SW Engineering CSC648/848 Fall 2018

Project Title: Aquirium

Team Number: 08

Names of Students:

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Milestone 1

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History Table:

Date	**Revision**
10/02/2018	**Created as the 1st version**

I. Executive Summary

Ever wanted a more convenient marketplace at your institution? Well, our web application ***Aquirium*** allows for on-campus buying and selling of items at anyone's convenience. Typically, college students struggle financially on their day to day lives. However, ***Aquirium*** will give them the opportunity to sell whatever they want for some extra cash. This web application will allow students to effortlessly sell products online or buy products, with the majority of customers being either nearby residents or students dorming at San Francisco State. Our web application serves as a primary marketplace for students at any institution, in which the marketplace can be utilized by different institutions across the world and thus, allowing all students this opportunity to buy and sell.

The ***Aquirium*** web application will primarily focus on students and nearby residents of San Francisco State University in which they can buy and sell products online easily. This application is important because not only is it convenient, but it also creates opportunities for college students who are extremely tight on budgeting and just need a little extra cash, or it gives students the opportunity to buy items without the need to wait for shipping and processing. Rather, students will be able to buy products and have the option of picking it up from the seller, or having it shipped to them at their own convenience.

As team 08, we are hardworking and dedicated programmers interested in helping our community by providing this interactive buying/selling web application to the general public. With 4 front-end and 3 back-end engineers, we seek to create a friendly user environment by providing all users with a simplistic yet efficient user interface in which they'll be able to easily utilize multiple functionalities created by the back-end engineers.

II. Personas and Use Cases

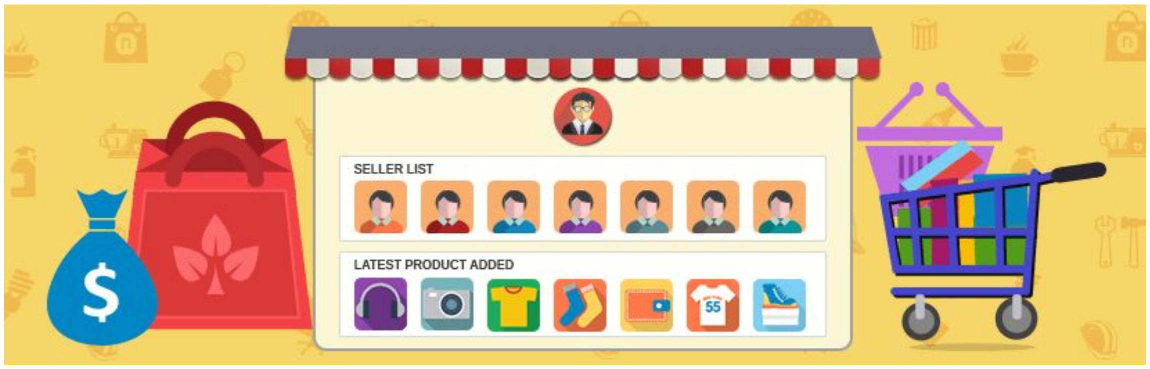
1). Browsing and Searching Items

Jason is a transfer student and is beginning his studies at San Francisco State University. He is a computer science major. He is moving into the dorms and is trying to find items for his dorm room, but he does not feel ready to decide on what to purchase. He wants to see what different sites have to offer college students. On our site, he looks through the diverse list of categories. By choosing the “furniture” category, Jason narrows down the results and finds the dorm items that he is looking for. After browsing furniture, he realizes that he still needs to get his school supplies such as books. He has never taken courses at SFSU so he is not comfortable with the course numbers for the corresponding course topics. He wants to search for books relating to his courses, so he switches into the “book” category, and types the course name (e.g. “Computer Science”) in the text search bar, and then reviews the list of search results.

2). Purchasing Items

Adam is a returning student at San Francisco State University. It is the middle of the semester and Adam needs some new items that he can use for school. He needs items that are at a reasonable price and he needs to find them quickly since the classes have begun. He uses multiple different web applications so he has a good idea as to how to navigate and buy items online. However, he already has many different accounts and does not like the idea of having to make another account and keep track of it if it is not absolutely needed. Having just found our site and after browsing for a few minutes, Adam finds an item he wants to purchase. When using the in-site message to contact the seller, he is prompted to either register or log in.

3). Posting Items



William is a senior student at SFSU. He will graduate at the end of this semester and leave San Francisco. However, he has several pieces of furniture that are too large to bring with, including a table, a queen-size mattress, and two chairs. Moreover, he has books that are no longer needed. Thus, he decides to sell all these items to new incoming SFSU students. Then he chooses ***Aquirium***, the web-app specifically designed for SFSU. After filling in the details of his mattress and clicking "post", he is prompted to finish registration. When he logs in 3 days later, he goes to the seller dashboard to check status of his posts, and finds that they have been approved and shown on the site. Besides, he also receives messages from potential buyers who contact him for purchase.

4). Admin Users Monitoring Posts

Susan is a software engineer at ***Aquirium***. She is an admin user that has the permission to approve requests. Susan ensures that there is no inappropriate data so that the users have a good experience on ***Aquirium***. She is busy every other weekday maintaining the site. One day Susan receives notifications of two new posts from sellers that need to be approved. She goes on to the admin dashboard to review the posts. Susan feels that one of them meets our site's guideline and then approve the content to go live with a simple click. However, she finds that the other post contains some illegal information, and therefore she removes (rejects) that post request and deletes that user.

III. Data Definitions

1). **User**

- *id* (unique numeric value for each user)
- *username* (username)
- *avatar* (avatar)
- *priority* (permission level: 0, unregistered user; 1, registered user; 2, admin user)
- *password* (encrypted for safety)
- *created_at* (time that marks the creation of this user)
- *updated_at* (time that marks the last update)

2). **Category**

- *id* (unique numeric value for each category)
- *title* (title/tag of the category)
- *priority* (priority level, determining which category will be put at first)

3). **Item**

- *id* (unique numeric value for each item)
- *user_id* (user who posts the item)
- *category_id* (category to which the item belongs)
- *title* (title of the item posted on website)
- *description* (short paragraph of introduction and related details for the item)
- *price* (numeric value, also used for sorting)
- *unit* (unit of price, depending on what kind of item it is)
- *title_img* (title picture/image to show the item)
- *detail_img0* (detail picture/image to show the item)
- *detail_img1* (detail picture/image to show the item)
- *detail_img2* (detail picture/image to show the item)
- *detail_img3* (detail picture/image to show the item)
- *is_approved* (whether the item is approved by admin)
- *link* (link to the item if it is already posted on website)
- *created_at* (time that marks the creation of this item)
- *updated_at* (time that marks the last update)

4). **Shopping**

- *id* (unique numeric value for each shopping record)

- *item_id* (item that is shopped)
- *buyer_id* (user who buys the item)
- *seller_id* (user who sells the item)
- *created_at* (time that marks the creation of this shopping record)

5). **Message**

- *id* (unique numeric value for each message)
- *from_user_ id* (user who sends the message)
- *to_user_id* (user who receives the message)
- *content* (content of the message)
- *created_at* (time that marks the creation of this message)

IV. Initial List of Functional Requirements

1). All types of users (including unregistered, registered, and admin users) shall be able to browse the items on the website without being signed in.
2). All types of users shall be able to sort the list of items by price, in both ascending and descending orders.
3). All types of users shall be able to filter the items according to their search categories, such as furniture, clothes, electronic device, etc.
4). Unregistered users shall be asked for registration only when they decide to contact the seller or post an item.
5). During registration, the checkboxes for terms and conditions shall be unchecked by default. The registration form shall be successfully submitted only when all these boxes are checked and all the required fields (username, password, etc.) are filled in.
6). Registered users shall be able to contact sellers as a buyer and post items as a seller.
7). Registered users who are buyers shall be able to access the shopping cart with the list of items they decide to purchase.
8). Registered users who are sellers shall be able to access the dashboard with the list of items they have posted.
9). Registered users shall have the privilege to edit the items they have posted, but Admin users shall not.
10). Registered users who are buyers shall be able to send messages to other sellers via web form (in-site messaging), but not via email.
11). Registered users who are sellers shall be able to receive messages regarding any postings from inquiring buyers.
12). Admin users shall have the privilege to censor and delete inappropriate items.

13). Admin users shall have the privilege to delete users who post inappropriate items.
14). Admin users shall have the privilege to approve legal items before they are shown on the website.
15). Admin users shall have the privilege to add/edit search categories.

V. 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 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).

VI. Competitive Analysis

Below is a table for the comparison of several websites, with our web application ***Aquirium*** marked as the shaded column.

	Etsy	**eBay**	**Amazon**	**Bonanza**	**Aquirium**
Seller Services	+	++	+	+	+
Categories for Browsing & Filtering	++	++	++	+	+
Contact Seller	+	+	+	+	+
Online Payment & Mailing Service	+	+	++	+	-
Delivery Speed	+	+	+	+	++
Suitable Price for Students	-	+	+	-	++

Although lacking in online payment and mailing service, ***Aquirium***'s main focus is on a buy/sell service for SFSU students and their needs, which means two things:

- Transactions will more than likely be completed on campus and therefore the items are ready for pick-up on an agreed upon and convenient time.
- Sellers and buyers alike empathize with each other in regards to the rising cost of school essentials, ensuring prices to be reasonable and low-cost across the board.

VII. High-Level System Architecture

1). Server Host:
- Amazon Web Services (AWS) 1vCPU 1GB RAM

2). Operating System:
- Microsoft Windows Server 2012 R2 Base

3). Database:
- MySQL 5.7.21

4). Web Server:
- Apache 2.4.33

5). Server-Side Language:
- PHP

6). Additional Technologies:
- Web Framework: Laravel
- Web Analytics: Google Analytics
- Front-end: Bootstrap
- Back-end IDE: NetBeans

7). Supported Browser:
- Google Chrome and Mozilla Firefox (latest 2 versions for each)

VIII. Team

1). Jianfei Zhao:
- Team Lead & Back-end Engineer

2). Feras Alazzeh:
- Back-end Lead

3). Tommy Lik:
- Front-end Lead

4). Lileana Wright:
- Front-end Engineer

5). Edward Barajas:
- Front-end Engineer

6). Alex Li:
- Front-end Engineer

7). Jiawei Xu:
- Back-end Engineer

IX. Checklist

1). Team found a time slot to meet:
- **DONE**

2). Github master chosen:
- **DONE**

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 and working on it:

- **DONE**

5). Team lead ensured that all team members read the final M1 and agree/understand it before submission:

- **DONE**