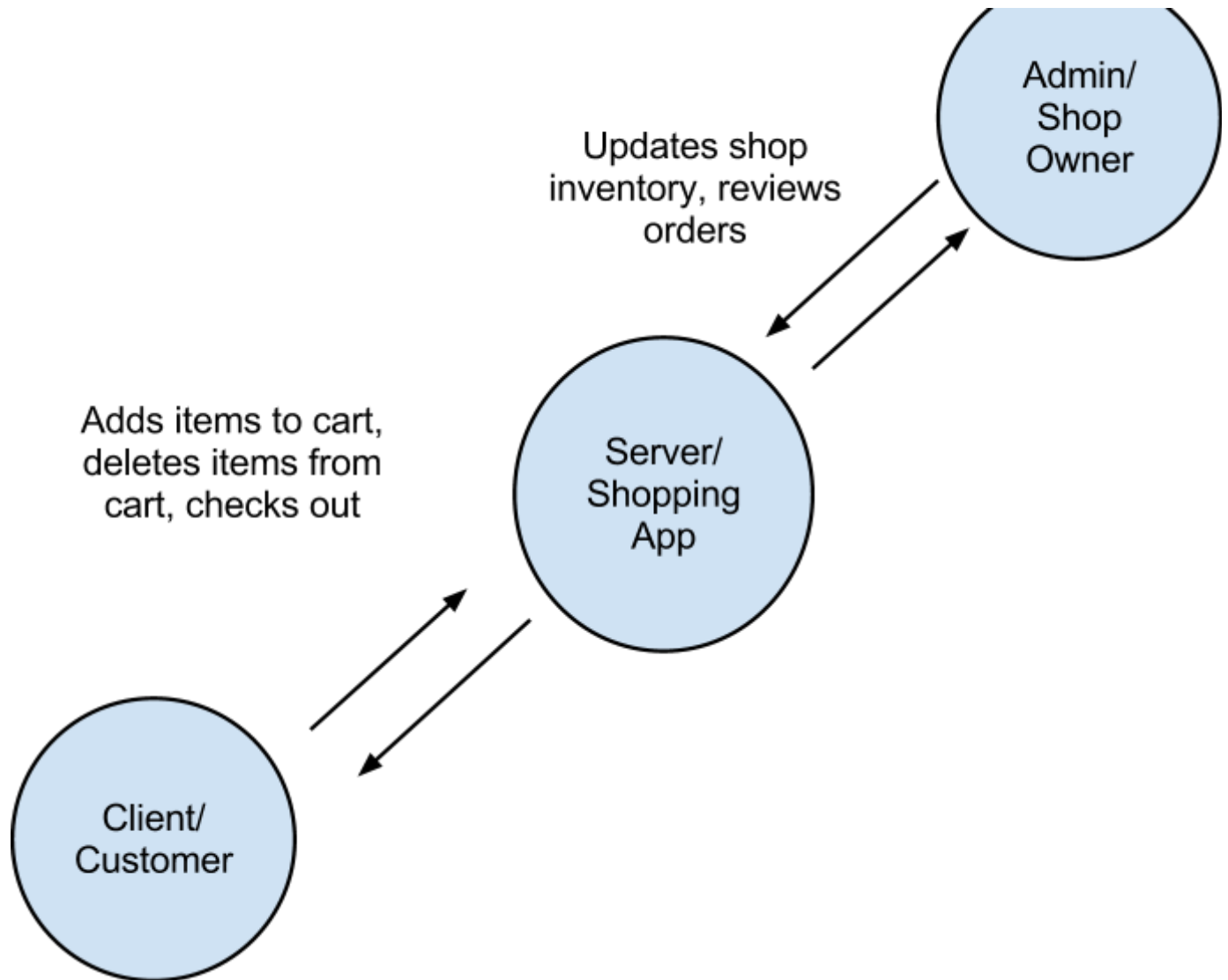# Project 2 Problem Analysis

Overview

The goal of this project is to build a working shopping cart. I've thought long and hard about what the "essence" of a shopping cart is. I've spent some time playing with shopping carts on Newegg, Amazon and Zappos.

The goals of the shopping cart are:
- Allow users to add and remove items from the cart
- they should be able to view the cart and perform actions on it
- they should be able to check out and place an order
- the system should be able to deal with strange online shopping habits (multiple tabs etc)
- the system should also support a shopkeeper interface so someone can manage the items and view recent orders

Context Diagram

Admin/ Shop Owner

Updates shop inventory, reviews orders

Server/ Shopping App

Adds items to cart, deletes items from cart, checks out

Client/ Customer

Unusual Requirements

The only thing I can think of for this is that if a user is using multiple tabs and updates their cart in one tab, and updates the cart again in another tab the server must be able to deal with this. I believe this can be solved using ajax.

Key Features

- Basic Shopping Cart functionality
    - add items to cart
    - modify quantity of item in cart
    - delete items to cart

- ○ checkout
- ○ place order
- ● Shopkeeper interface
  - ○ Can update inventory
  - ○ modify items and prices and stock
  - ○ review orders
- ● wishlist/saved shopping cart functionality
  - ○ users can save shopping carts for later
  - ○ can restore saved shopping carts
  - ○ can share shopping carts

Object Model
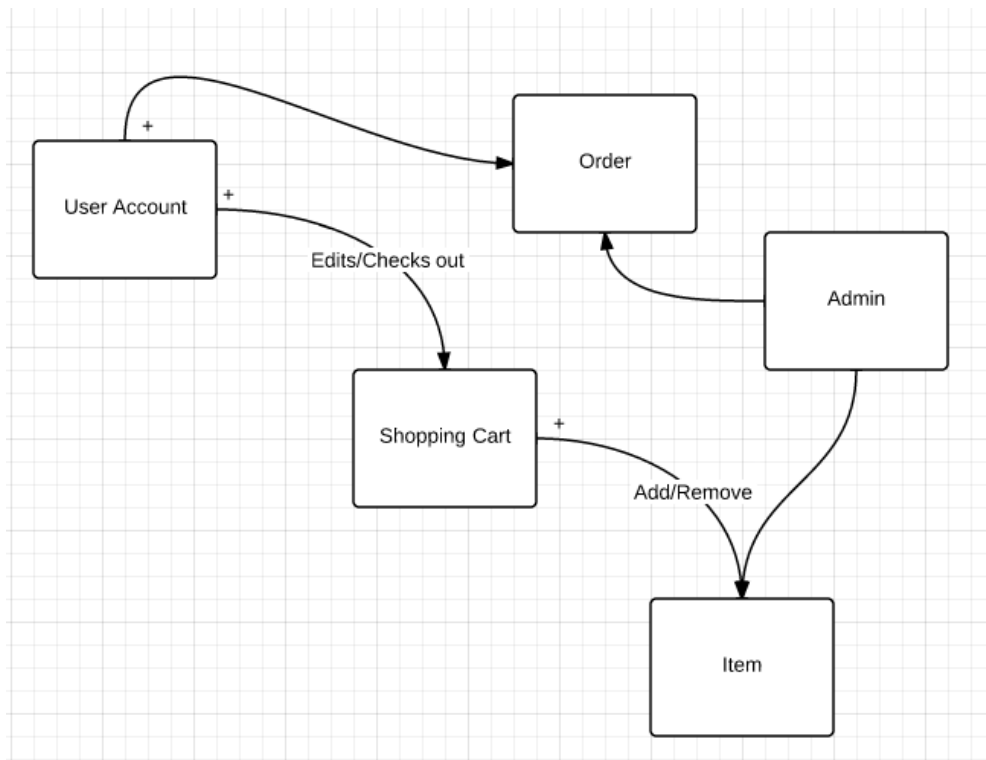
Event Model

User Account ::= (create (login |logout)* close)
Shopping Cart ::= (create|restore) (add item | delete item |modify item)*(destroy|save|checkout))

Item ::= (create modify* destroy)
Order::=(create view (cancel | complete))

Feature description

I am creating a shopping cart which users can add items to, remove items from, edit the quantity of said items in the cart and then place that cart as an order. Admins can also edit which items are for sale and view orders. Additionally shopping carts can be saved and then reloaded and shared between users.

Security Concerns

I am worried about people trying to hack people's accounts. I am also worried about someone trying to steal credit card information. Someone could potentially tamper with someone's cart contents or order information.

It is important to make my api secure and robust so that people cannot abuse it.