

SW Engineering CSC648/848 Spring 2022

GatorBay

Team 6

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Backend Lead: Michael Davichick

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Milestone 1

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1. Executive Summary

San Francisco State University is located in the most ideal place with very comfortable weather year round. SFSU is famous for being located in the Bay which is one of the most visited spots in the country by tourists. It is also famous for being only a stone's throw away from the world's tech hub Silicon Valley and fostering an environment in which a student can feel comfortable and therefore more able to learn. One of the greatest unfortunate downsides of attending a University surrounded by some of the best minds this world has to offer is the cost of Attendance. The average college student attending has student loans and credit card bills. Students are looking for any way to help reduce their financial burden while attending SFSU in any way they can. The leading cause of student financial debt at SFSU are the required books and electronics needed for attendance and furniture for new students.

Thanks to the enginuative thinking from team 6 those debt ridden individuals will have a way to save more money. GatorBay is a web app that would allow students, staff, and faculty to purchase and sell books, electronics, furniture and clothing from other students, staff and faculty. In many cases the student will have to pay nothing due to Gator Bay's exchange option. The ability to receive these items any time day or night is an added bonus for people in a rush.

All of us from Team 06 acknowledge that Students, Faculty, and Staff could use a website that curtails more to them. That is why Team 6 has decided to build GatorBay. GatorBay will offer the exchange of goods such as Furniture, Clothes, Books, and electronics. What makes GatorBay so unique is that it is exclusively for SFSU Students, Faculty, and Staff. That along with our 24/7 operating hours at safe locations throughout SFSU we help to assist in the ease of making transactions in a non-harmful environment. Team 06 is dedicated to making this dream a reality.

2. Personae and Main Use Cases

a. Lisa - Student at SFSU



- About Lisa:
 - Full time student
 - Limited budget
 - Lives at home
- Goals and scenarios:
 - Lisa is on a limited budget and needs new books for her classes
 - She has an excess of books from previous classes and is looking for other students to exchange books with.

b. Alex - Student at SFSU



- About Alex:
 - Lives on campus
 - Part time student
 - Works two jobs
- Goals and scenario:
 - Be able to balance work and school to graduate with a Bachelor's Degree on time.
 - First year at SFSU

c. Samantha - Professor at SFSU



- About Samantha:
 - Is a senior professor at SFSU
 - Has written own book for class
 - Chair of her department
- Goals and scenario:
 - She is considered a residential expert in her field of work and has often written books for the class she teaches. To help out her students he offers a 10% discount.

d. John - Admin of application



- About John:
 - Graduated from SFSU with a computer science degree
 - Created a social media app for his senior project
 - Very attentive to detail
- Goals and scenario:
 - From his past project experiences, John understands the importance of moderating content of social media.
 - As not only an admin but an employee of the application, it's very important to John that nothing offensive gets posted that may drive away investors.

3. Main Use Cases:

- Selling a product

As a senior Professor, Samantha has written many books for her students. She noticed that when she sells through the bookstore, the price would be greatly increased, leaving some students not having the ability to purchase a new book. Samantha wants to be able to sell her books at an affordable price for students.

- Buying a product

Being a new student living at SFSU, Alex is already on a tight budget. Upon arrival, Alex notices he requires furniture for his dorm room and electronics. Alex wants to be able to find local furniture online to furnish his new dorm room while being on a tight budget.

Alex works two jobs and isn't available to pick up new furniture and electronics at reasonable times. With GatorBay's 24/7 Pickup option for SFSU Community, Alex is able to pick up items whenever it is convenient for him.

- Exchanging a product

Lisa has just started her junior year at SFSU. She is in need of new textbooks for her classes this semester but is on a tight budget and only has her old textbooks that are no longer of any use to her to barter with. Lisa logs into her registered *GatorBay* account and sees that another student has posted the exact textbook she needs listed for an exchange. Since Lisa has registered her account, she is able to check the details of the exchange and sees that she owns one of the books that the poster is looking for along with her contact information. Lisa then contacts the other student for an exchange of books; of which they are then instructed to meet at one of the designated safe local meet up areas, the SFSU Library. Lisa was able to obtain a new book for her class and get rid of an old one without spending a dime.

- Approving a post

A newly graduated student, John has just landed the first job of his career as an admin of the newly created *GatorBay*. From his past experiences of creating a social media app, John understands the importance of monitoring posts prior to them being in the public eye, therefore he is required to approve all posts before they go live. Excited and eager to start his day, John logs into his employee admin account and sorts through the list of posts awaiting approval. He soon discovers one post that was redirecting users to a fraudulent site and immediately rejects the post, ensuring the site is safe for all users to enjoy.

4. List of Main data items and entities -data glossary/description:

- a. Product - A product serves as a placeholder for all items sold on the site. There are as follows:
 - i. Books
 1. Textbooks
 2. Magazines
 3. Novels
 - ii. Electronics
 1. Laptops
 2. Cell Phones
 3. TVs
 - iii. Furniture
 1. Tables
 2. Chairs
 3. Couches
 - iv. Clothing
 1. Shirts
 2. Pants
 3. Jackets
- b. Unregistered User - Unregistered users are able to browse posts but are required to log in / register when attempting to purchase, exchange or sell.
- c. Registered User - Registered users can not only browse but post sell orders, purchase and exchange. Contact information regarding the poster is only visible to registered users as a safety precaution.
- d. Admin - can do everything a Registered User can do and can approve or delete posts from other Registered Users.
- e. Buy - Purchase products that Registered Users post.

- f. Sale - A transaction between two Registered Users.
- g. Exchange - Exchange products that Registered Users post.

5. Initial list of functional requirements

1. Unregistered: Unregistered users shall be able to browse posted items and can create an account. The Unregistered shall also be able to search for specific posts.
2. Registered: Registered users shall inherit everything unregistered users have in addition to other features such as:
 - i. Buy, sell, exchange, post, delete own account.
 - ii. Select drop off location:
 1. From the library, Cesar Chavez Student Center, or SFSU Police Headquarters.
 - iii. Select time of exchange.
3. Admin: An admin shall have access to everything a Registered user has access to. Additionally an Admin shall be able to approve or disapprove posts requests, and shall be able to remove posts or ban registered users.

6. List of non-functional requirements

- **System requirements:** describe the system requirements (architecture, system services, networks, platforms etc.)
 - Server Host: Google
 - Operating System: Linux
 - Server Database: MySQL
 - Web Server Node JS
 - Server-Side Language: JavaScript
 - Additional Technologies:
 - Web Framework: Bootstrap
 - IDE: Visual Studio, VS code
- **Usability requirements:** describe specific usability and UI issues, users who will use the system, delivery clients
 - Anyone on the website can search for posts without logging in.
 - Registered users can create posts and see the user's contact information from already approved posts.
 - Admins are required to approve posts prior to being visible to the public.
- **Performance requirements:**
 - Average latency will be 150 ms for refreshing pages and after posting or creating a new account.
 - Accuracy will be 97 percent so every one hundred requests sent to the server, a maximum of 3 errors shall be thrown.
 - Bandwidth is a maximum of 7 gigabytes of flow from up to 50 external IP addresses and a maximum of 3 gigabytes of flow from one IP address.
- **Storage, security, environmental requirements:**
 - MySQL database provides secure connections, authentication services, fine-grained authorization and controls as well as data encryption.
 - All passwords will have a separate encryption process prior to being stored on the back end for verification.
- **Marketing, legal requirements (logos, branding, licensing):**
 - No logos currently exist or are present for GatorBay

- No branding currently exists for GatorBay
- No licensing currently exists for GatorBay
- **Content (size, formats...):**
 - Design for desktop displays from 1024x768 through 1920x1080
 - Design for mobile displays from 360x640 through 414x896
 - Design for tablet displays from 601x962 through 1280x800
- **Privacy (what data is collected, how is it used...):**
 - Username and passwords are collected for logging in.
 - Post history for admin moderation

7. Competitive Analysis:

Product	Safe Transaction	Saves Money - No Shipping fee	24/7 Pickup	Explicitly for the SFSU Community
Ebay	✗	✓	✗	✗
Amazon	✓	✓	✗	✗
Craigslist	✗	✓✓	✗	✗
GatorBay	✓✓	✓✓	✓✓	✓✓

✓ Feature exists; ✓✓ Superior, ✗ does not exist

Ebay, Amazon, and Craigslist offer ways to purchase and sell the items mentioned. GatorBay offers the safest transaction because the individuals using the site are verified students, faculty, or staff at SFSU. Only GatorBay and Craigslist offer no shipping fees due to the face-to-face exchange and in doing so, lowering the cost. The one thing that sets GatorBay apart is the ability for 24/7 pickup at SFSU. Ebay, Amazon, and Craigslist do not have this capability.

8. High-level system architecture and technologies used:

- Server Host: Google Compute Engine
- Operating System: Linux
- Server Database: MySQL
- Web Server: Node JS
- Server-Side Language: JavaScript
- Web Framework: Bootstrap and React
- IDE: Visual Studio, VS code

9. Team and roles:

- Team lead: Bobby Roots
- Backend Lead: Michael Davichick
- Backend Member: William Rattan
- Frontend Lead: Michael Wang
- GitHub Master: Michael Almeda

10. Checklist:

- So far all team members are engaged and attending ZOOM sessions when required
 - ON TRACK
- 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 ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing
 - ON TRACK
- Team lead ensured that all team members read the final M1 and agree/understand it before submission
 - DONE/OK
- Github is organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)
 - DONE/OK