SW Engineering CSC648/848 Section 2 Fall 2016

SFSU Rental Hub

Team Number 16

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Milestone 1

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I. Executive Summary

Our application SFSU Rental Hub looks to make it easier for students of San Francisco State University to find a place where they can live, as well as providing rental owners a chance to rent to students. We believe this idea has advantages over other competitors in this space. First, by narrowing it down to specifically students, home owners that are looking to rent out a room or an apartment already have an idea of who their clientele will be, reducing the overhead of filtering through potential renters. Second, by focusing on students that are looking for housing near their school, the logistical space and domain we have to worry about is easier to observe and manage, thus giving us the ability to create a tailored experience for our user base. Finally, this product is being developed by engineers that are knowledgeable in the realm of web application development with experience in delivering high quality products. The frontend is being developed by a team of students at San Francisco State University, both with frontend experience and experience with the application domain space. The backend is being contracted out to a team of engineers in Germany. By having a high quality product with a great user experience, users will be more inclined to use our system over others, out of ease of use and convenience.

II. Use Cases

A. Looking to Rent

John has recently graduated high school in LA. He is planning to attend SFSU in the Spring 2017 semester. All of the dormitories are already filled up, and he does not have a friend or relative in San Francisco to live with. He is wondering if there is anyone living in the area with a spare room that he can rent. John recalls the name of this website SFSU Rental Hub he saw on Facebook the other day, and checks it out. He searches for the rental space by providing the necessary details to filter it out results, more related to his need. He liked some of the rental space options from the listing. He tried to know more about the options he just liked, but for more critical details the application is asking John to register with us. After successfully registering with the application, now John is able to see the details of the rental listings. He contacted the rental space providers to show his interest in that rental space. He finds he is able to view many rental listings all at once, and that the website is specifically catered to SFSU students in need of a place.

B. Looking to Post

Mike and Mary live in the Sunset District of San Francisco. They have a daughter, age 18, who is about to move to the East Coast tomorrow for college. The parents will have an empty room for the next 6 months. They could use a bit of extra money and know that SFSU is an impacted school, so they go on Google to search for “San Francisco room rentals” to try and rent out their daughter’s room. They scroll past Craigslist after having previous bad experiences with it, and decide to try SFSU Rental Hub. They come to our web application and after exploring the application they also want to post an ad for rental space that they have. As they are trying to post the ad, the application asks them to register with us to use the ad posting functionality of the application. After successfully registering with the application, they post the ad with the details of the available rental space such as date of availability, monthly rent etc. Within the hour, Mike and Mary have got the response for the rental space they have just posted and an SFSU student, John just contacted them to show his interest in their listing.

C. Administrator

Carl has joined SFSU Rental Hub as an administrator, to help moderate the listings that are being posted. One day when browsing he notices that someone has put some obscene material in one of the photo sections for a listing. Since Carl is logged into his administrator account, he quickly deletes the listing, simultaneously removing the content so that no one else can see, and sending an email to the rental owner to inform them of the action taken.

III. Data Definitions

1. Rental Space: The type of unit that will be rented out (apartment, in-law, room).
2. Rental Listing: Listing created by a registered user with all rental unit information (price, dimensions, address, pictures, etc.).
3. Registered User: A user who has registered themselves on the website, so that they either post rental listings, or rent rental listings.
4. Guest User: A user who has not registered themselves on the website. They are still allowed to browse rental listings, but cannot post or rent rental listings.
5. Administrator: A power user who has the ability to remove rental listings that violate the Terms of Service, as well as see additional information about registered users.

IV. Initial List of Functional Specs

1. All users shall be able to view rental listings.
2. All users shall be able to use filters when browsing rental listings.

3. Non-registered users shall not be able to post rental listings.
4. Non-registered users shall not be able to purchase rental listings.

5. Registered users shall be able to post rental listings.
6. Registered users shall be able to purchase rental listings.
7. Registered users shall be able to send messages to other registered users.

8. Administrators shall be able to view basic account information of registered users.
9. Administrators shall be able to remove rental listings with inappropriate information.
10. Administrators shall be able to regulate rental listings (e.g. remove duplicates).

V. List of Non-Functional Specs

1. Application shall be developed using class provided LAMP stack.
2. Application shall be developed using pre-approved set of SW development and collaborative tools provided in the class. Any other tools or frameworks shall be explicitly approved by Marc Sosnick on a case by case basis.
3. Application shall be hosted and deployed on Amazon Web Services as specified in the class.

4. 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. Data shall be stored in the MySQL database on the class server in the team's account.
6. Application shall be served from the team's account.
7. No more than 50 concurrent users shall be accessing the application at any time.
8. Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.
9. The language used shall be English.
10. Application shall be very easy to use and intuitive. No prior training shall be required to use the website.
11. Google analytics shall be added for major site functions.
12. Messaging between users shall be done only by class approved methods to avoid issues of security with e-mail services.
13. Pay functionality (how to pay for goods and services) shall be simulated with proper UI, no backend.
14. Site security: basic best practices shall be applied (as covered in the class).
15. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development, and only the tools and practices approved by instructors.
16. The website shall prominently display the following text on all pages "SFSU/FAU/Fulda Software Engineering Project, Fall 2016. For Demonstration Only". (Important so as to not confuse this with a real application).

	Airbnb	Craigslist	Zumper	SFSU Rental Hub
Ability to Rent/Post Listings	✓	✓	✓	✓
Ability to Filter by Price, Size, and more.	✓	✓	✓	✓
Rental Listings Displayed on Map	✓	✓	✓	✓
National Support	✓	✓	✓	✗
Special Support for Students	✗	✗	✗	✓

VI.Competitive Analysis

From a high-level analysis with our competition, one can see that we are more-or-less in line with the same feature set that other big names in the space have. The difference lies in the domains we support. Where most of our competitors have national support, we are focusing on special support for students, specifically attending San Francisco State University. By constraining our domain, we can better understand the wants and needs of our customers, and provide them with a higher quality and more custom tailored experience.

VII. High-level System Architecture

Front End Technology

JavaScript
HTML5
CSS3
jQuery & jQueryUI
jQuery Plugins
Twitter Bootstrap 3
LESS (approved by CTO due to prior team experience)

Back End Technologies

Linux
Apache HTTP Web Server
MySQL Database
PHP Programming Language

IDE

NetBeans

APIs

Google Analytics
Google Maps

Software Framework

Model-View-Controller(MVC)
MINI PHP Framework

Client Side Debugging Tool

Google Chrome Developer Tool

Browser Support

Google Chrome, Mozilla Firefox, Safari

VIII. Team

Darin Evanow - Team Lead
Abhilash Shrivastava - Tech Lead
Felix Lee - Frontend Engineer
Steven Lum - Frontend Engineer