

Project 2.2

Design Analysis

Overview:

The design challenges to be resolved here include:

- User authentication between multiple computers and sessions.
- User carts between authentication sessions.
- Transferring from a non-authenticated, guest user, to an authenticated user halfway through a session.
- Tracking the products and quantities for a user in the cart.
- Enabling an administrator interface for the products available.

Details:

The data schema for this implementation of AwesomeCart is exactly as was specified in the Object Model. The only addition is that there's an "Admin" user (username and password are set to admin by default, but can be changed). The representation was created as was described in the object model because this was the simplest way to enable product, user, and product-order objects by ID (basically enabling a "join-table" command in the underlying database).

One invariant that is not expressed in the Object Model is that a Cart may only contain zero or one ProductOrders for any given Product ID. This is to ensure that when the user adds more items of the same type to his cart, each separate submission is not added as a new line item.

It is also true that when a guest becomes authenticated (signs in), his cart adds to any cart that was tied to his login previously. This pushes the burden of figuring out which orders are more relevant on to the user rather than forcing the designer to decide whether to keep only the old or only the new cart.

This was the only model seriously considered. The "multiple carts per user" model seemed too cumbersome. It is also worth noting that there is only one administrator account (though there is nothing preventing multiple accounts from having administrator privilege). The rationale here is that we are not trying to create amazon.com or etsy.com, we are trying to create a site for a small business that has an online storefront and directly deals with the clients (it does not act as a host for others to post products). This defines users strictly as either Admin or a buyer and makes the distinction clearer.