

# Gopher

Designing Human Centered Software  
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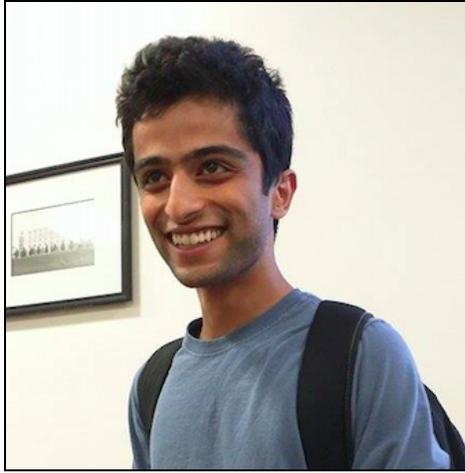
## Pitch

Have you ever had some stuff you need to get rid off quickly but didn't want to throw it away? Are you tired of searching on Facebook For Sale groups, hosting tiresome eBay auctions and sorting through suspicious CraigsList users?

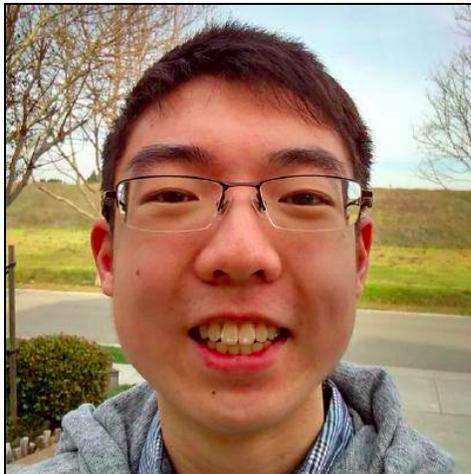
Gophr is your very own, always online garage sale. Whether you're looking to buy or sell, Gophr is the application for you. Gophr is an innovative new way to connect with buyers and sellers around you. Selling your items is easy - simply take a picture, add a label and suggest a price and wait for offers. Buying an item is even easier - filter by a keyword and just flick left and right. Once we find a match, you can connect and negotiate that killer deal. Pay conveniently within the application and seal the deal quickly. And of course, Gophr is completely free forever.

**Welcome to the 21st century garage sale.**

## Our Team



**Abhishek Chadha** created the initial idea of our application. Consequently, Abhi was active in the ideation and iteration processes throughout every stage of the project. He played a key role in coordinating team meetings and schedules. His project management skills came into play when he delegated tasks to the other members of the team according to their skill sets. He worked on the frontend and integrated the required APIs with the application. Abhishek was also very involved in the deployment and publishing of our application.



**Cary Yang** initially was an instrumental part of the team by helping conduct user research while we were in the needs finding phase. Once ideas were developed, he then worked on implementing the frontend while simultaneously integrating the backend of the app. Cary was our quality assurance manager, and always made sure our work was of the best possible quality. He also played a vital role in fixing any bugs that came up throughout the development process.



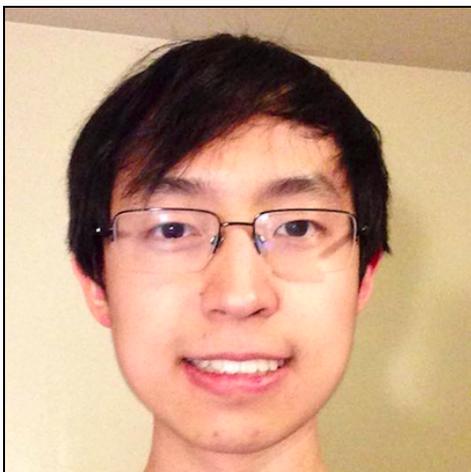
**Chase Wennick** was on the design team for Gophr. He created and iterated upon the application's flow diagrams and helped to create the application's design language. Chase also played a key role in creating mockups and wireframes of the app. Chase conducted user research by creating and sending out a survey about our users' online shopping habits.



**Gale Bonker** was a key player on Gophr's design team. Gale performed user research about our user base's online shopping habits by conducting interviews and sharing surveys. After much discussion and evaluation, Gale created a mood board that would best represent the look and feel of the Gophr app. Gale also conducted many iterations on Gophr's design language by getting constant feedback from the team. Additionally, Gale assisted in editing the CSS of app so that they were consistent with the design language.



**Paul Aluri** was immensely helpful in creating the minimum viable product of Gophr by working on the application's frontend and backend consecutively. He ensured that our design goals were executed by editing the application's CSS. Paul's project management skills also came into play when he took detailed notes during meetings and delegated tasks to the other developers of the team accordingly.



**Stephen Choi** contributed to the team significantly by working on the backend and creating appropriate database schemas. Additionally, he created a REST API that could be used by the application. Stephen was also immensely helpful in the early ideation phases of our project because he provided the team with many discussion points, feedback and ideas.

## Needs-Finding and User Research

Firstly, we conducted six interviews with some of our potential users: young 20-somethings that live in a moderately populated area, such as a college town. We asked questions such as the following:

1. Do you use Amazon, Craigslist or eBay? If so, how often do you use each? Is there a reason why you don't use some of them?
2. If Craigslist had a mobile app, what features would help you feel secure and encouraged to use it?
3. If you were moving in or moving out, what features would you look for in an application that let you buy or sell your items?
4. What features would you want when window shopping through an app?
5. How would you improve upon the design or functionality of Craigslist, eBay, or any other ecommerce sites that you regularly use?
6. [We then told the interviewees about our application idea.] What do you think? What would encourage you to use it? What features would you add to the app?

Most of our interviewees reported using Amazon on a regular basis, and only seldomly Craigslist or eBay. Others reported that they did not use eBay or Craigslist because they did not find them trustworthy. One user reported that Craigslist's archaic user interface combined with an apparent anonymity of users made it difficult to trust the site or the users on it. Other users reported that they regularly shop from Facebook groups because they know they are receiving reliable products from people they trust.

Next, we created a survey using Qualtrics. We first asked basic questions about the users' online shopping habits. Then we conducted a competitive analysis of our competitors, such as Amazon, eBay, Craigslist, Etsy, and local Facebook groups.

### **Basic Questions:**

1. What ecommerce platforms have you used in the past to buy or sell goods?
2. How often do you buy goods from ecommerce sites?
3. How often do you sell goods on ecommerce sites?
4. What kinds of items have you purchased from ecommerce sites before?

### **Competitive Analysis:**

5. How would you rate Amazon/eBay/Craigslist/Etsy/Facebook groups' payment process?
6. How would you rate the trustworthiness of buyers/sellers on Amazon/eBay/Craigslist/Etsy/Facebook groups?

7. How would you rate your experience when you window-shop on Amazon/eBay/Craigslist/Etsy/Facebook groups?
8. How would you rate the easiness of finding what you are looking for on Amazon/eBay/Craigslist/Etsy/Facebook groups?
9. What are some aspects of Amazon/eBay/Craigslist/Etsy/Facebook groups that you like and/or dislike?

We received 77 responses to our survey by posting the survey to our social media circles, as well as Carnegie Mellon Facebook groups. Some of our main observations of key features of ecommerce applications that users valued were as follows:

- **Proximity.** Our users were more likely to buy something from someone if the seller was local than if the seller had to ship the item to the buyer.
- **Trust.** Users were more likely to purchase an item from a seller that they knew personally and trusted than they were to buy an item from someone whom they had never met, or from someone who did not reveal a lot of details about themselves through their seller account.
- **Reliability.** Our respondents valued the service they received from ecommerce sites very highly. They valued having an intuitive user interface and easily accessible customer service.
- **Price.** Like most consumers, our survey respondents valued getting the highest quality product they could get at the lowest price possible.

When we looked at the results of our competitive analysis, the following were some of our main conclusions about each of our competitors in question:

- **eBay:** Users thought that the idea of offering a bidding system was fascinating, but the way that eBay implements it is too complex. Many users were frustrated when they bid on a product on eBay one minute, only to find that the next minute someone outbid them.
- **Craigslist:** Most respondents thought that Craigslist was untrustworthy, mostly due to its unsophisticated and outdated user interface and general user experience. However, users liked how Craigslist helps them find items that are close in proximity to them that are affordable.
- **Amazon:** Users liked the fact that Amazon is reliable and has excellent customer service. They also generally liked the recommendations feature because it helped them determine which sellers were the most trustworthy.

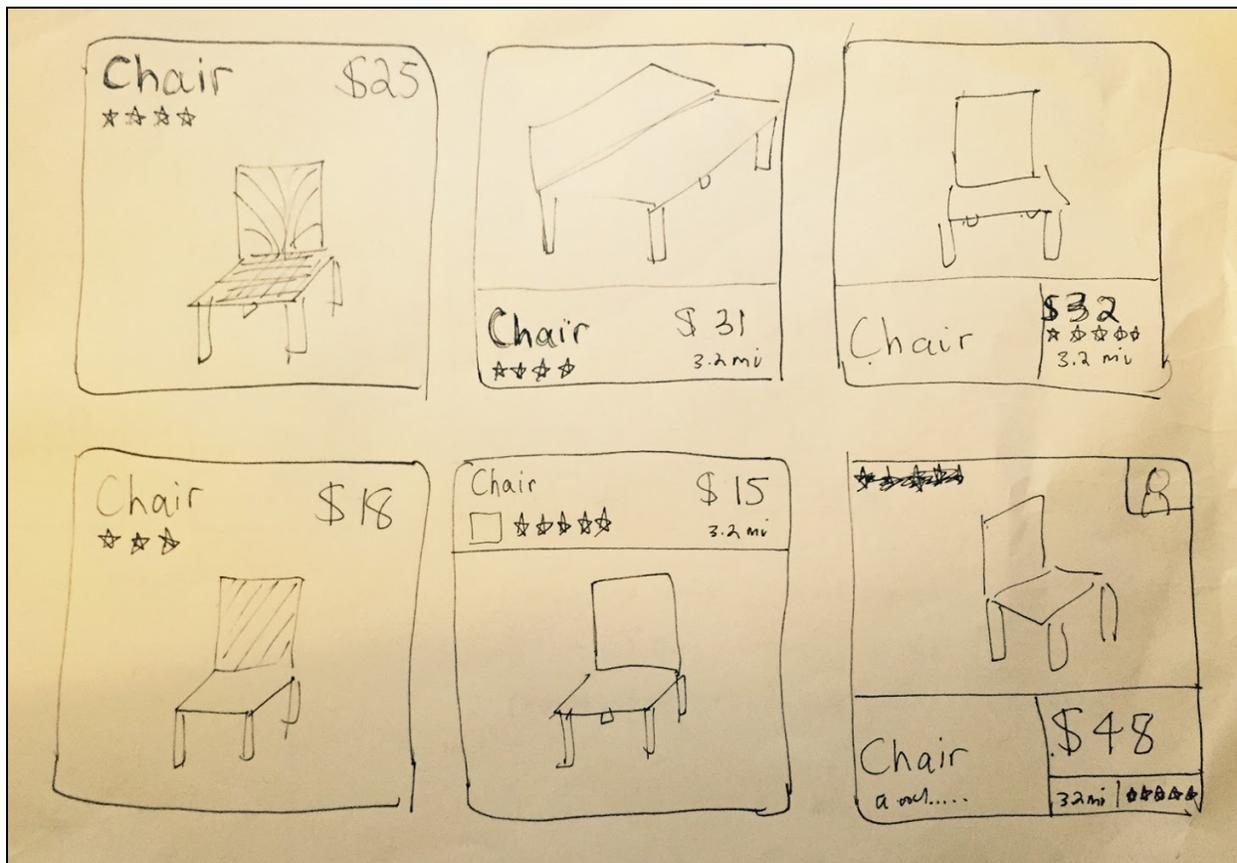
A detailed report of our survey results can be found at:

[https://cmu.qualtrics.com/CP/Report.php?RP=RP\\_ezmNwrxYNYbwlal](https://cmu.qualtrics.com/CP/Report.php?RP=RP_ezmNwrxYNYbwlal)



We were inspired by the experience of swiping left and right to express interest or disinterest in any certain item, so we wanted to make sure that the way our products were being displayed was able to support that kind of user experience. We decided to put all the information into “cards” that the user could then “swipe right” or “swipe left” on, similarly to the way that Tinder is used.

The following is an example of ideation of how we want to display information about each item being sold:

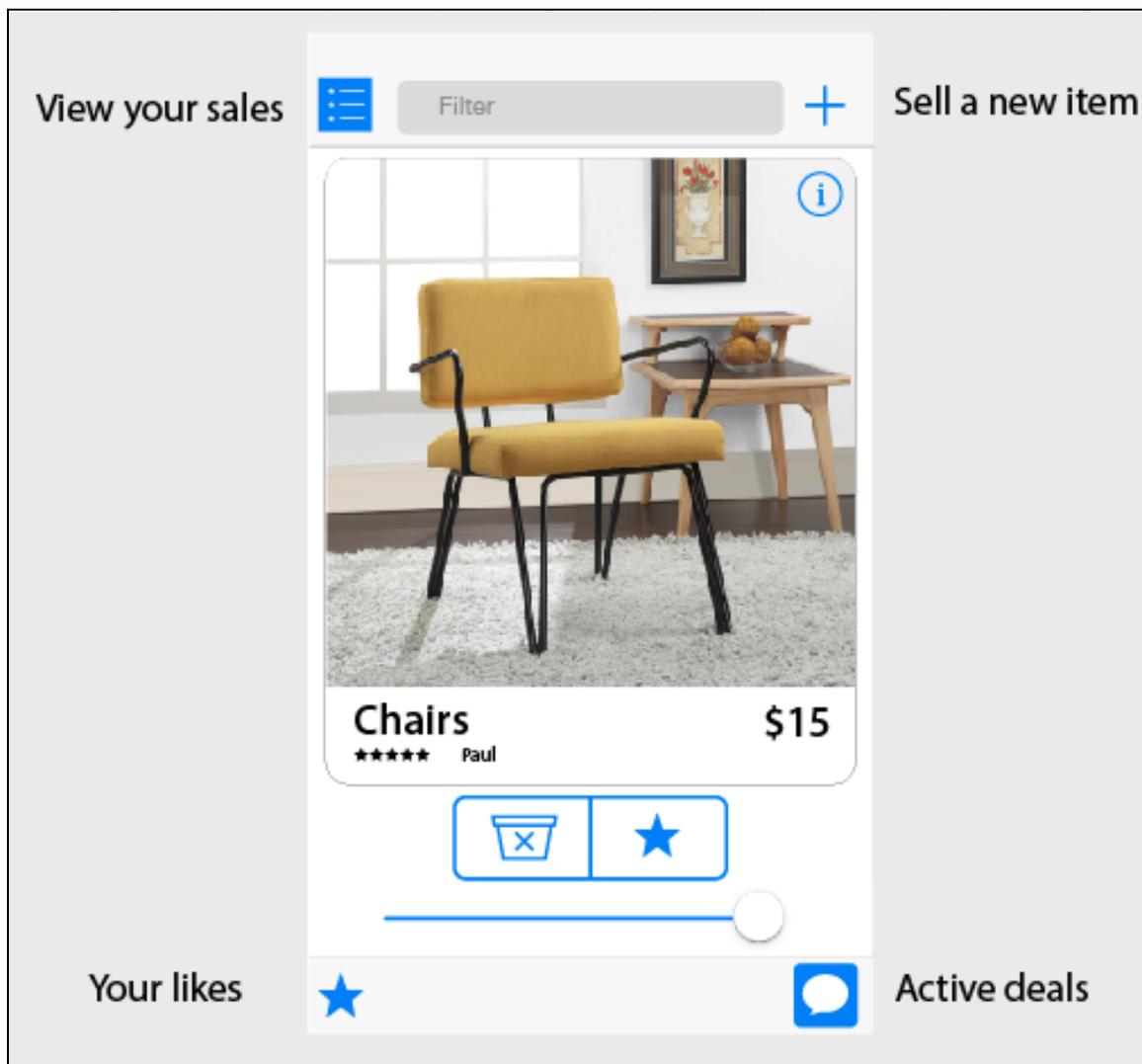


# Prototyping and Iteration

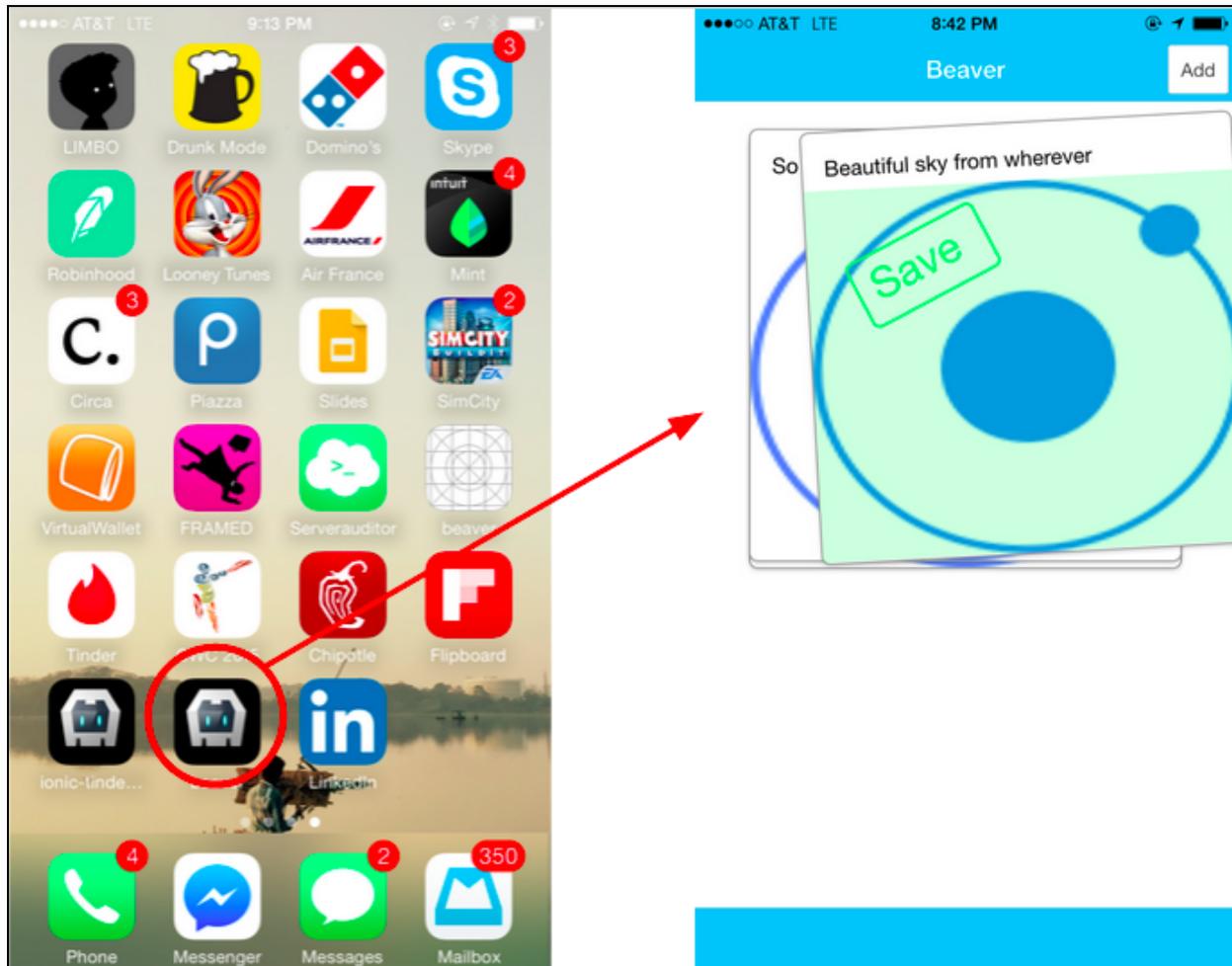
## Mid-Fi Prototypes

Once we experimented with low-fi designs enough, we started making medium fidelity mockups and prototypes of our application.

Here is one of our early mid-fi prototypes of the home screen, where the user can view their sales of their items, sell a new item of their own, see what items they have liked, or “swiped right” on, and view any active conversations they are having with other users about selling or buying an item.



Our next iteration was a rough HTML prototype, styled with CSS and enhanced with JavaScript. It was with this prototype that we tested the Tinder-like interface. We also tested the camera functionality, which allowed the user to capture and upload a picture of their item that they are selling directly to their item post.



We used the Ionic developing framework to test all of our prototypes on our mobile devices.



## Design Language

From our mood board, we iterated on our design language. The following is our final iteration of our design language.

Background 250,250,245	Headings 58,40,18	Logo 63,138,144	Border and Accent Color 207,155,85	Text Color 15,18,16
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**Gophr - Mouser**

Headings - Avenir, Regular

Regular Text - Avenir, Light




Chair      \$30



Hi! Your chair looks really cool! I'm interested in buying it.

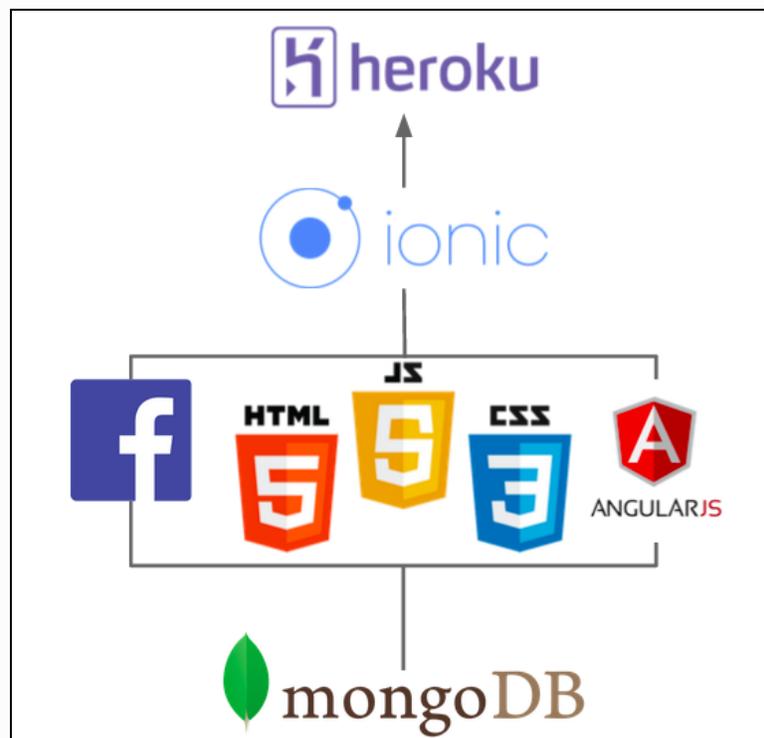
I'm glad! I'm selling it for \$30, when and where can we meet?

## Our System

Gophr is an iOS application written with the Ionic framework for the frontend and MongoDB for the backend and database. Ionic allows us to use HTML, CSS, JavaScript, and Angular Javascript to create a web-based application that is easily ported to mobile apps. We also incorporate the Facebook-login-plugin API to help obtain user accountability via authentication. Our application is currently being hosted on Heroku.

Our process included partitioning main features among members of our coding team such as chats, the navigation bar, and transactions. Team members often worked and helped each other with their partition. Meeting three times a week, our members kept each other updated of progress and pitfalls. Our team communicated via our Facebook chat group every day to ensure everyone was on the same page and to hold each other accountable for action items.

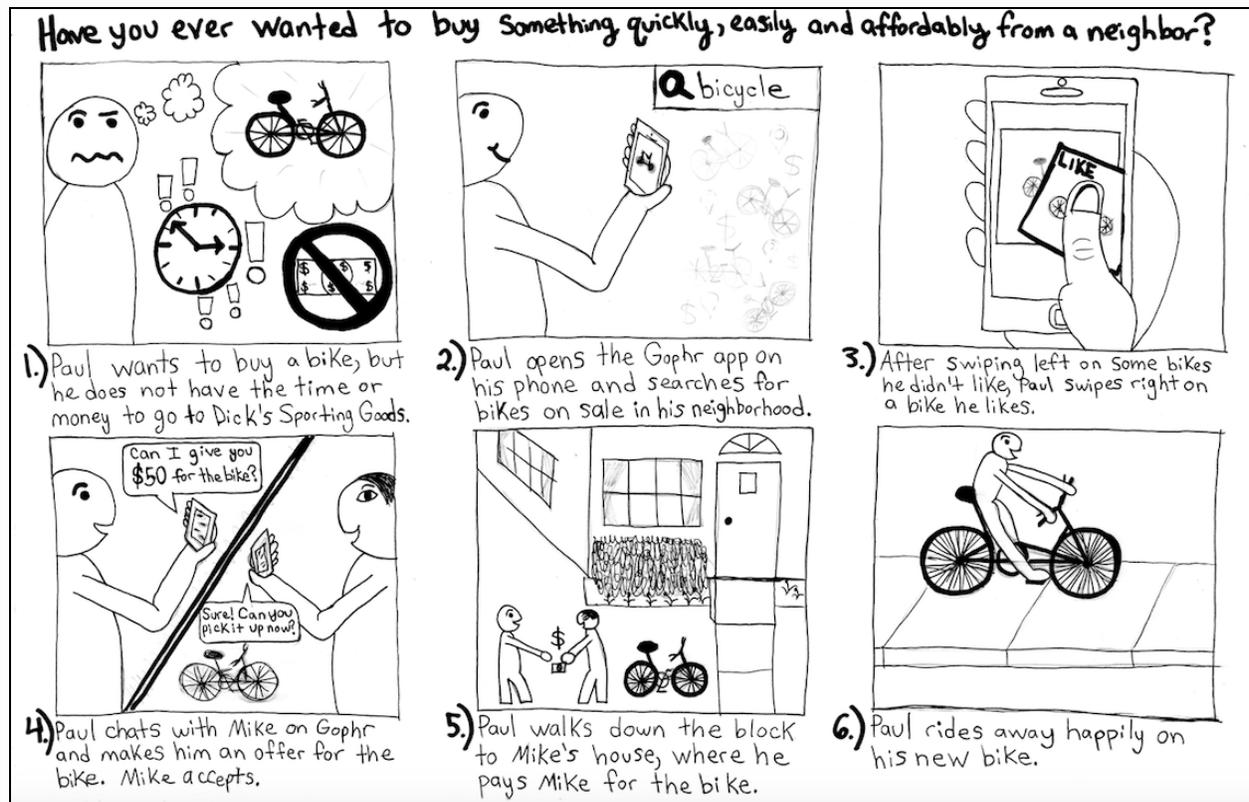
### Architecture Diagram



## Main Features

### Storyboard

We created a storyboard to convey a typical situation in which someone would use Gophr to buy an item locally.



### As a Buyer

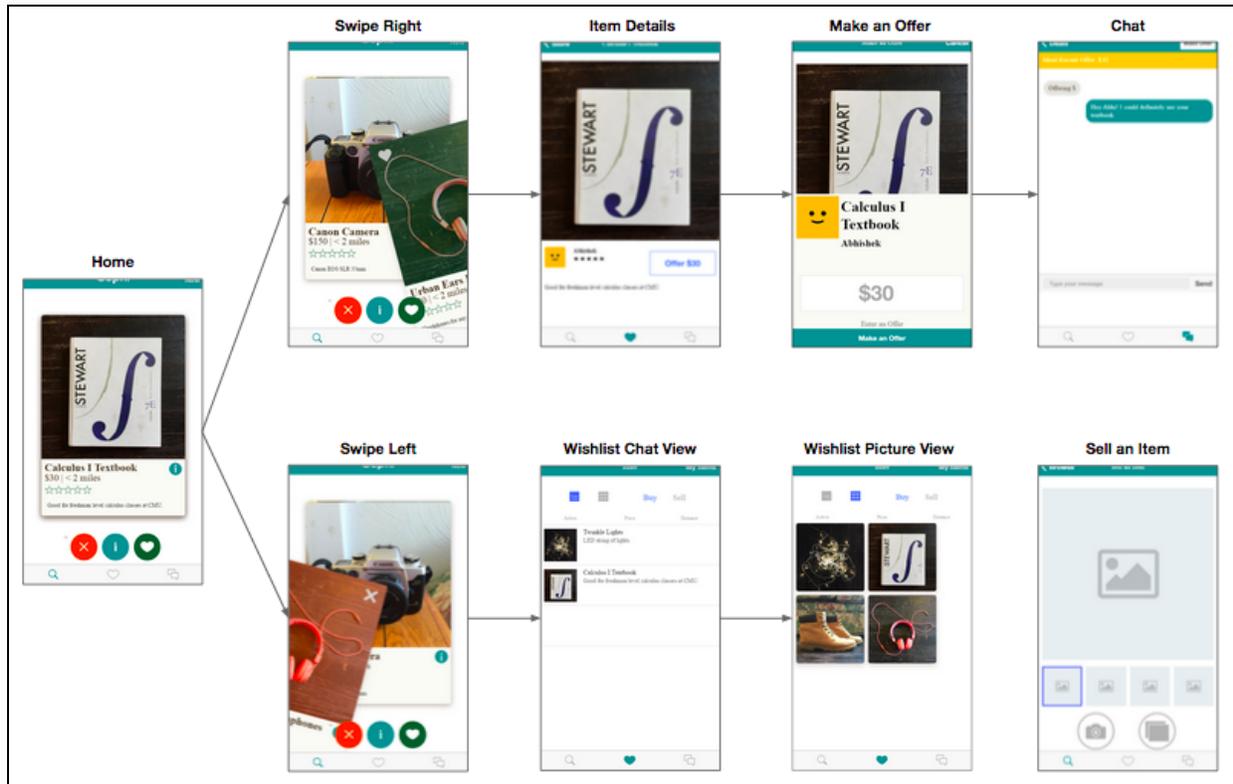
As a buyer, you can search for items you want, swipe left and right for items, look at your wishlist, view an item's details, chat with sellers, and make an offer for an item.

### As a Seller

As a seller, you can make an entry for an item you want to sell with a description and picture, take pictures and post them right in the app, and chat with potential buyers about your items.

## Screenshots and App Flow

The following app flow diagram demonstrates the main features of our application:



## Future Extensions

If we had another semester to work on Gophr, we would extend it by integrating Venmo into the application's payment process. Venmo is an application that allows users to send and receive money to and from each other's bank accounts digitally with their phones. We originally thought we would be able to incorporate Venmo, but due to time and scope constraints we had to drop that feature. If we had more time, we would allow the users to pay for their items with Venmo, and then meet up with the person to pick up their item, as opposed to having to pay with cash, check, etc.

Additionally, if we had more time, we would have liked to make our application compatible with Android devices. We chose to make an iOS app because Apple has a huge user base, especially amongst our target users. We also chose to make an iPhone app because it would be a lot easier for our design and database to be responsive to each different device it was used on. However, if we had time, we would have liked to make an Android-compatible application. Perhaps these two tasks can be priorities if Gophr ever becomes a real startup.

## Links

### **Application Link**

<http://gophr-app.herokuapp.com/#/tab/login>

### **Pitch Video**

<https://www.youtube.com/watch?v=cc2oWmojvrs>

### **Overview Video**

<https://www.youtube.com/watch?v=zIFqnn9qOdE>