CS-255-T1150 System Analysis and Design

4-1 Assignment: Evaluate An Object Model

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1. **Interpret the object model for the new online storefront by responding to the following prompts:**
   * **What are the different functions of the online storefront? How are they represented in this type of model?**

register(), login(), updateProfile(), verifyLogin(), addCartItem(), updateQuantity(), viewCartDetails(), checkout(), placeOrder(), updateShippingInfo(), calcPrice(), updateCatalog()

* + **What are the different classes of “users” represented by this object model? What are the associations between these classes?**

**The functionality of the classes can best be understood by grouping them together.**

The Customer, User and Administrator classes handle all things regarding people. A user is one of two types of accounts, Customers and Administrators, whether they are a customer or administrator they will have a user id, password, login status and register dates. Customer can register, login to the store and update the information on their profiles while an Administrator can update the items available in the storefront.

Then we have the ShoppingCart class which is kind of by itself, this is the object that contains the information about the items a Customer would like to purchase, it has the ID of the cart and the product id of the item, the number of items to purchase and the date to which they were added to the cart. Through the storefront the user can add items to the cart, update the quantity of an item in the cart, view the detailed information about the items in the cart and then finalize the purchase of the items in the cart.

Finally, we have the group that is all about after the items are purchased. The Order class contains information about the order such as the date the order was received and shipped, who placed the order, that status the order and once shipped the id of the record associated with the shipment and has the functionality of placing the order. The Order and Shipping class have a one-to-one relationship. Next there is the Order Details class which contains the detailed information about the products that were on a particular order. It contains the product order, the quantity order, the cost of the product and the subtotal for that time. The Order Details and Orders class have a one-to-one relationship. The subtotal is calculated using the calcPrice method. Finally, there is the ShippingInfo class which contains the information regarding the shipment of an order including the cost, type and region. It also gives the ability to update shipping information.

Probably out of the scope of the question but the Order, ShippingInfo and OrderDetails classes have composition association meaning if a Customer is deleted so are all of the orders associated with it and the if a Order is deleted all of the ShippingInfo and OrderDetails are deleted.

* + **Does this object model capture all of Hamp Crafts’ desired functionality? Why or why not?**

The object model presented in this assignment captures most of Hamp Crafts desired functionality, there are some features missing. The most important functionality missing is for customers to have the ability to view the status of their orders and the ability to view current and past orders. It would also be very important to include customers with the option of canceling orders which is a feature most shopping carts/ordering system have today. While minor it is something customers thing about, being able to save a shopping cart for future viewing.

* + **The above diagram uses a solid diamond shape to represent a form of aggregation.**

**What type of aggregation does this represent? What does it imply about the relationship between the classes? Why is a solid diamond the appropriate choice here?**  
The solid diamond shape shows a composition association which stated above means if an object in one class is deleted all objects in the class associated with it will also be deleted.

The composition association is appropriate because if a customer is deleted out of the system there is no need to keep the orders associated with that customer. It will create an orphaned objects in the system. The same holds true for shipping information and order details, why would you want to keep the shipping information and details of an order if you deleted the order.

1. **Finally, think through the two different models you’ve explored for Hamp Crafts’ systems: a process model and an object model. Then compare these models by responding to the following prompts:**
   * **How well do you think a process model describes the system? What information does it make easier to understand? What aspects of the system are more difficult to understand or are not represented?**

So the process model shows the flow of the system, how everything should function and events take place. The issue with the process model is ambiguity, it lacks details which can cause confusion if the process is not well known. The whole shipper, carrier and supplier process can be a bit confusing and actually took me a little while to understand.

* + **How well do you think an object model describes the system? What information does it make easier to understand? What aspects of the system are more difficult to understand or are not represented?**

I believe the object model does a relatively good job of describing the system. It makes understanding the individual components of the system a lot easier as it gives those needed details. I don’t believe there are any aspects that are more difficult to understand, there are some functionality missing which was discussed in question above but other than that I believe it is great.