SW Engineering CSC648/848 Fall 2020

Application: SFSU Buy and Sell Website

Name: SFSU CONNECT

Team: 1

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# **Milestone 2**

October 20, 2020

| | |
|---|---|
| September 23, 2020 | First Revision Done |
| October 13, 2020 | Added to first revision |
| October 20, 2020 | Made changes based on CEO feedback |
| | |

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# Executive summary

The idea behind 'SFSU connect' is to provide a platform akin to craigslist which facilitates the buying and selling of items and services exclusively for SFSU staff, students and faculty. For example, say a student finishes a class and no longer needs a textbook, he will be able to post a listing detailing the book on our platform. Our website will facilitate the initiation of contact with other SFSU community members who are interested in acquiring the book. The uniqueness of our product stems from how niche the market we are looking to target is. By targeting a market as specialized as the SFSU community specifically, we can build a product that caters to their needs. For example, by creating a system which allows the users to filter by either class, course number or subject, they will be able to efficiently find listings relevant to their needs. Unlike other platforms, search results will not be bloated with irrelevant results such as textbooks which are not used at SFSU. For other items and services on the platform, a user can be assured that they can be procured on the SFSU campus. By limiting the ability to list items and contacting others users that have signed up, we can ensure that those participating are affiliated with the school and in this way we can provide a measure of security for our users.

Our team consists of six senior level students at SFSU. As such, we think we are uniquely positioned to understand and properly address the needs of the SFSU community. Our experience as students allows us to know what type of features will be best in addressing the needs of our fellow students. Our narrow target market combined with our understanding of it, ensures that our website will be able to compete with other platforms.

# List of main data items and entities

1. Unregistered user
    1.1. A user who did not register
    1.2. Can browse, search, and register
2. Registered user
    2.1. A user who is already registered
    2.2. Can send a message, post items, and sign in
    2.3. Report other registered ussr to admin for review

3. Admin

    3.1. Must approve user post before being publish

    3.2. Can delete registered user and their post for violating TOS

    3.3. Registers with special permissions

4. Registration Record

    4.1. Keep the list of registered user

      4.1.1. First name

      4.1.2. Last name

      4.1.3. Email

      4.1.4. Profile Picture

5. Publicly Viewable

    5.1. Content that can be seen by anyone regardless of whether or not they have registered

    5.2. All items are publicly viewable

6. SFSU Email

    6.1. Any email address which belongs to the sfsu.edu domain

    6.2. Registration on the website is only possible with an SFSU email

7. Message

    7.1. The messaging system built into the website allowing registered users to connect with each other through an item

8. Category

    8.1. Books

      8.1.1. Can be look up by class number or title

    8.2. Tutors

      8.2.1. Can be look up by class number or title

    8.3. Electronics/Software

      8.3.1. Can be look up by item name

    8.4. Art

      8.4.1. Can be look up by item name

    8.5. Clothing

      8.5.1. Can be look up by brand

8.5.2.   Can be look up by item name

8.6.   Home & Kitchen

8.6.1.   Can be look up by item name

8.7.   Tools

8.7.1.   Can be look up by item name

8.8.   Entertainment

8.8.1.   Can be look up by item name

8.9.   Miscellaneous

8.9.1.   Anything that does not fit into set categories goes here

8.9.2.   Can be look up by item name

9.   Item

9.1.   The item for sale

9.2.   Has a title, a price, a description, a category, zero or one photo

9.3.   Title

9.3.1.   The name given to an item and is the main focus for searching. (e.g. green couch)

9.4.   Price

9.4.1.   The cost of the item

9.4.2.   Price will be set by the user posting the item

9.5.   Description

9.5.1.   A text description of each Item

9.5.2.   Descriptions are public

9.6.   Photo

9.6.1.   Can have zero or one photo of an item

10.   Service

10.1.   A service that a user could provide to another user as opposed to a physical object

10.2.   Tutoring

10.2.1.   A service in which one user provides extra opportunities for learning to another user

10.2.2.   Have a list of course available for tutor

10.2.3.   Contain the tutor profile information

# Functional Requirements

prioritized  (1-must have; 2 – desired; 3 – opportunistic as defined in the class)

Priority 1:

    1.Unregister User

- User shall be able to browse all listings
- User shall be able to create an account
- User shall be able to search for listings based on category combined with text search
- User shall be able to view each listing's details
- User shall be able to filter listings by price

    2.Register User

- User shall inherit all functional requirements of a unregistered user
- User shall be able to send a message to a listing's owner
- User shall be able to login
- User shall be able to post tutoring information
- User shall be able to post items for sale
- User shall be able to view their own items and messages

    3.Admin

- Admin shall inherit all functional requirements of a registered user
- Admin shall be able to remove postings the admin does not own
- Admin shall be required to approve each listing before it is posted publicly
- Admin shall be able to delete a registered user's account

Priority 2:

    1.Unregister User

        -None

2.Register User

- User shall be able to remove a posting they own

- User shall be able to delete their account

3.Admin

- Admin shall be able to message registered users

Priority 3:

1.Unregister User

- None

2.Register User

- User shall be able to delete messages in inbox

3.Admin

- Admin shall take request from users

# UI Mockups and Storyboards

## Use Case 1

Mary hears of a website through her classmate where you can buy and sell textbooks. She is used to buying books online so this offer intrigued her since she wants to sell an old book she had used in the last semester. Mary enters the website and right away begins to make her post. She includes the class name and title when she fills out the information for her book. When she goes to submit the website asks her to sign in before she can continue with the submission. Mary doesn't have an account so she clicks to register for a new account. She is taken to a new page where she fills out her info. Once she finishes her registration, her post gets confirmed and ready for review. A few days later she looks on the website and sees another user has contacted her regarding her book. She connects with the potential buyer and the two agree on a price and

location. She walks to the SFSU Library where she meets the buyer and delivers the book. The book is exchanged and the buyer gives Mary cash.

###landing###
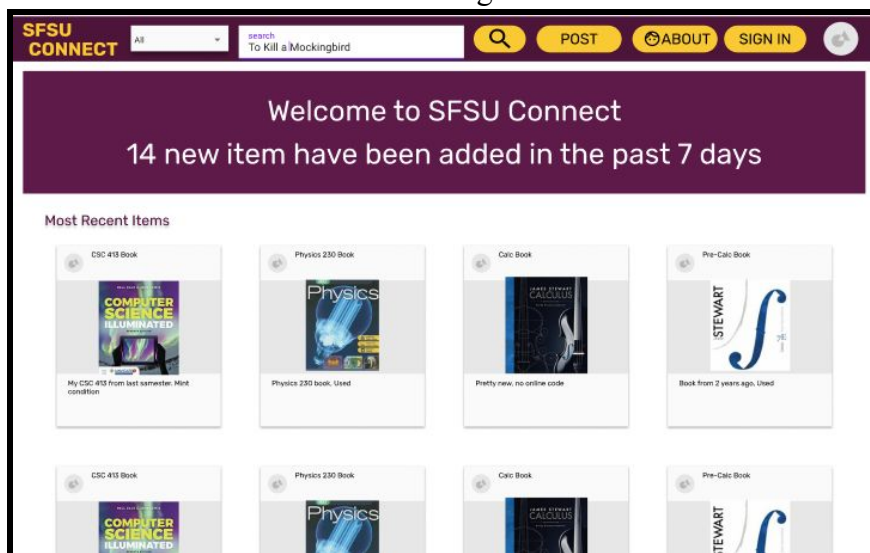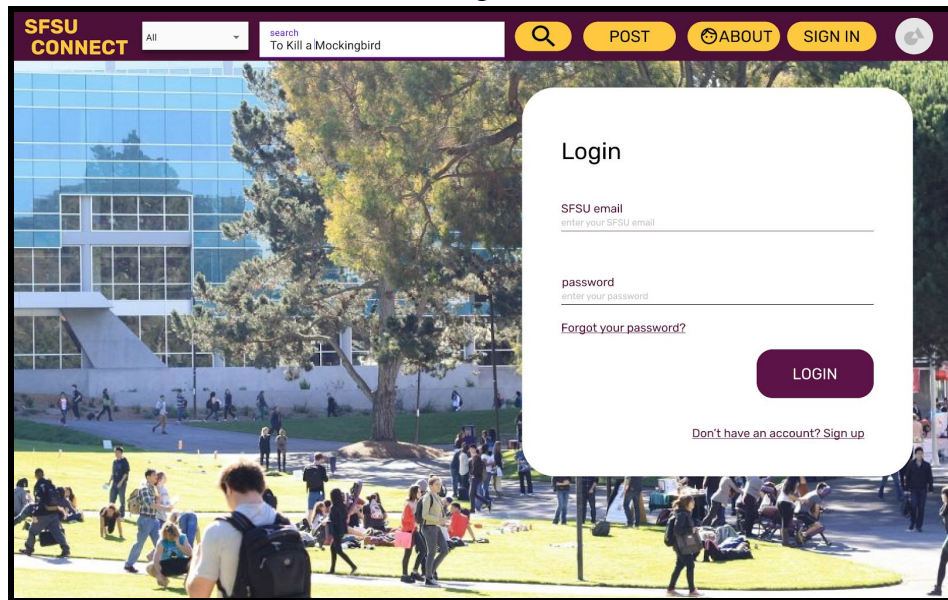


This is the initial page Mary sees as she enters the website. She clicks the "post" button located in the navigation bar to post the book she is interested in selling.

###post###



Mary uses the form to fill out information about her book. She is not logged in and when she submits she is taken to the login page

###login###



Mary doesn't have an account and has to signup

###register###



Mary fills out the following information. After she clicks "Register" she is then brought back to the *post item* page.

### ###post###
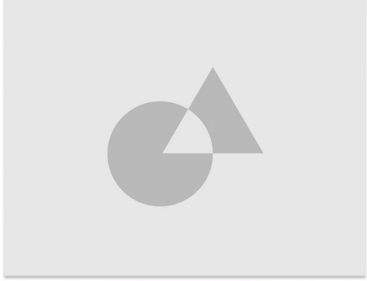
SFSU CONNECT | All ▾ | search To Kill a Mockingbird | 🔍 | POST | ⏱ABOUT | SIGN OUT

ITEM NAME

DESCRIPTION

PRICE

CHOOSE A CATEGORY    Category ▾

Insert Images

SUBMIT

The info she filled out before is still there when she returns.

### ###thanks###

SFSU CONNECT | All ▾ | search To Kill a Mockingbird | 🔍 | POST | ⏱ABOUT | SIGN OUT

Thank you for posting
Your post will not be public until an admin has approved it

Go back to Home Page

Mary is redirected to a page that confirms her post submission.
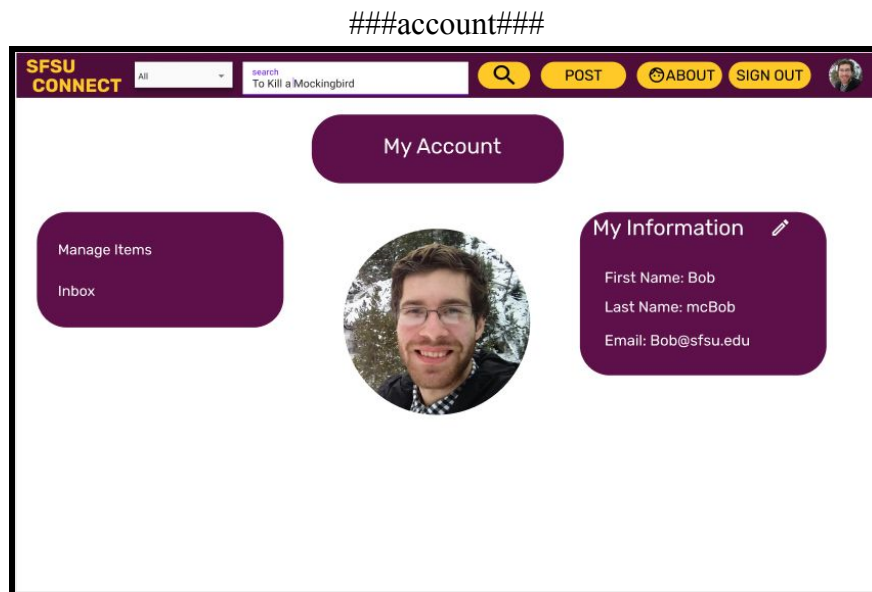
###account###



Mary comes back a few days later. After she signs in she goes to her account page. Mary was contacted by a potential buyer so she clicks on "Inbox" to see the message.

###inbox###
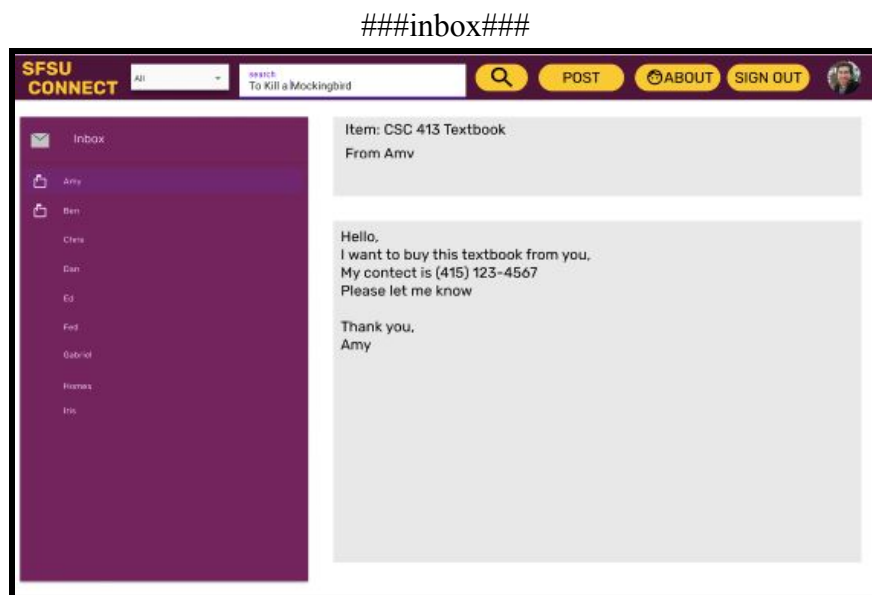


Here, Mary can read messages from people who are interested in her book.

## Use Case 2

Mary attends her first day at SFSU and learns that she needs a certain book for her Archeology class. Mary's professor tells her about *SFSU Connect* which she can use to get her

textbook for a better price from another student. Mary does just that and browses the website. She uses her class title Intro to Archeology to filter the items listed. Sure enough there are 3 listings for the book she needs. Mary uses the website's messaging system to write a message to the sellers. She doesn't have an account so when she submits her message the website asks her to sign up. Within the day, one of the sellers gets back to Mary with a steep price. Mary connects with the seller and negotiates a better price. The seller and Mary then agree on a location and time to meet using the website. They exchange phone numbers through the messenger so they can find each other at the library. On the day of the transaction, Mary and the seller meet and exchange the money for the book, then go about their days. Mary is satisfied with the service as she felt an extra sense of security when she met in a public place with a fellow student.

###landing-drop-down###



Mary begins on the *Landing* page. She uses the *Category* drop down to specify that she is looking for books. Mary types in her specific book title to see if the book shows up.

### search-results ###
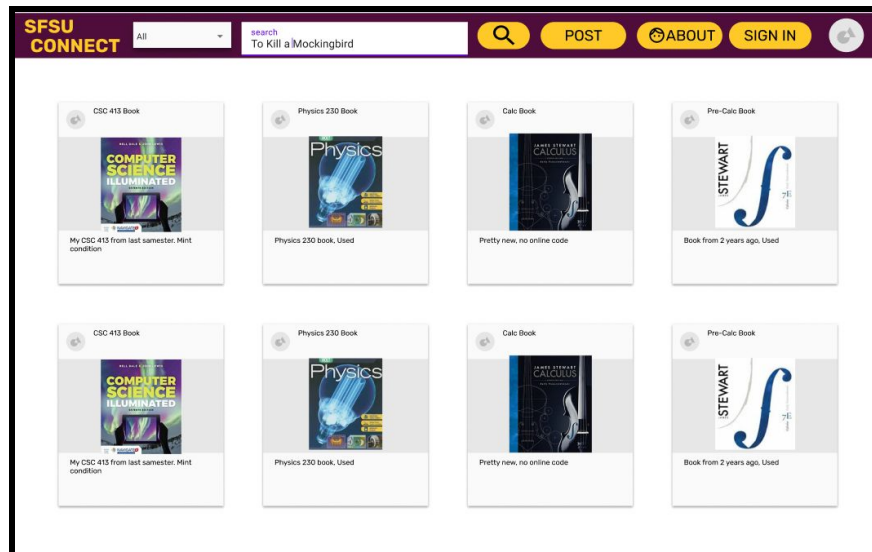


Mary finds the product she is looking for so she clicks on the item.

### item ###
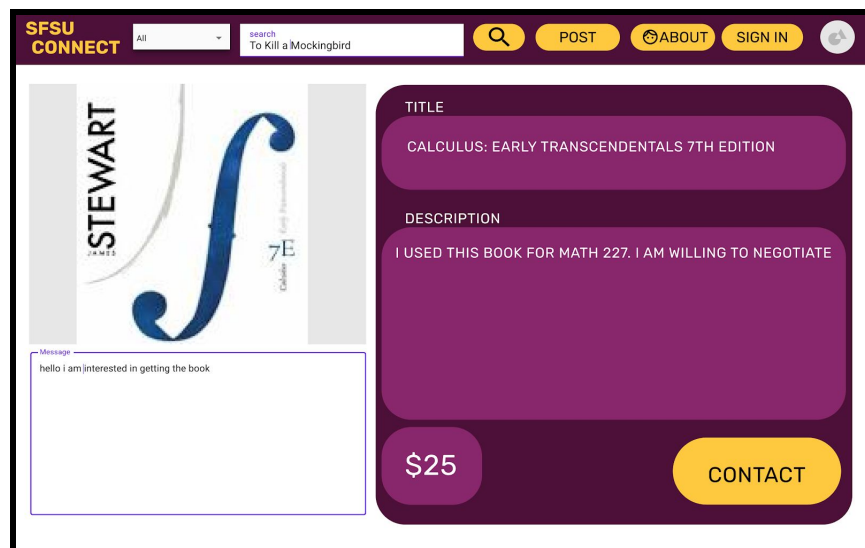


The product and description match what Mary is looking for so she contacts the seller. She doesn't have an account so she must register first.
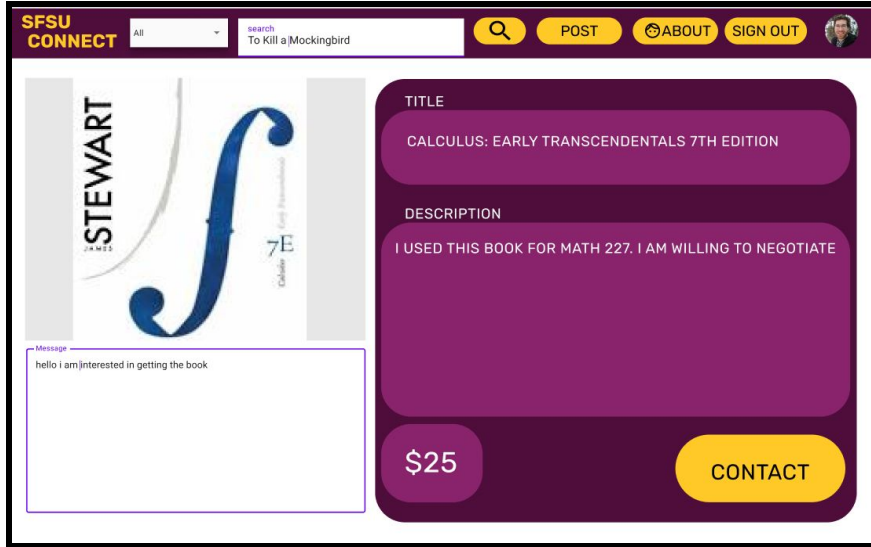
### ###login###



The website assumes Mary might have an account and redirects her to login. Mary however does not have an account and must register first

### ###register###



Mary fills out the registration form. When she submits she is taken back to the item post

###item###



She messages the seller about the book and successfully makes a purchase.

## Use Case 3

Mary doesn't know exactly what she needs so she looks to *SFSU Connect* (our website) for inspiration. Mary doesn't need to be a member to browse and can find what she needs quickly without obligation. When she enters the site she finds that she can search for items by category. She sees for example that there is a "home & kitchen" category and selects that to see all related listings. She sees a "cheese grater" listed and realizes that it is something she needs. Mary wants to make sure this is a reliable website so she checks out their about page. She likes how she can see the people's pictures and descriptions. Mary goes back to the "cheese grater" and contacts the seller to make her purchase. Mary and the seller agree on a price ($5), a location (the SFSU Library), and a date and time (Friday at 4:30 PM). Mary and the seller meet at the library and exchange items and then go about their day.
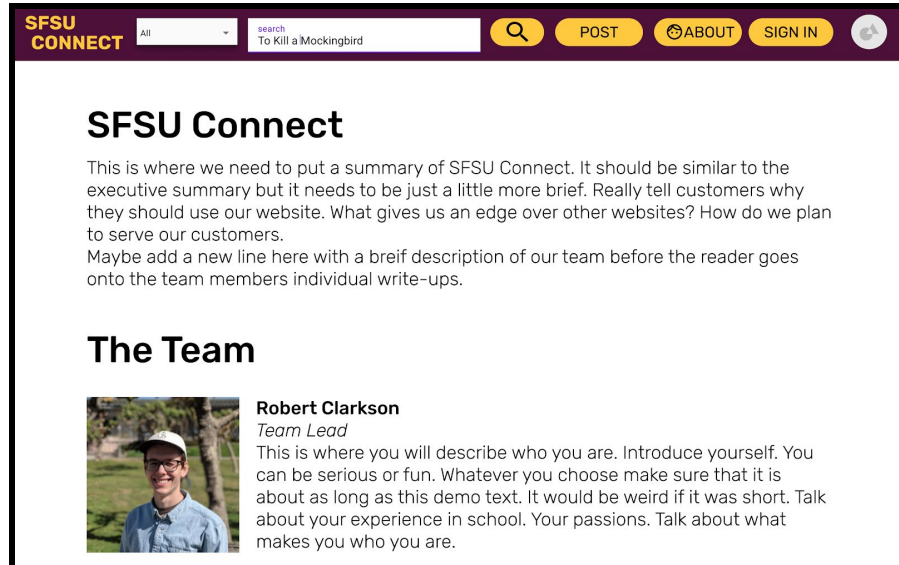
###landing-drop-down###
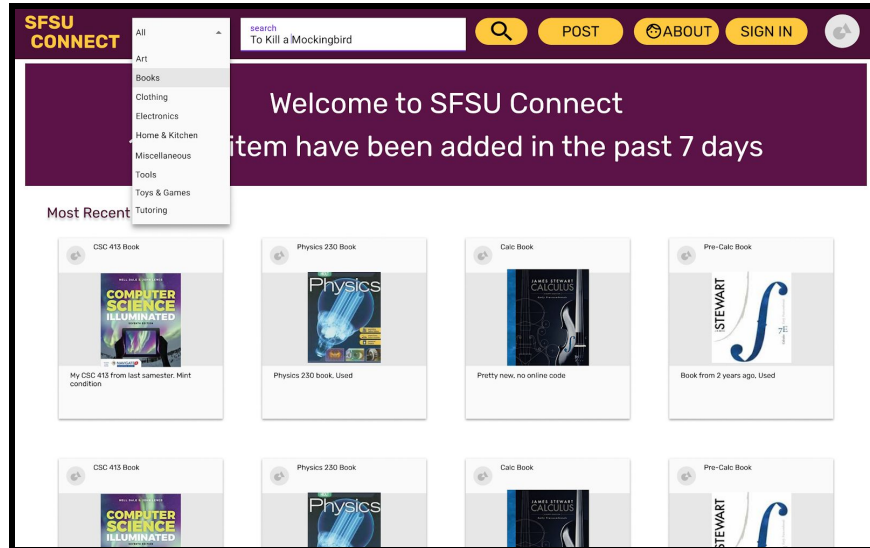


Mary starts at the *Landing* page of the website. She wants kitchen supplies so she selects "home & kitchen" from the *Category* drop down selector.

###search-results###
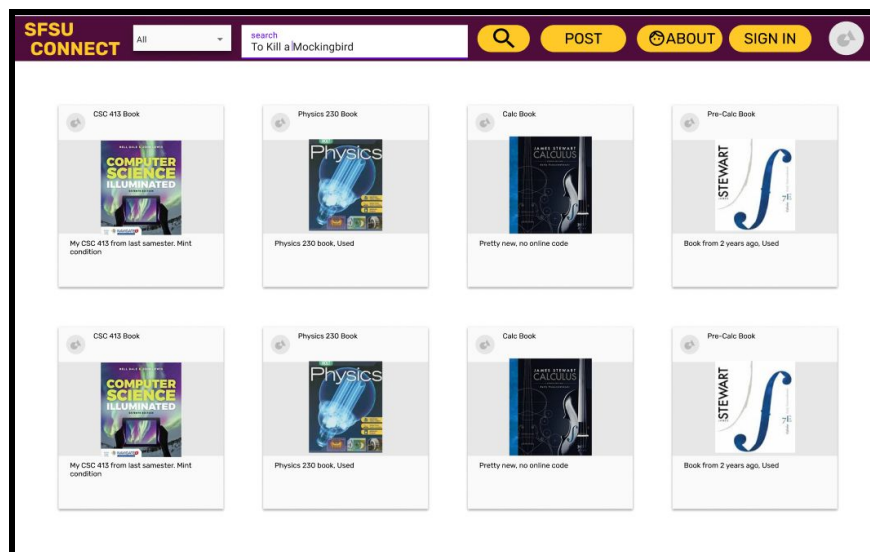


Mary sees all listings of kitchen items available on *SFSU Connect.* She sees a "cheese grater" listed and realizes that it is something she needs.

###about###



Mary wants to make sure this is a reliable website so she checks out their about page. She likes how she can see the people's pictures and descriptions.

###register###
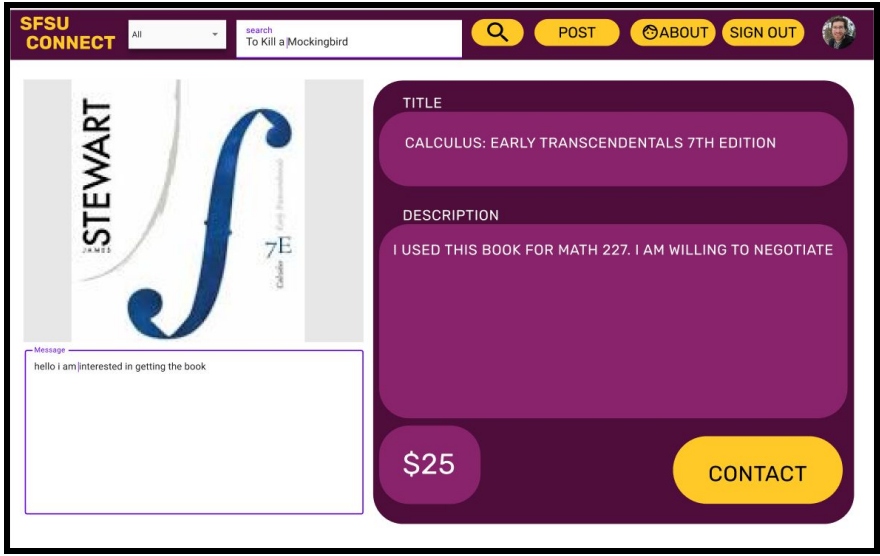


Mary then creates an account to purchase some kitchen supplies. After this Mary navigates back to the item page.

###item###



She clicks on contact to send a message to the seller and awaits a reply to sort out the rest of the details.
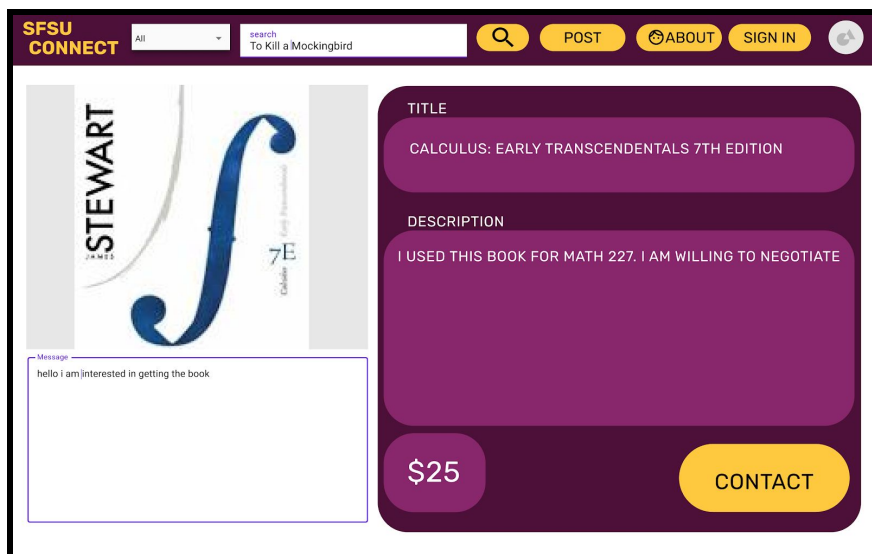
## Use Case 4

Mary is bad at math and needs one math course for her major. She knows she will need a tutor and decides to visit *SFSU Connect* to see what is available. She searches using the terms "Business Calculus" and selects "Tutors" on the *Category* drop down selector to narrow down her results. She sees there are two students available who tutor "Business Calculus." Mary clicks on the tutors post and clicks to contact them. The website asks Mary to sign in before she can continue. Mary sends messages to both tutors and they contact her immediately. After some communication Mary feels confident that either tutor would be appropriate for her class. She then negotiates a price with both tutors, one tutor having a much lower price. Mary agrees to the cheaper tutor but tells the other tutor she will keep their conversation saved in case it does not work out. The two then decide on a time and place to meet weekly. Mary has found what she needed through SFSU Connect.

###landing###
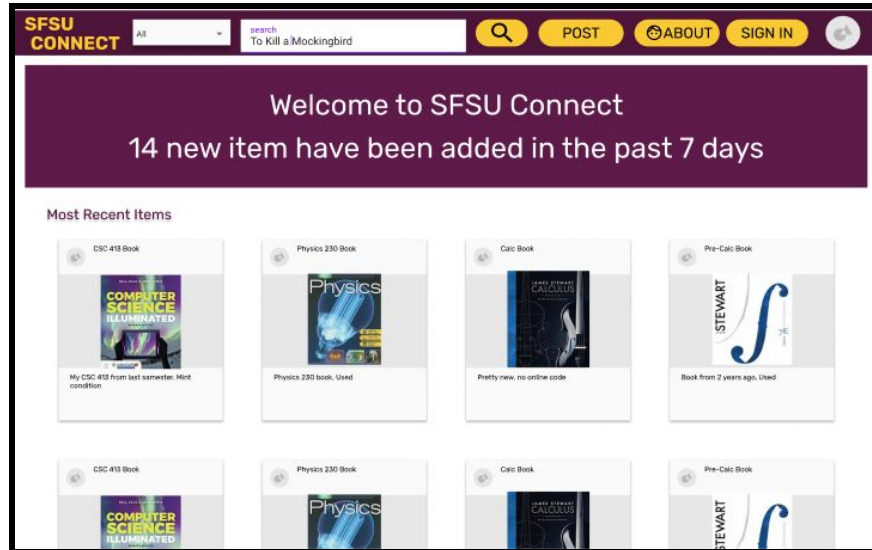


Mary is initially at the landing page of the website. She then goes to the drop down to search for a tutor.

###item###



Mary clicks on the tutors post and clicks to contact them.

### ###login###



The website asks Mary to sign in before she can continue.

### ###item###



Mary sends messages to both tutors and they contact her immediately.

# Use Case 5

Mary found some extra time in her week to make some money. She decides she wants to tutor in Spanish. Mary visits SFSU Connect and creates a post that she would like to start tutoring.  She lists her title as "Spanish Tutor" under 'Tutoring' so students can easily find her when they search the website. She states a basic description, profile photo, and the classes she is eligible to tutor for. A day goes by and Mary already has inquiries sent to her by direct message through the website. Now that she is connected to potential clients, she is able to communicate with each student and make sure they are the right fit for each other. Because Mary already stated her hours of operation and her skill level, most of the students were a good fit. SFSU Connect has made it easy for Mary to put her extra time to good use by taking advantage of all the site has to offer.

###sign-in###
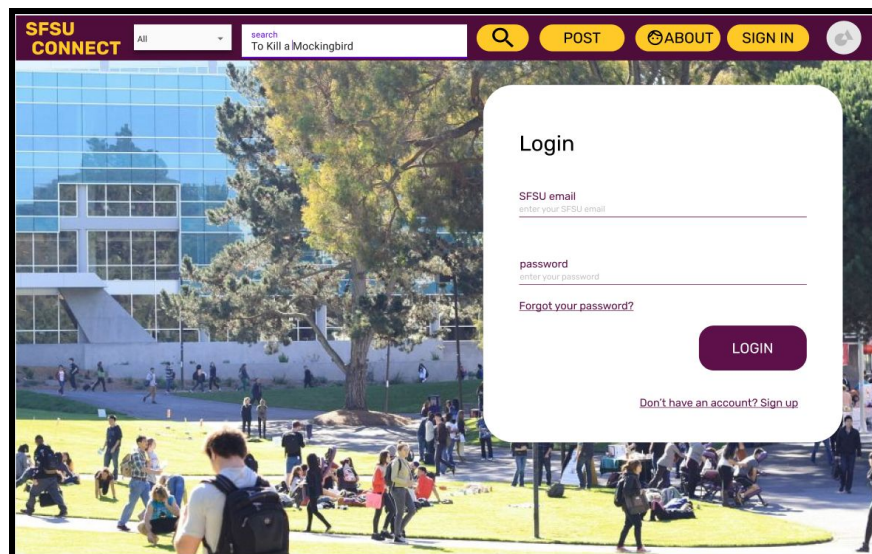


Mary already has an account so she logs in to begin with. Mary then goes to the new item page to list herself as a tutor.

###post###



Mary knows she can use the same page as posting an item but instead its a tutoring service. She can write all of her qualifications in the description box.

###inbox###



Mary checks her inbox the next day to find a couple of students have submitted inquiries regarding her tutoring.

# Use Case 6

Bob recently bought a microwave but it turns out he didn't really need it. Since it is still brand new, he wants to sell it and he comes across SFSU Connect. Upon entering the site, Bob realizes he can sell the microwave here to students or faculty members nearby. He would register for an account and list the microwave in the "home & kitchen" category along with other information. Bob waits until a buyer contacts him on the website and they will discuss the final details. Once they have an agreement, the buyer and Bob can meet up and do their exchange. Bob has successfully sold his new microwave.

###landing###
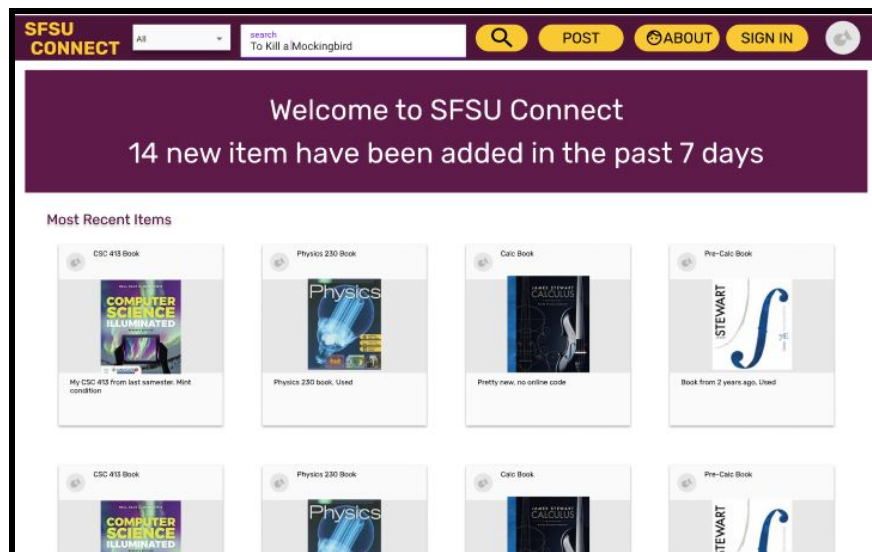


Bob initially visits SFSU connect. He clicks sign in to continue to sell on the website.

### ###sign-in###



Bob does not have an account so he clicks "Don't have an account? Sign up" which brings him to the register page.

### ###register###



Bob completes this form and is brought back to the landing page.

### ###landing###
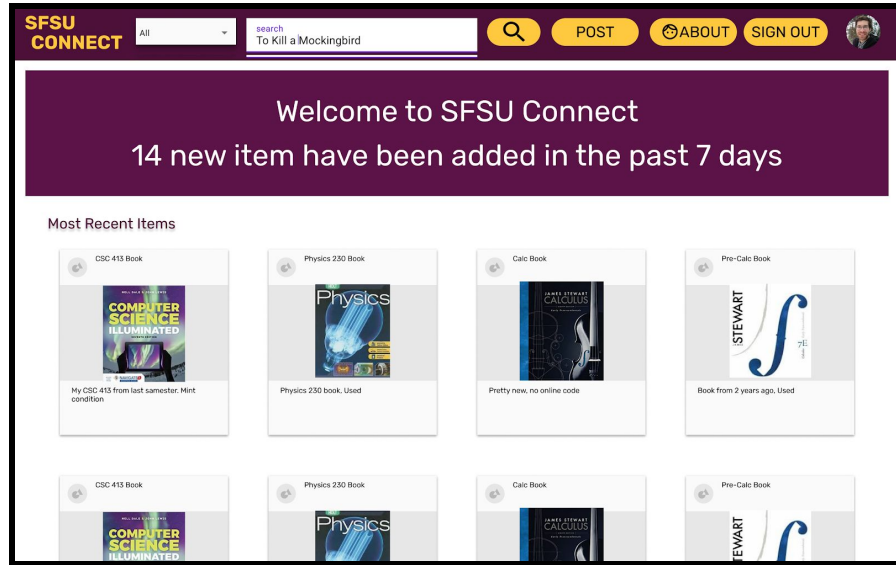


Bob then clicks post on the navigation bar in the top right corner.

### ###post###



Once he fills out all of the information he is brought to the post confirmation page

###item###

Thank you for posting
Your post will not be public until an admin has approved it

**Go back to Home Page**
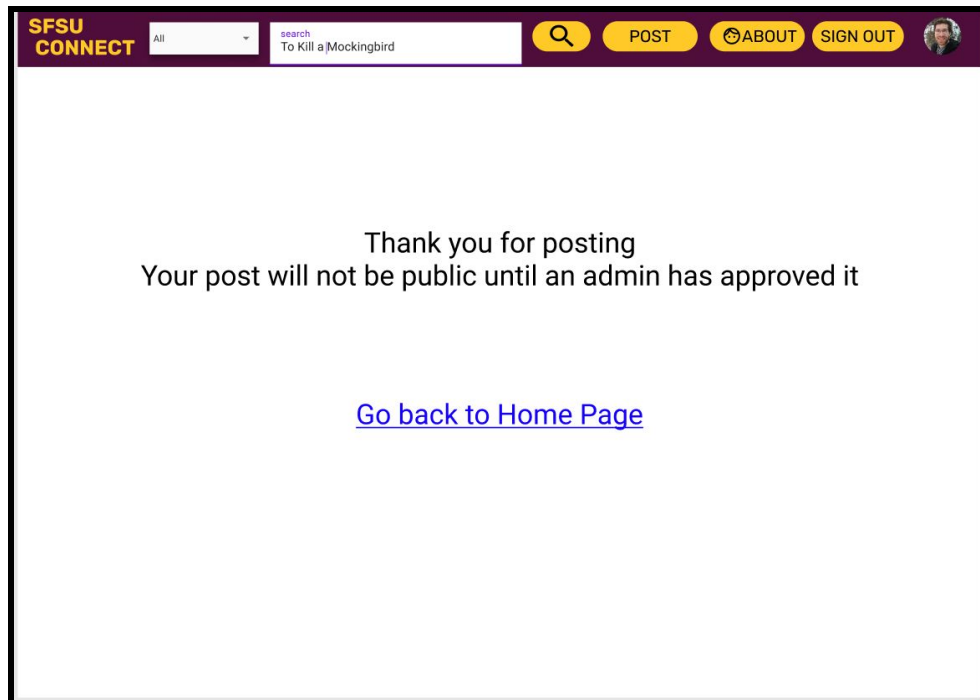
Once vetted by an admin, the post will be visible to those who visit the site.

## Use Case 7

Bob has recently been assigned to teach an extra course due to high demand. Since the semester is almost starting, Bob is in a hurry to gather some last minute materials for the course. He comes across SFSU connect and decides to browse through it. Bob eventually finds someone that was selling a book that he needed for the course. Bob logs into his account and messages the seller regarding the book. Upon making an agreement on both sides, Bob meets with the seller and buys the book. Bob is satisfied since he got the material without wasting much time.

### ###sign-in###
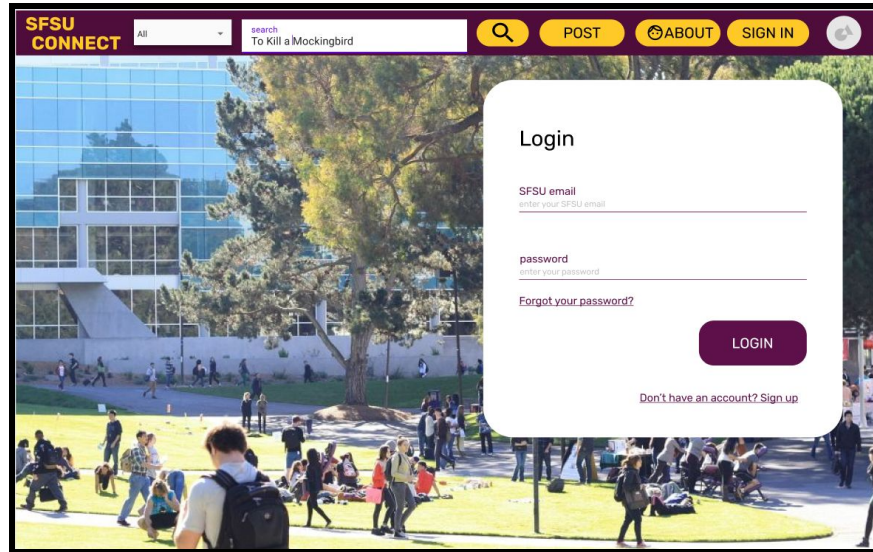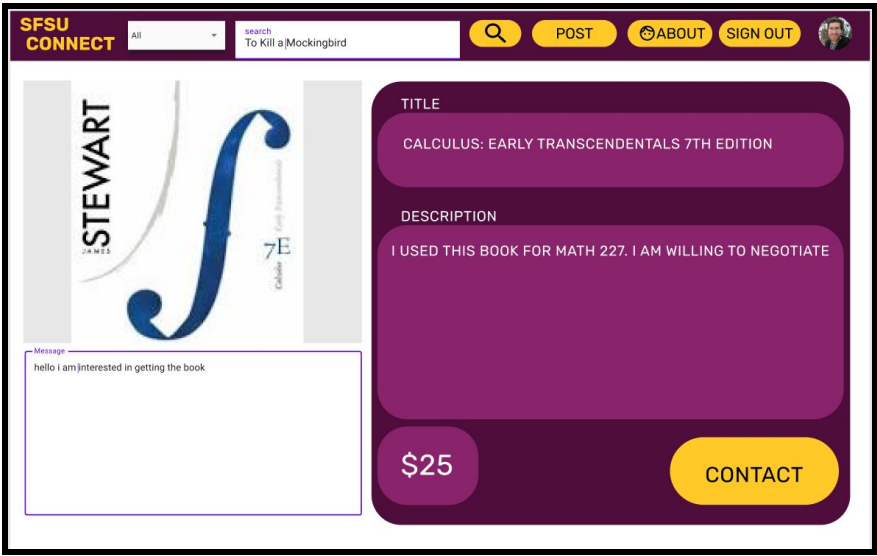


Bob already has an account so once he reaches the home page of the website he then needs to login. From here Bob goes to the search bar to find the book he is looking for.

### ###navbar###
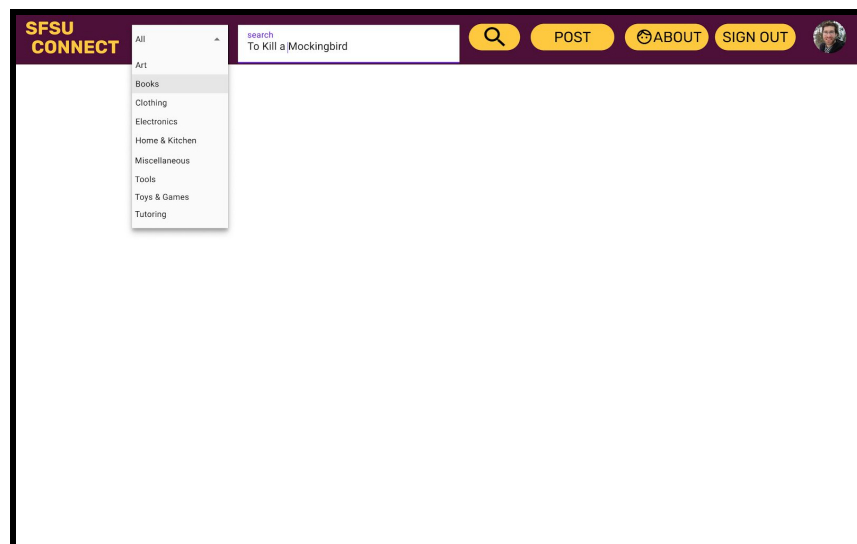


He clicks on a book that he was looking for.

###item###



He messages the seller and awaits a reply.

# High level Architecture and Database Organization

1.    Messages

    1.1.    idMessages

    1.2.    idUsers_sender

    1.3.    idUsers_reciever

    1.4.    subject

    1.5.    message

    1.6.    created

    1.7.    read/not read

2.    Users

    2.1.    idUsers

    2.2.    name

    2.3.    email

    2.4.    image

    2.5.    permissions

    2.6.    created

3.   Permissions

    3.1.   idPermissions

    3.2.   name

    3.3.   description

4.   Items

    4.1.   idItems

    4.2.   idUsers

    4.3.   idCategories

    4.4.   name

    4.5.   description

    4.6.   price

    4.7.   image

    4.8.   created

    4.9.   approved/not approved

    4.10.   adminMessage

    4.11.   available/sold

5.   Categories

    5.1.   name


All Images will be stored in the server's file system. The database will store links to the location of each image in the file system. We will not be storing video or audio.

The search algorithm to find items will be an SQL %LIKE search.

# Identify actual key risks for your project at this time

- skills risks (do you have the right skills),
  - Most members have no experience with html framework "pug"
  - Most members have no experience with "MaterializeCSS" framework
  - Some members have little experience with web development
  - Some members have little to no prior experience with javascript

- ○ Some members have little experience with database management
- ○ Some members have little experience with  SQL
- schedule risks (can you make it given what you committed and the resources),
  - ○ Frontend schedule risk is fairly high because some frontend members have little web development experience. It will be hard to gauge how long it will take each page to be transformed into code. That being said, I think that our frontend mockups are as basic as possible for now and are about as good as we can get it to be simple but still satisfy the functional requirements
  - ○ Backend schedule risk is fairly high because only a few members have worked on an express app before. However, I believe that expressjs is the easiest server framework to use. Therefore, while the risk is high, I do think this is the best option given the circumstances.
- technical risks (any technical unknowns to solve),
  - ○ One technical unknown we have is how we are going to categorize items posted.
  - ○ Some members have never saved a client side image to the server side. However, one member does have experience in this and will hopefully be able to handle the issue using skills he has previously learned.
- teamwork risks (any issues related to teamwork);
  - ○ Just need to make sure we meet our due dates and ask for help when we need it.
- legal/content risks (can you obtain content/SW you need legally with proper licensing, copyright).
  - ○ We do not have any foreseeable legal issues at this time.

# Project Management

- WireFrames & Mockups for M2 → Gerardo, Hong, Kevin, Taylor
- DB management → Cody, Gerardo
- Test AWS Expressjs connection to AWS MySQL Database → Robert