SW Engineering CSC648/848 Spring 2019

GatorRooms.com

Team 9 Milestone 1

Product Requirements Document

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Versions

History Table

Version	Date	Notes
1.0	3/6/2019	Initial draft for Milestone 1 submission.

1. Executive Summary

The rental website GatorRooms.com was built specifically for San Francisco State University students. The website is meant to be more attractive and relevant to those SFSU students whose main concerns are to find a good deal on rental rooms that are close to SFSU, quickly.

The rental website features sorting based on price, search functionality, rental terms (temporary, long term, etc), means of transportation to school (bike, walk, bus), distance to study areas (i.e. coffee shops, libraries, wifi spots, tea shops, printing shops like Kinkos/FedEx, etc.) and general usability features that would make it easy for students to review rentals on the go.

The general user experience on GatorRooms.com is comparable to other rental websites and aligned to the average expectations of any users of rental website today. The rental website should require very little to no learning experience as it is also built to be intuitive, simple, and fast for student users as well as landlord users.

All users can search, sort, view, and click on any of the listings on the site. Once a user registers, they are able to access higher level of features, such as posting a listing, viewing communications, bookmarking a listing, and adding/modifying alerts. The boundary between unregistered and registered is subtle. The call-to-action buttons - to post, view communications, bookmarking, and adding alerts - will be viewable to all users. To attract new registered users to the site, features available to registered users, such as “post”, or “contact” are made viewable to non-registered users. This is presented to motivate the user to engage further with our site. To post or contact, for example, the user must register first.

The idea is to motivate users to move down the path towards a registered user action, such as writing a post, or creating an alert, etc. After they have clicked “post” or “create an alert” button, and they are ready to save the work, and want to activate the post or alert, at this point we will trigger registration. This UI pattern is called “lazy registration” and is intended to provide a sample of what is available before formal registration, or conversion. We believe that by leveraging this pattern we will be able to increase conversion. We also have guardrails in place to prevent against erroneous or malicious listings/posts - we review every posting and they are approved by our team, who are also SFSU students.

Registered users to the site can post a listing and we encourage them to post an image as they get the most clicks, and provide more than one way of contacting them. We provide these suggestions in order to increase the listing’s attractiveness to the students; i.e. posting with images gets more clicks, posting that allow more flexible terms of contract will garner more interest, etc.

Gatorrooms.com is a website designed by SFSU senior students who have had years of experience searching for rentals. We believe that a website designed by, and made specifically for, students that is fast, highlights the right features, and easy to use on mobile and desktop will prove to be valuable and competitive to our target audience compared to a general public site. Our site is designed to support ~50 users concurrently and we are confident that this niche website will serve our students and landlords for a long time.

2. Personae and Use Cases

Personae

<u>Actor - Student</u>

Students are members of the university. Some require renting because they do not have family housing available and some prefer to live closer to school. Some students require sharing rent cost and others do not. Presumably, the average modern day students is relatively familiar with technology and can follow/operate simple to moderately complicated user interface design, however, students are not expected to understand complicated processes. Students can have malicious intentions and some can lack civil behavior.

Students are desperate and cut-throat, for example, they would most likely not give up a good apartment deal for another. Many students have low amount of patience. Students communicate with a basic level of english. All San Francisco State University students speak english.Most students understand how to rent an apartment, that is, they understand that certain procedural steps are required to achieving an apartment lease such as contact with the landlord.

Actor - Landlord

Landlords can work independently or represent a realty group. Landlords rely on email to do their business online. They are highly communicative with their clients. Landlords will receive large amounts of emails. Landlord emails need to be available to the public because their clientele is the public. Therefore, being opened to the public, their emails are vulnerable to spam and other attacks.

Anyone can become a landlord. Landlords are greedy. Landlords are assumed to have very low to no technological skill. Landlords are generally incompetent and lazy, therefore presumably, Landlords can only directively click buttons and type numbers related to their greedy desires. Landlords are inconsiderately picky. For example, most landlords explicitly disallow the presence of pets under rental lease contract terms for properties that are perfectly designed for pets. Landlords have no attention span.

Commented [1]: not sure I understand what buttons or numbers are related to greed, maybe give examples of which buttons/numbers?

Actor - Admin

Admins are detail focused observers of computer and network systems. Admins have a moderate to high technological skill level. Admins are not expected to have programming skills but may have programming knowledge. Admins understand how to make database queries and use databases. Admins are trusted agents who are employed by the company to manage site content and administrate the website's user behavior therefore admins will do things like filter our website data. Admins are not automation scripts, they are humans and therefore can have malicious intentions, but admins are rarely malicious. Admins have the ability to communicate directly with the developers. Admins cannot handle work overloads, i.e. can handle less than 20000 service requests per day. Each admins has a working interval and therefore each admin cannot work indefinitely.

Use Case

2.1	Student (Unregistered) can browse & sort by price , location, method of transportation without logging in.
2.2	Student (Registered) can contact landlord after viewing the listing on the screen once they have

	registered.
2.3	Students (Registered) can view their communication with the landlord and understand next steps required to secure their rooms.
2.4	Students (Registered) can save the listings that they like.
2.5	Students (Registered) can elect to choose alerts so they can be emailed without having to visit the site.
2.6	Landlord (Unregistered) can browse, view, and start their apartment listing posts, however they can only finish after registering.
2.7	Landlord (Registered) can complete the post after registering on the site. However, the post will not be live until the Admin has reviewed and approved the posting.
2.8	Landlord (Registered) can check his/her dashboard and view messages from students.
2.9	Landlord (Registered) can be emailed when they are contacted by a student and can view messages in their email.
2.10	Landlord (Registered) can remove posting on the site if they changed their mind or room has been filled.
2.11	Admins can review, approve, decline, several listings in bulk so as to save time.
2.12	Admins can be notified/emailed when a landlord has posted a listing and needs to be reviewed.
2.13	Admins can communicate with the poster and request edits to be made to the posting.

3. Data Definitions and Entities

Listing The advertisement posting of the apartment by the landlord. Includes the date it was posted, image, number of rooms, address, distance, and price.

Listing Image An image should be a proper size and resolution, and should be only of an apartment.

Listing Address A residential valid address that follows a defined format.

Listing Price A price of the listing per month in US dollars.

Listing Distance A distance in miles to SF State campuses.

Guest User A user that can browse website and see the listings and contact Landlords.

Registered User The same abilities as a guest user, but their information will be stored.

Admin User A user that will verify the listings submitted by the Landlord users.

Landlord User A user that will have an ability to create the listings and send them for review.

User Email Email address of the user that will needed to be verified to validate this a legitimate address.

User Phone Number Phone number to connect to the user for admin purposes.

Message A communication unit that will be used by Users. Includes content, date, sender and recipient.

Favorite A rental listing can be added to the set of saved info of user's database.

Alert A listing can be emailed to the users who elect to be emailed

4. Functional Requirements

1. User shall be able to browse the list and details of the listing best on desktop.
2. User shall be able to sort the list ascending, descending date of posting, monthly rent price, distance to the campus, distance to popular study spots, and keyword search for their listings.
3. User shall be able to review a listing and find commuting directions and time estimate by using the Google API.
4. Users shall be able to review the About page and read team's profile on mobile and desktop easily.
5. Users shall be able to review the listings quickly whether they are on mobile or desktop.
6. Admins shall be able to have a dashboard allowing them to review and reject posting.
7. Landlord shall have a dashboard allowing them to review messages from user and contact the student to reply.
8. Admins shall be able to delete but not modify the listings from customers.
9. Users shall be able to contact the landlords or agents if they have further questions about their listing.
10. Users shall be able to bookmark or save their favorite listings to their shopping cart.
11. User shall be able to filter their listing to what they desire(i.e., garage, community amenities, heating/cooling and more types of filters).
12. Users shall be able to view GatorRooms.com's social media platforms.
13. Users shall be able to click on the "Customer Portal" tab that directs them to the registration and sign up page where they are able to keep their listing up to date and respond to renter reviews.
14. Users shall be able to fill out a "Refer a friend" form for their friends, families and relatives.
15. Users shall be able to print their listings in a printer-friendly format from the site.
16. Users shall be able display the property images in a grid with navigation; when clicked, the larger version of the image is displayed.
17. Users shall be able to create alerts and emailed when the listing fitting their criteria is posted
18. Landlords shall be able to publish multimedia like images, or a videotape(virtual tour) of their properties so that students shall be able to view it.
19. Users shall be able to have access to a built-in rental calculator to help students avoid commiting to

a property they cannot afford and keep rental expectation in check.

20. Users shall be able to view the Frequently Asked Questions(FAQ) page.
21. Users shall be able to access the forum page where they can contact other students or landlords for assistance.*

5. 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 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. 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. (Important so as to not confuse this with a real application).

5. Competitive Analysis

The goal of our website is that it strikes a balance between being comparable with competitors and especially attractive to SFSU students.

	Zillow.com	Homes.com	Craiglist.com	GatorRooms.com
Search Bar	++	++	+	+
Browse	+	+	+	+
Sort by	+	+	+	+
Login	+	+	+	+
User Friendly	+	+	+	+
Saved Searches	++	+	+	+
Favorites	-	+	-	+
Walking, biking, muni time estimate to school	-	-	-	+

Gatorrooms.com vs Competitors comparison

Gatorroms compares favorably against the competition that currently is available. While Gatorrooms doesn't stand out in any specific category, it makes up for that by being the only website that is not lacking in any of the features we deem necessary for our target audience. Going category by category we can see that Zillow.com and Homes.com have an upper hand when it comes to their search bar. All four sites have the capability to browse homes and they all do it about the same. All four site have a good sort by option as well as an easy Login process. After trying out all websites it was determined that all 4 websites have a friendly user interface. Where Gatorrooms.com stands out is by being the only website to provide the user with a walking, biking and muni time estimate to school.

6. System Architecture and Technologies

Team 9 stack:

- Server Host: Amazon EC2, Instance size 8 gB (1 CPU and 1GB RAM)
- Operating System: Amazon Linux 2 AMI (HVM), SSD Volume Type
- Database: MySQL 5.5.62
- Web Server: Amazon Web Services
- Server-Side Language: JavaScript (1.7[ECMAScript2018])

- Additional Technologies:
  - UI Framework : React.js Material UI
  - Backend Framework: Node.js Express, NodeJS 11.10.1
  - Team Communication: Slack, Trello, Zoom

7. Team

1.	Romeel Chaudhari	Back End Developer	
2.	Hang Li	Front End Developer	
3.	Jia Nan Mai	Front End Developer	
4.	Ismael San Juan	Front End Developer	
5.	Aliaksei Siarheyeu	Front End & Back End Lead	Github Master
6.	Marcus Wong	Front End & Back End Lead	
7.	Inez Wibowo	Team Lead	Document Editor

8. Checklist

✓ 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 ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing
✓ 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.)

*Works Cited

- https://docs.worldsecuresystems.com/user-manual/site-design/building-a-real-estate-website
- https://www.apartmentfinder.com/Off-Campus-Housing/California/Apartments-Near-San-Francisco-State-University-slzdcn4
- https://www.agentimage.com/blog/8-tips-creating-effective-websites-realtors/
- https://www.wordstream.com/blog/ws/2015/04/16/real-estate-marketing