

SW Engineering CSC648/848

Fall 2019

Aardvark

Section 01

Team 01

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History table (revisions)

Executive Summary

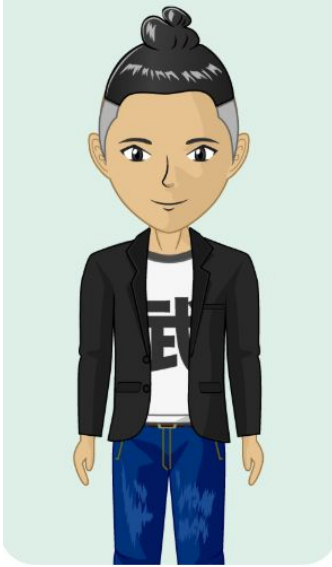
Studying for school and transitioning to a university is difficult; quickly getting the items needed for a successful year shouldn't be. Aardvark provides essentials to students and staff during their academic stay. It's estimated that over 14 million new students enroll in public universities each year; over 5 million enroll in private. These numbers are projected to increase in the years to come. From moving into their first home near or on campus to acquiring the proper supplies they need before their final, Aardvark is here to provide millions of students with a convenient, affordable, efficient solution to their practical needs.

On this website, students and staff will be able to purchase goods (furniture, toiletries, supplies). There will also be an option to purchase kits (or bundles) at a slightly discounted rate. These kits will cover general themes that an average undergrad will encounter during their time at university. For instance, one pack is called the room kit which includes the essentials a student may need to have in their dorm - a lamp, coat rack, sheets, pillows, towels, and more. There will be variations of each kit because we know that one size does not fit all. There will also be an option where students can resell/list their items if that item is already listed under our site. This allows students to redistribute their stuff - assuming they're in good condition. Students will choose the items they want to purchase and complete the transaction at checkout. After purchase, all items will be placed in an accessible, protected locker on campus during various hours of the day; meetup options are available. Our goal is to get our students and staff the items they need faster so they have time to focus on the more important things in life.

The team at Aardvark understands the phases one can encounter while attending college or university which is why we teamed up to create a fluid solution to tackle the challenges and obstacles an undergraduate, graduate, or staff might face. The team consists of 7 computer science students, all of which comes from various technical backgrounds. With hopes in changing the way people buy, they teamed up to create Aardvark.

Personae and Main Use Cases

Personae Case #1: Joshua Algulto



Description: Joshua Algulto is a 23-year-old full-time college student at San Francisco State University majoring in Computer Engineering. He's skilled in many computer programming languages and loves to create sprite-based animation games. He is a part-time Service Representative at Planet Fitness in Vallejo, CA. He is currently living with a family of five and pays monthly rent for a single room.

Attitude: He has a very friendly, welcoming demeanor for those who treat him with courtesy. However, you will catch him a little tired or frustrated; especially after working long hours and completing late night study sessions.

Pain Points: He lives in a small apartment with his family and has a shared vehicle. It's challenging to go out shopping for food, school supplies, and needs to go to work to pay his monthly rent. So he needs a website that he can purchase his school supplies and receive it at the lockers on campus, since it's more convenient to get the product after class.

Experience: As a gaming computer and keyboard builder, he has experience in using many resources to build his gaming PC such as Amazon, PCPartPicker, Ebay, Drop (for headphones and key switches), Crunchyroll (anime figures, mugs, etc.) and so on.

Goal: Joshua's objective is to optimize the convenience of our website for purchasing school supplies and to avoid wasting time shopping at local stores, since he commutes two hours from San Francisco to Vallejo. Also, to find affordable prices for textbooks, stationary/office materials, and electronic devices.

User Case: This part is what services and functions user will need from our website. Joshua uses our website to search for textbooks by author name, professor name, and title, to narrow down what book they need for that semester. Also, to possibly purchase a bundle of items for a better affordable price such as stationary goods or home goods, since he has a shared vehicle.



Personae Case #2: Mark Bugzy

Description: Mark Bugzy is a full-time student at San Francisco State University and is majoring in Mechanical Engineering. When he has free time, he plays Role Playing Games (i.e. Sword Art Online, Borderlands, and Fate Grand Order) and desires to build gaming computers and race cars. He commutes from Hercules, CA and is living with a family of three. He is currently unemployed due to the fact he has limited transportation options which also makes it difficult to get school supplies and personal home goods.

Attitude: He has a welcoming personality with his friends and those who have similar anime and sports interests as he does.

Pain Points: Mark shops for products within his budget while having enough left for transportation expenses. Mark goes to class four to five days a week and barely has the time throughout the day to purchase home goods for himself and struggles to find affordable prices for required textbooks than what Chegg and Amazon have to offer.

Experience: Since he is not working, Bugzy is on a budget and analyzes what he needs versus his wants. He shops for products as a necessity such as electronics, printer paper, shower goods, etc. Currently, sites used to complete his shopping experience includes Amazon, Crunchyroll, Ebay, Chegg, PCPartPicker, and so on.

Goal: Bugzy's objective is to purchase electronics and school supplies near campus for efficiency and convenience.

User Case: He would use our website for minor purchases and bundle of stationery items such as bluetooth earphones, mechanical pencils, scientific calculator, and home goods. Mark will be using our website to search for books by category types such as professor name and title because he finds affordable prices here and for efficiency when searching by professor name.



Personae Case # 3: Stephanie Lopez

Description: Stephanie Lopez is a 19-year-old full-time student at San Francisco State University. Lopez lives on campus. She shares her room with another person. She is currently not working but pays for food and housing with her scholarships. Her major is sociology.

Attitude: Lopez is friendly and talkative. She loves to cook. She enjoys hanging out with friends. She loves to watch romance movies.

Pain Point: Lopez is new to online shopping. She always bought her supplies at the store. She struggles with some websites. She does not like icons because some are unclear about what they are meant to do. She prefers buttons to be more descriptive. Lopez also does not like drop-down navigation menus which do not give the website visitors a clear indication of where they are in the site.

Goal: Lopez wants to purchase supplies that will help her keep her room organized and clean, but the campus stores are either sold out or they do not sell the products.

User case: She wants to purchase a laundry hamper, drawer organizer, and cork board to keep her room clean and organized. She also wants to purchase kitchen supplies to do some cooking. She doesn't mind standard delivery but wants affordable shipping.



Personae Case # 4: Daniel Vargas

Description: Daniel Vargas is a 23-year-old full-time student at San Francisco State University. Vargas lives off-campus. He shares a studio with his friend. Vargas is currently working full time at a fast-food restaurant. His major is biology.

Attitude: Vargas is very busy. He does not like to waste time. He likes to work out and eat healthy.

Pain Point: Vargas has used some online shopping websites. He has used Amazon to purchase some products for his bicycle and household supplies. He usually uses his laptop to make a purchase but uses his android cellphone to look at the products. Vargas has had a hard time finding websites that use filters such as the most popular sold products. He has also struggled to find useful customer reviews of products. He also

does not like how some search engines are inconsistent. He also dislikes websites that have too many links and options to click on because it is more difficult to find things.

Goal: Vargas wants to purchase textbooks and other school supplies, but does not want to commute for an hour and 30 minutes to get the supplies.

User case: He wants to purchase a new laptop and smart devices to help him with daily activities. He also wants to purchase household items such as light bulbs, laundry detergent, and dish detergent. He doesn't mind paying more for shipping as long as the delivery is fast and on schedule.

List of Main Data Items & Entities

- Users
 - Name
 - Display Name
 - Email
 - Password
 - Photo
 - Posts
 - Starred Posts

The "Users" entity will be used to store the account information for users that wish to go on the site in order to buy, sell, or star posts. During registration the user must enter their name, email, and password. Later on, if the user would like to buy or sell, they must add a photo to be easily identified when meeting for the item. The users will have the ability to post new items for sale, manage these items, reply to posted items, and star posts that they are interested in.

- Admins
 - Name
 - Email
 - Password
 - Posts
 - Starred Posts

The "Admins" entity will be used to store users of the site that have the role of maintaining the site in terms of users and posts. The initial admin will be given an account that already has administrator privileges and allows them to create new admin accounts. Similar to users they can create, manage, and star their own posts, but they will also be able to manage

other users posts and user accounts. For example, if a user were to not be in compliance with our terms of service, the administrator would suspend their account.

- Posts
 - Title
 - Photo(s)
 - Description
 - Category
 - Tags
 - Timestamp
 - Price
 - Status (Sold)
 - ID

The “Posts” data item will be used to store the important information of each individual post. When a user or admin decides they would like to create a post, they must include the title, photos, category, description, and price. The person may also add tags to possibly show up in more related searches. The timestamp, post ID, and status will automatically be updated when it is posted, and when the user marks the item as sold.

Functional Requirements

Unregistered User:

1. Unregistered users shall be able to register an account.
2. Unregistered users shall be able to browse product posts from registered users.
3. Unregistered users shall be able to search for textbooks by title or author.
4. Unregistered users shall be able to search for items by name or identification number.
5. Unregistered users shall be able to place items in the shopping cart feature.
6. Unregistered users shall be able to purchase products through guest checkout feature.

Registered Users:

1. Registered users shall be able to post items to sell.
2. Registered users shall be able to buy items from registered users.

3. Registered users shall be able to search for textbooks by title or author.
4. Registered users shall be able to search for items by name or identification number.
5. Registered users shall be able to browse product post from registered users.
6. Registered users shall be able to place items in the shopping cart feature.
7. Registered users shall be able to edit and correct data after it's submitted.

Administration/System:

1. System shall provide user access to data information based on customer ID and password.
2. System shall provide privacy of users data. Data shall only be used for this website for tracking customer usage and will not be shared with anybody.
3. System shall populate locations where students can meet up to buy or sell products.
4. System shall provide guest checkout option for users specifically buying products.
5. Administration shall screen photos and posts before displaying it on the website.
6. Administration shall screen newly registered users before creating their new account.
7. Customer transactions shall be executed via secure internet connection.

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	<i>Amazon</i>	<i>eBay</i>	<i>Etsy</i>	<i>Our Product</i>
Text Search	+	+	+	+
Browse	+	+	+	+
Shopping Cart	+	+	+	+
Recommendations	+	+	-	++
Meetup	-	-	-	++

In order to distinguish ourselves from existing competitors, we plan to utilize the fact that we are targeting a specific and familiar niche (SFSU students) to our advantage. As fellow SFSU students, we have a good understanding of demands, preferences & behaviors of our customers. With this advantage, we shall make better recommendations than our competitors, effectively meeting our customers' needs. Our product's most important attribute is the meet-up feature. Compared to our top competitors, none utilizes this feature, and this gives our product a significant advantage in the market. Our meet-up feature brings a more convenient solution to our customers as it includes locations that are within close, accessible proximity of our users. With this feature, buyers & sellers could agree upon a meet-up location to carry out a transaction. This also implies that shipping related costs and services are no longer needed, allowing our customers to purchase products at an overall lowest cost - a key attraction of our service.

High-level System Architecture & Technologies Used

Software Components:

1. Server Host: Amazon Web Services (AWS)

2. Operating System: Ubuntu 16.04
3. Web Server: NodeJS v12.10.0
4. Server-Side Language: JavaScript 1.8.5

Frameworks:

1. Bootstrap 4.3.1
2. Express.js 4.17.1

Supported Browsers:

Google Chrome & Mozilla Firefox (Current Version & One Version prior to the Current Version)

Checklist

1. Checklist: for each item below you must answer with only one of the following: DONE; or ON TRACK (meaning it will be done on time, and no issues perceived); or ISSUE (you have some problems, and then define what is the problem with 1-3 lines)

Team found a time slot to meet outside of the class	Done: Wednesday 3-5 and Monday before class
Github master chosen:	Done: Ryan
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