# Hamp Crafts Object Model Analysis

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**Diagram, schematic

Description automatically generated**

* **What are the different functions of the online storefront? How are they represented in this type of model?**

There are 12 functions of the online storefront. They are represented as public functions, two of which have a boolean (true or false) return type, while the other 10 do not return data or have not had their return type defined. There are four functions for the Shopping Cart, three for the customer, and one for the Administrator, Order, Order Details, Shipping Info, and User.

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

The object model represents two types of “users”, one being the Customer, and the other being the Administrator. These classes have differing roles within the system, but they maintain forms of similarity as they inherit attributes and methods of the parent User class. They also both contain a private “email” attribute, which could possibly be relocated to the User class seeing as they both use it.

* **How would the objects “use” their respective variables and functions?**

Because of the practice of encapsulation, a class’s variables are private and inaccessible to most of the system. Therefore, objects can only use their variables to store data relevant to the object when they are initialized or when they are updated through a function.

Within this model, objects are using functions to update and verify information, perform calculations, and perform procedural measures like changing the contents of the webpage.

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

This object model does not capture all of Hamp Crafts’ desired functionality on the surface. Some of the desired functionality does not have explicitly defined functions within the system but could be happening in the final system through the currently listed functions. The notifications for orders may be pushed through the updateProfile and updateCatalogue functions from the placeOrder function, but it is impossible to identify the desired functionality with just the object model. Therefore, it is important to use object models in conjunction with process models to capture the full view of the system.

* **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 diamonds are representing composition. Composition is the relationship between two objects where the second would not exist without the first. In context of the diagram, we can see multiple composition relationships. A Customer object can have many Order objects (a customer can have many orders), but the Order objects cannot be created without a Customer. The solid diamond is the appropriate choice in each spot it is used in the model, as none of the contained classes serve a purpose without their container class.

* **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?**

The process model does a good job at describing the system. It conveys the flow and logic of the system, i.e. the order of the processes and their endpoints. We can process in simple terms what task is being performed, and what task(s) are queued. What isn’t represented is how the system processes information. We cannot decipher anything about the data being used in the processes, be it the type or who has access to it.

* **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?**

The object model also does a good job at describing the system. We can easily understand the components of the system, as they are described with object types and associations. Behavior of the system is harder to grasp with an object model, as we can only make inferences based on function names and associations.

In totality, the object and process models have unique strengths in describing a system. For the most accurate depiction of a system, both should be used as they will cover the others weakness.