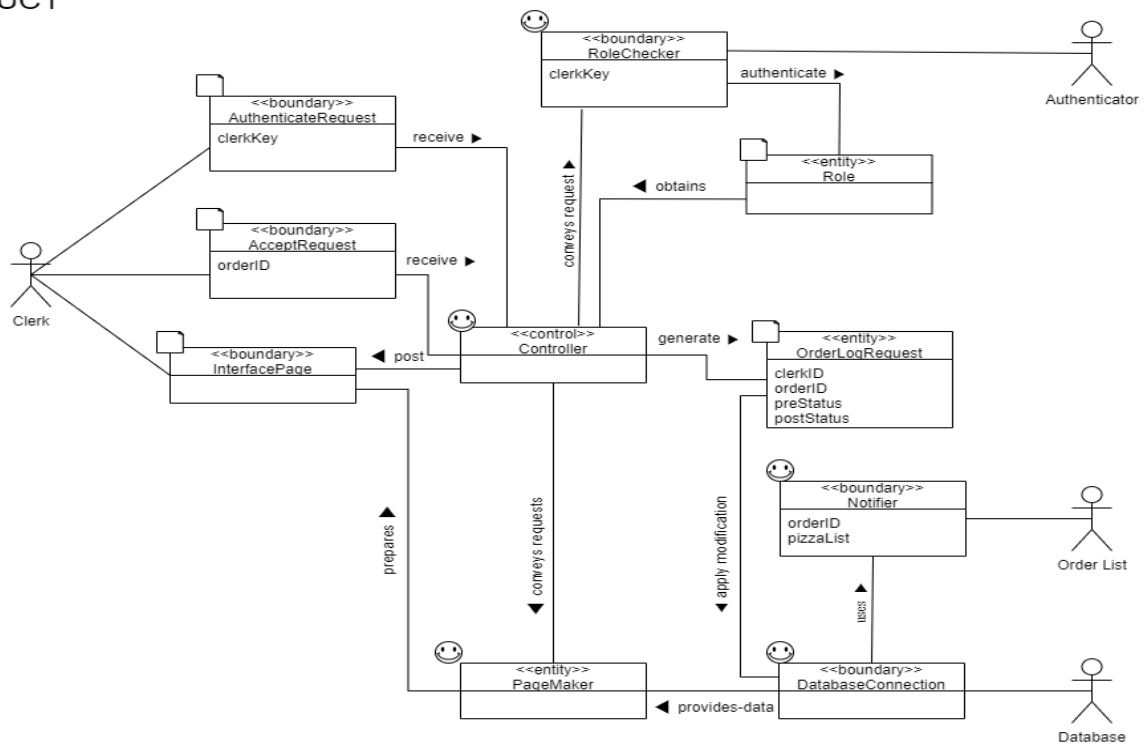


B-UC11: DisplayByPizza



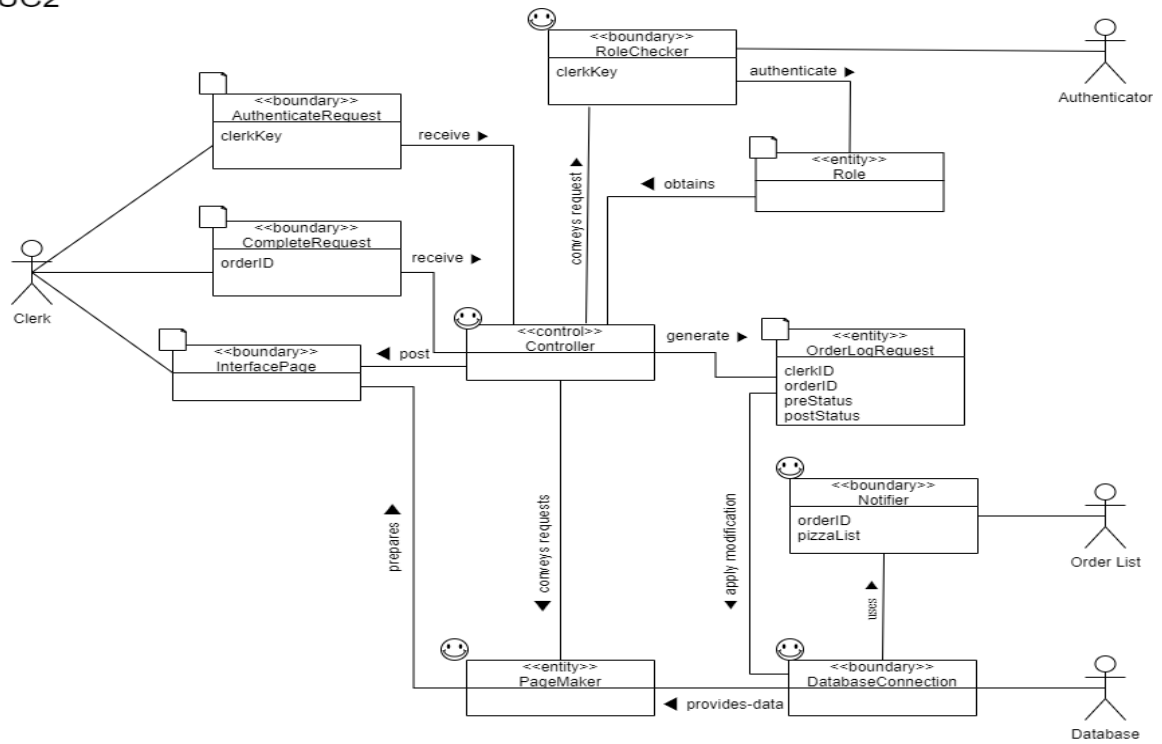
B-UC12: DisplayByPeriod

C-UC1



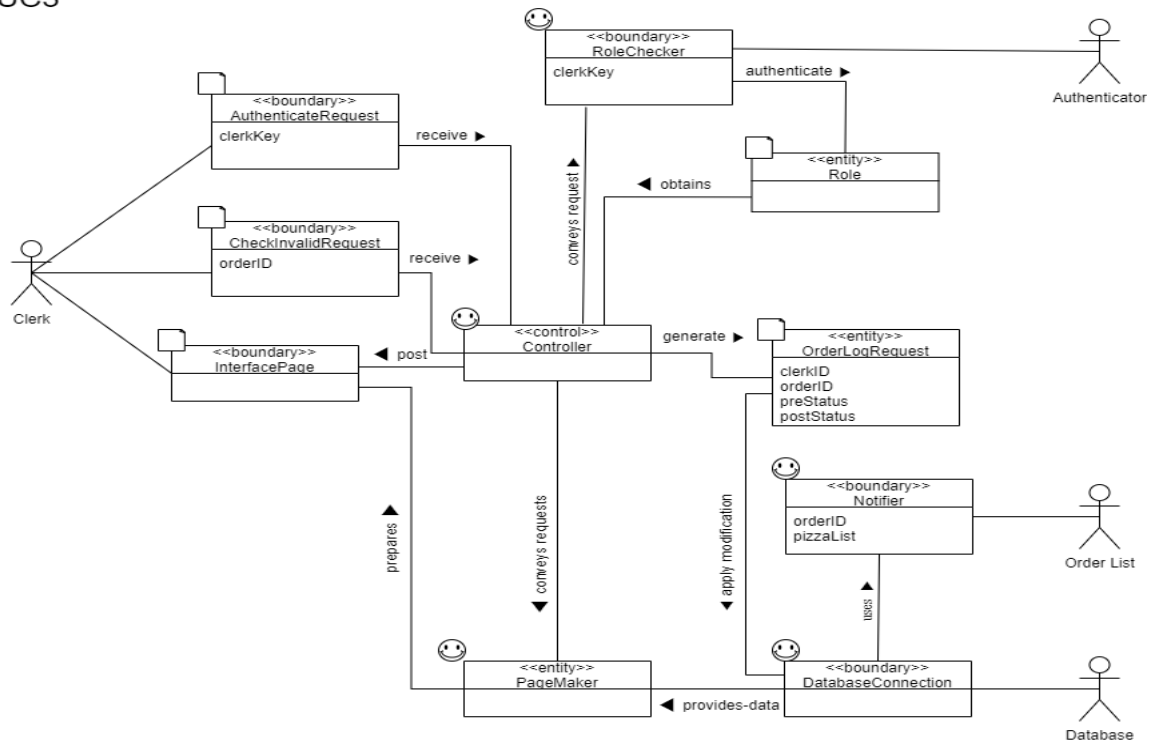
-UC2: Complete Cook

C-UC2



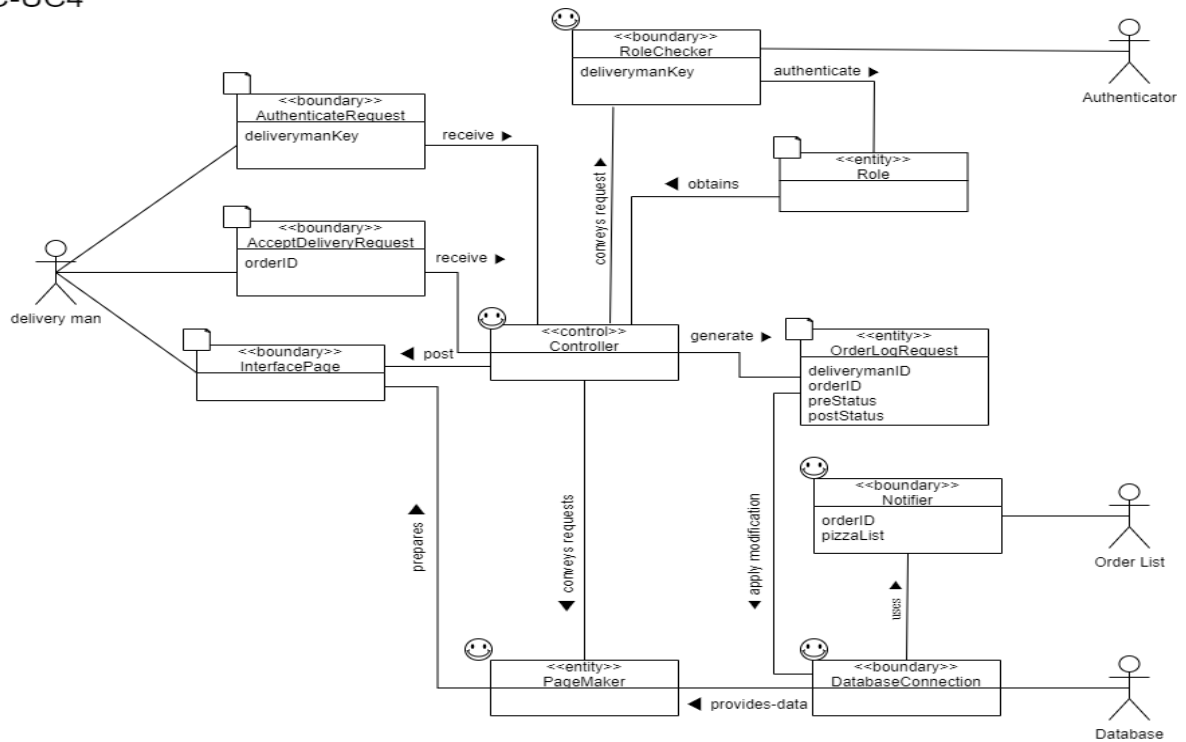
C-UC3: Handle emergency

C-UC3



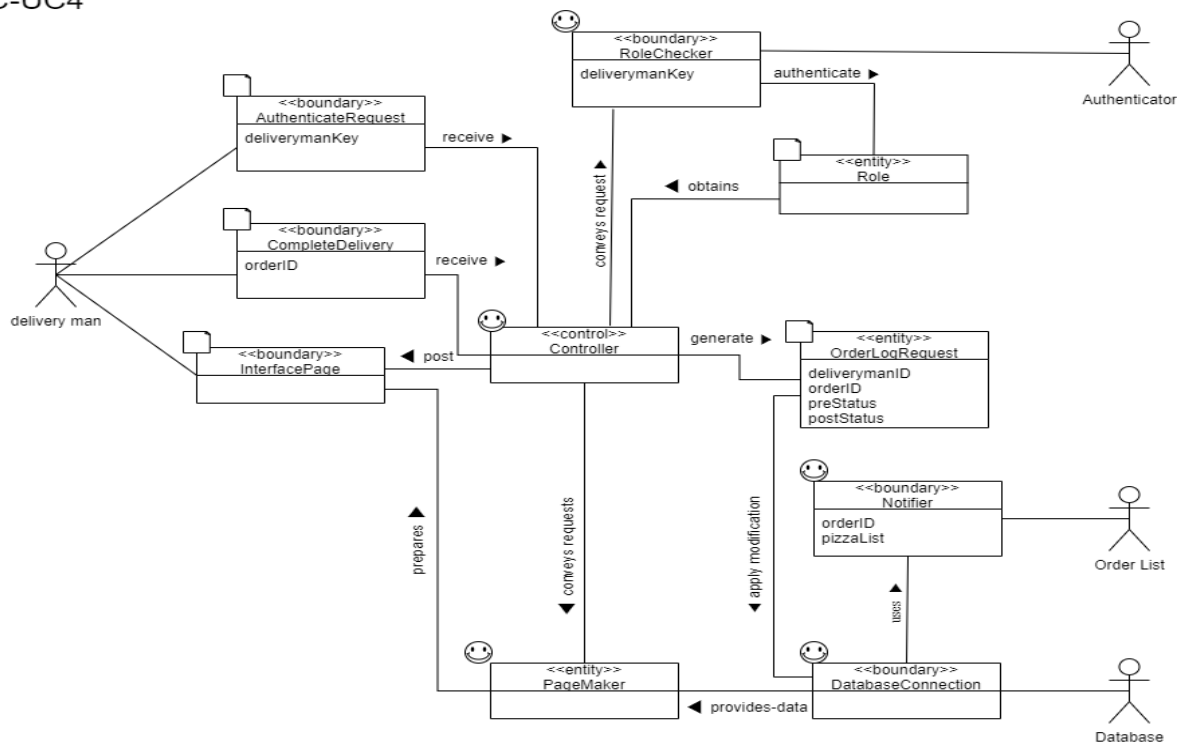
C-UC4: Start Delivery

C-UC4



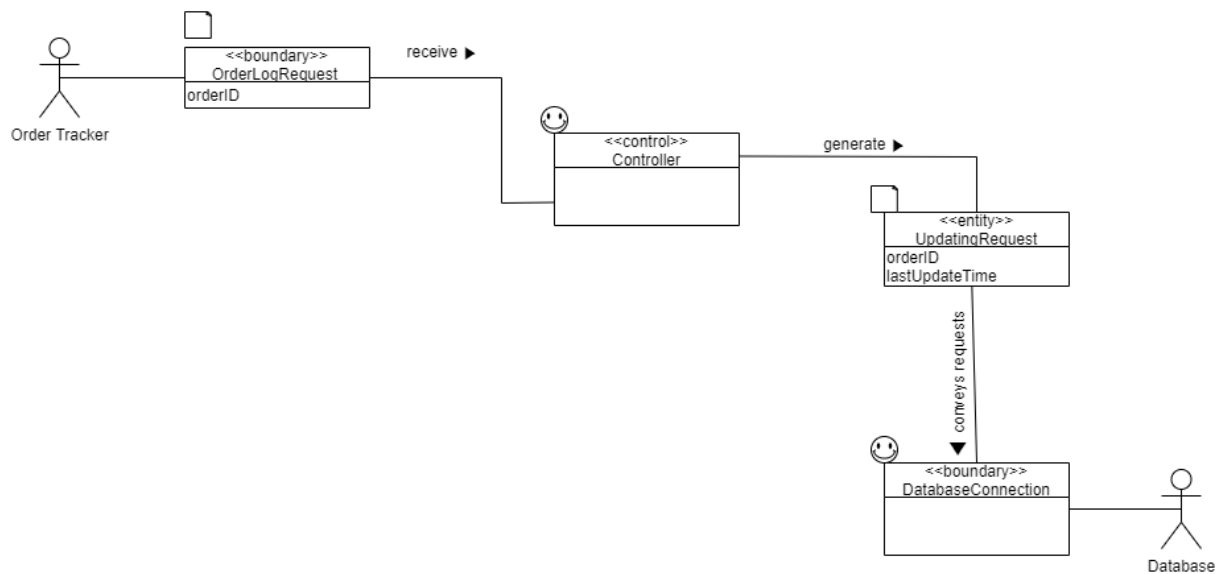
C-UC5: Complete Delivery

C-UC4



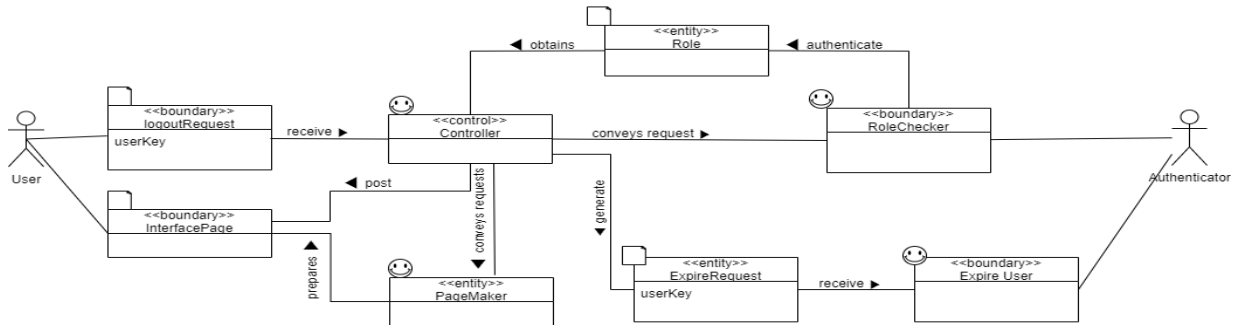
C-UC6: Track order

C-UC6



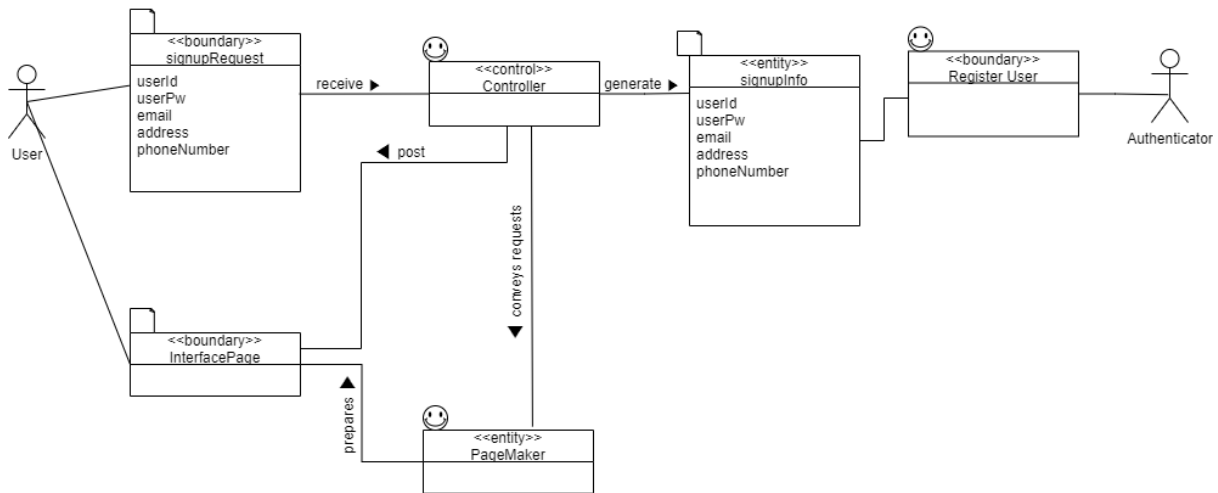
C-UC7: Logout

C-UC7



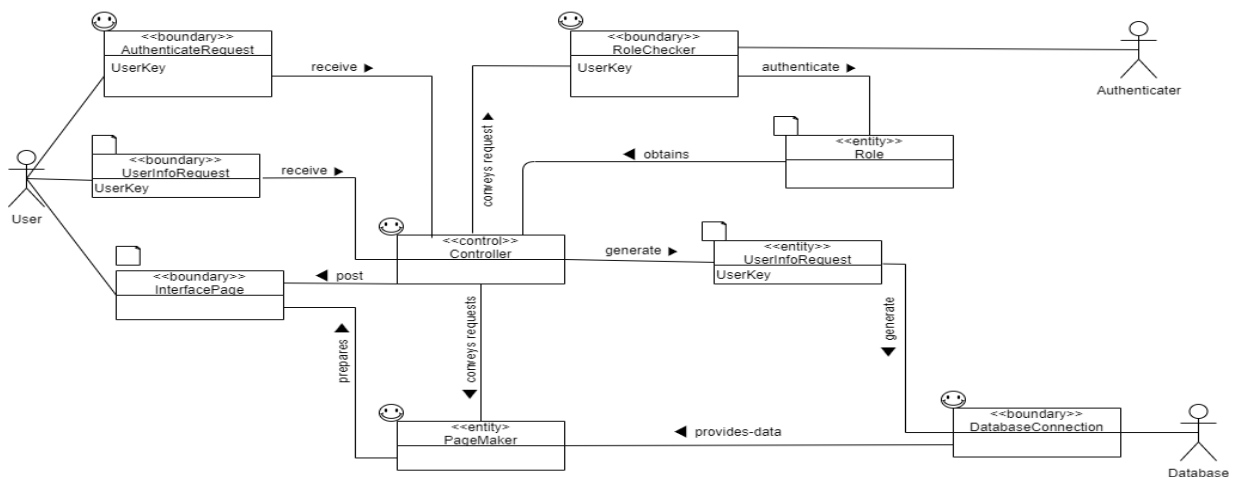
C-UC8: Sign up

C-UC8

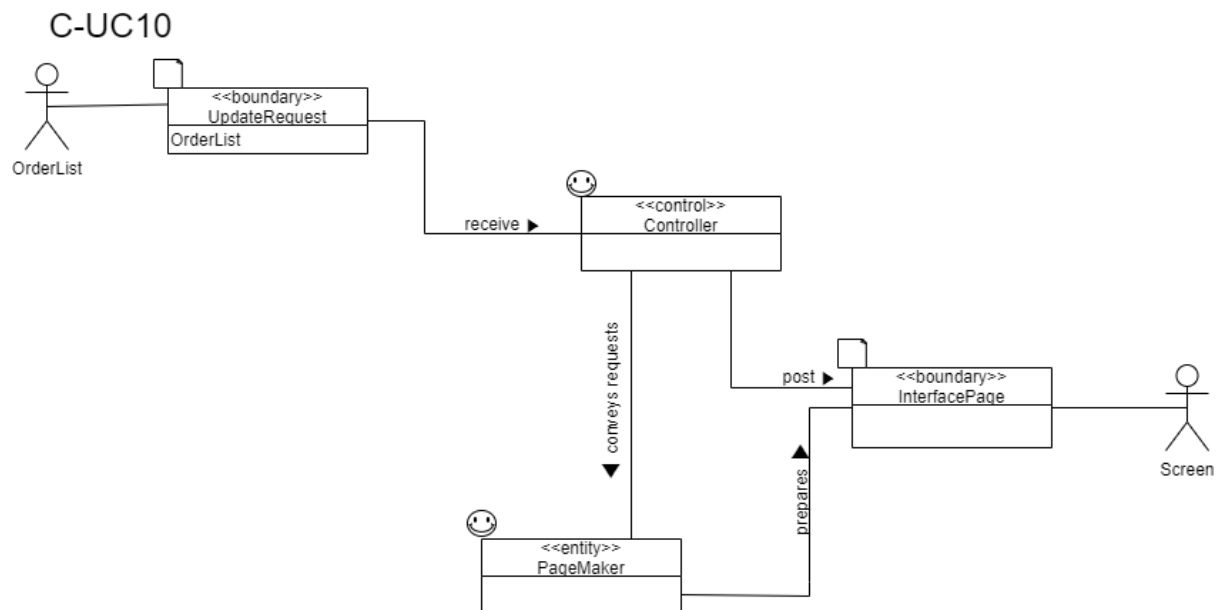


C-UC9: Display user's info page

C-UC9

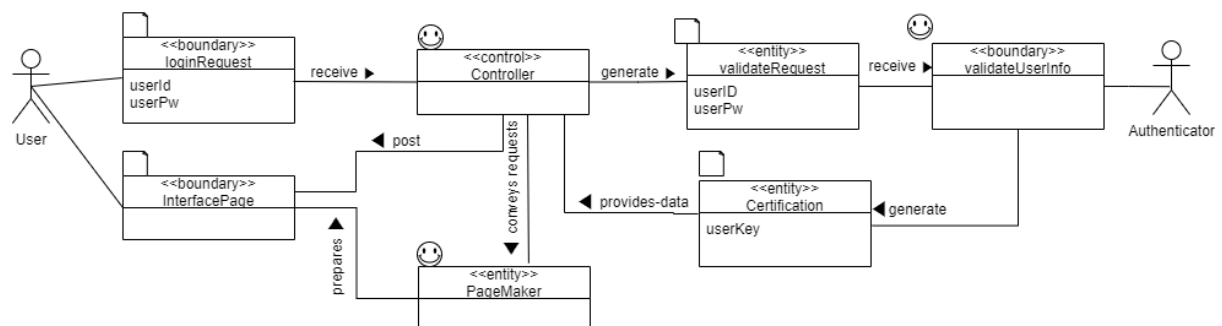


C-UC10: Display Orders



C-UC11: Login User

C-UC11



3. Traceability Matrix

3.1 SubgroupA(PizzaOrder)

		Get Address Request	Order Request	Login Checker	Order Information	User Information Storage	Order Operator	Get Order History Request	Order Detail Request	Order History Storage	Authentication Request	Cancel Order Request	Cancel Order Operator	Menu Storage	Cart Storage	Menu Operator	Cart Operator	Add to Cart Request	Modify Cart Item Quantity Request	Remove Cart Item Request	Page Request	Control Panel	Page Maker	Interface Page
A - U C 1	21			O										O	O	O	O	O			O	O	O	O
A - U C 2	34			O											O		O				O	O	O	O
A - U C	5			O											O		O		O		O	O	O	O

3																								
A - U C 4	8			O										O		O			O	O	O	O	O	
A - U C 5	4 4	O	O		O	O	O													O	O	O	O	
A - U C 6	1							O		O										O	O	O	O	
A - U C 7	1			O	O				O	O	O										O	O	O	
A - U C 8	2										O	O									O	O	O	
Total PW		44	4	11 3	4 5	44	44	1	1	2	1	2	2	2 1	6 8	2 1	6 8	2 1	5	8	1 1 6	1 1 6	1 1 6	1 1 6

3.2 SubgroupB(Management)

|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

3.3 SubgroupC(OrderStatus)

		A u t h e n t i c a t e R e q u e s t	O r d e r L o g R e q u e s t	A c c e p t R e q u e s t	C o m p l e t e R e q u e s t	C h e c k i n v a l i d R e q u e s t	A c c e p t D e l i v e r y R e q u e s t	C o m p l e t e D e l i v e r y R e q u e s t	U p d a t i n g R e q u e s t	L o g o u t R e q u e s t	E x p i r e R e q u e s t	S i g n u p R e q u e s t	S i g n u p l i n f o	U p d a t e R e q u e s t	C e r t i f i c a t i o n	V a l i d a t e R e q u e s t	L o g i n R e q u e s t	U s e r i n f o R e q u e s t	
	pw																		
C-UC-1	5	O	O	O															
C-UC-2	5	O	O		O														
C-UC-3	3	O	O			O													
C-UC-4	5	O	O				O												
C-UC-5	5	O	O					O											
C-UC-6	2		O						O										
C-UC-7	8	O								O	O								
C-UC-8	14											O	O						
C-UC-9	4	O																	O
C-UC-10	2													O					
C-UC-11	4															O	O	O	O
Total PW		35	25	5	5	3	5	5	2	8	8	14	14	2	4	4	4	4	8