

SW Engineering CSC648/848 Spring 2022

GatorTrade

Team 5

Milestone 1

5 March 2022

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Table of Contents

Executive Summary:	3
Personae and Main Use Cases:	4
Personae:	4
Main Use Cases:	6
List of Data Items and Entities - Glossary/Definitions:	8
List of Functional Requirements:	9
Unregistered Users:	9
Registered Users:	9
Admin:	10
List of Non-Functional Requirements:	10
Competitive Analysis:	11
Technologies and Architectures:	12
Team Members and Roles:	12
Checklist:	12

1. Executive Summary:

Currently, there is a lack of a dedicated platform for the people of San Francisco State University (SFSU) to quickly and securely exchange goods. Students often try to find the cheapest and most efficient way to get the items they need for their classes. If a student wanted to sell a used textbook for a particular class, it is hard to do so since they would not be certain what type of platform other students would use to find used textbooks for sale. Although there are some undedicated places for SFSU members to sell their belongings like Amazon, SFSU Reddit, and SFSU Discord, they have less traffic and exposure since not every SFSU member would use or know about that platform. Having a dedicated platform can also provide a sense of safety for the users, especially since having a place to have secure transactions can allow for accountability to occur.

Our application will be tailored to the students and faculty at SFSU. All of the required materials needed for classes offered at SFSU will then be listed for sale in one place with the appropriate tags. Items specific to SFSU courses and programs that may not be easily available on other trading or e-commerce platforms will most likely be more accessible on this application. The platform will allow for SFSU students and faculty to buy, sell, or exchange items with one another. This means that the used textbooks and materials gathering dust in one's possession may no longer be considered useless or without purpose. Users of this application shall be able to search and filter through tags for the goods they are looking for. It can also be an outlet for artistic students to showcase their skills and sell handmade goods to fellow students and staff.

Our team is a student start-up composed of students at SFSU. Each member is well-versed in the problems and concerns we address with our application since we have all experienced it firsthand at least once. Therefore, it is safe to say that we know the target audience well because we are in fact part of that same target audience the application strives to appeal to.

2. Personae and Main Use Cases:

Personae:

Jennifer - Full-Time Student



<https://www.shutterstock.com/image-photo/smart-female-college-student-on-campus-193300418>

About/Personality	Goals/Scenario
<ul style="list-style-type: none"> • Full-time SFSU freshman with financial aid and student loan. • Is majoring in Psychology. • Uses smart-phone for social media and computer to watch k-drama. • Have basic WWW skills. • Is tight on money, so she likes to save up whenever she can. 	<ul style="list-style-type: none"> • She just found out the required textbooks for her class, so she wants to buy cheap and used physical textbooks to save money. She also wants to get them fast so that she can read ahead.

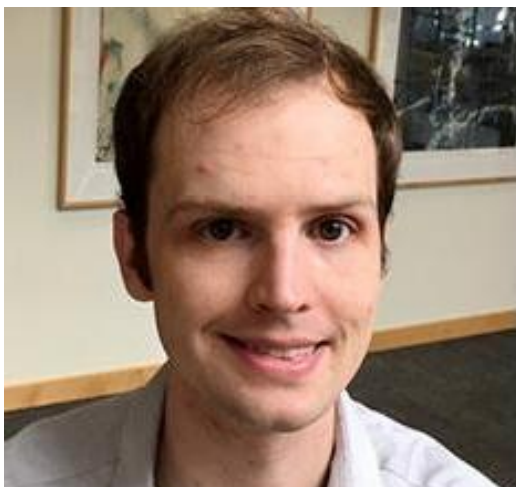
Jerry - part-time student,
full-time employee, father



<https://imgur.com/a/Tpj6Lsu>

About/Personality	Goals/Scenario
<ul style="list-style-type: none"> • Part time student at SF State • Works at an ice cream shop • Has to care for his young daughter • Limited time: Constantly rushing to get things done • Proficient WWW app skills • Has big hands so struggles navigating WWW apps on mobile • With his limited time and big hands he has low patience for WWW apps 	<ul style="list-style-type: none"> • He wants to know the required materials for each class and order them while navigating through as few pages as possible.(On his phone) • He wants to get his daughter a present but doesn't have the free time to go shopping. He wants to be able to search for gifts and contact a seller to set up a pickup to his workplace.

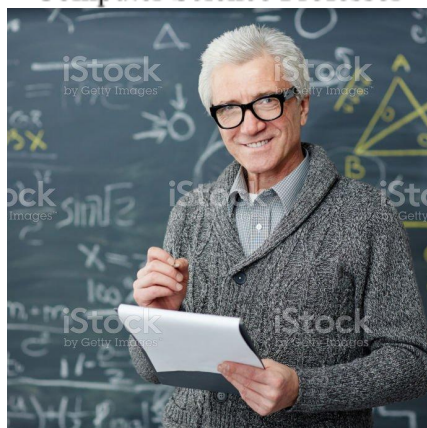
Robert - SFSU Faculty
Member, Registered Admin



<https://www.scs.gatech.edu/sites/scs.gatech.edu/files/styles/medium/public/images/mercury/scsnew2018.jpg?itok=5jEIXmae>

About/Personality	Goals/Scenario
<ul style="list-style-type: none"> Has worked at SFSU as an Office IT worker for ~2 years. Was previously a SFSU student, and is now an alumni. Is knowledgeable and patient when it comes to using and managing WWW apps. Has some free time during his work hours, and plenty after work hours. 	<ul style="list-style-type: none"> He was asked by a student if he could help manage the GatorTrade application part-time as an admin, and with Robert's prior experience in managing WWW applications, he agreed to help. Because of the amount of free time he has, he can manage the GatorTrade app on the side as an admin. If a SFSU student user of GatorTrade has posted an inappropriate item for sale, Robert will remove such items as soon as possible during his free time managing the application.

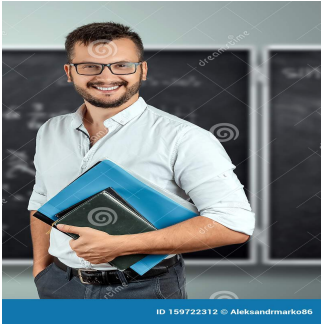
Franklin - SFSU Staff,
Computer Science Professor



<https://media.istockphoto.com/photos/teacher-with-document-picture-id905256730>

About/Personality	Goals/Scenario
<ul style="list-style-type: none"> Familiar with online shopping, has used Amazon before Has a busy schedule, doesn't like to click more than necessary Knows what he wants, isn't looking to browse 	<ul style="list-style-type: none"> Provide resources necessary for his students to succeed Do his tasks quickly and efficiently Coordinate with seller to make new listings

Steve - A graduate student at SFSU



<https://www.dreamstime.com/portrait-young-male-teacher-background-school-blackboard-teacher-s-day-knowledge-da-y-back-to-school-study-image159722312>

About/Personality	Goals/Scenario
<ul style="list-style-type: none"> • Very busy with work and study at same time • English major, excels at his analytical papers • Poor time management skills • Need help with his Math class • Average WWW skills, prefers mobile app 	<ul style="list-style-type: none"> • Struggling with Math class in the middle of semester • Wants to buy some resources that might be helpful with the class

Main Use Cases:

A. **Jennifer** - Buying a used textbook from GatorTrade

Jennifer is a **SFSU student**. She finds out about GatorTrade from an email sent by a **SFSU administrator**. She goes to the web site and searches for her courses' textbooks by typing in their name. She sorts the list of used textbooks from the search result by lowest to highest price. She doesn't care about editions because her course allows her to use older editions. After clicking on the **item** that she wants to buy, she is prompted to login or register an account. Since she is a SFSU student, she can register with her SFSU email and become a **registered user**. After registering, she is now allowed to send a one-way message to the seller, who is also a **registered user**. She sends her phone-number and shortly, she is contacted by the seller. They agreed to meet at the library to conduct the transaction. After the **transaction**, the seller goes to their post and removes it because they have sold the **item**.

B. **Jerry** - Getting Materials for class and personal shopping using GatorTrade

While Jerry is at work, he realizes that the semester is about to begin. He pulls out his phone and navigates to GatorTrade. Jerry finds searching up each of his classes one by one too tedious and opts to **login**. He quickly locates the large **login button** and enters his **username** and **password**. He is redirected to his **homepage** and as a **registered user** he can see his **Class Table** and sees all the **required and recommended materials**. Tapping on the **contact sellers** button next to each item he is able to contact each **seller**

who all agree to meet on campus to carry out the exchanges during his break. He then remembers that his daughter's birthday is soon but is too busy to go shopping. She's been getting into physical conditioning recently so she searches for weights under the Fitness and Exercise **category**. He eventually finds a set of dumbbells and contacts the seller who agrees to swing by his workplace tomorrow to complete the **exchange** since Jerry won't be able to make it to the campus tomorrow.

C. **Robert** - Managing the GatorTrade application.

Robert is a **Faculty member**. He was approached by a SFSU student to help manage the GatorTrade application as an admin. Using an **admin account** given to Robert, he can manage all **buy, sell, and exchange** postings on the application. He can browse through the listings on the **home page** or on any specific pages, and **edit** any listing as if he was the creator. From there, as an admin, Robert can **delete** the posting should it contain any inappropriate information. He can also **edit** the title, description, image, and other information of the posting.

D. **Franklin** - Listing class materials

Franklin is the **instructor** for a Computer Science class. He wants to add some **items** to the store. They are necessary materials for the class he teaches. These items include a **textbook** (physical or digital) and a software **license**. The textbook is not already listed on the website. Franklin **contacts** a textbook seller using the website. He tells the seller which textbook he wants **listed** and he also fills out a **form** that the website can use. Franklin's students are eligible for an education license for the software. The students are able to **redeem** their copies of the software license on the website

E. **Steve** - Exchanging notes on GatorTrade

Steve is a **graduate student** with an English major at SF State University. He also has a part time job on campus and often struggles managing work and study together. In the middle of the semester, he feels like he needs help with his Math class. While he was working, he only had a phone with him, so he used his phone to navigate through our website. On the website, he found a **post** from another student named Bucky for

exchanging notes. He also found notes for his Math class in the list of notes that Bucky wanted to give. So Steve **texted** Bucky using GatorTrade's **chat feature** and **traded** his English notes for Bucky's Math notes.

3. List of Data Items and Entities - Glossary/Definitions:

a. Key Users:

i. **Users:** People who are using the application.

1. **Unregistered_users:** They can view and search items, cannot send one-way messages or post items for sale, and do not need to login/register.
2. **Registered_users:** They can register if they have a valid SFSU email. They are allowed to view, search, post items, review other users, and send one-way messages. Will have a profile picture, username, password, notifications. They are required to login/register.
3. **Admin:** They have all the privileges and can access and modify permissions for all users. They also check items before other users are allowed to view them. They are allowed to delete any posts or reviews that violate the policies/terms/conditions.

b. Data items:

- i. **Items:** These are products listed by users to be sold or exchanged. Each item has a price and/or other items they are willing to exchange for, the user who posted it, the date it was posted, a brief description of the item, photo(s) of the item, and related tags.
- ii. **Reviews:** These are posts made by users of a particular seller. It includes the user who posted it, the user that is being reviewed, the item related to the review, and the date it was posted.
- iii. **Transactions:** It is the exchange of goods between users that includes the date it happened, the two users associated with the exchange, status of the exchange, and the item involved.

- iv. **Categories:** All different tags related to items, including but not limited to books, tech, food, supplies, notes.

4. List of Functional Requirements:

1. Unregistered Users:
 - 1.1. Unregistered users shall be able to register a new account with a valid SFSU email address.
 - 1.2. Unregistered users shall be able to access the homepage of the website.
 - 1.3. Unregistered users shall be able to browse items on the website.
 - 1.4. Unregistered users shall be able to view details of an item including price, image, item details, etc.
 - 1.5. Unregistered users shall be able to search for items on the website.
 - 1.6. Unregistered users shall be able to sort and filter search results with specific tags and labels.
 - 1.7. Unregistered users shall be prompted to create an account (lazy registration).
2. Registered Users:
 - 2.1. Registered users shall be able to login to their account.
 - 2.2. Registered users shall be able to edit their user profile picture.
 - 2.3. Registered users shall be able to change their password.
 - 2.4. Registered users shall be able to buy items on the website.
 - 2.5. Registered users shall be able to post items to sell on the website.
 - 2.6. Registered users shall be able to exchange items with other registered users.
 - 2.7. Registered users shall be able to delete items posted by them only.
 - 2.8. Registered users shall be able to send messages to other registered users.
 - 2.9. Registered users shall be able to receive messages from other registered users.
 - 2.10. Registered users shall be able write reviews for items from other registered users only.
 - 2.11. Registered users shall be able to logout from their account.

3. Admin:
 - 3.1. Admin shall be able to authorize newly registered users.
 - 3.2. Admin shall be able to authorize items posted by registered users.
 - 3.3. Admin shall be able to delete any item from the website.
 - 3.4. Admin shall be able to delete user accounts permanently from the website.
 - 3.5. Admin shall be able to add or delete categories of items from the website.

5. 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.
2. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers.
3. All or selected application functions must render well on mobile devices.
4. Data shall be stored in the database on the team's deployment server.
5. No more than 50 concurrent users shall be accessing the application at any time
6. Privacy of users shall be protected.
7. The language used shall be English (no localization needed).
8. Application shall be very easy to use and intuitive.
9. Application should follow established architecture patterns.
10. Application code and its repository shall be easy to inspect and maintain.
11. Google analytics shall be used.
12. No email clients shall be allowed. Interested users can only message to sellers via in-site messaging. One round of messaging (from user to seller) is enough for this application.
13. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated in UI.
14. Site security: basic best practices shall be applied (as covered in the class) for main data items.
15. Media formats shall be standard as used in the market today.
16. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development.

17. The application UI (WWW and mobile) shall prominently display the following exact text on all pages *"SFSU Software Engineering Project CSC 648-848, Spring 2022. For Demonstration Only"* at the top of the WWW page nav bar. (Important so as to not confuse this with a real application).

6. Competitive Analysis:

Key Features	GatorTrade	Competitor A: (SFSU Bookstore)	Competitor B: (Etsy)	Competitor C: (Craigslist)	Competitor D: (Ebay)
Sell a variety of products	+	+	+	++	++
Product Category (ie: tags)	++	+	+	+	+
Reviews for items/sellers	+	-	+	-	+
Communication	+	-	++	+	+
Browse for items	+	+	+	+	+
Exclusivity	++	-	-	-	-
Feature exists: +		Superior: ++		Does not exist: -	

Unlike the current market, our product will offer a user experience that will be easier for students to navigate. Students will easily be able to locate all the required or recommended materials for their classes. In addition, students are able to read reviews left by other users. All of this information will help students make a decision on whether they should make a purchase. In

addition, our product will offer services exclusively for students. Students may find offerings intended for students, such as discounted items or services.

7. Technologies and Architectures:

1. Server Host: AWS 1 vCPU 1 GB RAM
2. Operating System: Ubuntu 20.04 Server
3. Server Database: MySQL v8.0
4. Web Server: Apache v2.4
5. Server-Side Language: Javascript (Node v17.0)
6. Additional Technologies:
 - a. Web Framework: Express, Bootstrap
 - b. IDE: Visual Studio Code
 - c. Web Analytics: Google Analytics
 - d. SSL Cert: Lets Encrypt (Cert Bot)

8. Team Members and Roles:

1. **Team Lead:** Kishan Patel
2. **Front End Lead:** Michael Cheung
3. **Front End Member/Document Master:** Joanne Wong
4. **Back End Lead:** Faisal Zaheer
5. **Back End Member:** Juan Hernandez
6. **Back End Member/Github Master:** Ze Lei

9. Checklist:

1. So far all team members are engaged and attending ZOOM sessions when required. **DONE**
2. Team found a time slot to meet outside of the class. **DONE**
3. Back end, Front end leads and Github master chosen. **DONE**
4. Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing. **DONE**

5. Team lead ensured that all team members read the final M1 and agree/understand it before submission. **DONE**
6. Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.). **DONE**