



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.
1.1	3/7/2019	Incorporated feedback received on 3/6 for M1 submission.

1. Executive Summary

The rental website GatorRooms.com was created with the desire to build a website that is useful and built specifically for San Francisco State University students. We believe that SFSU students have unique rental preferences and their rental experiences can be better served by a website that is specifically designed for them, which may include features such as providing distances to the campus, or to study spots around the neighborhood, etc. The website is meant to be in general more attractive and relevant to those SFSU students compared to more general purpose sites.

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.

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

Actor - Student



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. In spite of their savvy technical skills, we want students to enjoy a simple experience. We will also make sure to pay attention to website security, so that students will have a safe user experience.

Students are under pressure and would appreciate a website that makes it easy for them to act quickly on a rental apartment deal. Many students use lingo and simplified English, they do not usually communicate with advanced formal 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. Some Landlords will receive large amounts of emails while others are not very comfortable with technology. Some Landlords may be comfortable with emails that are available to the public because their clientele is the public. However, some may have privacy concerns because the protection of their data is a priority.

We expect Landlords who visit our site to have some comfort with computers but a respectively low level of technological skill. Landlords are hardworking, busy people, and maybe juggling many tasks, therefore Landlords would highly desire a simplified user interface that provides the convenience when only limited amount of time is available and there is a sense of high urgency. Additionally, being able to post and read messages with very low effort, will satisfy a typical Landlord and hopefully would enjoy interacting with a rental website. Many Landlords have particular rules and preferences that are in accordance to their lease contracts which directly affect students. This direct effect between users is very important because it can cause our student clients to be discouraged from using the website. Because we will allow Landlords to have very specific details regarding their ads, we will respond by providing students the ability to filter out all the posts that do not meet their preferred living criteria.

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 will not be using automation scripts work will be done manually and carefully so that the quality of the listings they manage encourages confidence and trust. Admins have good communication skills and are able to communicate to both clients and with the developers. Admins should be presented with easy to use and understand administration tool sets, so that we can help support fast paced demands and heavy workloads.

Use Case

Student: Mary - A rental website with alert features.

Mary, an SFSU student, needs a rental apartment. She finds GatorRooms.com and enjoys the simplicity of the site since she can use the site **without registering**. She **sorts by lowest price** and sets an **alert** to be emailed when a listing is available in her price range. She can check listing details on the go, while she is commuting on the bus, or walking, or having lunch with her friends. She can feel secure that she does not need to provide her email address to the landlord to contact them, as the **email addresses are masked**. She can use the same website without having to go to another mail app to read messages from the landlord or to post a message. She can easily, and securely find a rental apartment without taking too much time out of her studies.

Student: Jon - A student seeking a student roommate using lifestyle features.

Jon is an SFSU student who is renting an apartment close to SFSU but his current roommate is soon moving out and he needs to find a new roommate. He has a good relationship with the landlord and the landlord trusts him to find a roommate to share the total costs of the two-bedroom apartment. Jon finds GatorRooms, and sees it is directed specifically to SFSU students, whom he feels he can relate easily with and may have the same lifestyle. He can **categorize his room availability** under shorter rental terms on GatorRooms.com because the landlord only wants month to month and he also includes the **distance between the rental, to the campus**, or between **popular study spots** by walking, biking, or driving, as he knows students will find helpful.

Landlord: Jill - A realtor experienced with renting needs fast performance and flexibility.

Jill is a busy realtor and she is always in her car, driving to the next open house, or on her laptop in a coffee shop entertaining prospective client. However, she realizes that at the same time, she needs to create a more stable source of income and had bought a house within walking distance to SFSU. She finds GatorRooms.com and finds the website **easy to access on her laptop** and **can create a post between**

meetings. She is a realtor so she likes that she **can use her business email address as a contact** and does not need a masked email address. She prefers to keep it all in her business email account because she highly monitors that one inbox. She is a skilled marketer and knows how to make her listing attractive and finds 3 freshman renters that she can be sure will provide her with rental income until graduation.

Landlord: Steve - A landlord inexperienced with technology, likes suggestions and simplicity.

Steve is newly retired, and he has some time on his hands. He likes to stay active but finds that his retirement income is not giving him enough income living in the bay area. He has an apartment he bought in the Sunset that he can put on the market, but he is not familiar with listing rentals to the public. He finds GatorRooms.com and is more comfortable because the site **looks simple** and **easy to use**, and it targets a small set of audience, SFSU students. He is able to view other listings and see examples of how others have posted without having to register. Once he is ready, he finds the posting process easy, as the pages **provides tips on how to make the listings attractive**, and he becomes more confident that the posting can be attractive. He likes that his email address is masked, and he wants students to contact him through the site.

Admin: David - An inexperienced admin leverages convenience tools on the dashboard.

David is a new website administrator who just graduated from SFSU. He is excited to work on GatorRooms.com because he is familiar with the target market and believes the work level is just right. GatorRooms can only hire one developer and his automation experience is limited. He still believes he can do a great job. Using the **Admin dashboard** on GatorRooms, he can review, approve, and reject, several listings **all on one page, in bulk**, without having to click on each link, and he is not required to edit the postings himself. Considering GatorRooms.com has a small database, David can go to his dashboard and tackle most of the posting requests coming in during the 8-hour work day work level and does a great job. Additionally, as a plus, he can effectively troubleshoot logging in issues, and review postings on the website, **on the same dashboard page**.

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.

- **Image** An image should be a proper size and resolution and should be only of an apartment.
- **Address** A residential valid address that follows a defined format.
- **Price** A price of the listing per month in US dollars.
- **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

Registration record A set of information obtained during registration such as first name, last name, email address.

4. Functional Requirements

Guest User (Not registered)

1. Guest User shall be able to browse the list and details of the listing best on desktop.
2. Guest 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. Guest User shall be able to review a listing and find commuting directions and time estimate
4. Guest User shall be able to review the About page and read team's profile on mobile and desktop easily.
5. Guest User shall be able to review the listings quickly whether they are on mobile or desktop.
6. Guest User shall be able to view GatorRooms.com's social media platforms
7. Guest User shall be able to fill out a "Refer a friend" form for their friends, families and relatives.
8. Guest User shall be able to print their listings in a printer-friendly format from the site.
9. Guest User shall be able to click a different way of viewing the listing and display the property's larger version of the image.
10. Guest User shall be able to have access to a built-in rental calculator to help students avoid committing to a property they cannot afford and keep rental expectation in check.
11. Guest User shall be able to view the Frequently Asked Questions(FAQ) page.
12. Guest User shall be able to access the forum page where they can contact other students or landlords for assistance.
13. Guest User shall be able to filter their listing to what they desire(i.e., garage, community amenities, heating/cooling and more types of filters).

Registered User

14. Registered users / Landlord shall have a dashboard allowing them to review messages from user and contact the student to reply.
15. Registered users shall be able to bookmark or save their favorite listings to their shopping cart.
16. Registered users shall be able to login to access favorited listings and respond to messages.
17. Registered users shall be able to create alerts and be emailed when the listing fitting their criteria is posted.
18. Registered users / 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.

Admins

19. Admins shall be able to have a dashboard allowing them to review and reject posting in bulk.
20. Admins shall be able to delete but not modify the listings from customers.
21. Admins shall be able to help users troubleshoot issues with registration such as logging in, form issues, resetting password, reconciling old/new accounts, etc.

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	Craigslist.com	GatorRooms.com
Search Bar	++	++	+	+
Guest Browse	+	+	+	+
Sort by price	+	+	+	+
Login	+	+	+	+
User Friendly	+	+	+	+
Saved Searches	++	+	+	+
Favorites	-	+	-	+
Walking, biking, driving, muni time estimate to school	-	-	-	+
Simple and fast posting process	-	-	++	++

GatorRooms.com vs Competitors comparison

GatorRooms compares favorably against the competition that currently is available. GatorRooms stand out 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 sites have a good sort by price 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, driving and muni time estimate to school. Additionally, GatorRooms posting experience will be a simple and fast process that would require very little to no experience in posting.

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 Siarheyev	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.)