

List of classes and relationships:

1. UserClass:

This is a super class that will define all the common property and methods between all users of the system. Such properties and methods include Personal Information, and user actions such as the ability to scan items, cancel a transaction or authorization.

a. UnregisteredCustomerUserClass

The unregistered User class inherits the UserClass and handles users who just want to check out and leave. They have no personal information stored. Just a generated name and userID to identify them later. They require a simple session authentication.

b. RegisteredCustomerUserClass

This also inherits from the User Class and is specific to users who have an account with the store through their loyalty cards. They require a mid-level authentication.

c. PersonnelUserClass

This as well inherits from the User Class and is specific to the personnel of the supermarket. They require a higher level of authentication.

2. AuthenticationClass

This super class handles all types of authentications in the system except the card payments authentication which is handled externally.

3. BasketClass

This super class handles the virtual basket objects created per a checkout session. All line products are stored here. This also contains the business logics for calculations and the determining the total payment to be sent over to the payment class for processing.

4. ItemsClass

This is a super class and handles all common item features in the supermarket. Common features include category, refund policy, allowed purchasing quantity per customer, etc.

a. FixedItemsClass

This inherits from the Items class and is for items whose prices are fixed and determined in the system.

b. WeightItemsClass

this also inherits from the Items Class and its price is determined only after the type of item is selected and the item is weighed. Price is dependent on weight.

5. StockClass

This super class determines the total number of Items that exist for each item set. This should be part of the stock/warehouse part of the system. This is as well where notifications for limit alerts, restocking and out of stock are handled.

6. PaymentClass

This is a super class that determines the type of payment selected by the user and processes it.

a. CashPaymentClass

This inherits from the Payment Class and handles the cash payment option. This part of the system is part of an external system. Total amount to be paid

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is sent to the cash system and the user inputs physical notes into the system. Payment is processed and a signal of failed or success is sent back for processing.

b. LoyaltyCardPaymentClass

Inherits from Payment Class. Allows a customer to combine payment with loyalty points and other payment methods. Customer scans their card and selects the option to pay using their remaining balance on the card. It then returns a status of failed or success back.

c. CardPaymentClass

Inherits Payment Class. This handles payment with cards(Visa, etc). It processes the payment on a POS that returns a status of failed or success back.

