

**SW Engineering CSC648/848 Section 01 Spring 2019**  
**Milestone 1**  
**SAHARA LLC.**  
**Oasis**  
**Team 07**

**Team Members:**

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**3/6/19**

**Version History:**

**3/6/19:** document created

**Content and structure for Milestone 1 document for review:**

- 1. Executive Summary**
- 2. Personae and Use Cases**
- 3. List of Main Data Items and Entities**
- 4. List of Functional Requirements**
- 5. List of Non-Functional Requirements**
- 6. Competitive Analysis**
- 7. System Architecture and Technologies Used**
- 8. Team**
- 9. Checklist**

## 1. Executive Summary:

Here at SAHARA, we believe that careful business sense and a bit of foresight can go a long way in generating successful web-based products and applications, and this is why we believe now is the perfect time for our apartment renting and listing platform for the San Francisco State University community, Oasis!

As a working-class university in one of the most expensive real estate markets in the country, SFSU can be a difficult option for students without family or friends in the city to help them find accommodations during the school semester. Often times, students must either take on extra loans to afford a rental nearby or make long commutes in from the East Bay or even farther out. Our goal with Oasis is to connect these students with those who have space to rent directly, therefore alleviating the difficulty SFSU students face when looking for affordable and practical student housing. Our Product will eliminate the need for SFSU students to go to our competitors like Zillow or Craigslist when searching for an apartment. Our listings will be catered to their unique needs such as SFSU student roommate matching. While other websites offer general listings, we will be the only ones targeting this specific, but a sizable market.

So, what is Oasis exactly? Oasis is a rental listing platform where local residents and businesses with space to rent can post offerings that students of SFSU can then search and browse. Student users who find space that works for them can then message the lister directly through our website to set up an appointment to visit and potentially begin renting the property. Our website will be easy to use and clear to navigate with features like search filtering, mapping, and post favoriting to help students find exactly what they need. Not only will our users be able to take advantage of these expected features, but they will be able to sort listings by the distance to the campus. Also, our users can rest easy knowing that our website will be safe, and all of their personal data will be secured.

Now that you've heard a little bit about Oasis, you might be wondering just who we are here at SAHARA and we think that we are uniquely qualified to create this product. Well, as a group of computer science seniors who attend classes here at SFSU we feel that our passion for software development combined with our proximity to the target demographic of Oasis positions us perfectly to execute this project!

Thank you for your interest!

SAHARA LLC.

## **2. Personae:**

### **2.1.1 Persona: Renter**

Renters are typical SFSU student looking to find housing close to the university. They could be either freshman, sophomore, junior, senior or graduate students.

### **2.1.2 Persona: Lister**

Listers are interested in renting out their available room or apartment or an entire house to make an extra income. They have available space in their house/apartment to rent in the San Francisco city.

### **2.1.3 Persona: Administrator**

Administrator moderates the listings posted by the lister. The administrator also approves and/or disapproves the listings. Moreover, the administrator can remove any user that violates the terms and conditions of the listings.

### **2.1.4 Persona: Guest**

Guests are any users that browse our website to access listing information with a purpose to rent housing. The guests shall have limited access to the listing service that we provide.

### 2.2.1 Use Case – Sarah: Renter

Sarah is a freshman at SF State. She enjoys online shopping and is open to shopping at new sites. She works part-time and is careful with her money. She does not want to commute to school and is in the hunt for a nice apartment for a good price on a reliable site. Her goal is to get information on the listings and eventually rent out a place for herself in a timely manner.



### 2.2.2 Use Case – Robert: Lister

Robert is a recent graduate from SF State. He needs a roommate at his apartment because his old one moved out. He is good with computers, but has never posted an apartment room for rent before and is a little confused on how to do so.



### 2.2.3 Use Case – Tammy: Admin

Tammy is an artist who likes to sell her works on Etsy and is a moderator for a popular crafting forum. She likes the ease and convenience of selling and communicating with buyers online and enjoys the moderating process.



### 2.2.4 Use Case – Adam: Guest

Adam is a sophomore at SF State. He is a casual online shopper who loves to shop on many different websites. He is lazy and usually checks out all purchases by the guest. He commutes to school but is curious to see if he can afford the apartment prices in San Francisco.



### 3. List of Main Data Items and Entities:

- 3.1 Unregistered\_User:** The user has not registered. The Unregistered\_User can only browse the web pages.
- 3.2 Registered\_User:** The Registered\_User can post and edit rental information, upload images, send and receive a message from other Registered\_User.
- 3.3 Administrator:** The user can review and manage the posts on **Oasis**. The Administrator can approve and delete the posts, but unable to edit the posts.
- 3.4 User\_Profile:** We shall collect basic user profile such as first name, last name, and email from the registered users. Registered\_User can update the information as they wanted.
- 3.5 Favorite:** The list can store the registered user's favorite properties links. The user can keep tracking and comparing different properties.
- 3.6 Messages:** The list can store the information of messages between the registered users. Only the associated senders and receivers can read the messages.
- 3.7 Login:** For registered user and administrator to log in.
- 3.8 Logout:** For login registered user and administrator to log out.
- 3.9 Register:** For an unregistered user to register as the registered user. The registration process shall allow the unregistered user to create an account by creating the username, password and filling out the valid first name, last name, and email.
- 3.10 Property:** The list can store the information of properties listed on **Oasis**. The property list is further sub-divided as follows:
  - 3.10.1 Room:** A single room to rent typically from a single-family house.
  - 3.10.2 Apartment:** The apartment to rent from apartment rental agencies.
  - 3.10.3 House:** The whole house to be rented directly from the house owners.
- 3.11 Property\_Image:** The image archive can store the image of properties on **Oasis**. The image can be loaded as necessary.
- 3.12 Property\_Filter:** The filter can allow all users to sort and show out the properties as they desired.
- 3.13 Search:** All users are able to find desired properties to show out by entering the associated information.

## **4. List of Functional Requirements:**

### **Unregistered Users:**

- 4.1** Unregistered users shall be able to browse the items on the website without being registered.
- 4.2** Unregistered users shall be able to search the apartments according to proximity to SFSU.
- 4.3** Unregistered users shall be able to search the apartments by using the text search bar
- 4.4** Unregistered users shall be able to sort the list of items by price, in both ascending and descending orders.
- 4.5** Unregistered users shall be asked for registration only when they decide to contact the seller or post an item.
- 4.6** Unregistered users shall be able to sign up by creating username and password and providing email first name, last name, and address.

### **Registered Users:**

- 4.7** Registered users shall have all the privileges of the Unregistered users plus the following privileges.
- 4.8** Registered users shall be able to sign in by providing their username or email and password
- 4.9** Registered users shall be able to contact sellers and post apartment listings.
- 4.10** Registered users shall be able to access the dashboard with the list of items they have posted.
- 4.11** Registered users shall have the privilege to edit the items they have posted.
- 4.12** Registered users shall be able to send messages to sellers through the website.
- 4.13** Registered users shall be able to receive messages regarding any postings from inquiring buyers.

### **Administrator:**

- 4.14** Admin shall have all the privileges of Registered users plus the following privileges.
- 4.15** Admin shall be able to censor and delete inappropriate items.
- 4.16** Admin shall not be able to edit items posted by the Registered users.
- 4.17** Admin shall be able to delete Registered users who post inappropriate items.
- 4.18** Admin shall be able to approve legal items before they are shown on the website.
- 4.19** Admin shall be able to add/edit search categories.



## **5. List of Non-Functional Requirements:**

- 5.1** 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).
- 5.2** Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers
- 5.3** Selected application functions must render well on mobile devices
- 5.4** Data shall be stored in the team's chosen database technology on the team's deployment server.
- 5.5** No more than 50 concurrent users shall be accessing the application at any time
- 5.6** Privacy of users shall be protected and all privacy policies will be appropriately communicated to the users.
- 5.7** The language used shall be English.
- 5.8** Application shall be very easy to use and intuitive.
- 5.9** Google analytics shall be added
- 5.10** No e-mail clients shall be allowed
- 5.11** Pay functionality if any (e.g. paying for goods and services) shall not be implemented nor simulated.
- 5.12** Site security: basic best practices shall be applied (as covered in the class)
- 5.13** Before posted live, all content (e.g. apartment listings and images) must be approved by the site administrator
- 5.14** Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development
- 5.15** 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).

## 6. Competitive Analysis:

COMPETITIVE ANALYSIS MATRIX					
	Craigslist	Rent	Zumper	Apartments	Sahara
Search	++	++	++	++	++
Category	++	++	++	++	+
Sort	++	++	++	++	++
Browse	++	++	++	++	++
Message	++	++	++	++	+
Ability to filter by proximity to SFSU	+	+	+	+	++

**Legends:** Superior (++), Feature exists (+), Feature Not Available (-)

### Summary:

Sahara is dedicated to serving the SFSU students' housing needs. While our competitors serve the broader general public and have a larger market share of the housing market, they lack the connection to SFSU students and their special housing needs. We stand out from our competition because Sahara shall provide ability to filter housing by proximity to SFSU when displaying available housing markets to students.

## 7. System Architecture and Technologies Used:

Below is a list of the technologies used in CSC648.01 Team07's software stack:

Server Host: AWS EC2 Instance t2.micro (Free tier)

Operating System: Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-0ad16744583f21877

Database: MySQL

Web Server: NGINX 1.12.2

Server-Side Language: JavaScript

Supported Browser: Chrome (Versions: 71 & 72), Firefox (Versions: 64 & 65)

Additional Technologies -Web Framework: node.js Express

## 8. Team

Ratna Lama:	Team Leader, Back End
Ade Adetayo:	Front End Lead
Andrew Sarmiento:	Back End Lead
Adam Tremarche:	GitHub Master, Document Master, Front End
Hadia Andar:	UI/UX Designer
Shuyuan Deng:	Database Master

## 9. Checklist:

- 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: **DONE**
- GitHub organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.): **DONE**

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