Design Specifications

As a consumer-facing mobile application, a simple, refined, and attractive user experience is key to the success of Mooch. Consumers have high expectations of their apps and if Mooch does not meet them it is unlikely they would trust using it to exchange food with other people. This section contains screen mockups and example use cases.

User Interface

Mobile Application

Initial Loading

The initial loading screen is the screen a user sees when the app launches. The first time the app opens after being downloaded, the app prompts the user whether they would like to subscribe to push notifications. There is a spinner that spins to indicate loading. While the loading screen is displayed, the app checks if there is any saved user data. If there is saved user data then the app attempts to automatically log the user in. The app also downloads the available communities and food categories from the API, and updates the user's push notification device identifier if they are subscribed. When these steps are completed the Initial Loading screen fades away. If a user was successfully logged in they are taken to the Listings screen. If a user was not logged in, they are taken to the Community Picker.

Figure 1: Initial Loading

Community Picker

The Community Picker shows a user the communities that they can join. Communities are displayed as a collection of photos with the community name as a caption. They can be sorted alphabetically, or by the distance from the user's current location. When the user selects a community the screen is dismissed and the user is returned to the screen they came from. However, if the user came from the Initial Loading screen, then they are taken to the Listings screen.

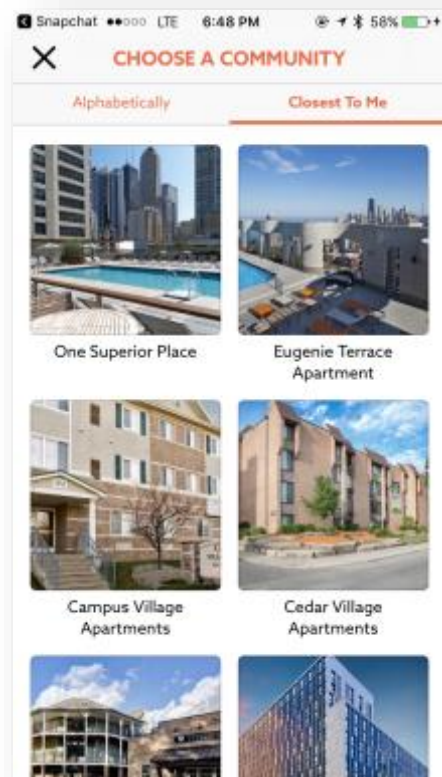Figure 2a: Community Picker, alphabetically sorted

Figure 2b: Community Picker, sorted by nearest location

Main Navigation

Once the initial community has been selected, the main interface of the app becomes visible. The navigation of the app is based on a pattern common to iOS applications, the tab bar. Each icon indicates a different screen or action the user can navigate to. There can only be one selected tab, and the currently selected tab is indicated by the color change and bar beneath the icon. From left to right the screens associated with each tab are: Listings, Search, Edit Listing, and Profile.

Pressing the home icon tab will take the user to the Listings screen for their current community. Pressing the search icon tab takes the user to the Search screen. Pressing the sales tag icon tab will pop up a photo-taking screen, and upon taking a photo takes the user to the Edit Listing screen. However, if they are not logged in and in guest mode, they are presented the Login screen. Pressing the user icon tab takes the user to the Profile screen. However, if they are in guest mode, they are given the option to either login or to change their community.

As part of the iOS Human Interface Guidelines the tab bar is translucent. This can be seen below. The translucency effect is a result of colors from the user interface beneath the tab bar partially showing through to give the user contextual awareness and depth of where they are in the app. This specific translucency effect was generated from the Listings beneath the tab bar, and can be seen along with the rest of the user interface in the Listings figure.
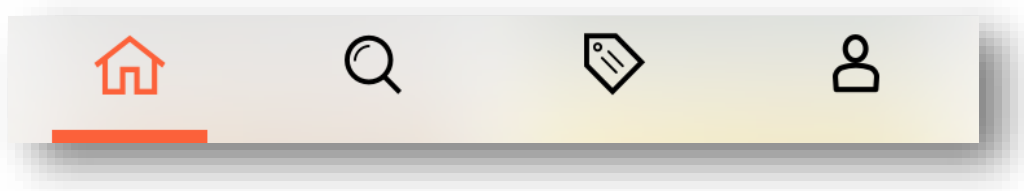

Figure 3: Tab Bar Navigation

Listings

The Listings screen is the main screen of the app. It is navigated to by selecting the first tab bar tab from the left. From here, a tiled layout of all listings posted in the user's current community is displayed. Once a listing has gone unclaimed for 2 weeks it can no longer be seen on this screen. For each listing tile the image of the listing is shown, along with a price in the bottom right of the tile. Touching a tile selects it and brings the user to the Listing Details screen. To make it clear to the user which community they are currently in, a label is shown at the top left with the name of the current community. To the right of that label is the Filter button. Pressing the filter button animates the Listings Filter screen into appearance. When the user wishes to refresh the listings shown, they can "pull to refresh."
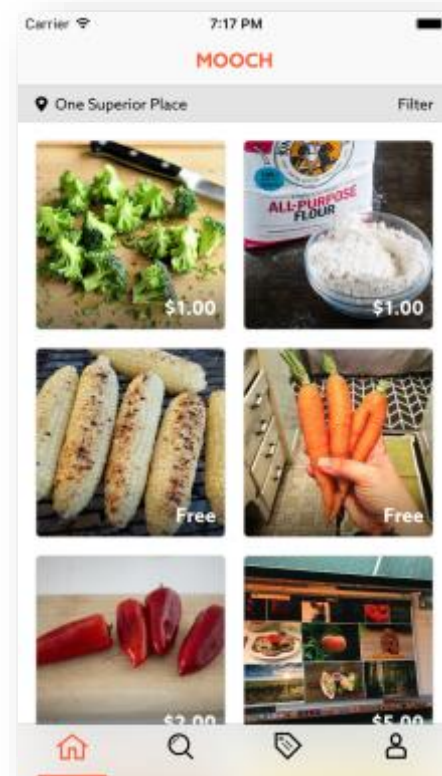

Figure 4: Listings

Listings Filter

The Listings Filter screen provides the user with options for filtering and sorting a group of Listings. There are four different filtering options the user is provided with: sort ordering, food category, posted within duration, and price range. Pressing the sort ordering, food category, posted within duration rows shows a screen with the associated options. Pressing the Clear button in the upper left will remove all filters, and return the user to the Listings screen. Pressing the Done button in the upper right will apply all selected filters, and return the user to the Listings screen.

For sort ordering there are four options: best match, lowest price, highest price, and newest. The best match option is essentially a placeholder that takes the food category, posted within duration, and price range the user selects and returns all listings that match those filters in no particular order. The lowest price and highest price options take the food category, posted within duration, and price range the user selects and then sorts them based on price, respectively. The newest option takes the food category, posted within duration, and price range the user selects and returns all listings matching those filters, sorted by the most recently posted listings. By default, the selected sort ordering option is Best Match.

The food category option allows the user to choose a single food category to filter by. These food categories are predefined.

The posted within duration option allows the user to filter out listings that were posted beyond a specific amount of time. Users can choose to only show listings posted within: 24 hours, 2 days, 5 days, 7 days, and 2 weeks. By default, the selected posted within option is 2 weeks.

The price range allows users to choose the minimum and maximum allowable price ranges. The lowest price that can be selected is $0, and the highest price that can be selected is $200. The user can drag the double-ended slider to select this range.
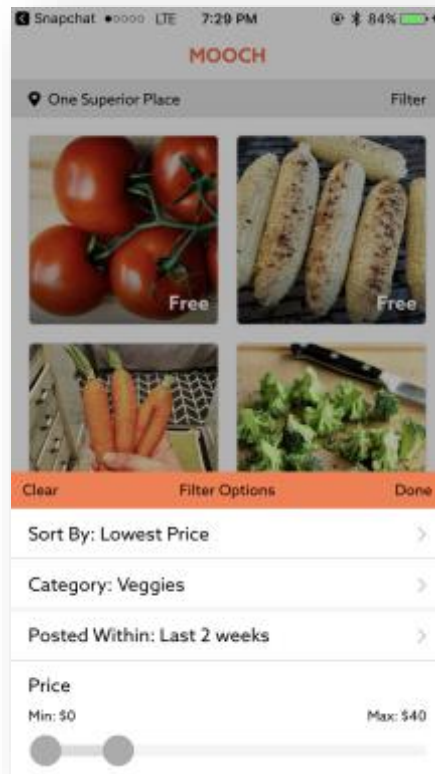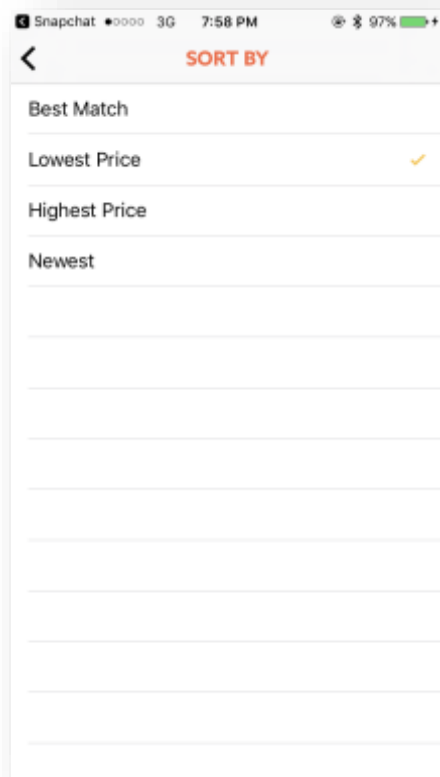
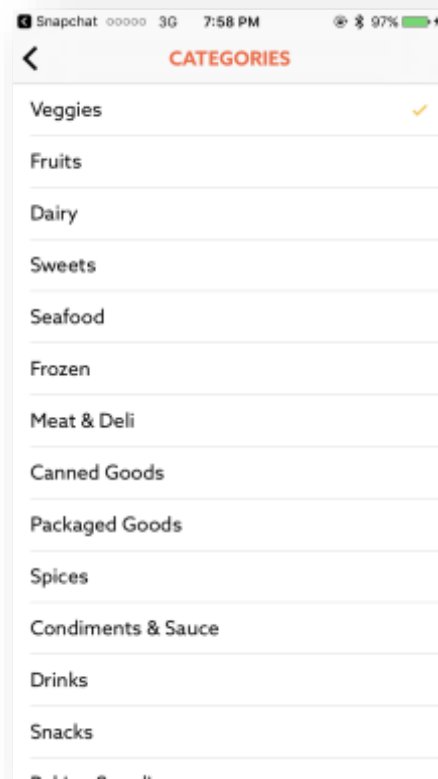Figure 5a: Listings Filter

Figure 5b: Listings Filter Sort By Options

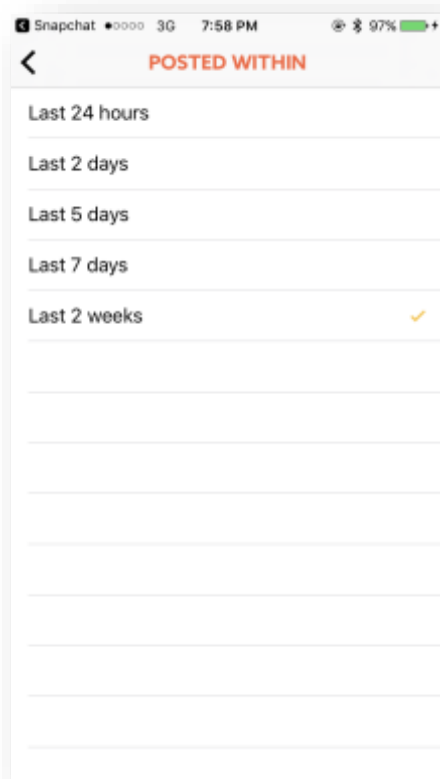Figure 5c: Listings Filter Food Category Options

Figure 5d: Listings Filter Posted Within Options

Listing Details

The listing detail screen shows the information for a listing. The listing information shown is the listing's image, title, date posted, quantity, price, and details. The screen is scrollable such that the user can "pull down" on the listing image to make the image grow to the full size of the screen and be fully visible. Depending on the context the screen is navigated from, there are 4 different major configurations for the content that shows beneath the listing information:
1. Viewing other user's available listing
2. Viewing other user's accepted listing
3. Viewing current user's available listing
4. Viewing current user's accepted listing

1. Viewing other user's available listing
This Listing Details configuration can be reached from the Listings screen, or from the Contact History portion of the Profile screen if the seller hasn't accepted the exchange request. Below the listing information is the Contact Seller button, View Seller Profile button, listing description, and About Seller section. Pressing the Contact Seller button creates an exchange request between the user and the seller for this listing. Once selected, the button changes to a dimmer color and becomes disabled. The View Seller Profile button shows the Seller Profile screen. The About Seller section shows the seller's profile photo and name, and a label informing the user how a listing exchange can be completed to reveal the seller's contact information.

2. Viewing other user's accepted listing
This Listing Details configuration can be reached from the Contact History portion of the Profile screen when the seller has accepted the exchange request. There is a banner saying "LISTING ENDED" to indicate that the listing is no longer available, and the seller has accepted the exchange for the current user. Below the listing information is the View Seller Profile button, listing description, and About Seller section. The View Seller Profile button shows the Seller Profile screen. The About Seller section shows the seller's profile photo, name, email, phone, and address. Pressing the seller's email opens up the Apple Mail app with the sender field of the email prepopulated. Pressing the seller's phone number presents the user with the option to call or text the user. If the user selects the call option, they are taken to the Apple Phone app. If the user selects the text option, they are taken to the Apple Messages app.

3. Viewing current user's available listing
This Listing Details configuration can be reached from the My Listings portion of the Profile screen if the current user hasn't received or accepted any exchange requests. Below the listing information is the End Listing button, listing description, and Interested Buyers section. Pressing the End Listing button will forever delete the listing. The Interested Buyers section shows the users that have started an exchange with the current user for this listing, if there are any. Each interested buyer row shows the buyer's profile picture and name, and has an Accept button. Pressing the Accept button for a prospective buyer will complete the exchange with that buyer for the listing. This means the listing is no longer visible, and is in an accepted state. If there are no interested buyers, a label saying "Currently No Interested Buyers" informs the user. The listing can also be edited by pressing the settings gear icon in the top right.

<u>4. Viewing current user's accepted listing</u>
This Listing Details configuration can be reached from the My Listings portion of the Profile screen if the current user has accepted an exchange request for the listing. There is a banner saying "LISTING SOLD" to indicate that the listing is no longer available, and the current user has accepted the exchange for the shown buyer. Below the listing information is the listing description and About Buyer section. The About Buyer section shows the buyer's profile photo, name, email, phone, and address. Pressing the buyer's email opens up the Apple Mail app with the sender field of the email prepopulated. Pressing the buyer's phone number presents the user with the option to call or text the buyer. If the user selects the call option, they are taken to the Apple Phone app. If the user selects the text option, they are taken to the Apple Messages app.
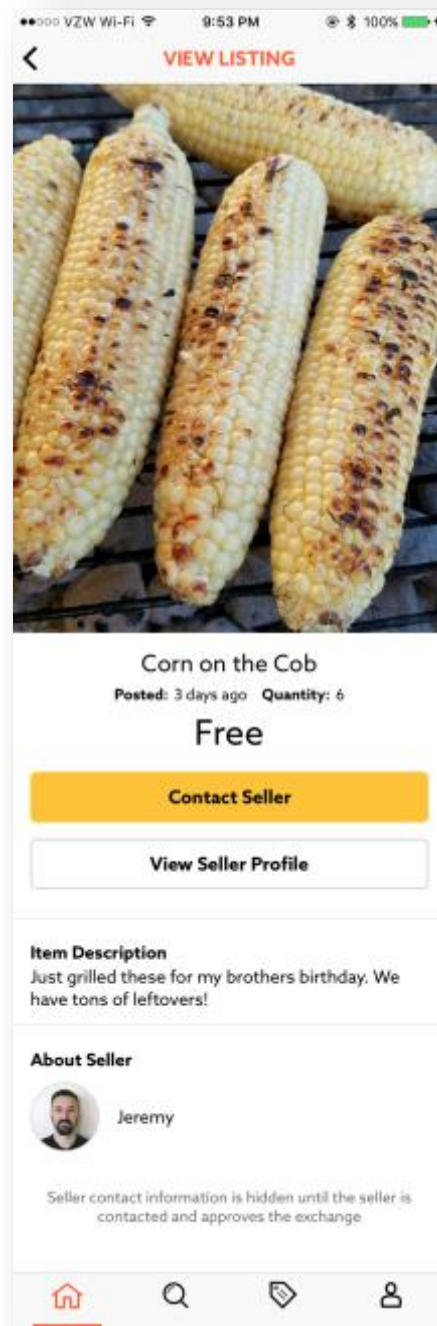
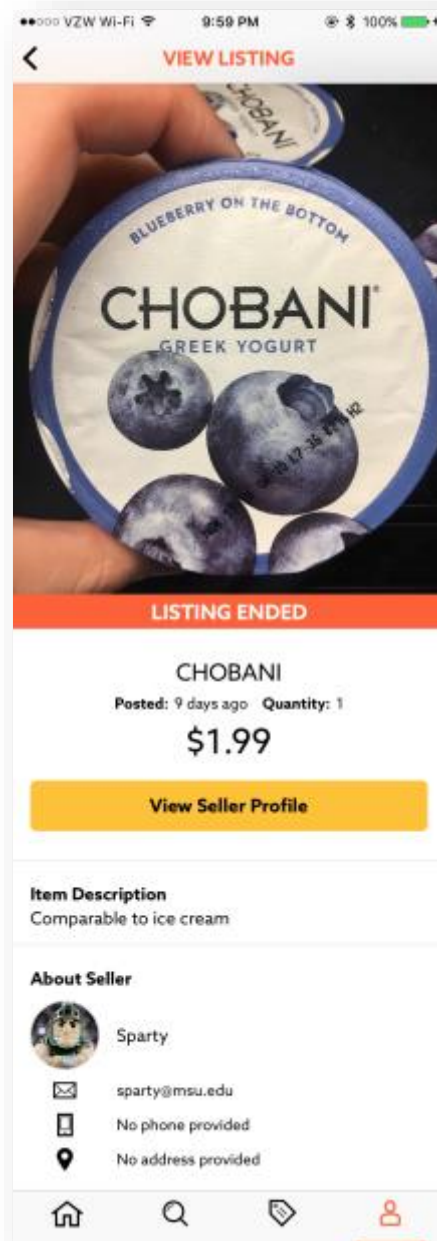Figure 6a: Listing Details, other user's available listing

Figure 6b: Listing Details, other user's accepted listing

Figure 6c: Listing Details, current user's available listing

Figure 6d: Listing Details, current user's accepted listing

Seller Profile

The Seller Profile screen shows the user information of a seller. It can be reached from a Listing Details screen. The seller's profile photo, name, and current community are at the top of the screen. The bottom half shows other listings the seller has posted. They can be selected, which will show the Listing Details screen for them.
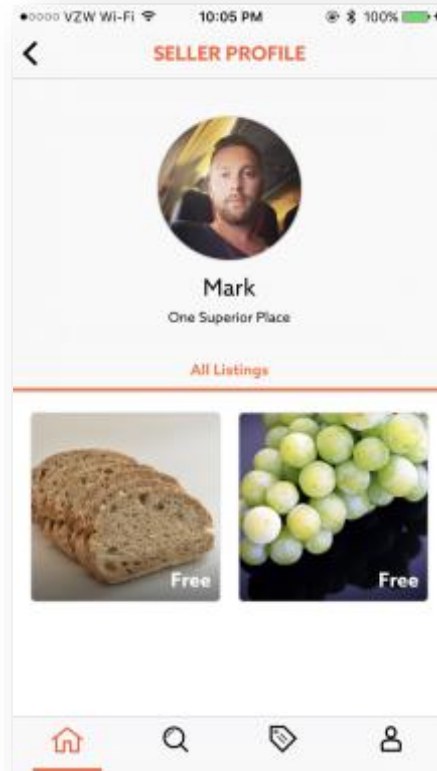

Figure 7: Seller Profile

Search

The Search screen allows the user to search through listings in their current community. A user can type in the navigation bar with a search field at the top of the screen, and only listings whose name or description match the search will be shown. As the user types the matching listings are updated. These listings appear under the navigation bar. The user can also select a specific food category, and then only listings in the selected food category will be shown. The listings in the selected food category can then also be searched in the same way the listings could be searched before a category was chosen. If the user no longer wishes to only search listings in the selected food category, they can press the back button at the top left of the screen.
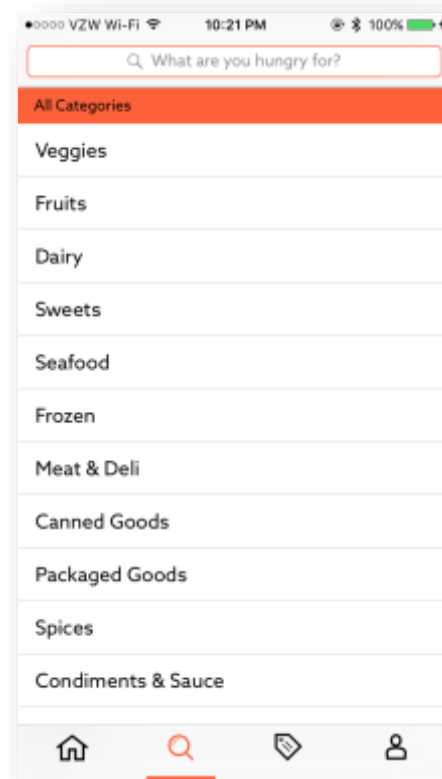

Figure 8: Search

Edit Listing

The Edit Listing screen is where the user creates or edits a listing. When creating a listing this screen appears after taking a picture of the item by pressing the sales tag icon tab in the tab bar. When editing a listing the screen is reached from the Listing Details screen of a listing for the current user. The image cannot be changed once on this screen. The user can change the title, price, quantity, description, and category. All the preceding fields are required to post other than the description field. Once they are finished, they press the Post button. The fields are all checked that they are filled and valid; otherwise an alert appears informing the user how to fix the problem. Upon successfully posting the screen is dismissed and either creates the new listing or finishes editing the existing one. The user can also press the Cancel button to leave the screen.

Figure 9a: Edit Listing, creating listing

Figure 9b: Edit Listing, editing listing

Login

The Login screen is where the user signs into Mooch.. The username and password text fields are in the middle of the screen. The Sign In button is below the text fields, and the Create Account button is below the Sign In button. The user types their email and password into the respective fields. The email is validated by a regex, and the password is checked that it is at least 6 characters. Once both those conditions are met, the Sign In button becomes enabled. Upon successfully signing in after pressing the Sign In button, the user is returned to the screen they came from. When the Create Account button is pressed the user is taken to the Edit Profile screen. Pressing the X button at the top left of the screen will also return the user to the screen they came from.
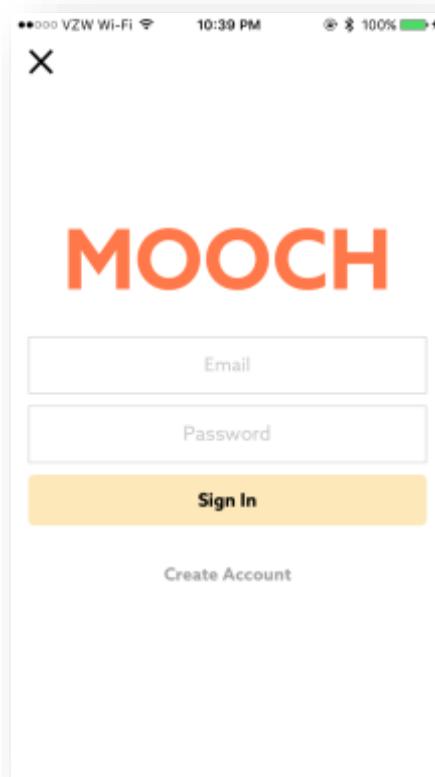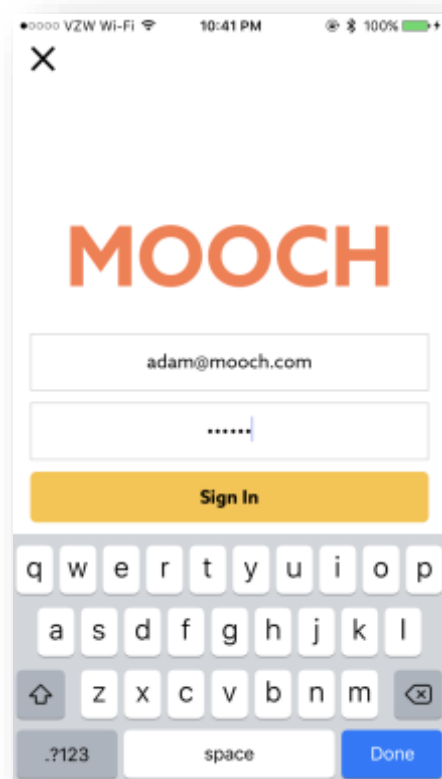

Figure 10: Login, fields empty

Figure 10: Login, fields filled and valid

Profile

The Profile screen shows a user's information and allows them to change their information. A user can see their profile photo, name, and current community name. There are two tabs in the middle of the screen, My Listings and Contact History. One of these tabs is selected at a time, and the selected tab is indicated with bold text and a bar below it. A tab is selected by pressing the text, like a button. Below the tabs the applicable listings show and can be scrolled through. The My Listings tab shows the listings the current user has posted, and the Contact History tab shows the listings of other users the current user has contacted. In the top right of the screen is a settings gear button. Pressing that button gives the user the following options: Edit Profile, Change Community, and Log Out. The Edit Profile option takes the user to the Edit Profile screen. The Change Community option takes the user to the Community Picker screen, where they can change their community. The Log Out button signs out the user and puts the app into guest mode.
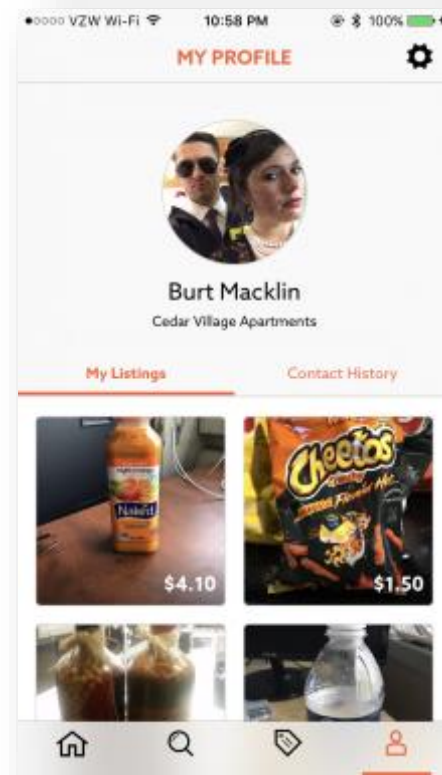
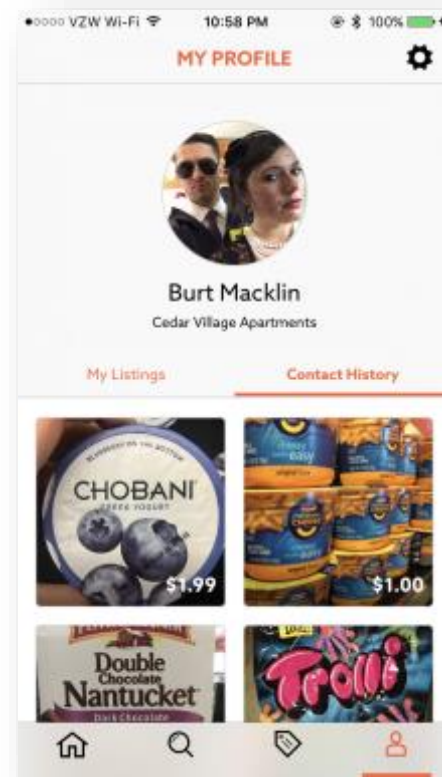

Figure 11a: Profile, My Listings selected
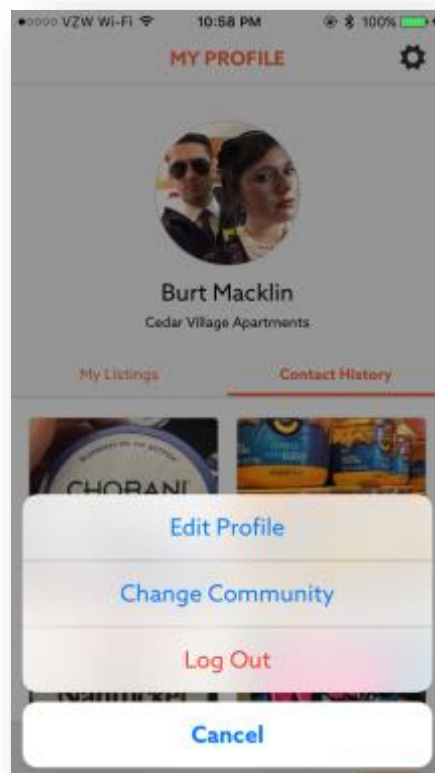
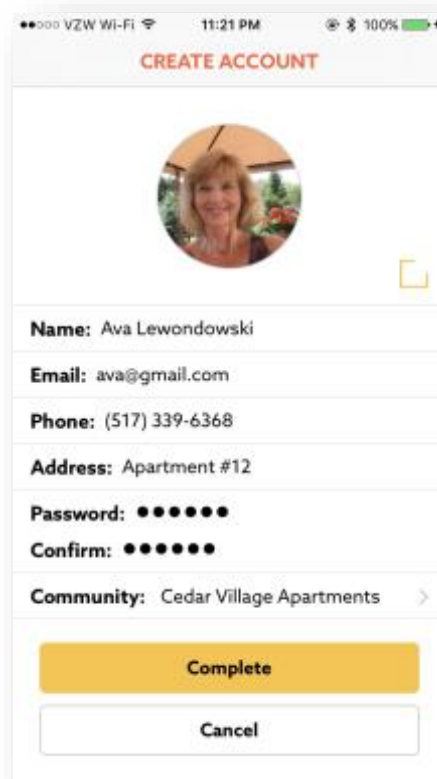Figure 11b: Profile, Contact History selected

Figure 11c: Profile, settings gear button pressed

Edit Profile

The Edit Profile screen is where a user can create a new account or change their existing information. When creating an account this screen is reached from the Login screen. When editing a profile the screen is reached from the Profile screen of the current user. When creating an account a user can fill out their photo, name, email, phone number, address, password, and community. When there isn't already a photo picked, the photo field is filled by pressing the circular icon at the top. When a photo is already selected it is changed by pressing the edit icon at the bottom right of that field. All the preceding fields are required for a profile other than the photo and address fields. When editing an account a user can only change their photo, name, email, phone number, and address. Once they are finished, they press the Complete button. The fields are all checked that they are filled and valid; otherwise an alert appears informing the user how to fix the problem. Upon successfully completing the screen is dismissed and either creates the new account or finishes editing the existing one. The user can also press the Cancel button to leave the screen.

Figure 12a: Edit Profile, creating account

Figure 12b: Edit Profile, editing account

Use Cases

Mobile Application Use Case for Food Suppliers

Ryan lives in a large apartment building in New York City. He opens up his refrigerator, and sees that he has two new jugs of milk. He checks the expiration dates and realizes he will only be able to get through one jug of milk by the time they expire. Ryan doesn't like the idea of wasting food, and he also likes making easy money. Ryan remembers a friend mentioning a food-sharing app called Mooch, and downloads the app from the app store.

Ryan opens the app. Mooch allows people to use it without signing in initially, but they still have to pick their community. Ryan sees his apartment building and selects it. He is taken to the Listings screen, which shows all the food items people have added in his community. He sees the button to add a food listing, and presses it. Since he doesn't have an account yet, he is taken through the process of making one. He is then directed to a screen to create a new listing. Listings need pictures, so Ryan takes a photo of his milk jug. He fills in the title, "Fresh 2% milk jug," and sets the category to "Dairy." He sees that the price has defaulted to free, but instead decides to charge $1.50 for it. Now that all the required information is filled out, he finishes creating the listing, and now other Mooch users can see it in the Listings screen. Ryan closes the app.

Five minutes later, he gets a push notification that someone wants his listing. Ryan clicks on it, the Mooch app opens, and Ryan is taken to the Listing Details screen for his milk listing. He sees Phil as an interested buyer and accepts the exchange request. Ryan and Phil can now see each other's contact information. Phil texts Ryan and they meet. After some small talk they realize they have a friend in common. They exchange the milk and money, and decide they should hang out that weekend.

Mobile Application Use Case for Food Demanders

Tanay lives in a large apartment in downtown Chicago. While at home, he decides he would like to cook his favorite meal, dragon noodles. He checks the recipe and sees he has everything but the tablespoon of brown sugar it needs. Tanay doesn't want to make a trip to the grocery store just to buy a bag of brown sugar when he only needs a tablespoon. Like most people in the area he doesn't own a car and the nearest grocery store is a few blocks away. So, Tanay opens the Mooch app.

He has already signed into the app before and is taken straight to the Listings screen. He doesn't see brown sugar right away, so he searches the listings in his community by text, and finds a brown sugar listing from a few days ago posted by Susie. He presses the button to claim the listing and waits for Susie to respond. To pass the time he goes back to Listings screen and scrolls through the listings of food, enticed by the pictures. He sees a can of Vanilla Coke. Tanay likes Vanilla Coke, but not enough to bother carrying a 12-pack of it home. It turns out seeing a Coke makes him crave one, so he impulse claims the can of Coke, too. Soon after an alert pops up, notifying him that Susie has accepted his claim request. Now that they have completed the exchange, Tanay can see Susie's contact information. Tanay emails him, and they successfully complete the exchange in the lobby of their building.

Web Application Use Case for Mooch Administrators

Ian is an administrative user of Mooch. He has a new community to add to the system. Ian navigates to the URL for the web app. He enters his username and password, and is logged in. He clicks the

Communities button and is directed to the page for managing communities. He clicks the Add Community button, fills out the required information, and clicks Save. The community is added to the database and all Mooch users will be able to select it now.

Ian is also curious how user growth and engagement has been going. He navigates back to the home page. From there, he sees how many users there are, how many listings have been posted, how many listings have been successfully completed, the most common listing categories, and other useful information.