San Francisco State University

SW Engineering CSC648/848 Fall 2020

GatorGoods

Team 08

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Milestone 1

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1. Executive Summary

The world has changed rapidly over the past few months as Covid-19 continues to impact the way we live. Obeying local governmental safety protocols, residents have largely chosen to stay home unless absolutely critical. This has given rise to an unparalleled explosion of online shopping. Shoppers have flocked to online outlets in search of everything from groceries to school supplies, and because of this, shipment delays are common. This is where we come in. While GatorGoods cannot fix the problem for everyone, we aim to at least alleviate some of the burden of waiting for those working, studying, and/or living at San Francisco State University (SFSU).

Our goal is to provide an online marketplace specifically designed and limited to students and faculty at SFSU. We will provide a single, consolidated web application where users can buy and sell items that others attending the university might need (no financial transactions will occur through the site). This includes school supplies, dorm furniture, clothing, and more. Due to our transactions being offered as an in-person meet-up agreement limited to safe spaces around campus, users will know for certain that they can get their supplies on their schedule, and without worrying about unnecessary shipping delays.

Our team is a small but highly dedicated start-up of four current students at SFSU. We are passionate about providing an easy, quick, reliable, and safe way for those of us on and around campus to buy and sell school supplies. Moreover, our ultimate mission is to provide users an opportunity to develop new relationships with their peers, and in doing so, strengthen our great Gator family.

2. Personae and main Use Cases

2.a. Personae

Jessica

Image by Anastasia Gepp from Pixabay

- **Characteristics**
  - First year SFSU student
  - History major
  - Excited to be on her own
- **Goals**
  - To pass all her classes
  - To meet new people
  - To discover new interests
- **Skills/Familiarity with Technology**
  - Great with social media apps
  - Uses cellphone, laptop regularly to access the internet
- **Frustrations/Concerns**
  - Nervous for the semester because she's never been on her own before

Nate

Image by Andrea Piacquadio from Pexels

- **Characteristics**
  - Fourth year SFSU student
  - Biology major
  - Ecstatic to be graduating
- **Goals**
  - To graduate on time
  - To find an entry-level position post graduation
- **Skills/Familiarity with Technology**
  - Uses computers frequently
  - Expert knowledge of SFSU iLearn and web systems
- **Frustrations/Concerns**
  - Doesn't know what to do with all his old school and dorm supplies

Professor Anderson

- **Characteristics**
  - SFSU Geography Professor
  - Old-fashioned teaching methods
  - Passionate about his classes
  - Loves the natural world
- **Goals**
  - To teach the required material
  - To inspire his students
  - To instill a passion for learning
- **Skills/Familiarity with Technology**
  - Uses computers infrequently
  - Uses cellphones even less
  - Knows how to Google search
  - Has a GatorGoods account

Image by Hatham from Unsplash

- **Frustrations/Concerns**
  - Concerned that forests are being culled for paper goods and single-use items
  - Doesn't want to see used books be discarded or destroyed

Julie

- **Characteristics**
  - Third year SFSU student
  - Computer Science major
  - Admin for GatorGoods
- **Goals**
  - To successfully moderate content on GatorGoods
  - To finish all her classes with A's
- **Skills/Familiarity with Technology**
  - Great with all technology
  - Routinely browses GatorGoods and knows it well

Image by Alexandra Lammerink from Unsplash

- **Frustrations/Concerns**
  - Doesn't want to spend all of her already reduced free-time moderating content

2.b. Use Cases

1. **Jessica** is an incoming freshman attending college for the first time in her life. She's incredibly excited but also extremely nervous because she's never lived on her own before. She's never gone through the process of scheduling college classes, so she doesn't know exactly what school supplies she'll need nor where to find them, and to top it off she doesn't have any dorm supplies either! Further, she barely knows the area surrounding the campus, let alone how the muni system works, so she isn't comfortable venturing into the city by herself yet. One of her suite mates tells her to check out GatorGoods for help getting settled in, so she finds the site on her phone and checks it out. Immediately she notices that there are easily browsable categories. She browses furniture for a bit before noticing a lamp she really likes. She clicks on the picture of the lamp which brings up additional information as well as an option to add the item to her favorites list. She tries to add the lamp to her favorites, but a prompt directs her to first create an account before favoriting an item. After entering a username, password, and SFSU email, she receives notification that her account has been created and then navigates back to the lamp. In that brief moment during registration, Jessica has decided that she actually wants to purchase the lamp as soon as possible, so she messages the user who made the product listing for the lamp with an offer, and hopes they'll respond!

2. **Nate** is a senior student about to graduate, and has no issues going through the process of finding school supplies and simply waits for professors to state what materials are needed for their classes in person so he doesn't end up purchasing unnecessary items. At this point in his academic career, his main focus is graduating, finding a job, and finding a way to get rid of his dorm furniture that he'll no longer need! He already has a GatorGoods account and has used the site to buy a used textbook last semester, so he's familiar with how the process of buying and selling works and knows he can possibly find buyers for his dorm furniture. He accesses the site on his laptop, logs in, and clicks the link to make a product listing. He decides to test run through the selling scenario by making a hypothetical product listing for his desk chair. GatorGoods takes him step-by-step through the process, having him fill in information about the chair before requesting he upload a picture of the item, and then directs Nate to either finalize the post, or to cancel it. He cancels the test run, but feels reassured knowing it's a simple and easy process to sell his items on GatorGoods once the semester is over.

3. **Professor Anderson** is a tenured and dedicated geography professor at SFSU. He loves teaching, and is always excited to greet the students in his new classes. However, he's decidedly less enthusiastic about cutting down trees to print new textbooks for courses that haven't changed their content from the previous semester. This, combined with the fact that he just recently received news that his new course was approved for lecture and will be offered next semester, means that he was in the perfect position to give his previous class' textbook a new home. Despite not being tech-savvy, Professor Anderson has found the process of registering an account with GatorGoods and making a product listing for his old textbook easy, even for him. One day between classes, he sits down in front of the aging desktop computer in his office and opens his browser to GatorGoods, where he logs into his account. He checks the status of his product listing, and sees that some interested users have recently messaged him with potential offers. He reads their offers and decides that he will respond to one of the users who have offered a fair price, proposing they meet in front of the San Francisco State University library tomorrow at noon to complete the transaction. That user immediately responds with an enthusiastic, "Sounds like a plan!" The next day after meeting with the buyer in-person and selling his textbook, he goes back to his office happy that no trees had to be culled for his old class, and marks his product listing as sold so that he stops receiving notifications of offers for the textbook he no longer owns.

4. **Julie** is a computer science major in her third year at San Francisco State University who's recently accepted an admin role for GatorGoods. She knows computers and technology like the back of her hand, and is well-versed in the layout and functionality of GatorGoods. While she has no struggles with accessing the site on her phone or laptop, her main concern is that she'll just get inundated with an abundance of flagged content, meaning that she'll have to decide whether or not those product listings violates the terms and agreements users must sign when creating an account. While she enjoys the role of admin, and has performed similar roles on online forums related to her computer science classes, she hopes the process will be streamlined enough so that she can make decisions quickly and efficiently and then get back to her studies. On the first day of her new role of admin, she logs into GatorGoods and sees a notification that there are product listings requiring her judgement. After reviewing the first flagged product listing, she decides that it does not break the terms and agreements of the site, and removes the flag - maybe somebody miss-clicked! When reviewing the second product listing however, it only takes a precursory glance to know it's not allowed on the site, so she opts to immediately delete the listing. That hardly took any time at all! She's relieved to find that moderating content on GatorGoods is as easy as it is efficient! Now back to her studies!

3. List of main data items and entities - data glossary/description

1. Unregistered Users
   1.1. Users who have yet to register an account on GatorGoods
2. Registered Users
   2.1. Users who have already registered an account with GatorGoods
3. Admin Users
   3.1. Registered Users with elevated privileges and are responsible for content moderation on the site
4. Messaging
   4.1. User-to-user interactions
5. Product Listing
   5.1. Listing belonging to a Registered User in order to sell an item

4. Initial list of functional requirements

4.a. Unregistered Users

1. Users shall be able to search items by category
2. Users shall be able to filter search results
3. Users shall be able to browse items by category
4. Users shall be able to register accounts by providing their username, password, and San Francisco State University email address

4.b. Registered Users

1. Users shall have complete functionality of an Unregistered User plus the following:
2. Users shall be able to log into their unique accounts by providing their username and password
3. Users shall be able to modify their account information
4. Users shall be able create product listings
5. Users shall be able to delete their product listings
6. Users shall be able to edit their product listings
7. Users shall be able to contact the selling parties of items posted
8. Users who have product listings shall be able to respond to buyer inquiries
9. Users shall be able to report inappropriate content to Admin Users
10. Users shall be able to add items to their favorites list
11. Users shall be able to delete items from their favorites list
12. Users shall be able to see pending notifications and contact requests from other users

13. Users shall be able to see a listing of all their product listings

4.c. Admin Users

1. Users shall have complete functionality of a Registered User, plus the following:
2. Users shall receive notification of flagged product listings
3. Users shall be able to moderate content on the site through the following means:
   3.1. Deleting flagged product listings
   3.2. Remove flags from product listings

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 (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 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 and all privacy policies will be appropriately communicated to the users
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 e-mail 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 <u>prominently</u> display the following <u>exact</u> text on all pages *"SFSU Software Engineering Project CSC 648-848, Fall*

2020. For Demonstration Only" at the top of the WWW page. (Important so as to not confuse this with a real application)

6. Competitive Analysis

Feature	**Amazon**	**Ebay**	**Craigslist**	**SFSU Bookstore**	**GatorGoods**
Search by Category	++	++	+	+	+
Browse by Category	++	+	+	+	++
Communication between Users	-	+	+	-	+
Save to Favorites	+	+	+	+	+
Report Inappropriate Content	+	+	+	+	+
Limited to SFSU students/ staff	-	-	-	+	++

- = not implemented + = implemented ++ = excellent implementation

GatorGoods aims to distinguish itself from its e-commerce competitors by capitalizing on its target demographic of SFSU students and staff, limiting its design approach to a user-friendly, elegant layout, and by making the entire process of buying and selling items as simple as possible, while also providing implementations of the features users are accustomed to seeing on online marketplaces. Despite corporations like Amazon, Ebay, and Craigslist being established and engrained into broader society, they are unable to limit their scope to SFSU customers specifically, which means they are unable to take advantage of tailoring their sites to directly tackle the needs of our potential users. Further, despite the SFSU Bookstore restricting certain items from being sold to the general public, they perform the role of a simple supplier, without capitalizing on the community aspect of the university. GatorGoods not only directly targets the members of that community by restricting outside access to the site, but it also enables users to perform their own transactions between one another, building a greater sense

of community as a whole for the Gators, and which in turn will help expand our site's reach.

7. High-level system architecture and technologies used

- Hosting/Server: Amazon Web Services - EC2: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)
- Operating System: Ubuntu Server v18.04
- Database: MySQL v8.0
- Web Server: Node.js v14.8
- Server-Side Language: JavaScript
- Front-end Framework: React
- Web Framework: Express
- CSS Framework: Bootstrap
- IDE: Visual Studio Code, WebStorm

8. Team and roles

- Keith Eastman, Team Lead
- Trenton Smith, GitHub Master | Editor
- Zhuozhuo (Joy) Liu, Front-end Lead
- Yugyeong (YG) Lee, Back-end Lead

9. Checklist

- So far all team members are engaged and attending ZOOM sessions when required | **DONE/OK**
- Team found a time slot to meet outside of the class | **DONE/OK**
- Back-end, Front-end Leads and GitHub Master chosen | **DONE/OK**
- Team decided and agreed together on using the listed SW tools and deployment server | **DONE/OK**
- 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/OK**
- Team Lead ensured that all team members read the final M1 and agree/ understand it before submission | **ON TRACK**
- GitHub organized as discussed in class (e.g. master branch, development branch, folder for milestone documents, etc.) | **ON TRACK**