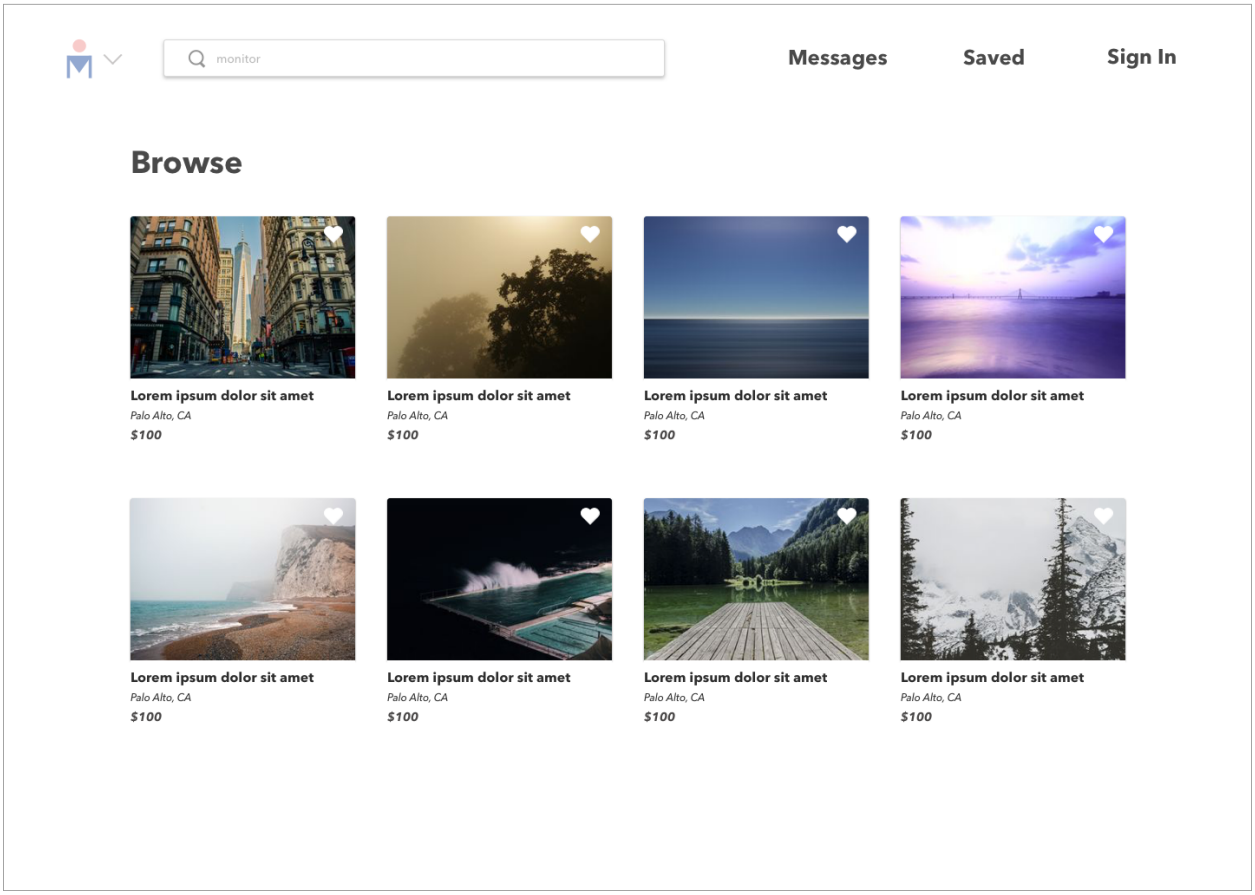
CP: Peijia Lu (peijialu@usc.edu)
Team Members:
Andrew Hariri (hariria@usc.edu)
Arthur Krut (akrut@usc.edu)
Bhavin Shah (bhavints@usc.edu)
Majed Jendi (jendi@usc.edu)
Sung Bin Kim (sungbink@usc.edu)
Zach Izzard (izzard@usc.edu)

Detailed Design

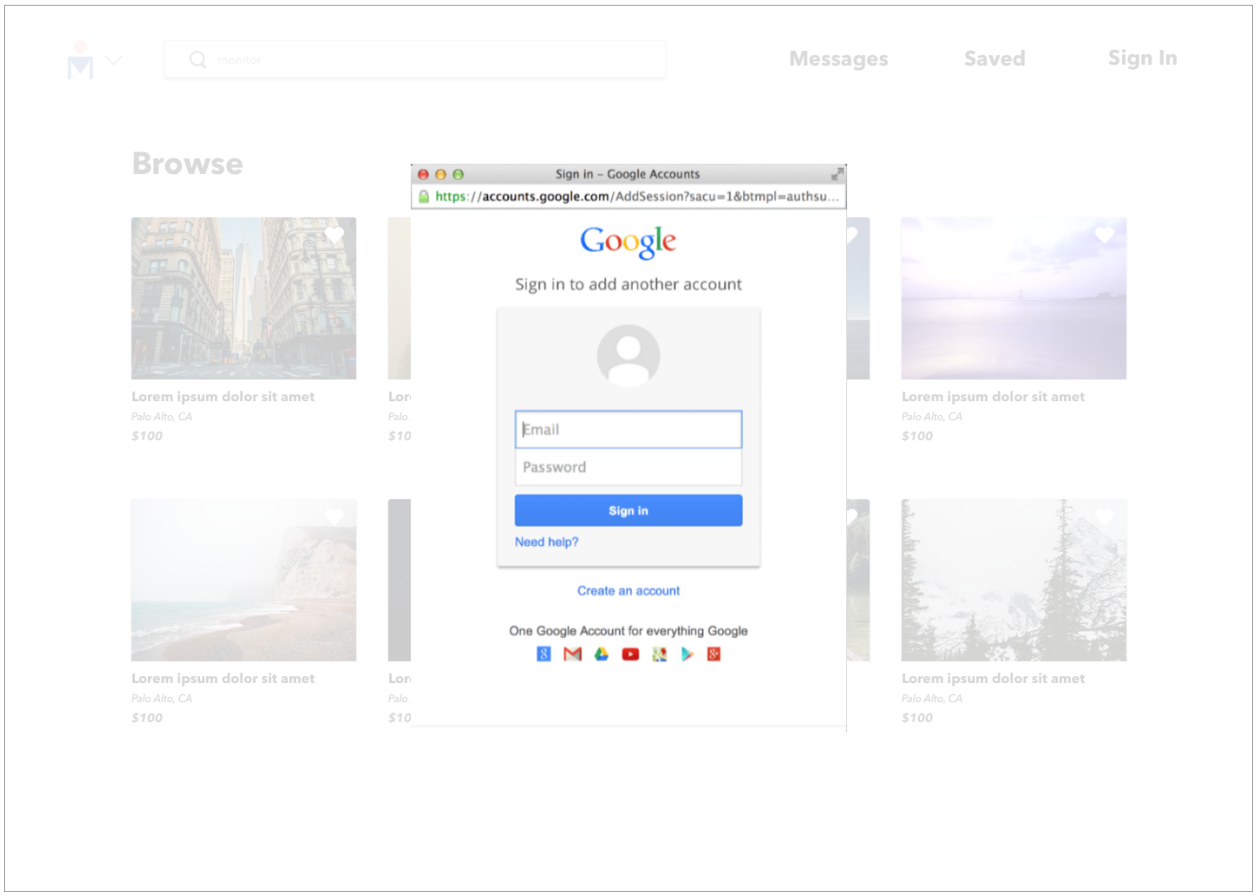
Based on the feedback you receive on your technical specifications document, you will write up your detailed design document. This should show any difficult algorithms, the exact GUI (though slight modifications will still be allowed), the database schema (ER diagram), the hardware/software requirements, class diagrams, inheritance hierarchies, etc. This will likely be a lengthy document. In addition, submit your requirements and specification documents again with any changes clearly delineated using a feature such as Track Changes.

GUI:

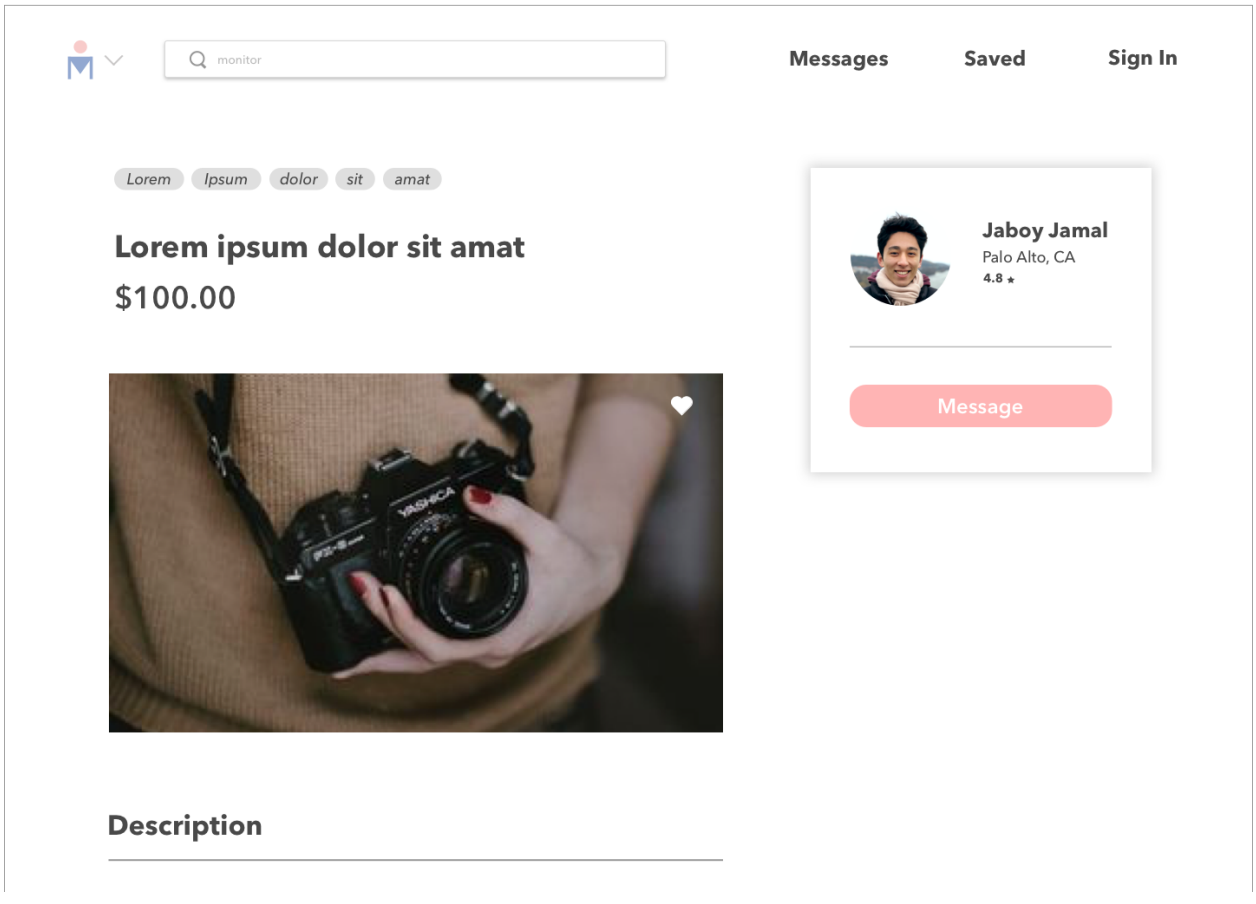
Browse Page



Browse Page with Login



Product Page (Short)



Product Page (Full)

monitor

Messages Saved Sign In

Lorem Ipsum dolor sit amat

Lorem ipsum dolor sit amat

$100.00

Jaboy Jamal
Palo Alto, CA
4.8 ★

Message

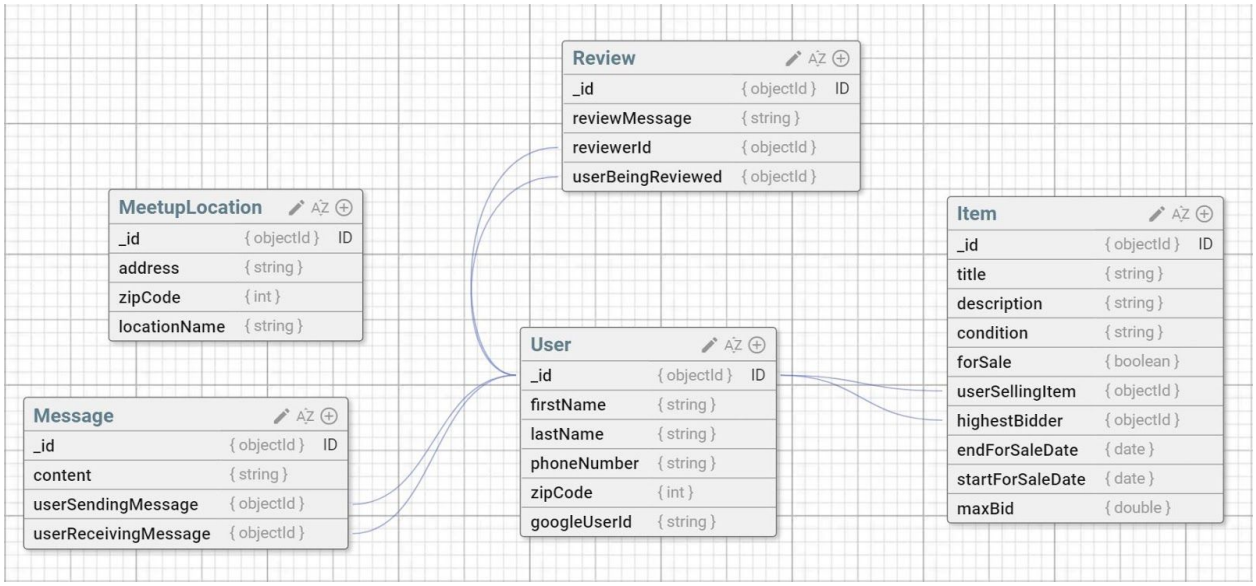
Description

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Cras sollicitudin tincidunt velit non rhoncus. Pellentesque lobortis quis purus id imperdiet. Pellentesque consectetur tempor arcu. Phasellus vitae libero sit amet nulla ultricies blandit. Vivamus id semper lorem. Nullam sed elit id felis efficitur mattis. Aenean aliquet risus mollis augue tempus, ut ultricies diam fringilla. Vestibulum posuere magna a tortor condimentum posuere. Maecenas venenatis ornare tortor sed pharetra. In sed ultricies augue. Sed tincidunt lobortis felis nec tincidunt. Nulla nulla magna, convallis in porttitor id, bibendum non neque. Ut eu sagittis lacus.

Condition	Location	Model No.
Used	Palo Alto, CA	83942003402304

Map

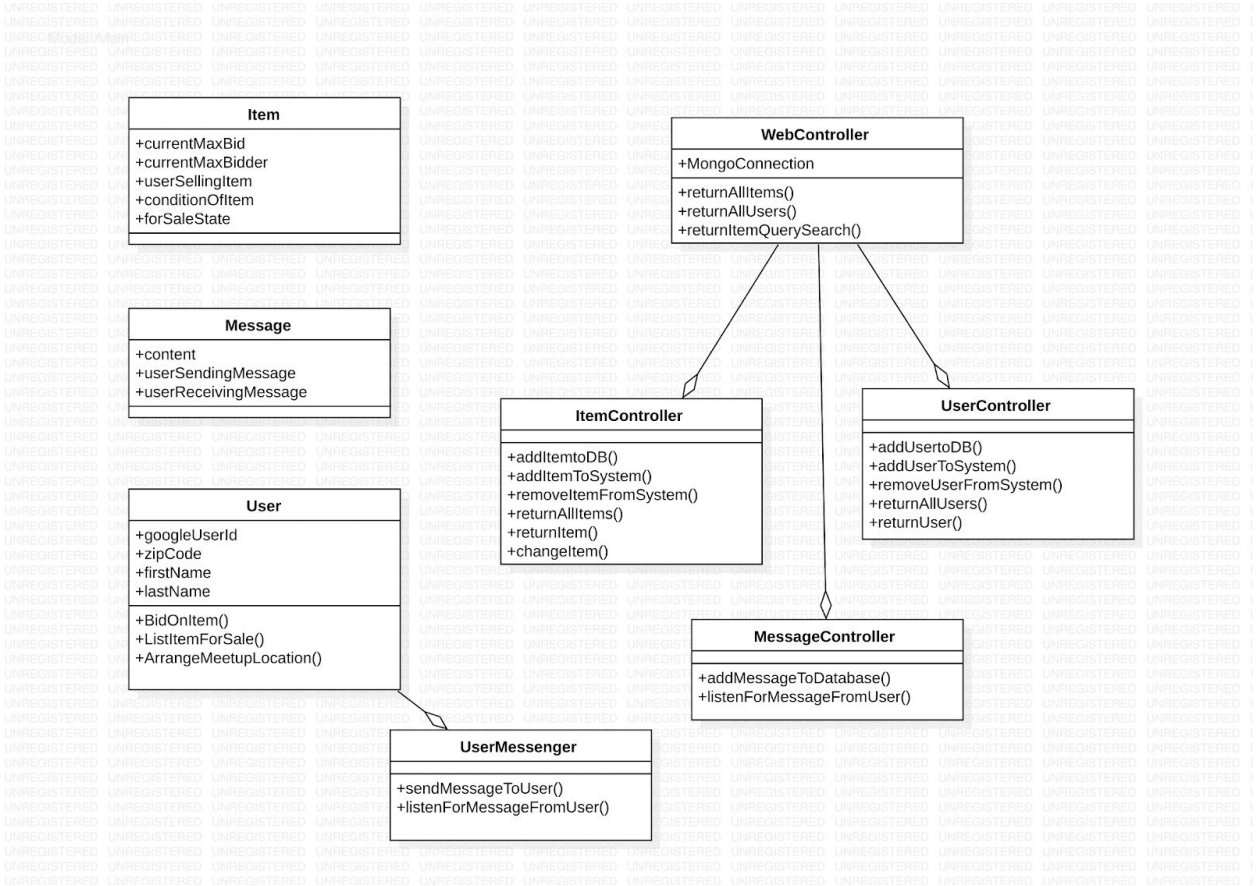
ER Diagram



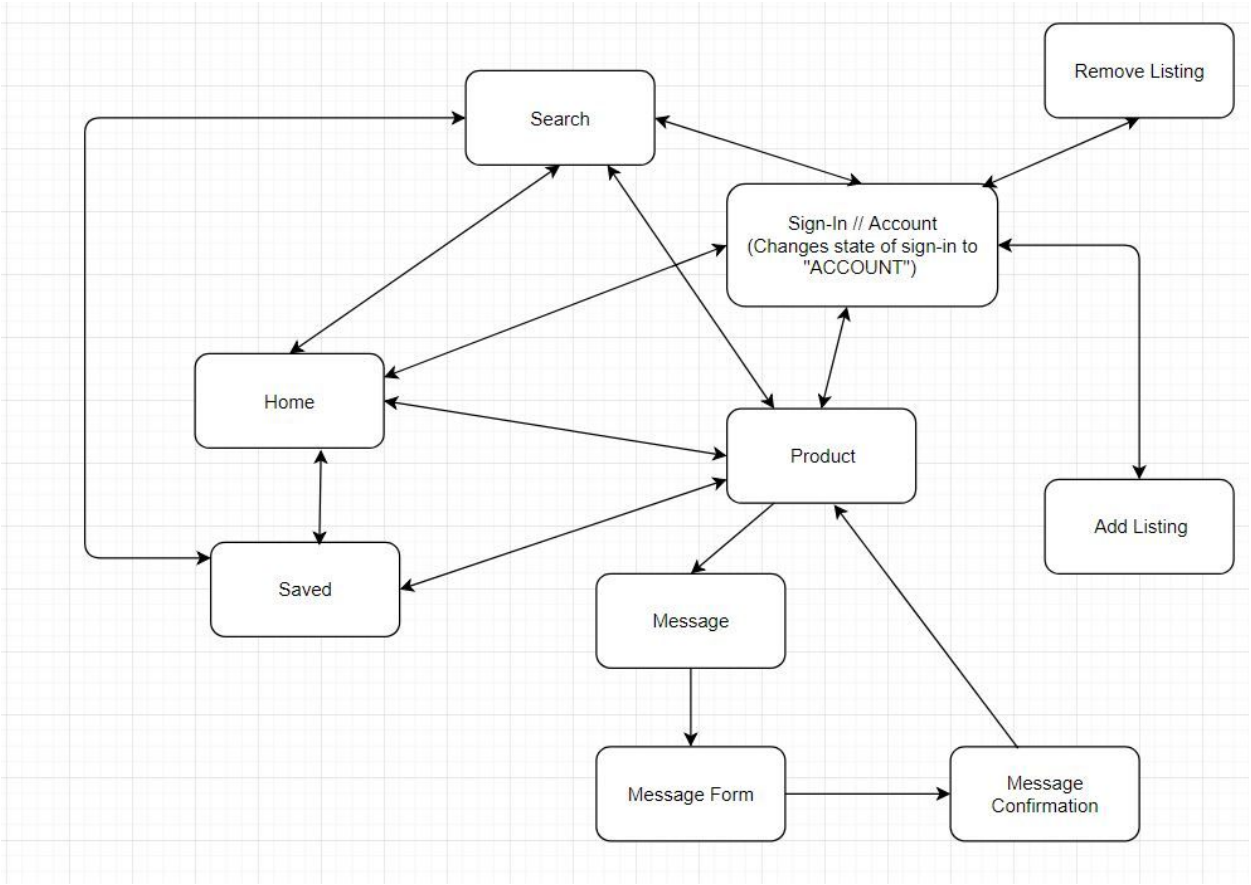
Hardware/Software Requirements:

- Client: a device with an internet connection
- Server: a computer with the ability to host a small server

Class Diagrams/Inheritance Hierarchies



State Diagram



Additional Technologies Used:

- Flex Boxes
- jQuery
- Bootstrap
- Spring Boot
- Maven for Java Package Management
- MongoDB
- Rest API (Used to access the database)

Technical Specifications (No Changes):

Web Interface / GUI (30 hours total):

- Core Technologies: CSS, HTML5, Javascript will be used for the frontend pages
- The project will be composed of these core components:
    - **Central Listing Homepage(8 hours)**, which consists of:
        - A search bar to find products with certain keywords
            - Search bar will make a request to a backend Java service that will query the database

        - Tile listings including pictures of the good being sold, price, location of seller, and other relevant information
            - All this data will be retrieved from database
        - A login button, that turns into a sign out button once logged in
            - We will save the user's info in a session variable whenever the user logs in and won't erase the session until the user logs out
        - An account button that refers the user to their account settings
            - Will retrieve data from database
        - A saved items, (only available to signed in users) that stores a list of items that the user may have wanted to save for later
            - Will be a session variable
    - **A Login Page (8 hours)**, which consists of:
        - A username entry field,
        - A password entry field
        - Usernames will be verified to see if they are "@usc.edu" emails
        - Users can be authenticated via google web sign in oauth
        - Attempted logins will be verified with the database and redirected if credentials are correct
    - **A Sign Up Page (8 hours)**, which consists of:
        - A users name (fName and lName),
        - A users zip code,
        - USC Email
        - Phone number
        - Since the sign in is done through Google Login, it does not need a reset password function
    - When you click on a tile listing on the central Listing Homepage, it will take you to a **Listing Page (8 hours)**, which consists of:
        - Pictures of the product for sale
        - Title of the listing
        - Price of the listing
        - Description of the product
        - Location (ie. zip code / potentially google maps)
        - Share and Save options
        - Option to chat with the seller
    - A **Profile (8 hours)** Page
        - Consists of information about the user (their name, email address, option to change password, location, etc.)
        - Users will have ratings, purchase, and selling history

Multi-threaded Code (20 hours total):

- Adding/removing live listings **(8 hours)**
    - Users are able to add item listings and remove them simultaneously

- Updates price in real time **(6 hours)**
- Accepting new bids in real time **(6 hours)**

Networking (24 hours total):

- Our website will have a bidding feature that allows users interested in purchasing a listed product to bid live **(8 hours)**
- Implements the Google Maps API to decide on a location for the transaction
- Users can chat with each other if they had questions about the product **(8 hours)**
- Connect web server to database that contains information on listings, and user profiles **(8 hours)**

Database (16 hour):

- Design the database **(8 hours)**
    - Design is shown in schema
- Implement MongoDB database **(8 hours)**

Specific Features (4 hours):

- Any user can view items, but must login to bid on items or contact sellers **(4 hours)**

<u>High-Level Requirements (No Changes):</u>

We will be creating a web interface where individuals are able to browse items up for auction. Guests will be able to view items, but will not be able to bid on or sell items until they register. To register, a user is required to have a USC email address. Once registered, users will be able to bid on and sell items.

From a buyers point of view, users will be able to bid on items during a live auction. Bids will update in real time, and users will place higher bids at an attempt to purchase the item. Users will be able to search for items based on keywords, or view items that end the soonest.

From a seller's point of view, users will be able to list items for sale. Each item must have a starting bid, a time that the item's auction will end, the location of the item being sold, along with images and a description of the item.

Each user will also have a profile page. On the users profile page will be information such as name, email address, and website history (i.e. history of purchases, history of sold items, and ratings from other users).

Throughout the auction, users will be able to communicate with the seller to discuss any questions the buyer has about the item. After the auction ends, the buyer and seller will be able to continue the line of communication, to discuss payment and a meetup location. A common meetup location on USC campus will also be provided as a suggestion.