SW Engineering CSC648/848 Fall 2019

Team 14

Milestone 1

Gator Trader:

Use cases, High Level Requirements and Architecture

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Date submitted	Date revised
10/02/2019	

Executive Summary

The cost of college tuition has increased drastically from how it was 10 - 20 years ago. College students in present times are finding it nearly impossible to pay for tuition by themselves. This is especially true for students at San Francisco State University, since the cost of living is one of the highest in the entire United States. Besides tuition and living expenses, there is also the demand for supplies, books, furniture, and other essentials for college students. With this in mind, how can we expect these college students to get closer to financial freedom?

Our idea for an application, "Gator Trader", seeks to reduce the amount of financial struggle San Francisco State University students face. This application will allow current and former students of SF State to buy or sell items that college students would generally need. These items would include electronics, books, furniture, and even class notes so that students may get a knowledgeable edge before they even start the class. In order to create a safe environment for people to exchange, we would implement designated meeting spots such as the J. Paul Leonard library in order to reduce the likelihood of crime. Furthermore, we would implement a function to allow user ratings so that a potential buyer can see reviews of another user or seller before proceeding to buy an item from them.

We realize that books are widely sold online. Many of these books are also available as digital copies. However, Gator Trader would allow our users to search their books by class. Searching books by class would make finding books a very quick and easy process. In addition, our website would allow students to search by professor at SF State, a feature that is not available anywhere else except the San Francisco State bookstore. The aforementioned facts make our software very unique.

Our company consists of 4 San Francisco State students, as well as 3 students from the University of Fulda in Germany Our combined experiences help us create a diverse and technical environment, with people confident in tools such as MySQL, Javascript, Handlebars, Node.js, express, and more.
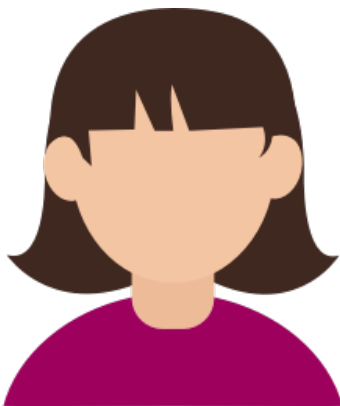
Personae and main Use Cases

Thomas:

Thomas is a freshman at SFSU. Thomas is not looking to sell much, but is more concerned with buying school equipment at a cheap price. Thomas doesn't receive a lot of financial aid. Thomas has a busy schedule and is trying acquainted with school, and his classes will start soon. Thomas needs to find books, furniture, and electronics. If Thomas cannot find these quickly, he'll probably just order off of amazon and buy things from Target. Thomas wants to furnish his room, buy a laptop, and buy books for his classes. If Thomas could keep all of these items under a certain budget it would be great.

- Wants to find items quickly and cheaply
- Wants to buy used books for his classes
- Couldn't find all of these things in one place.

Katie:

Katie is a junior at SFSU. Katie has already familiarized herself with the campus, and knows the ins and outs of school. Katie already has her furniture needs taken care of because she's been in the same apartment and she bought all of her furniture in freshman year. Katie wants to sell her old books to other students. Katie also may want to trade in her old electronics to get something new.

- Wants to sell books on a marketplace.
- Wants to sell a bunch of old electronics to buy something new
- Can't find a place to sell these things.

Julian:

Julian is graduating from SFSU this semester. Congrats Julian! Julian will be moving out of his dorm/apartment and needs to get rid of all of his furniture. Julian may have a few old books laying around as well. Julian is also interested in selling off most of his school supplies like his iClicker, his TV, and all of the random things he had in his home like a vacuum, air humidifier, etc. Everything must go! Julian is not interested in buying anything, and because he has owned his items for so long, Julian may be willing to let items go very cheap or offer a bulk price if someone buys more than one item.

- Everything must go! Wants to get rid of everything in his dorm/apartment because he is moving out.
- Will not be buying anything for school at the moment.
- Does not know where to put all of these things all on one marketplace without using craigslist.

Use Cases:

Thomas:

Thomas is a freshman at SFSU. Thomas is a part of generation z, so he has a lot of experience with web apps and using the internet. After he goes to the student center several times to figure out his schedule, he realizes that he needs books and furniture so he sits down at the library. He has a laptop and access to the wifi at SFSU. He has set up an account on our site using a simple e-mail registration. Thomas navigates to the search page and uses our search bar with dropdown menu to search for furniture. Thomas runs through a few potential selections and finally lands on a couch that he would like to purchase. Thomas finds the contact details of the user listed on the website of the item and contacts the other party. After some negotiation, Thomas makes his purchase.

Katie:

Katie is a junior at SFSU. Katie also has excellent computer savvy because she is a millennial. Katie has just finished her fall semester and has gone home to unwind. After binge watching a few episodes of her favorite show, Katie realizes that she no longer needs the books that she used for the previous semester and considers selling them. Someone told her about our app a few weeks ago. She navigates to our app and signs up for an account. After registering for an account, Katie navigates to the upload item module in her profile. She takes a few pictures of her books and uploads a picture to our website. She puts the book in the universal description form field of the upload form, and quickly posts her couch for sale. Someone contacts Katie and she successfully sells her couch.

Julian:

Julian has completed his final semester at SFSU. Julian is also computer saavy. Julian has used our app to buy books and furniture in his first semester so he is already an active user and has great reviews on our review page. Julian needs to get rid of everything he has because he is moving out and no longer needs any of his electronics and furniture. Julian signs into his account and navigates to the upload page. Julian uploads all his items separately. Julian uploads his couch, his bed, his TV, and all of his books. Julian checks off the appropriate categories when uploading and his items get categorized correctly. Because his reviews are great, his items sell quickly and Julian has a little extra cash for his job hunt.

Jeff:

Jeff is a sophomore at SFSU. Jeff just wants to sell his iPod because he wants to buy the latest one and selling his current one will give him a little cash towards a new one. Jeff has used applications before and has a few social media accounts, but does not consider himself computer savvy. Thankfully, our application is easy to use. Jeff navigates to our site and clicks on a button that says "Sell". Jeff is immediately given a quick and easy registration page with just e-mail and password as form fields.
As soon as Jeff enters his e-mail and password, he is taken back to the sell page. Jeff is given a simple form that asks Jeff to upload a picture, check off an item type, enter a universal headline, enter a price, and enter a small description. Within a few seconds Jeff's item is uploaded and posted for sale. Within a few days, Jeff sells his item and uses the profits with some of his extra cash to buy a new iPod.

Administrator:

The Administrator is also a student at SFSU. The administrator is very computer savvy. The administrator logs into his account that was prepared by the developers of the site. The layout of the administrator is much simpler and designed for easy access. The administrator goes to the feed page which shows all posts marked as negative. The administrator goes through the negative posts and makes a final decision on whether or not they should be deleted from the site. The administrator then checks his messages on his messages page and considers any messages regarding the rules of the site, or general concerns. The administrator then handles the issues appropriately.

List of main data items and entities

USERS:
- Name
- Email
- Password
- Student ID
- Login (Yes/No)

ITEM:
- Name
- Descriptions
- Price
- Status (Sold/unsold)
- Categories (Books, Furniture)

ADMIN:
- Name
- Email
- Password
- Access
- Item Check

Initial list of functional requirements

1. Unregistered users shall be able to Search books by class at SF State.
2. Unregistered users shall be able to see items in a specific format.
3. Unregistered users shall be able to see Footer page that includes our about me.
4. Unregistered users shall be able to filter by price either high to low or low to high, or by range.
5. Unregistered users shall be able to have a search bar that also allows filtering.
6. Registered users shall be able to have a sort of directory available for users to navigate.
7. Unregistered users shall be able to see ratings for sellers, shown from 1-5 stars.
8. Unregistered users shall be able to see recently sold items on the front page.
9. Unregistered users shall be able to click sell Item button to easily start selling an item.
10. Unregistered users shall be able to filter by condition.
11. Unregistered users shall be able to see picture of SF State on main page.
12. Unregistered users shall be able to Seasonal categories shown on front page. (Halloween costumes, Christmas decor, etc.)

13. Unregistered users shall be able to do lazy registration (don't ask for login until last steps).

14. Registered users shall be able to be brought to a separate page with more information when clicking on an item.
15. Registered users shall be able to have designated meet up spots for the sale.
16. Registered users shall be able to see a general profile for Users where ratings, reviews, and general info are shown.
17. Registered users shall be able to message user to buy item.
18. Registered users shall be able to have Favorites/Wishlist system to save items.
19. Registered users shall be able to see recently viewed Items.
20.
21. Registered users shall be able to have Inbox to show messages from potential buyers.
22. Registered users shall be able to sell items by categories. Categories would be Electronics, Furniture, Notes, Books, Miscellaneous, Events.

23. Registered users shall be able to use Reporting systems for scammers/flakes/mean people.
24. Registered users shall be able to see picture of exact location of meeting spot.
25. Registered users shall be able to to flag their item as sold.
26. Registered users shall be able to change display name.

27. Admin shall be able to take listings down after 30 days to prevent old listings.
28. Admin shall be able to delete inappropriate listings.
29. Admin shall NOT be able to edit listings

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

Feature	eBay	Amazon	Swappa	Gator Trader
Text Search	++	++	-	+
Browse	+	+	+	+
Adjusted for Student needs	-	-	-	++
Fast Pick-up / Delivery	-	++	+	++

Our app has big global players like Amazon and eBay in it's peer-group. We will implement a search bar where the user can directly choose a category like by class to get specific results. Also, people can browse through the site without using the search bar. This feature is also provided by all of our competitors, but our biggest strength is that our product is adjusted for student needs, which means that students find books for their classes very quickly. No competitors offer the aforementioned service. Also, it is possible to quickly find the products you need for college. If you are lucky and the seller has time you can get your item on the day of purchase.

High-level system architecture and technologies used

Server Host:	AWS EC2 1vCPU 1GB RAM
Operating System:	Ubuntu 16.04
Database:	MySQL v8.0.17
Web Server:	Node.js 8.15.0
Server-Side Language:	Javascript 1.8.5

Additional Technologies	
IDE:	IntelliJ IDEA
Framework:	Bootstrap
Analytics:	Google Analytics
Other:	Handlebars
	Express

Team and roles

TEAM LEAD/GITHUB MASTER   Shubham Gupta

FRONT END LEAD   Gregory Han

BACK END LEAD   Suraj Mondem

BACK END DEVELOPER   Michael Remmert

Checklist

Completed tasks:

- Team found a time slot to meet outside of the class.

- GitHub master chosen

- Team decided and agreed together on using the listed SW tools and deployment server

- Team lead ensured that all team members read the final M1 and agree/understand it before submission

- GitHub organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)

On track tasks:

- 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

Issues:

- None