

Design Analysis: AZCart, a Shopping Cart Plugin angelaz

OVERVIEW

AZCart is a lightweight web application that simulates a shopping cart experience online. AZCart provides a similar service as Opencart, Shopify, Paypal, and Stripe, but it fulfills the shopkeepers' need for a more basic and minimal setup effort required product.

FEATURES

When a shopper is browsing a website, they can

- 1) create account/log in/log out
- 2) add items to the shopping cart
- 3) remove items
- 4) edit quantity of an item
- 5) checkout items in the cart
- 6) retain the shopping cart across browser sessions
- 7) share shopping carts with other users

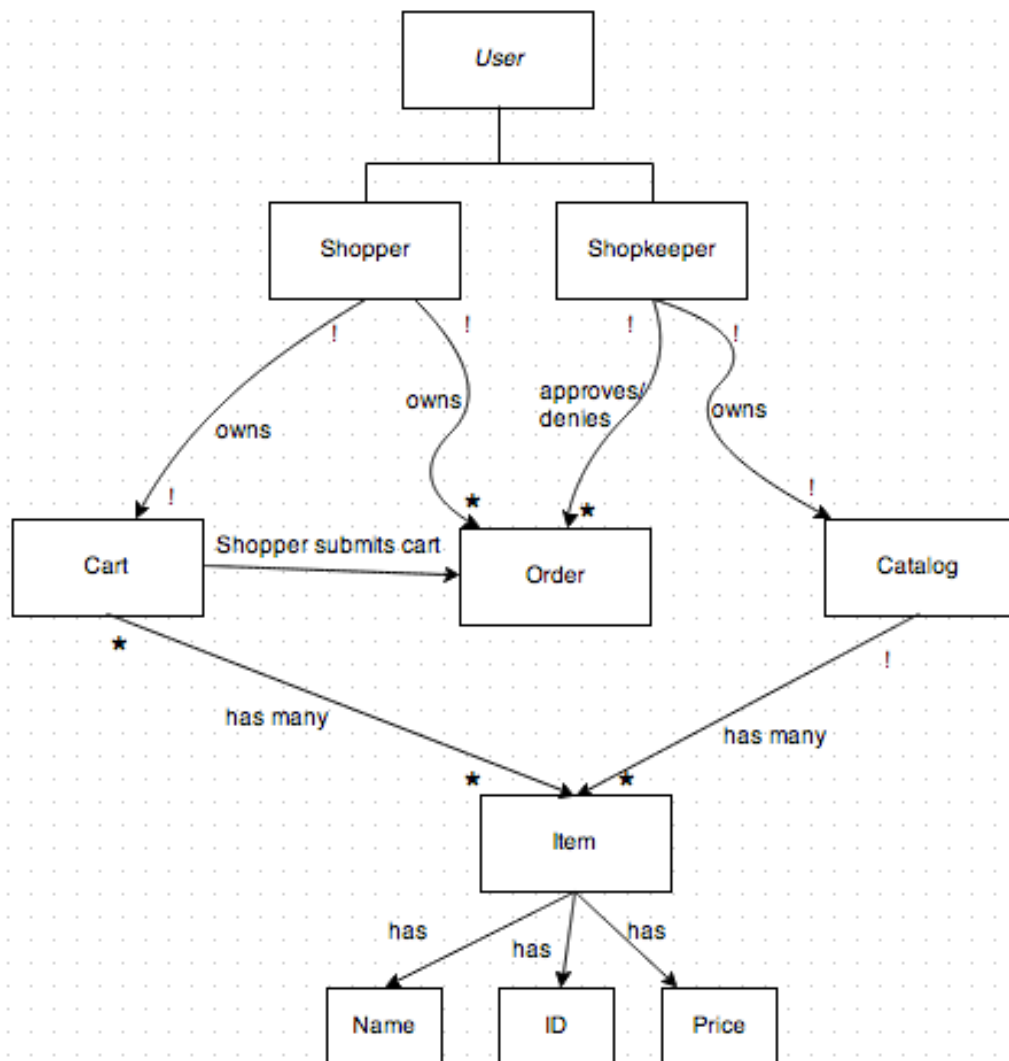
For a shopkeeper, AZCart will provide them a simple admin interface to:

- 1) add items to the catalog
- 2) edit a catalog item's title, price, and quantity
- 3) approve or decline orders submitted by a user

CONCEPTS

AZCart models the following concepts:

- **User:** Represents a user on the site, could be either a Shopper or a Shopkeeper
- **Catalog:** Represents a catalog of items. Each Shopkeeper owns a Catalog and can add/remove/edit items in the Catalog.
- **Cart:** Represents a cart of items. Each Shopper owns a Cart and can add/remove/edit quantities of items in the cart.
- **Order:** Once the Shopper hits "Checkout," an Order is made from the Cart, which is available for the shopkeeper to approve or deny.
- **Item:** Represents an individual item in the Catalog. Each item can also belong to multiple Carts and Orders.



Challenges

Below is a list of potential challenges:

- Access control. Allowing users to create account, log in, and log out.
- Retaining the cart across browser sessions, specifically, from not logged-in to creating new account or logging into existing account.
- Cart -> Order. How to maximize efficiency. Deciding whether to copy all the items from one database to another or allow complex permission system to distinguish between Shoppers and Shopkeepers.
- Security concern. Hacking other people's account and stealing credit card number. How to make the account session secure.

- Scaling. What happens when there are lots of shopper and shopkeepers and items? Will the database query run in a reasonable speed?