

## **SW Engineering CSC 648/848 Fall 2018**

### **Gator Exchange**

Team 11

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## **1. Executive Summary:**

Living as a student is not a walk in a park. As you may or may not know, being a student is heavy task due to an inconsistent schedule, dealing with huge workloads, and most importantly lack of financial stability. On top of tuition, students find themselves losing a considerable amount of money on living costs, books, and other study materials. As semesters finish, and living situations change, students are finding themselves funnelling money consistently changing expenses. What if there was a service out there that allows students to buy items they need at a cheaper price and sell things they don't need anymore? Introducing Gator Exchange.

Gator Exchange is the premier buy and sell website which features an array of features catering toward students. Students at SFSU are offered a unique and special place to advertise, sell, and buy goods from other students. Gator Exchange features a dynamic front page that features a what's hot section, which students could market their items on for a fee. Gator Exchange allows for sellers to upload a picture and description of what they're selling and buyers can browse through these items and chat with buyers in order to set up meet ups. Gator Exchange also features a customer review system and a way for SFSU students to verify themselves in order to maintain high level security. With these features, students will finally be able to have a way to advertise their products, and buy from trusted sellers from their own school.

Gator Exchange is developed by a startup team of seven passionate students at SFSU that understand the difficulties that students have to go through on a day to day basis. We are passionate about improving the student experience at SFSU and we find that finances are one of the biggest issues that we constantly deal with here. With Gator Exchange, students worry less about finances, recycle their cash, and can take one stress out of their already stressful lives.

## 2. Persona and Use Cases:

**a.) Customer-Seller:** Joseph was a SFSU graduate who is still living around the area, and wants to get rid of some books and supplies that he doesn't need anymore. He works at a daycare and takes part time classes to supplement his jobs needs in child development, so he is a very busy person. He has basic experience when it comes to using computers and websites. Joseph first heads over to the website because he wants to post his textbook he is finished using for sale. He searches up the book on the website in order to figure out a general pricing of the book, in order to not overprice or underprice his item. Next, he posts his item and proceeds to input a name for the product, an image of the product, a price for the product, and a description of the product. Afterwards he submits his post and is prompted to register because he doesn't have an account. Once he finishes registration his application is put up for review to be approved by an admin and will be notified once his item has been published. The notification is sent that his post does not contain anything in the way of some inappropriate post, and when checking his dashboard he notices that his post is put under approved.

**b.) Customer-Buyer:** Lauren is a student who attends class overseas in another country but during her breaks she comes back to San Francisco to be with her family. At times she would like to quickly and cheaply acquire some books or some school supplies so as to be prepared when going back. Throughout her time with her family, she is very busy and just wants to quickly acquire some items without having to take the time to head over to a local stationary store. She has all the basic knowledge when it comes to computers and online shopping. Being told about the website she heads over to take a look at a chance to quickly restock on notebooks and pens. She heads over to the notebooks categories and begins to scroll through the available notebooks up for posting. After clicking on the post Lauren is able to read the description, checkout some photos of the item, and decides this is the one she wants. With her decision, she contacts the person through the website which leads her to a messaging page where she can direct message the seller through the website and see if the item is still for sale and figure out how the transaction can be done.

**c.) Admin:** Nelson was hired to be an admin for the buy and sell website, and has gone through some training to understand how to administer the website. The website just launched and he does not have very many posts that he has to go through everyday, but one person decided that it would be a good idea to play a joke and submitted a picture that is not fit for viewing as well as a title and description that has curse words that Nelson hasn't even heard before. He goes through the post disapproval process which will reject the posting because it goes against user policies. Then he acquires the users email in order to send a email stating that the post was rejected due to a reason, and letting them know they will be banned for what they have posted. He then proceeds to go to the users profile and temporarily bans him for the offense, and if the person decides to continue with the misbehavior they will eventually get permanently banned.

**d.) Customer - Buyer:** Bill a standard San Francisco State University student who is looking to get some cheap used textbooks, but unfortunately he had some problems and was unable to get his hands on books that he would need for the semester. He was told about this website and decides to go have a quick look in hopes that some books that he needed would be sold by some other students. Having standard computer knowledge like any other student going to San Francisco State University in 2018, he begins to browse the online store through class code and is able to find the textbook he is looking for and for a fairly cheap price. He clicks on the item to and goes through the direct message process the person to get in contact and tells him that he is interested and want to set up a meeting point for them to make the trade.

**e.) Customer - Window Shopper:** Julie doesn't use the computer much and has not had much exposure when it comes to technology. She understands how a computer can be used, but doesn't actually know how to do web shopping. She wanted to learn how to go shopping online, as since her friend goes to San Francisco State University decides to use this website to teach because of the simplicity. Her friend begins to show her how to use the search function which begins with the categories in case she wanted to narrow the search quickly, or just simply typing into the search bar for something she specifically wanted. Her friend also shows her how she can look for discounted offers on the front page, in case she wanted a bang for her buck. Julie also learns how to get in contact with a seller if she wanted an item, by pressing a button that will allow her to direct message the person selling.

### **3. Data Definitions:**

**Registered User:** these users are users who are registered to our site, they have a login name, and a password that allows them to do things Unregistered Users cannot. Registered Users can read and view posts, comment or contact a seller, post a selling item, and login.

**Unregistered User:** are users who do not have a login name or password that allows them to do somethings registered users can. This type of user will have the ability to read and view posts, fill out posting information, but not be able to post until signing up for the website.

**Admins:** are the people in charge of managing posts and making sure a post is appropriate for the website. They can do everything Registered Users can do, as well as accepting posts, deleting posts, banning users, and deleting users.

**Post function:** will allow registered users to post items that they want to sell.

**Unregistered users:** will have the ability to begin posting, however when they go to submit they will be prompted to sign in or sign up to post the item.

## **4. Functional Requirements:**

### **I. User (General) functional requirements**

- General users shall be able to search using item type categories
- General users shall be able to view items per page up to 48
- General users shall be able to view postings
- General users shall be able view website and items without an account
- General users shall be able to view sellers' basic information (Name, General area of preferred transaction)
- General users shall create an account to sell or buy

### **II. User (Approved) functional requirements**

- Approved users shall be able to communicate between buyer and seller
- Approved users shall be able to create a selling post
- Approved users shall be able to view their account, includes order history, current selling, and profile information
- Approved users shall be able to buy item, by agreeing to price and setup with buyer for transaction place and time

### **III. User (Authors) functional requirements**

- Authors posting shall not be altered by other entities
- Authors shall agree to terms and conditions before posting
- Authors shall follow guidelines or authors' post shall be disabled from being public
- Authors information shall be revealed after agreed transaction (Preferred contact information, and meet up location)
- Authors shall be able to edit an existing post
- Authors shall be able to upload a maximum of 5 photos in the post
- Authors shall add a title, description, category, and price in the post

### **IV. Admin functional requirements**

- Admins shall be able to disable postings that violate guidelines
- Admins shall be able to monitor any postings
- Admins shall be able to access all data and content and modify the database
- Admins shall be able to ban users who violate guidelines

### **V. Item functional requirements**

- Items shall include price, description, photo (1 or more), and title
- Items shall be displayed to the public with agreement of service before posting
- Items shall follow guidelines of appropriation

## **VI. System functional requirements**

- System shall provide full functionality with using a mouse
- System shall provide approved user access to summary as well as raw data
- System shall provide access to all data items based on customer name and account number.

## 5. Non-functional Requirements:

### High Level specifications:

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 all major browsers: Mozilla, Safari, Chrome.
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 e-mail clients shall be allowed
11. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated.
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-Fulda Software Engineering Project CSC 648-848, Fall 2018. For Demonstration Only"* at the top of the WWW page. (Important so as to not confuse this with a real application).



## 6. Competitive Analysis:

Categories	Ebay	Craigslist	Touch Of Modern	Gator Exchange
Search and Filter	√	√	√	√
Prices	√	√	√	√
Display pictures by categories	√	√	√	√
Pictures Caption/Description	√	√	√	√
Upload Pictures	√	√	√	√
Shopping Cart	√	√	√	√

√ = Feature exists

The top 3 websites that control most of the market have a lot of features that allows them to compete, but they have one big down fall is their pricing is very expensive which is good for us because we can drive a lot of user to our platform by providing students to buy and sell with a reasonable price until we have a strong user base. Also, we can compete with them on launch by having most of their features like Search, registration. Organize pictures by categories, upload pictures option and also adding items in the shopping cart. Furthermore, when going to these websites that don't show any pictures on their homepage, but they show categories. We can do top 20 sales of the week on our main page which will incentive more sellers to our website to have their items featured by us on the main page.

## 7. High-Level System Architecture:

This following section mentions all the tools, frameworks, and APIs being used in the development of this project.

Our application will be developed following these environments that consists of the following:

- **Linux**
  - i. We are deploying our application on the Ubuntu 16.04 Linux platform.
  - ii. Hosted on Heroku Paas 512MB ram, the cloud-computing platform.
- **Web Server**
  - i. Our application will be served through the ExpressJS 4.16.3 web server to allow users to access our application over the web.
- **Database**
  - i. The database backend will be managed with MangoDB 4.0 to store information.
- **Server-Side Language**
  - i. Using JavaScript language allows us to create a very dynamic and content-driven web application.

### Frameworks and APIs:

As for the front-end and back-end of our application, we'll be utilizing the following frameworks to assist in our development:

- Bootstrap
- Express
- Node JS
- React

### Supported Browsers:

Our application shall be able to run smoothly in the following browsers:

- Google Chrome: Version 69.0.3497.100, 68.0.3440
- Mozilla Firefox: Version 62.0.2, 61.0.2

## **8. Team:**

**Matt Ho** - Team Lead

**Jason Chow** - Developer

**Justin Shee** - Back-end Lead

**Riza Shrestha** - Developer

**Ghulam Khan** - Front-end Lead

**Juan Valdez** - Developer

**Dian Zhu** - Developer

## 9. Checklist:

1. Team found a time slot to meet outside of class : **Wednesdays at 2pm.**
2. Github Master: **Matt Ho**
3. Team decided and agreed together on using the listed SW tools and deployment server:  
**DONE**
4. Team ready and able to use the chosen back and front-end frameworks and those who need to learn it: **ON TRACK**
5. Team lead ensured that all team members read the final M1 and agree/understand it before submission: **DONE**