

CSC 648-848 01 Fall 2019

Gator Trader

Team 05

Milestone 01:

Use Cases, High Level Requirements, & Architecture

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- Anmol Gondara
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Date	Description
9 / 28 / 2019	First Draft Complete
9 / 30 / 2019	Revision on class notes
10 / 1 / 2019	Final Draft
10 / 7 / 2019	Final Draft Revised

Executive Summary:

Welcome to **Gator Trader!** A website designed by students, for students; so you know the product is something the demographic will want and need. This website offers a safe and reliable way for students at San Francisco State University to both buy and sell items that are essential to being a student in 2020. Some of the items students will find on our site are: Furniture, Electronics, Books, Miscellaneous School Supplies, Tutoring Services, and more! What sets *Gator Trader* apart from other buy/sell/trade websites is the safety of trading with verified students at SFSU at a public location designated by our website and SFSU. *Gator Trader* is bringing a never-before-felt sense of security to person-to-person trading by ensuring that the users on the site are indeed students at SFSU (verified via SFSU ID # as this is an extension of the SFSU website!), as well as trade locations at the Blue Security Poles on campus to increase visibility of trades. These locations are already placed strategically by the SFSU Police Department across the SFSU campus.

As an added benefit, if a trade doesn't go according to plan, the Blue Pole locations are all near public access points to which either trading party can retreat to for safety. We encourage all of our users to make trades during regular school hours, as well as be equipped with the SFSU Police & Security phone numbers in the event of an uncomfortable trading situation as sometimes even our own student body has poor intentions. Though we cannot stop these individuals with malicious intent, the bases of our site is that all individuals are known students and can thus be tracked and found via their unique SFSU ID.

Our team is made up of 6 highly dedicated computer science students all based out of SFSU. We have combined our love for web design with our long-running need for quality student gear, which is a cornerstone for student success. Now, getting the gear you need for a successful semester will be an easy task here at *Gator Trader!*

Personae and Main Use Cases:

Name: Ben

Major: Second Year Film Studies major

Wants:

- To check out what other students are offering
- Save money
- New school gear

Struggles with:

- Time management
- Money management
- Finding good deals

Name: Annie

Major: Second Year Nursing major

Wants:

- Sell old items in the safest and most convenient way possible

Struggles with:

- Short on time, needs to get rid of old items ASAP

Name: Doug

Major: First Year Physics major

Wants:

- Looking to buy textbooks and other materials for specific upcoming courses

Struggles with:

- Doesn't want to spend too much time searching for the correct supplies

Name: Steve

Major: Second year Computer Science major

Wants:

- Simple interface that is easy to understand and use

Struggles with:

- CS major workload conflicting with admin responsibilities

1. **Use Case: Ben** - An unregistered user, Ben, wants to find out if peers at SFSU are selling a used computer in his price range. Ben is an average student at SFSU, he has decent exposure to the web but can't understand code at all. Ben

goes to our website and lands on the home page. Ben has no specific computer in mind so starts browsing for a computer. Ben is now able to view all the listed computers available. He then filters the results by cheapest price first. Ben sees a MacbookPro that he likes within his range, so he clicks on the post. Ben now sees multiple pictures of the computer as well as a description. Ben decides the computer is right for him, so he moves forward to contacting the seller, at which point he is prompted to log in.

2. **Use Case: Annie** - Annie, a nursing student at SFSU, has an item that she doesn't use anymore and wants to sell conveniently. She heads to our site and is directed to our home page, where she can begin the selling process. Before doing so, Annie uses the search to look up her item in order to get a sense of if others are selling the item and what it is valued at. She then begins the selling process. Here, Annie adds a description of her item, the price at which she would like to sell, and a picture of the item. After posting the item, Annie is then prompted to log in. After logging in Annie messages the buyer, sets up a time at a decided Blue Pole location, and conducts the sale in person at the meet up spot.
3. **Use Case: Doug** - Doug, a first year physics major, is in the process of buying a used textbook for his upcoming semester. He found the book he needs, contacts the seller, and attached a personal message to the inquiry. He comes to the site to check the status of the buy, luckily the seller is still interested and has responded to Doug, which Doug knows due to a notification. Doug uses the messaging system to select a time to meet and confirms which Blue Pole to meet.
4. **Use Case: Steve** - Steve is a second year computer science major with a good understanding of permissions and administration. Steve has access to the

Administrative page and is known in the GatorTrader database as an administrator. Steve sits down to work on his administrative role; he heads to our site, logs in like everyone else, and after verification is directed to a new page for approving / denying posts. This is a necessary role as registered users need to be refrained from making inappropriate/irrelevant listings.

List of main data items and entities:

- **Unregistered User:** A user who does not have an account or is not currently logged in. They use the website to browse the listings available, and create an account.
- **Registered User: All of unregistered user +** user has an account and is currently logged in. They are also able to contact the sellers and exchange messages for a sale / potential buy. Registered user elements include: valid email, student ID, username, password.
- **Administrator:** A user who has heightened privileges on gator trader; access to the website database. Here, the admin can perform tasks such as approving users and approving or vetoing posts by students.
- **User Chat Dashboard:** A page that a user can go to in order to find the listings they have made for sale as well as a listing of messages to potential sellers. Here the user will finalize a potential sale and will be assigned a Blue Pole.
- **Items:** Items are the specific listing from a user in the for sale page. The items must have a Title, Description, price, and at least one Image to associate with the post.

Initial list of functional requirements:

1. Unregistered User

- a. Shall be able to browse through listed items for sale
- b. Shall be able to view the details of each post
- c. Shall be able to sort the posts by price, newest post
- d. Shall be able to become a registered user

2. Registered User

- e. **Shall be able to do all of unregistered user +**
- f. Shall be able to log in to their account
- g. Shall be able to log out of their account
- h. Shall be able to contact a seller
- i. Shall be able to post items for sale

- j. Shall have access to the registered user dashboard for messaging
- k. Shall have access to registered user dashboard for personal post management

3. Administrator

- l. Shall be able to access the database of Gator Trader
- m. Shall be able to approve / deny potential posts to Gator Trader
- n. Shall be able to Suspend / Ban accounts for terms violations
- o. Shall have access to Google Analytics for Gator Trader

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. 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.
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 email clients shall be allowed
11. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated in UI.
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 Software Engineering Project CSC 648-848, Fall 2019. For Demonstration Only" at the top of the WWW page. (Important so as to not confuse this with a real application).

Competitive analysis:

	Craigslist	Ebay	Amazon	Gator Trader
Exclusive to SFSU students	—	—	—	+
Search by class	—	—	—	+
Browse without an account	+	+	+	+
In-person transaction	+	—	—	+++
Services for hire	+	—	—	+
Safe transaction area	—	—	—	+++

— does not have feature, + has feature, +++ feature is superior

Our website is superior to the competition because it offers features that specifically cater to SFSU students. Being that this website will be used exclusively by SFSU students, we are able to implement features and functions that the population outside of SFSU would not appreciate. These features include a search by class option, allowing students to search for items listed that may pertain to that class. Possible listings could be textbooks or even tutoring services, a product that would not be able to be listed on most buy/sell websites. Being that most users will be living near campus or visiting campus multiple times a week, we are limiting the payment to strictly in-person transactions and providing a map that offers multiple safe meeting locations to ensure the safety of both parties involved.

High-level system architecture and technologies used:

Platform

- Ubuntu 16.04.6 LTS
- AWS Web Server
 - 1vCPU 8GB RAM

Frameworks

- Server side language
 - Node.js v10.16.3
- Web server language
 - Express.js v6.9.0
- Server database
 - AWS MySQL v8.0.16
 - db.t2.micro
 - 1 vCPUs
 - 1 GB RAM
 - 20 GB Memory
- Additional server tools
 - HTTP server: NGINX v1.10.3 (Ubuntu)
 - Process manager: PM2 v3.5.1
- Web Framework
 - HTTP/CSS/Javascript, Bootstrap

APIs

- Google Analytics

Tools

- Github
- IntelliJ IDEA 2019.2, Sublime Text 3

Supported Browsers

- Google Chrome 76.0.3809 and 77.0.3865
- Mozilla Firefox 69.0 and 69.0.1

Team and roles:

1. Anton Abramson - Front-End Lead
2. Anmol Gondara - GitHub Master & Front-End Developer
3. Grayson Mical - Team Lead
4. Daniel Gutierrez - Back-End Lead
5. Hayato Waki - Back-End Developer
6. Samjot Singh - Front-End Developer

Checklist:

Task:	Status: (Done/ On Track/ Issue)
Team found a time slot to meet outside of the class	Done (2pm Mondays)
Github master chosen	Done (Anmol)
Team decided and agreed together on using the listed SW tools and deployment server	Done
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
Team lead ensured that all team members read the final M1 and agree/understand it before submission	Done
Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)	Done