

REQUIREMENTS

InternshipPLS

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SWE 3133 | Section 02

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Requirements

Section 1: Customer

- 1.1 The system will allow the user to add a new customer to the customer list. – Need to have
New customers can be added to the customer list through the Add New Customer button on the Customer List screen. A valid full name and unique phone number must be entered to add a customer to the customer list.
- 1.2 The system will display a current list of registered customers. – Need to have
The current list of customers is displayed on the Customer List screen through the Customer List button on the Main Menu screen.
- 1.3 The system will allow the user to identify customers by their phone number. – Nice to have
The Customer List screen will allow searching by phone number.

Section 2: Orders

- 2.1 The system will allow orders to be made for registered rewards customers. – Need to have
Orders for existing rewards customers may be started from the Customer List screen. New customers may be added to the customer list; after a new customer is added to the list, a new order is started for the customer.
- 2.2 The system will allow orders to be made for anonymous customers. – Must have
The Main Menu screen will allow orders to be started for anonymous customers. The Customer List screen will display the anonymous customer at the top of the customer list, and orders for anonymous customers can be started from this option.
- 2.3 The system will allow the user to add drinks to the order. – Must have
Drinks will be addable to orders from a selection of base drinks.
- 2.4 The system will allow the user to add modifications to each drink. – Need to have
As each drink is added to the order, a menu of available modifications will allow the user to select the modifications desired by the customer to the current drink.
- 2.5 The system will allow the user to remove modifications from a drink. – Need to have
On the order screen, modifications will be removable from drinks currently in the order.
- 2.6 The system will allow the user to remove drinks from the current order. – Need to have
On the order screen, drinks will be fully removable from the current order.
- 2.7 The system will allow the user to remove all drinks from the current order. – Need to have
On the order screen, an option will remove all drinks from the current order.
- 2.8 The system will allow the quantity of a drink to be changed. – Need to have
On the order screen, after a drink has been added to the order, an option will allow exact duplicates of a drink to be added or removed from the order.

2.9 The system will allow the user to cancel the current order. – Must have

On the order screen, a Cancel button will be available that will clear the current order and return the user to the Main Menu screen.

2.10 The system will allow the user to review the current order. – Must have

On the order screen, a display of the current order will always be on the screen on the right side. The display will contain the drinks, modifications, prices, subtotal, taxes, and total.

2.11 The system will complete the current order. – Must have

After successful payment, the order will be confirmed with a receipt displayed on the screen. The receipt will contain the drinks, modifications, prices, subtotal, taxes, total, payment method, and order date and time.

Section 3: Payment

3.1 The system will be able to accept payment by credit card. – Must have

Anonymous customers must pay by card. Rewards customers have the option to pay by card, and if they do, they are given rewards points based on the order total. The rewards for their order are then added to their current total of reward points.

3.2 The system will allow rewards customers to pay with reward points. – Nice to have

Rewards customers will have the option to pay with reward points. They must have enough reward points to cover the entire cost of their order. Reward points will be deducted from their total reward points.

3.3 The system will validate credit card information. – Must have

The system will use an open-source package, CreditCardValidator, to validate credit card numbers.

3.4 The system will allow the user to cancel payment for the current order. – Must have

On the payment screen, a button will be available to cancel the current payment process. The button will cancel the current order, and it will return the user to the Main Menu screen.

3.5 The system will notify the user of payment success or failure. – Must have

If the credit card information is validated the system will notify the user it was successful. Otherwise, the system will notify the user that the credit card information could not be validated.

Section 4: Data Management

4.1 The system will read configuration data from the Configuration Data JSON file. – Must have

The configuration file will contain the tax rate, reward points given per dollar, and all other relevant app settings data.

4.2 The system will read menu options from the Drink Menu JSON file. – Must have

The drink file will contain all drinks and their available customizations.

4.3 The system will read customer data from the Customer JSON file. – Must have

The customer JSON file will hold all rewards customers' information, and their order data. Customer information will include their full name, phone number, GUID, and each customer's reward points total.

4.4 The system will write customer data to the Customer JSON file. – Must have

The system will write a customer to the Customer JSON file after their information has been successfully entered and validated.

4.5 The system will write sales data to the Customer JSON file. – Must have

Sales data will be added to the Customer file once an order has been successfully placed and payment has been accepted.

4.6 The system will update the Customer JSON file upon each data entry event. – Must have

Immediately after a new customer is added to the list or an order is completed by successful payment, the Customer JSON file will be updated with the most current information.

4.7 The system will generate a CSV file of sales data. – Need to have

A button to generate a CSV file of sales data will be available on the Management Tools screen. It will generate a CSV file and open the file in Excel.

Section 5: User Interface

5.1 The system will have a Main Menu screen. – Must have

The application will start at this screen. The screen will contain an Order Now button that will begin an order as an anonymous customer, a Customer List button that will take the user to the Customer List screen, and a Management Tools button that will take the user to the Management Tools screen.

5.2 The system will have a Customer List screen. – Need to have

The Customer List screen will display the sorted customer list with the anonymous customer at the top of the list, each customer's full name, phone number, reward points, an order button for each customer, and a search bar. The screen will have an Add New Customer button that will take the user to the Add New Customer screen.

5.3 The system will have an Add Customer screen. – Need to have

The Add customer screen will have required fields for the customer's first and last name and phone number. It will also have a submit button that will add the customer to the customer list and begin an order for that customer.

5.4 The system will have an Order screen. – Must have

The Order screen will have the drink and modifications menu with pricing to add things to the order on the left of the screen. The screen will have an order summary on the right of the screen that will display the drinks in the order with their modifications, the subtotal, taxes, and the total for the order. The screen will have a Proceed to Payment button that is unclickable until at least one item is in the order; the button will take the user to the Payment screen.

5.5 The system will have a Payment screen. – Must have

The Payment screen will display the customer's current reward points total if they are not anonymous. It will have a Pay with Rewards button and a Pay with Card button. The screen will have fields for the credit card information to be entered. The screen will have a submit button that will validate the card information, and upon successful validation, will take the user to the Receipt screen.

5.6 The system will have a Receipt screen. – Need to have

The Receipt screen will display a list of drinks, modifications, the quantity of each drink, subtotal, tax, total, and payment method for the order. If the order was paid for with a credit card, the last 4 digits of the card used will be displayed. If reward points were redeemed to pay for the order, the total number of redeemed points will be displayed. A current total of reward points will be displayed for reward customers. The screen will also have a Continue button that will return the user to the Main Menu screen.

5.7 The system will have a Management Tools screen. – Need to have

The screen will have a Generate Sales Report button that will generate a CSV file as stated in requirement 4.7.

5.8 Each screen in the system will allow the user to return to the Main Menu screen. – Need to have

Each screen in the application will have a Cancel or Return button that takes the user directly to the Main Menu screen.

5.9 The system will display all dollar amounts formatted to two decimal places. – Must have

Requirement Priority Table

<i>ID</i>	<i>Requirement Desc.</i>	<i>Priority Level (1-3) *</i>
1.1	Add new customer to customer list	2
1.2	Display a current list of registered customers	2
1.3	Identify customers by phone number	1
2.1	Allow orders to be made for registered customers	2
2.2	Allow orders from anonymous customers	3
2.3	Allow user to add drinks to order	3
2.4	Allow user to add modifications to each drink	2
2.5	Allow user to remove modifications from each drink	2
2.6	Allow user to remove drinks from current order	2
2.7	Allow user to remove all drinks from current order	2
2.8	Allow user to change quantity of drinks	2
2.9	Allow user to cancel current order	3
2.10	Allow user to review current order	3
2.11	Complete current order & display receipt	3
3.1	Accept credit card payment	3
3.2	Allow customers to pay with reward points	1
3.3	Validate credit card information	3
3.4	Allow user to cancel payment of current order	3
3.5	Notify user of payment success or failure	3
4.1	Read config data from JSON file	3
4.2	Read menu option from Drink Menu JSON file	3
4.3	Read customer data from Customer JSON file	3
4.4	Write customer data to Customer JSON file	3
4.5	Write sales data to Customer JSON file	3
4.6	Update Customer JSON file upon data entry event	3
4.7	Generate CSV file sales data	2
5.1	Main Menu Screen	3
5.2	Customer List Screen	2
5.3	Add Customer Screen	2
5.4	Order Screen	3
5.5	Payment Screen	3
5.6	Receipt Screen	2
5.7	Management Tools Screen	2
5.8	Return functionality on all screens	2
5.9	Display monetary values at 2 decimal places	3

*1 – Lowest Priority, 3 - Highest

Decision Tables

Customer Account Creation

Customer Account Creation		
Conditions		
Phone # is unique	T	F
Phone # is 10 characters	T	
Name is not null	T	
Actions		
Save customer info	Save customer data	Do not save customer data

The Customer Account Creation table demonstrates that the user must input a valid, unique phone number and a name to create an account. If any of these conditions are not fulfilled, the user will not be able to create an account and the data will not be stored.

Payment Screen – Card Payment

	Card Payment		
Conditions			
Valid card number	T		F
Customer Type	Anonymous	Non-anonymous	
Actions			
Accept payment	Accept		Do not accept
Save sales data	Save data		
Calculate earned points		Calculate points	

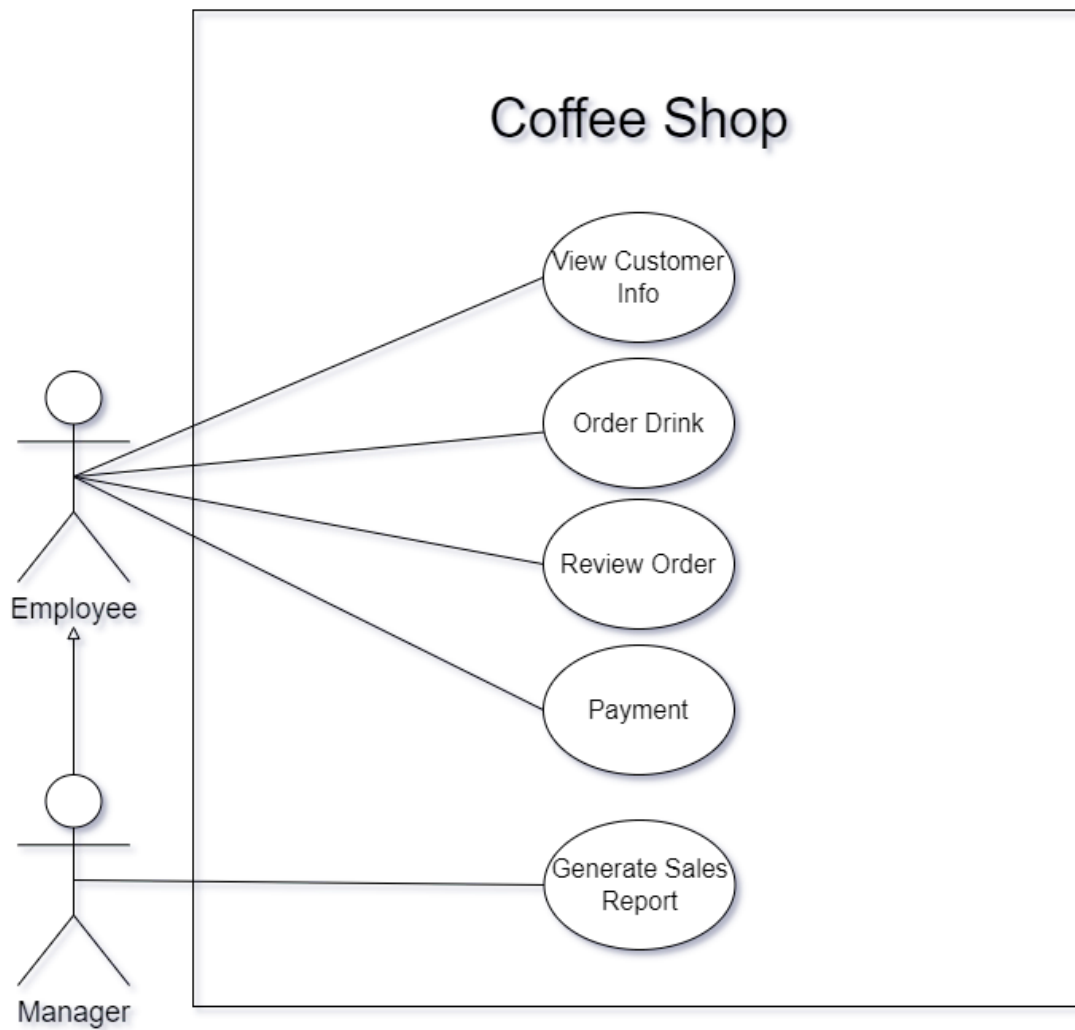
The Card Payment table shows the conditions that need to be met for a card payment to be accepted. If the card is valid, the payment will be accepted, and the transaction data will be stored. If the user is not anonymous, they will earn points based on their total.

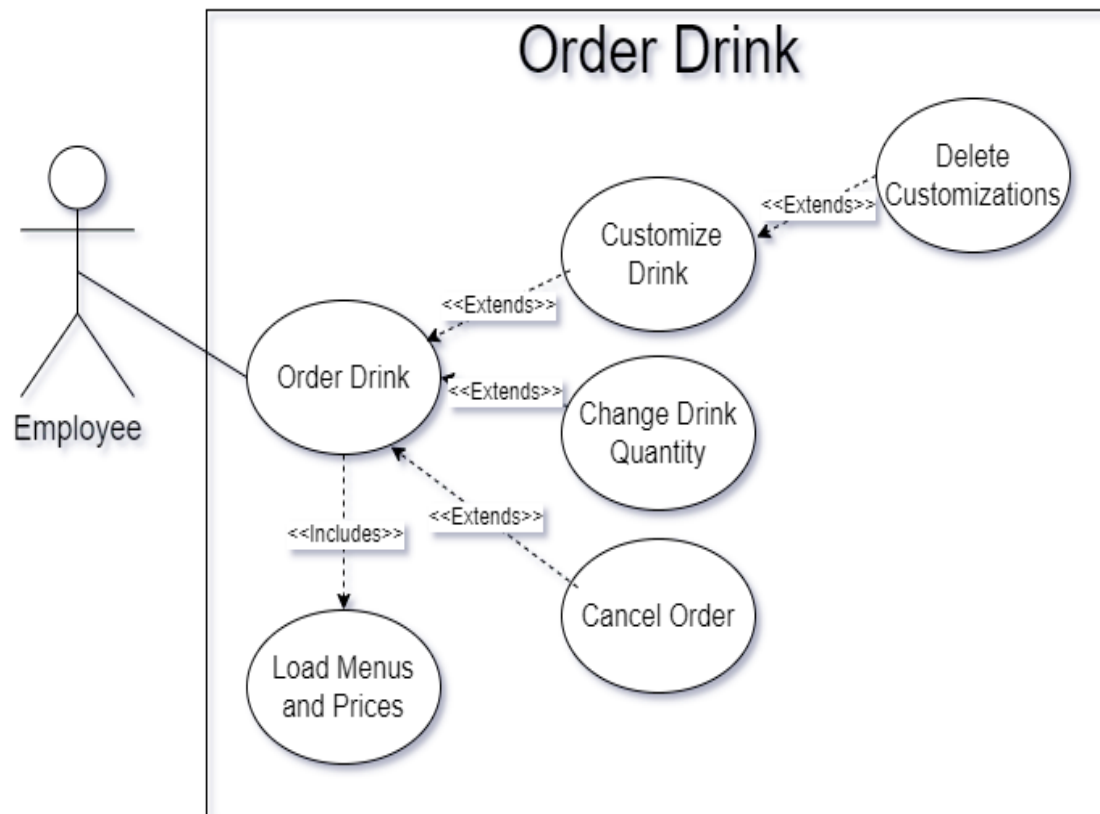
Payment Screen – Point Redemption

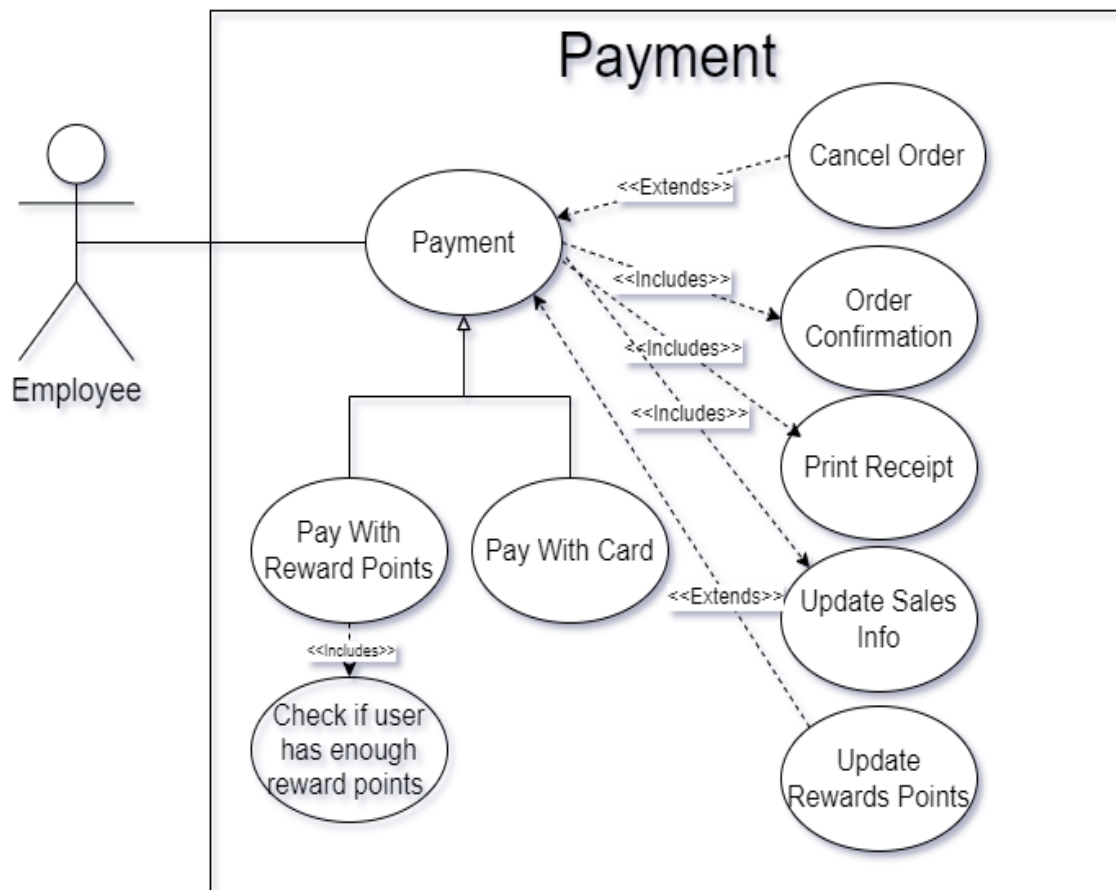
Point Redemption		
Conditions		
Customer Type	Non-anonymous	
Enough points	T	F
Actions		
Accept payment	Accept	Do not accept
Save sales data	Save data	

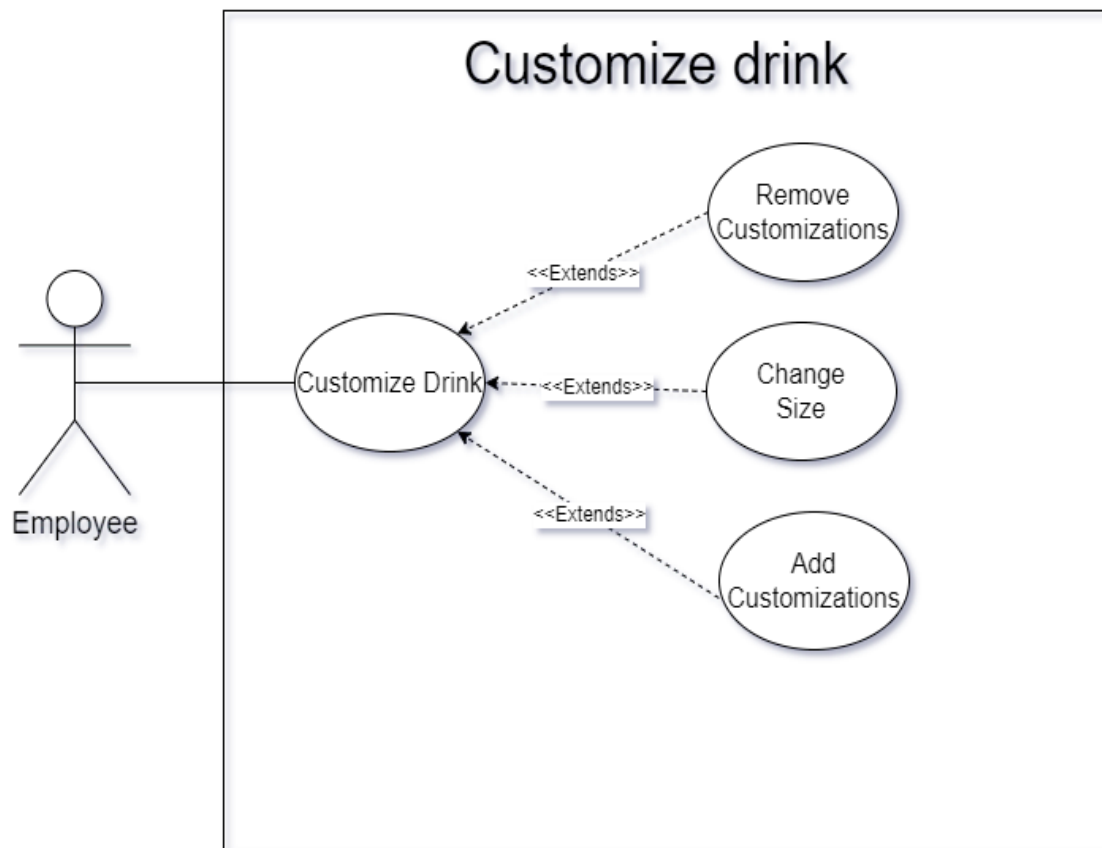
The Point Redemption table shows the conditions that need to be met for the user to pay with points. They must be non-anonymous, and they must have enough points to cover their order. If these conditions are met, the points will be accepted, and the transaction data will be saved.

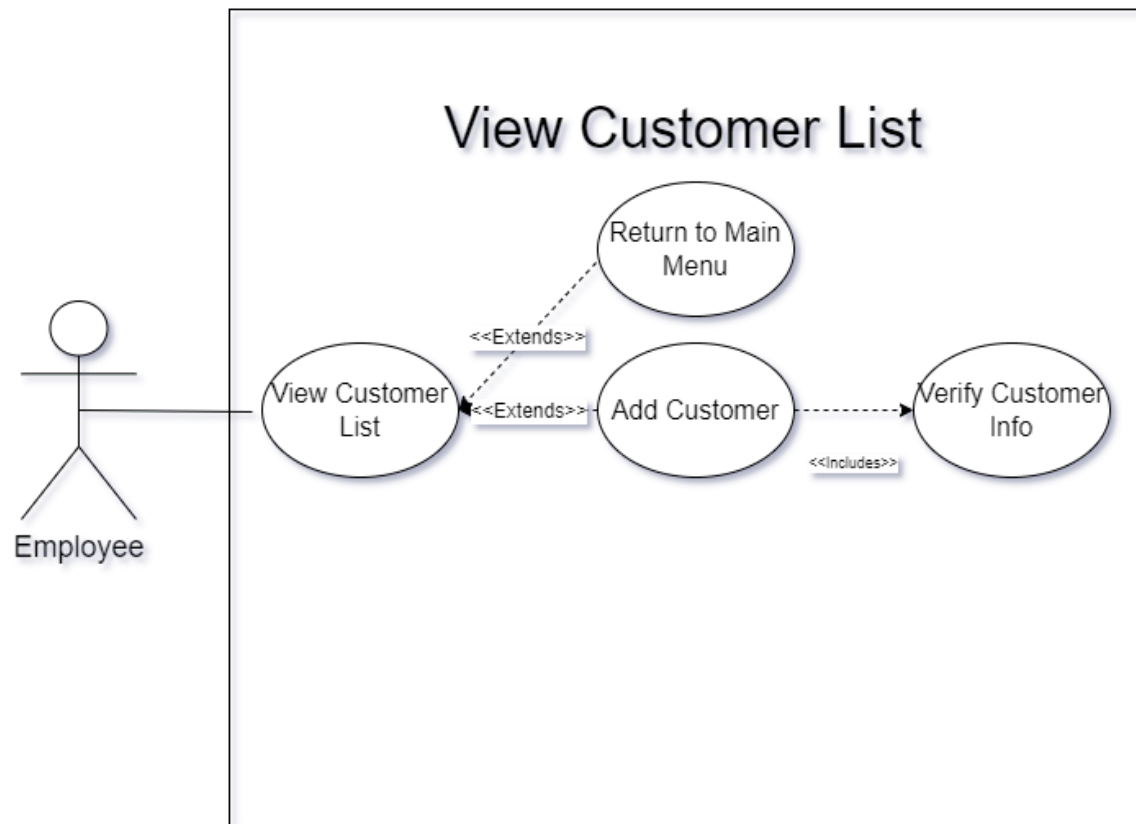
Use-Case Diagrams











Flow of Events

Navigating Customer List

The main menu will have a customer list button that will bring the user to the customer list. From here the user can add a customer to the list, choose a customer from the list for an order, or simply return to the main menu.

- 1) User clicks View customer list from main screen.
- 2) System displays customer list.
 - Exceptions:
 - a) User clicks a button to return to main screen.
 - b) User chooses a customer from the list and an order is begun
- 3) User chooses to add new customer.
- 4) User is asked to provide a First name, Last name, and a valid phone number.
 - Sub-flows:
 - a) System shows an error for any blank fields.
 - b) System shows an error for an invalid phone number.
 - Exception:
 - a) User clicks a button to return to main screen.
- 5) System adds customer to the customer list.
- 6) User is brought to the order screen (Order is begun as that customer).

Purchasing an Item

A user can get here by either choosing a customer from the customer list, which will start the order as that customer, or by clicking the order button on the main menu, which will start the order as anonymous.

Order drink:

- 1) System displays menu items.
- 2) Customer decides which drink(s) they wish to purchase.
 - Sub-flows:
 - a) Customizations are added to drink.
 - b) Customizations are removed from drink.
 - c) Drink quantity is changed.
 - Exception:
 - Order is canceled (returns to main menu).
- 3) System shows a review of the order
- 4) User chooses a payment method
 - Sub-flows:
 - a) User chooses credit card.
 - b) User chooses reward points (option not available to Anonymous customers).
 - Sub-flow:
 - i) Shows an error message is shown if the user does not have enough rewards points to pay for the entire order.

Exception:

- a) Order is canceled (returns to main menu).
- 5) System process payment.
- 6) User is returned to the main menu.

Generating Sales Data

The user (usually a manager) clicks on the management tools button and the screen will have a Generate Sales Report button that will generate a CSV file.

- 1) User chooses to generate sales data.
- 2) A CSV file of all sales data is generated.
- 3) User is returned to the main menu.