Diagram

Description automatically generatedThis diagram represents the classes of the proposed system as well as their individual attributes and methods.

A superclass named “User” leads to the subclasses of the user class, such as employees, third party sellers and the customers. These are all associations of the user superclass. All users will be required to log in and verify their credentials. Only the employee and the third-party seller’s class, will be able to update the shopping catalogue.

The shopping cart has a composition relationship with the customer and cannot exist without the customer class. There can be 1 customer to zero or many shopping carts, as each individual cart is assigned a unique ID therefore the shopping cart is unique to the customer. The shopping cart class may perform general items related to online shopping, such as adding an item to the cart, changing its quantity, and checking out.

Order has a composition relationship with the user and cannot exist without the user. The same principles apply to Payment, Warehouse and Shipping Info, which all exist only in the presence of the previous class. Each of these classes have a multiplicity of 1, as there is only 1 instance per instance of the superclass.

Diagram

Description automatically generatedThis diagram represents the activity of the customer completing an order.

1. The customer visits the site, and either searches for a specific item or browses the catalogue.
2. Once the item is found, it is added to the cart.
3. The customer then logs in to their account if they are previously registered, if not they will be prompted to register and create an account
4. The shipping method is to be chosen, in house items qualify for standard post and courier, 3rd party items qualify for standard post and are not available to be couriered
5. The customer is prompted to enter a voucher code if applicable
6. Total payment due is calculated and the customer has an option of 3 payment methods
7. Payment is validated, if successful the order is sent to the warehouse, if unsuccessful, the system will return to the payment stage
8. The warehouse locates, packs, and ships the order. The item is scanned, quantity is updated and loops back to the catalogue prior to being dispatched
9. Shipping details are sent to the customer
10. Order is completed

LEGEND

Blue- Customer activity

Red- Warehouse activity

Diagram

Description automatically generatedThis diagram represents the states during the online shopping process.

* Customer visits the store- search/ browse state
* They will either log in or register for an account - validate the credentials
* Customer adds to cart- confirms availability
* If not available, the customer will have the option of adding the item to a wishlist and to be notified when stock is available. They may then continue shopping or leave the site
* If available, shipping and total due is calculated
* Payment state
* If payment is unsuccessful- the customer may try again, or request assistance
* If payment is successful- processing state
* Warehouse packs the order and hands over to the couriers
* Customer receives order and inspects contents
* If not satisfied, customer service to investigate whether the problem is with the item or with service
* Solutions proposed, either return and refund, or a voucher discount code for the next purchase, as well as suggest a review of service and item.
* If the customer is satisfied with the order, suggest a review of service and item, and mark the order as completed