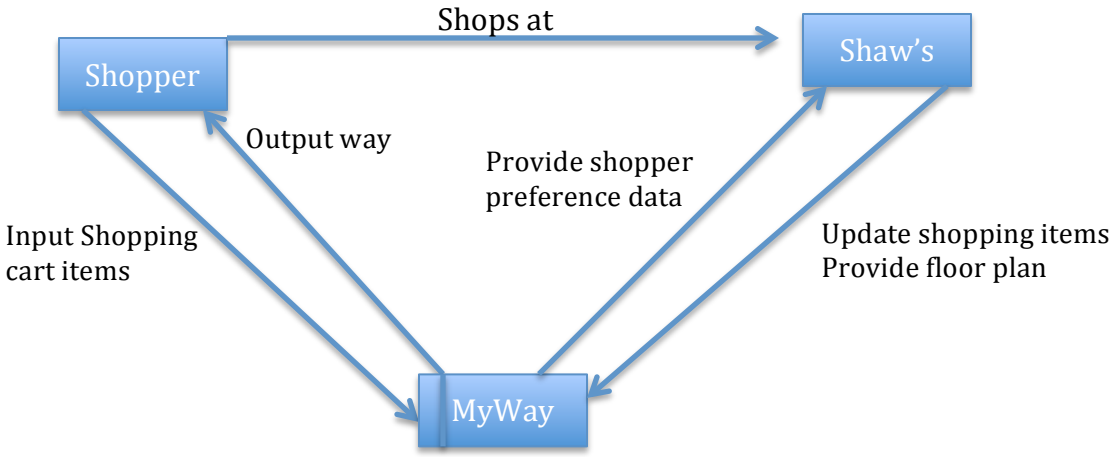
MyWay Draft Design Doc (Individual)
Shidan Xu

Clarification: for this draft version, I wrote up what I think was the most feasible application of our MyWay, namely the Shaw's application. Later when we met as a group we figured that this idea had a crucial weak point that defeats its purpose. Hence we went with the MFA solution. So this draft version was based on the Shaw's application.

The **motivation** of the website is to help Shaw's shoppers shop fast by pointing out where everything on their shopping list is. Often times, people go to Shaw's with items in mind, but despite the shopper having been there multiple times, it is still possible that they'd get lost over some new/non-daily items to shop. With that said, this website would be specifically useful for first time shoppers. So our website takes in a list of shopping cart items, and finds out the fastest way for the shopper to go through the supermarket and finish their shopping. It would display the visualization of the path with the floor plan of Shaw's as the background, like in a Google map direction page.
Not only is this a good website for shoppers to speed up their shopping process, the shops can also collect data on what kind of things people like to buy but cannot find, and hence adjust the store layout accordingly. Current existing technologies out there tend to skip the user experience entirely, by having things shipped at you (Amazon). However, Amazon does not solve shopping in a timely manner. For shopping in under than hour, there's nothing that I am aware of.

Context Diagram



So this context diagram is rather simple. We have the supermarket, the shopper, and our website MyWay. Note that the shopper and Shaw's are only physically related. The shopper would input the list of items into MyWay, MyWay interact with Shaw's to get data of where the items are and what the floor plan looks like. Then MyWay feeds back a visualization of the shopping routes to the shopper. And the shopper goes to Shaw's and finishes his shopping quickly. What the shopper bought is then

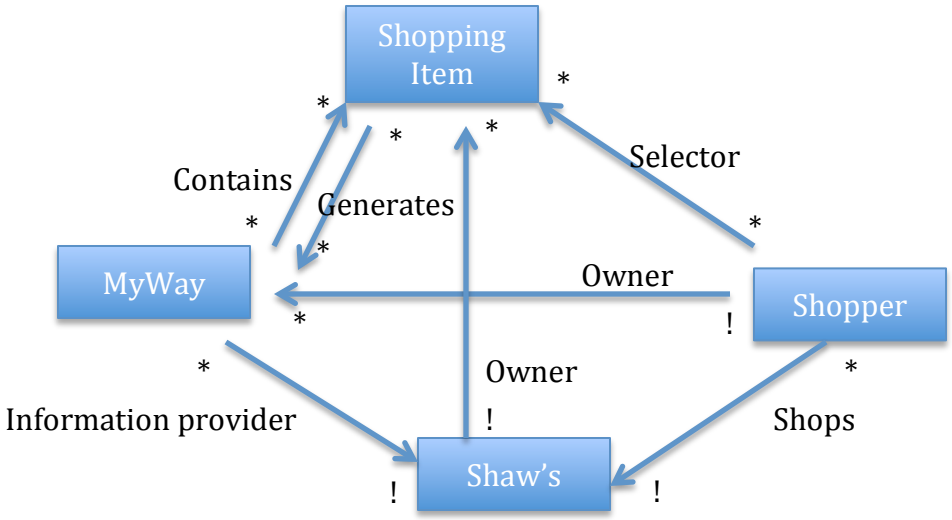
tracked and fed back to Shaw's, where they could decide whether to buy more of this product, put it at a more easily recognizable place, etc.

Data Model

Concepts
Moving on to concepts, the main concept is a **Way**. Then we have the **shoppers** and Shaw's (**Shop providers**).

So a **Way** is a directed acyclic graphical representation of a shopping path, which includes a list of shopping cart items as nodes on the path.
A **shopper** is a user who expects to speed up his shopping process using this website by understanding where everything he needs to buy is.
A **shop provider** (such as **Shaw's**) is the shop that wants to gain more information in the user behavior. They do so by providing data to MyWay, and they get shopper behavior back as their reward to update their selling strategies / layout.
A **shopping item** is a good in the supermarket, such as an apple, a bag of Lays, etc.

Data Model



Challenges

Design Challenges
So the first problem we have is what if nobody wants to use our website?
Based on my evaluation of what is currently out there, the need to shop in under an hour is definitely a need. There are two ways we can go about this: either have the shop deliver in less than hour, or let the shopper go shop. Given the population density and convenience store density in America, the first one requires way too

much technology such as Amazon drones. It's not bang for the buck effective. While I understand that our website does not address the problem directly, it address one aspect that keeps some people away from shopping – time spent in the shops is too long. Given that people still need supermarkets to shop, then pointing out where everything is can help them. Living in Simmons for a year, I could speak for myself that for instance once when I was looking for shoelaces, I had no idea where to look for it. It took me quite some asking to get things right. My friend sometimes does his Shaw's runs during fire drills. Clearly he has homework due really soon so he wants to get back as soon as possible, so this justifies the need of the website.

The second problem I encountered was whether I should let shoppers interact with each other and see if they want to go at a specific time together. I decided against it because this introduces another layer of security problems. For instance a bad person could be pretending to be friendly and votes yes on Shaw's runs at 11 p.m., which could potentially become a robbery. Having user authenticate with Facebook was something that would probably solve the case, however this puts too much layer of complexity to our problem and deviates from the original purpose.