

# SW Engineering CSC648/848 Fall 2018

Team 9

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Milestone 1

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## **Executive Summary**

Each year, students attending SFSU are faced with the high costs necessary for course materials, and new students may have to purchase expensive living essentials, such as furniture. These expenses can add up quickly, especially considering that many students do not need the materials they purchased after the conclusion of each semester. Most materials are sold back to the original vendor for a fraction of the cost that they purchased it for, and many students who graduate no longer need the furnishings they purchased for college. Currently, there is not a platform on the market that offers a place for students to buy and sell school related materials locally. Our product will remedy that and provide a place for SFSU students who are seeking to sell their old school materials and furnishings to students who need them, for a price that satisfies both the buyer and seller.

Our application will provide a platform for people who wish to sell to SFSU students, and a place for students seeking deals on school materials and living essentials. We will combine key elements from competitive websites such as eBay and Amazon, but design our website to specifically cater to SFSU students. Our website will display featured posts on our homepage for new shoppers to view and provide categories for viewers to browse. Our categories will be specifically tailored for SFSU students, such as categories for materials for specific courses offered at SFSU. All listing will be sortable and interested buyers will be able to contact sellers through in app messaging to arrange meetings outside of the website. If any students or local residents are seeking to post items on our website, they will only need to fill out a posting and register with the site. Ultimately, our website will serve as a blueprint for other college campuses besides SFSU.

Our team consists of seven SFSU students. As students, we are aware of the high costs of attending college and are dedicated to bringing the best buyer and seller platform that we can to our fellow students.

## **Personas and Use Cases**

### **Personas**

#### Zachary

- SFSU first year student
- Uses shopping sites such as eBay, Amazon, etc.
- Prefers to stay on or close to campus since he is only familiar with campus area, also does not have a car
- Not from California
- Wants to sell items before returning home for summer

#### Robert

- SFSU second year student
- Has used shopping sites like eBay and Amazon
- Willing to meet at any location in Bay Area since he has a car
- Wants to save as much money as possible

Alice

- Administrator
- Trained in using administrator dashboard
- Has done moderating on other websites

## Use Cases

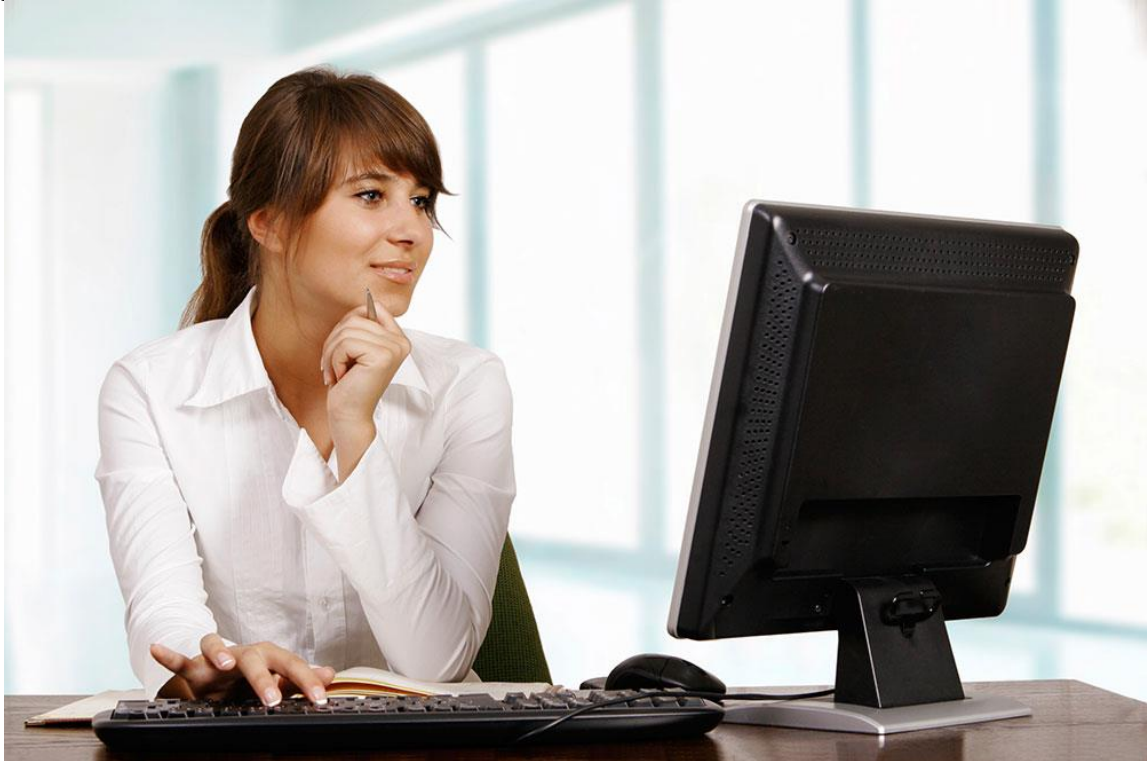
Zach is a first year SFSU student who needs to sell a television after the school year. Zach lives out-of-state, so he does not want to bring his television back home. Zach uses shopping websites like eBay and Amazon, but he wants to sell the television to fellow students. His friend tells him about the application, and Zach searches it up online. He looks around on all the links and pages and decides to list the sofa on the website. He creates his post and registers to post to the website. He posts a picture of the item he wants to sell, the description of the item, and his contact information on the website for any potential buyers to contact him. He is then asked to register on the website. Then he can view his posted item on the website and check to see if anyone has viewed his post.



Robert is a student who wants to buy a used textbook for his humanities class. He doesn't want to pay full price for a new book, so he wants to get a cheaper used textbook. He uses the web application to search for the book that he needs. He filters his search to find the cheapest textbook he can. Once he has found the right listing, he logs in to his already existing account and asks the seller about the condition of the book through the phone number that the seller provides only if the user wants to buy the book. Once he has received a response from the seller that the book is in good condition, he buys the book and drives to the place where the seller has arranged to meet.



Alice is an administrator for the application. Alice has an account that allows her to remove posts that are offensive or inappropriate and review reports from users. Alice can also ban users if they are found to be abusing the site rules and delete their accounts. Alice's account does not need the functionality of buying or selling since she is administrator, and only needs to have the functionality to read and remove posts as well as banning users. Alice also has a dashboard which allows her to read the complaints and reports from users that flag a post for inappropriate content.



### **Data Definitions**

1. Buyer: A user that is interested in buying goods through our service. Buyers must have made an account and are able to communicate with sellers.
2. Seller: A user that is interested in selling their goods through our service. Sellers must have made an account and are able to make a request to post a listing.
3. User: Any entity using our service. Users without an account shall be able to view listings, but are not able to interact with other users without making an account first.
4. Administrator: A user that will monitor post requests from sellers and verify whether a post is safe.
5. Post: A page about a good a seller makes, that needs to be verified as family friendly by an administrator. Posts shall have:
  - A picture of the posted item
  - A text description of the posted item
  - An approval status: each post must be approved by an administrator before it is posted for buyers to view

### **Initial list of functional requirements**

1. Selling: Being able to post an item with or without a picture uploaded and containing the price, condition, contact information, description, subject, and any SFSU classes that use this item. Will need a registered account to keep track of selling posts.
2. Buying: Being able to buy an item with or without an account as long as contact information is exchanged. Buyers shall be able to view posts and description without an account and payment option will only be in person to negotiate.
3. Browsing: Buyers shall be able to browse and search for items they are looking for. They shall be able to use a filter to filter by price from lowest to highest or vice versa. By default, the prices should already line up from lowest to highest.
4. Categories: In addition to Browsing, buyers shall be able to click on categories that turns into sub categories. For example, after clicking “Math”, the SFSU math courses and their course number will appear.
5. Registering: Sellers will have to sign in to post an item for sale. Registering will require an email and a password.
6. Terms of Service (TOS): Sellers will have to accept the TOS once for their account before they can begin posting items. Inappropriate items or illegal items will not go live after reviewed from the admin.
7. Administering: After a seller submits a post for sale, it will not go live until an admin reviews and approves of the post. If the post is rejected, the post will be saved as a draft for the seller to change and resubmit.
8. Accessibility: The website will automatically adjust and resize when using it on a desktop/laptop and on a mobile device.
9. Home page: The home page will feature the most viewed items/categories in the past hour/day and will have other links at the bottom; How to sell page, contact us page, about us page, How to buy page. There will also be a search box at the top to quickly search for an item and a “sell” button on any top corner that will also bring you to the How to sell page.
10. Messaging: Each item/post will have a button to send a message to the seller and start a chain of messages in order by date. Each user will have a different colored text bubble.
11. Seller Dashboard: The seller will have access to the seller dashboard which they can sort, manage, and edit their listings. They can choose to create new listings, delete existing listings, or edit a listing’s properties; price, picture, title, condition, etc.

### **List of non-functional requirements**

1. Application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in M0 (some may be provided in the class, some may be chosen by the student team but all tools and servers have to be approved by class CTO).
2. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of all major browsers: Mozilla, Safari, Chrome.
3. Selected application functions must render well on mobile devices.
4. Data shall be stored in the team’s chosen database technology on the team’s deployment server. MySQL 14.14 shall be the database that is used for storage. Apache 2.4.7 shall be the web server, hosted on Google Compute Engine 1vCPU 3.75 memory.

5. No more than 50 concurrent users shall be accessing the application at any time.
6. Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.
7. The language used shall be English.
8. Application shall be very easy to use and intuitive.
9. Google analytics shall be added.
10. No e-mail clients shall be allowed.
11. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated.
12. Site security: basic best practices shall be applied (as covered in the class).
13. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development.
14. The website shall prominently display the following exact text on all pages "SFSU-Fulda Software Engineering Project CSC 648-848, Fall 2018. For Demonstration Only" at the top of the WWW page. (Important so as to not confuse this with a real application).

### **Competitive Analysis**

Feature	Craigslist	Amazon	SFSU Bookstore	eBay	Our Product
Clean User Interface	-	+	+	+	+
Categories	+	+	++	+	++
Filtering	+	++	++	++	+
Featured Items	-	+	+	+	+
Easy to sell	+	-	-	+	+

Our product will provide an aesthetically pleasing interface comparable to our competition, as well as a featured items list on our home page. In addition, our product will provide categories targeted for SFSU students that websites like Amazon and eBay can't provide, such as textbooks for specific courses, similar to the SFSU Bookstore's website. We will also provide a filtering system to sort items, but not as comprehensive as the filtering that Amazon or eBay offers. Finally, our product will offer an easy platform for the average person to sell on, such as Craigslist or eBay. Ultimately our product will combine the key buyer/seller elements from leading competitors and cater to SFSU students specifically.

### **High-level system architecture**

Deployment Platform:

1. Server Host: Google Compute Engine 1vCPU 3.75 memory
2. Operating System: Ubuntu 14.04
3. Database: MySQL 14.14
4. Web Server: Apache 2.4.7
5. Server-Side Language: Python 3.4.3

Frameworks:

1. Flask 1.0.2

2. Bootstrap 4.1.3

Tools:

1. Pip 1.5.4
2. Virtualenv 1.11.4
3. Mysql 14.14

Supported Browsers:

Latest 2 versions of:

1. Mozilla Firefox
2. Google Chrome

## **Team**

Wagner Ayllon – Team leader, front end

Gordon Su – Front end

Alvin Lee – Back end team lead

Jake Carter – Back end

Tina Nguyen – Front end team lead

Martin Lee – Front end

Gary Deng – Back end

## **Checklist**

Meeting Time	DONE
Github Master	DONE
SW tools and deployment server	DONE
Back and front end frameworks	DONE
All team members have read final M1	ON TRACK