Project 2   Bruno Faviero

Design Analysis for Project 2 (ShoppingCart), basic Shopping Cart

1. Overview

ShoppingCart is a basic sales website that has interfaces for users and shopkeepers. Users can add and remove items from a cart, view their cart, and place an order. A shopkeeper can create and modify items and their prices, and view recent orders from customers. This iteration of ShoppingCart is intended to be a minimum viable product, with only basic functionality.
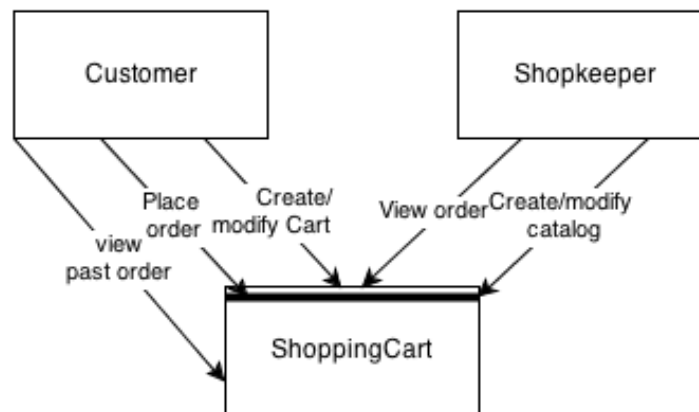

Figure 1: Context Diagram for Analytics. A striped box represents a system component, and a regular box represents a component that is external to the system (i.e., a part of the environment). Each edge is labeled with an event(s) that represents the type of interactions between two components; an arrow represents the direction of data flow.

Figure 1 provides a high--level overview of the interactions between ShoppingCart, shoppers, and shopkeepers. Shopkeepers create a catalog of items. Users put those items into their shopping carts, and can place orders. Shopkeepers are then able to view recent orders

2. Concepts

The key concepts in the design of ShoppingCart are customers, orders, order_items, carts, line_items, and products.

- Customer: Can be a signed-in (recognized) or not signed-in (unrecognized) visitor to the site. A customer has only one cart at a time. A customer can also be a shopkeeper, and modify the catalog.
- Cart: A cart is a collection of items ready to be ordered. A cart belongs to a single customer, who in turn can only ever have one cart.
- Line_item: A line_item is an item in a cart. It gets deleted when the product is represents gets deleted.
- Order: An order represents a collection of items purchased at the same time.
- Order_item: The representation of an item in an order. An order_item has certain product's information, but belongs to an order and will remain even if the original product is deleted from the catalog.
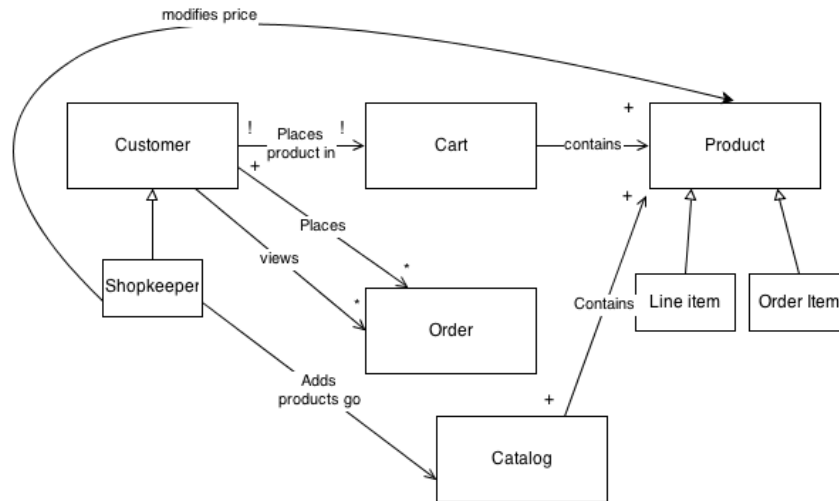- Product: A product is an item for sale. It has a certain price, and can appear in a cart or order.

Figure 2: Object Model for Analytics.

3. Behavior

3.1. Features

ShoppingCart provides the following list of features:

- **Cart:** A customer can add or remove items from his cart, or just view the items in the cart. Unrecognized customers have carts associated with their particular session. If an unrecognized customer makes a cart by adding an item, and then signs in and already had a cart in existence, the carts are merged into the cart created when the customer was signed in, and the other cart is destroyed.
- **Order placement:** A customer can place an order containing the items in his cart. Orders are archived, and can be viewed in the future.
- **Order Viewing:** A recognized customer can have many past orders. Orders are not tracked for unrecognized customers. A shopkeeper can view all orders.
- **Catalog:** A shopkeeper can create and modify a catalog of products and prices.