SW Engineering CSC648/848 Section 01 Fall2016

On-line apartment rental site tailored to SFSU students

GatorRent

Team 05

Soumithri Chilakamarri (Team Lead) schilaka@mail.sfsu.edu

Matthew Wishoff (C.T.O.)

Kevin Fang

Guanming Pan

Jeffrey Ilar

Emil Santos

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History Table

S.No.	Version	Revision Date	Revision Description

1. EXECUTIVE SUMMARY

On December 15th, we will be releasing Gator Rent a website that allows San Francisco State University students to rent apartments, or find roommate(s) to lease too. Users will also be able to use our website from their mobile device. We are going to make sure we launch on time on December 15th by using an agile development structure and methodology. Our product will allow San Francisco State University students to search and rent apartments they're interested in. By being able to filter by things such as price, allowance of pets, distance from the school, smoking allowed or not. A Leaseholder will be forced to create an account before posting so content on the website can be better managed, and people posting against our terms of service can be removed by an admin. A user will also be able to see the location of the house or apartment with the use of google maps. This allows users to have a better sense on where they will be living instead of just giving them an address. Overall our team seeks to make the renting process easier for students attending San Francisco State University. We accomplish this by giving them a website to seek out a place to live for a semester or longer while attending San Francisco State University, and the ability to customize their search for their individual housing needs.

2. USE CASES

2.1. Student:

Tony is a 20 year old **student** at San Francisco State looking to find an **apartment**.With **GatorRent** he is able to narrow his search to apartments with two bedrooms. Tony also **filters** apartments by **price** and **pets allowed** aswell. In just one hour of using GatorRent Tony finds two suitable aprtments and sends a **message** to both posters.

Sandra uses **GatorRent** to search for leaseholders specifically subletting a single **room.** By using the map feature of **GatorRent** Sandra is able to get a nice idea of the relative distance between the listings and school. Within a day Sandra is able to find several apartments in Park Merced subletting rooms.

2.2. Leaseholder:

Dorothy is a 57 year old **leaseholder** to a **house** near San Francisco State and she would like to advertise it for rent. She does not like long **registration** processes on websites. Dorothy wants to post **pictures** of the apartment and also set the **price** she is renting for. She also wants renters to know the house includes its own washing machine and dryer. Lastly she wants to tell renters she is willing to negotiate the price as a **special detail**. **GatorRent** is able to meet all of her needs. After going through the quick registration process; she uploads her pictures, sets the desired price, and indicates the house has a washer and dryer. Before finalizing the posts she writes that the **price** is negotiable. Within three weeks she meets five potential rentees and is able to sublet the house the next month.

2.3. Roommate Finder:

Henry is a **student** at San Francisco State and is looking to replace his roommate. With **GatorRent** he is able to indicate he is looking for a non-smoker who does not drink. Henry also lists specific details of the apartment such as **size**, **number of roommates**, the total rental **price**

that is paid by the roommates each month. Within a week, Henry receives messages from 14 interested **students**.

2.4. Administrator:

Miranda is one of the hired **administrators** of GatorRent. Her job is to review **flagged** postings and **deletes** them if they violate the site's guidelines. She is also in charge of support and as such she can change user passwords and respond to any user messages. On rare occasions she also **deletes** user accounts responsible for repeatedly posting offensive content.

3. DATA DEFINITION

3.1. User : Any person who uses GatorRent is a User. In GatorRent, a user can be Student, Leaseholder or an Admin.

3.1.1. Student : A User who is studying in SFSU is a Student. A Student uses GatorRent for finding the desired room.

3.1.2. Leaseholder : A User who would like to advertise the room for renting in GatorRent is a Leaseholder. A Leaseholder should have an account in GatorRent and a Student can also be a Leaseholder.

3.1.3. Admin : A User who monitors GatorRent is an Admin.

3.2. User_Type : It denotes the type of user - Student, Leaseholder, Admin. This information is used to authorize privileges around the website.

3.3. Account : An Account is the User Information in GatorRent. An Account is created when a user signs up in GatorRent. A user can login into GatorRent using his Account credentials. Every user need not have an account in GatorRent.

3.4. Room : A room is the rental house that is advertised in GatorRent.

3.5 Room_Type: It denotes the type of the room available for renting in GatorRent. GatorRent has three types of room - single bedroom, two bedroom and a three bedroom.

3.6. Address : An Address is the location of the room advertised by the Leaseholder in GatorRent.

3.7. Relative Distance : It denotes the distance between the room advertised in GatorRent and SFSU.

4. INITIAL LIST OF FUNCTIONAL SPECIFICATIONS

4.1. Buyer

4.1.1 The buyer shall be able to search the website for rental listings

4.1.2 The buyer shall be able to filter listings by marking box settings that fit their needs

4.1.3 The buyer shall be able to view a map(google) of the surrounding location(or to sfsu)

4.1.4 The buyer shall be able to create an account

4.1.5 The buyer shall be able to login to an account

4.1.6 The buyer shall be able to contact a seller or other buyers

4.1.7 The buyer shall be able to report false claims

4.1.8 The buyer shall be able to favorite certain rentals

4.1.9 The buyer shall be able to view pictures and videos

4.2. Seller

4.2.1 The Seller shall be able to create an account

4.2.2 The Seller shall be able to update their posting

4.2.3 The Seller shall be able to login to their account

4.2.4 The Seller shall be able to list posting(rentals)

4.2.5 The Seller shall be able to post pictures/videos of their rental

4.2.6 The seller shall be able to mention special details

4.3. Administrator (Admin)

4.3.1 The Admin shall be able to log into an administrative account

4.3.2 The Admin shall be able to delete posts

4.3.3 The Admin shall be able to remove/ban users

4.3.4 The Admin shall be able to change passwords

4.3.5 The Admin shall be able to communicate with buyers/sellers

4.3.6 The Admin shall be able to view an admin panel

5. LIST OF NON FUNCTIONAL SPECIFICATIONS

5.1 Security

5.1.1. Application shall be hosted and deployed on Amazon Web Services as specified in the class

5.1.2. Data shall be stored in the MySQL database on the class server in the team's account

5.1.3. Application shall be served from the team's account

5.1.4. Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.

5.1.5. Messaging between users shall be done only by class approved methods to avoid issues of security with e-mail services.

5.2. Performance

5.2.1. No more than 50 concurrent users shall be accessing the application at any time

5.2.2.Google analytics shall be added for major site functions.

5.2.3. Site security: basic best practices shall be applied (as covered in the class)

5.3. Optimization

5.3.1. Application shall be optimized for standard desktop/laptop browsers, and shall render correctly on the two latest versions of all major browsers: Mozilla, Safari, Chrome. It shall degrade nicely for different sized windows using class approved programming technology and frameworks so it can be adequately rendered on mobile devices

5.3.2. The language used shall be English.

5.3.3. Application shall be very easy to use and intuitive. No prior training shall be required to use the website.

5.3.4. Pay functionality (how to pay for goods and services) shall be simulated with proper UI, no backend.

5.4 Best Practices

5.4.1. Application shall be developed using class provided LAMP stack

5.4.2. Application shall be developed using pre-approved set of SW development and collaborative tools provided in the class.

5.4.3. The website shall prominently display the following text on all pages "SFSU Software Engineering Project, Fall 2016. For Demonstration Only". (Important so as to not confuse this with a real application)

6. COMPETITIVE ANALYSIS

Website	Search	Map	Photo	Payment	Message	Feedback
craigslist.org	Y	Y	Y	N	Y	N
zillow.com	Y	Y	Y	N	Y	Y
apartments.com	Y	Y	Y	N	Y	Y
GatorRent	Y	Y	Y	Y	Y	?

Y: Feature is available

N: Feature unavailable

?: Potential feature

The unique feature of GatorRent, when compared to other rental websites is the Roommate Finder. Roommate Finder allows an SF State Student to rent a room with other SF State Students. By using Roommate Finder, a Student can even share the rooms with another Student pursuing the same major in SFSU.

7. HIGH-LEVEL SYSTEM ARCHITECTURE

The System architecture for **GatorRent** uses two servers - ***sfsuswe.com*** and ***sweng.education***. GatorRent is developed and hosted on ***sfsuswe.com*** sever, which consists of LAMP stack, MySQL database, LINUX shell accounts and MINI php frameworks. The other server, ***sweng.education*** has GitLab accounts used as a cross-communication platform for code deployment and QA testing.

The front-end development uses LAMP stack tool and Bootstrap framework. So, what is LAMP stack? **LAMP stack** tool is a popular open source web platform commonly used to run dynamic web sites and servers. It is very flexible choice for developing web applications which need high performance and reliability. It is Linux, Apache, MySQL, PHP, Python, Perl compatible platform.

Bootstrap is a free and open-source front-end web framework for designing websites and web applications. It contains HTML and CSS based design templates for typography, forms, buttons, navigation and other interface components, as well as optional JavaScript extensions. Unlike many web frameworks, it concerns itself with front-end development only.

Every website we find on internet needs to be developed has a foundation of skeleton structure. Likewise, the skeleton structure for our website is MINI. **MINI** is an extremely simple and easy to understand skeleton PHP application. Why MINI? Well, the straight-forward answer would be MINI is easy to install, runs nearly everywhere and doesn't make things more complicated than necessary.

In this project, the back-end development uses PHP as the scripting language. What is PHP? Why do we use it? Firstly **PHP**, *Hypertext Preprocessor*, is a server-side scripting language basically designed for web development. PHP code is interpreted by a web server via a PHP processor module, which generates the resulting web page. For the later question, the answer is

that PHP is free and easy to code. PHP, though GNU General Public License (GPL) incompatible, can be embedded into HTML code and can be used in combination with various web template systems, web content management systems and web frameworks..

The data for the website is stored in ***sfsuswe.com*** server. **MySQL**, an Open Source Relational SQL database management system, is hosted on this server. It is one of the best RDBMS being used for developing web-based software applications in terms of usage and practice.

jQuery is another tool which will be used to design GatorRent. jQuery's syntax is designed to make it easier to navigate a document, select DOM elements, create animations, handle events, and develop Ajax applications. jQuery also provides capabilities for developers to create plug-ins on top of the JavaScript library. This enables developers to create abstractions for low-level interaction and animation, advanced effects and high-level, themeable widgets. The modular approach to the jQuery library allows the creation of powerful dynamic web pages and Web applications.

For the other server, ***sweng.education***, has **GitLab** which is an application to code, test, and deploy code together. It provides Git repository management with fine grained access controls, code reviews, issue tracking, activity feeds, wikis, and continuous integration. GitLab consists of Repository, a file storage manager, and Master which is a branch which contains the entire code of the website.

During the last 2 weeks of semester, the website will be hosted on **Amazon Cloud**, a cloud storage application managed by Amazon. The service offers secure cloud storage, file backup, file sharing, and Photo printing. Using an Amazon account, the files and folders can be transferred and managed from multiple devices including web browsers, desktop applications, mobiles, and tablets.

8. TEAM

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