SW Engineering CSC648/848 Spring 2019

Gator Housing

Team 12

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Milestone 1

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Version history can be seen on Google Drive here:
https://docs.google.com/document/d/15WlpiG261QIKrSNfnxkzKW34Oa0kJhicmv0PsLs-GDo/edit?usp=sharing

1. Executive Summary

As a group of students currently studying Computer Science at San Francisco State University, we all know how difficult it can be to look for the perfect place to live. Many factors come into consideration when deciding where to live, which is why we have decided to build and launch a website named “Gator Housing” to help students look for housing. Gator Housing is a website specifically tailored to the needs of students at San Francisco State University. Users will be able to search by price, distance from campus, distance from closest Muni stops, etc. This platform would also allow students to easily compare the rates of housing to quickly get an idea of current market rates and from there, get an reasonable price for housing. The objective of building this website is to help students quickly find housing that fits within all of their criterias all while using a safe and secure platform.

Gator Housing will have three different types of users: Administrators, Landlords and Tenants. The landlords can post their listings which will include a title, type of housing, description, location and price range. The listing can include multiple photos but must include at least one photo. The listing will then go to the administrator for approval before being posted on the website. The site can be browsed by registered and unregistered tenants. Registered tenants can use the website to message the landlord to further inquire about the housing, set up a viewing, etc. This website is tailored specifically to students who attend San Francisco State University as it would provide a quick, secure way of browsing, viewing and leasing housing at competitive rates. While this website is mainly for the student body, there is potential for this website to attract more customers and therefore increase the traffic and usage of this website.

The student startup team behind the development of the “Gator Housing” website is composed of Team Lead Andrew St. Germain, Backend Lead Sagar Pandya, Frontend Lead Steven Apicella, Backend Developers David Adams and Sunny Wong and Frontend Developers Ganzolboo Ayurzana and Peter Lin. This team will work collaboratively to develop the website using Software Engineering methods.

2.1 Personas

Pesona #1: Anna, a freshman at San Francisco State University.

- Freshman
- Technologically literate
- Has access to smartphone and a laptop/desktop
- Busy with classes
- Very concerned about price and proximity to campus
- Does her research

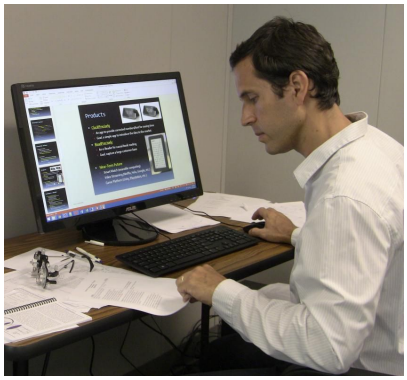
Persona #2: John, a senior at SFSU who wants a change.

- Senior
- Technologically literate
- Has access to smartphone and a computer
- Does not have a car
- Needs to find a place ASAP

2.1 Personas cont.

Persona #3: Mr. & Mrs. Smith, a retired couple on fixed income with a space to rent in their building/duplex.

- Landlord with a nice unit
- Technologically illiterate
- Prefers phone calls
- Has plenty of time to find the right tenant



Persona #4: David, an avid administrator.

- Website Administrator
- Highly experienced with technology/web applications
- Diligent in his work
- Computer Science major at SFSU

2.2 Use Cases

Use Case #1: Student looking for new housing for the next year

Anna Smith is currently a freshman at SFSU. Her first year is winding down and she and her friends are looking to get a place off campus to live together. She uses Gator Housing to find an affordable place that is somewhat close to campus. At first, she browses most of the apartments that are currently available to rent to get a feel for the market. She then narrows down her focus based on prices to be more affordable because she knows money will be tight for her and her future housemates next year. Once Anna and her friends have made her decision on some apartment, she decides to contact the landlord, sending a message along with her email and phone number. Once her message is complete, she clicks send, which then prompts her to login in order to send the message, or register as a new user.

Use Case #2: Desperate student looking for new housing

John is a Senior at SFSU and currently lives with 3 of his other friends in a house off campus. At the beginning of the year he thought living with his friends would be a great time, but after a few months into their lease, the habits of his roommates frustrated him greatly. Now, John wants to find a new place and move out as soon as possible. He goes onto the Gator Housing website to search for a new place to live. Unfortunately, John does not have a car and decides to sort apartments based on the distance from campus. Once John found a place that is offering a single, he uses the Gator Housing messaging system to send a message to the landlord. Within a few days, John met with the landlord for a viewing, content with the fact that he is finally moving out of his current housing situation thanks to Gator Housing.

2.2 Use Cases cont.

Use Case #3: Landlord looking to rent

The Smiths are a retired couple with a fixed income who are planning to rent a space that is available in their duplex. They are not in a hurry to find a tenant because they are looking for great, responsible tenants. The Smiths use Gator Housing to make a posting with multiple photos along with a description of the unit. However, since they are not as technologically literate, they favor using Gator Housing as the simple and intuitive design make it straightforward to post their unit. Their posting will be shown as pending until it is approved by the administrator. After approval, the listing can then be seen by potential tenants. The Smiths go through dozens of students who are interested in their unit before finally settling on someone they like. After a brief exchange of information with the tenant by using the Gator Housing messaging system, the Smiths prefer to have a conversation over the phone to set up a viewing date.

Use Case #4: Diligent Administrator

David is an diligent administrator for Gator Housing who is very serious about his job. He is a registered tenant on the website as well as an administrator. During his work hours, he continuously supervises the website for inappropriate postings, removing the postings that do not follow website guidelines. He has the authority to approve of postings and the authority to remove any suspicious user or users who have been flagged too many times.

3. List of main data items and entities

1. **Users**: Anyone who uses Gator Housing is a User
    a. **Unregistered users**: Users that are only allowed to browse the website, but are not able to send messages or get contact information
    b. **Registered users**: Users that are registered have the permissions of unregistered users but also the following:
        i. **Tenants**: Registered Tenants can message landlords, favorite postings
        ii. **Landlords**: Landlords can put up postings of their unit for other users to see. They can also edit their posts.
    c. **Administrators**: Can review and delete posts before they go live. They are unable to edit posts.
2. **Registration Form**: Required for users to register. Contains name and email, and optionally address, phone.
3. **Postings**: Postings are posted by Landlords and are reviewed by an administrator before it is posted onto the website. A posting consists of the Name/Title, Posting ID, Category, Price, Images(s), Location, Status and Description about the item.
4. **Messages**: The in-house form of communication between tenants and landlords. Once the tenant sees a posting they like, the tenant has to contact the landlord first through the message system. Both the tenants and landlords can check for new messages.
5. **Landlord Dashboard**: A dashboard for the landlords after they log onto the Gator Housing website. From here the landlord can post a new posting, check on the status of existing postings, edit existing postings, remove existing postings and check and reply to their messages.
6. **Tenant Dashboard**: A dashboard for the Tenants. After logging into the website the tenant can view their messages and send new messages to landlords.

3. List of main data items and entities cont.

7. **Administrator Dashboard**: A dashboard for the administrator. After logging onto the website, the administrator has access to special privileges. These privileges include approving postings to be posted onto the website, removing postings from the website that are deemed inappropriate or ones that don't follow the website guideline and removing suspicious users.
8. **User Record**: The user record is created when an unregistered user becomes a registered user. The user record contains information relevant to that specific user including username, user ID, user type, permissions, password, etc.

4. List of functional requirements

1. Users shall be able to browse apartments.
2. Users shall be able to search for apartments.
3. Users shall be able to view the apartment location.
4. Users shall be able to view how far the apartment is away from campus.
5. Users shall be able to view the price of the apartment.
6. Users shall be able to become a registered user.
7. Website shall be easy to use.
8. Website shall have a registration form.
9. Website shall prompt login to be able to send message to landlord.
10. Website shall prompt login to be able to post new apartment information.
11. Website UI shall be responsive to desktop/laptop users.
12. Website UI shall be responsive for mobile users.
13. Registered users shall be able to post information about apartments.
14. Posts shall be pending until approved by the administrator.
15. Registered users shall be able to edit their own posts.
16. Registered users shall be able to contact the landlord.
17. Administrators shall review posted apartments before they go live.
18. Administrators shall be able to remove inappropriate posts.
19. Administrators shall be unable to edit posted information.
20. Administrators shall notify user if their post has been removed.

5. 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.
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.
12. Site security: basic best practices shall be applied
13. Before posted live, all content (e.g. apartment listings and images) must be approved by site administrator.
14. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development.
15. The website shall prominently display the following exact text on all pages *"SFSU Software Engineering Project CSC 648-848, Spring 2019. For Demonstration Only"* at the top of the WWW page.

6. Competitive analysis

Key Features	Craigslist	Zillow	Hotpads	Apartments	Gator Housing
Text Search	+	++	+	+	+
Browse	+	+	+	+	+
Filter by Categories	+	+	++	++	+
Local Landlords	+	+	+	+	++
Internal Organization	-	-	-	-	++

+ feature exists; ++ superior; - does not exist

Key Feature Definitions:

- Text Search: Searching by using text
- Browse: Users can browse freely or by category
- Filter by Categories: Users can filter based on different categories (distance, price, etc)
- Local Landlords: Landlords that are in close proximity to SFSU campus
- Internal Organization: Used mainly by SFSU students and landlords who have units within close proximity to SFSU campus

The goal of Gator Housing is to provide SFSU students a quick and easy way to find affordable housing that fit within their needs. This website is designed primarily for SFSU students because the website is populated by users from within the community, making it a safer option. A safety feature is that users can contact each other through an internal messaging system, which only registered users can use. Therefore, users feel safer by not having to post their personal contact information on the web or worry about coming in contact with risky phone numbers, emails, etc. Other advantages Gator housing provides includes the ability to sort from distance to campus and to see if there are nearby Muni stops. Similarly students will be able to filter by categories, which includes price and number of bedrooms.

7. High-level system architecture and technologies used

Server Host: AWS 1 vCPU 1 GB RAM

Operating System: Ubuntu 16.04 Server

Database: MySQL 8.0.15

Web Server: Apache 2.4

Server-Side Language: Javascript 1.8.5

Additional Technologies:

Runtime Environment: Node.js

8. Team

- Andrew St. Germain (Team Lead)
- Sagar Pandya (Backend Lead)
- Steven Apicella (Frontend Lead)
- David Adams (Document Master)
- Sunny Wong (Github Master)
- Ganzolboo Ayurzana (Frontend member)
- Peter Lin (Frontend member)

9. Check List

- Team found a time slot to meet outside of the class: **DONE**
- Github master chosen: **DONE**
- 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: **ON TRACK**
- Team lead ensured that all team members read the final M1 and agree/understand it before submission: **ON TRACK**
- Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.): **DONE**