

# Final Project for SW Engineering Class CSC 648-848 Spring 2019

Team 03



## GATORHOUSING

Gator Housing

Dhwan Shah  
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Ahmad Rangeen  
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Mubarak Akinbola  
Aye Win

Team lead email: [dshah2@mail.sfsu.edu](mailto:dshah2@mail.sfsu.edu)

URL: <http://ec2-54-193-123-249.us-west-1.compute.amazonaws.com/updatedversion/csc648-sp19-team03/Team03/index.php>

Milestone 5

5 / 20 / 2019

## **Product Summary:**

**Product Name: Gator Housing**

“GATOR HOUSING” website is basically developed by the engineers for the betterment of SF STATE students where they can rent a property (apartment, condo). This will help SF State students to get cheaper housing and will also give relief from being waitlisted for on-campus housing. SF State students can basically login or register and see the posts posted from landlord. The unique aspect about the website is, it's only for SF State students.

**Priority 1 Functions List:**

**1) Home Page:**

- The attractive home page shall show the recent posts from database. It will have search, post, about and login features

**2) Login/Registration:**

- Users shall be able to create accounts and log into them, and remain logged in during the duration of session
- Stored Passwords will be encrypted

**3) Search with Results:**

- Users shall be able to search by text (address, city, keywords) and category and get redirected to results page

**4) Post Details:**

- Each post shall have “Contact Landlord” and “Show Details” button where the user can click for more details of the post like description of the post or send a message to landlord.

5) Messaging:

- Users shall send a one-way message to landlord showing interest in the posted apartment/ condo etc.

6) Details Page:

- Users shall be redirected to detail page on clicking show details of any interested page where the user can know more about the post.

7) Admin:

- Permissions granted from DB

URL starting point: <http://ec2-54-193-123-249.us-west1.compute.amazonaws.com/front2/index.php>

Final URL: <http://ec2-54-193-123-249.us-west-1.compute.amazonaws.com/updatedversion/csc648-sp19-team03/Team03/index.php>

## Product Screen Shots:

### Home Page

The screenshot shows the homepage of the GATORHOUSING SFSU website. At the top left is the logo, which consists of a purple heart shape containing a small house icon. To the right of the logo is the text "GATORHOUSING" and "SFSU". On the far right of the header is a "SIGN IN" button with a user icon. The header also features a search bar with a dropdown menu set to "All" and a "Search" button. Below the header is a large blue banner with the text "Find Your Home, GATORS!" in white. The main content area below the banner is currently empty.

### Most Recent Posts:



📍 Address : 8865 N. Saxon Drive,

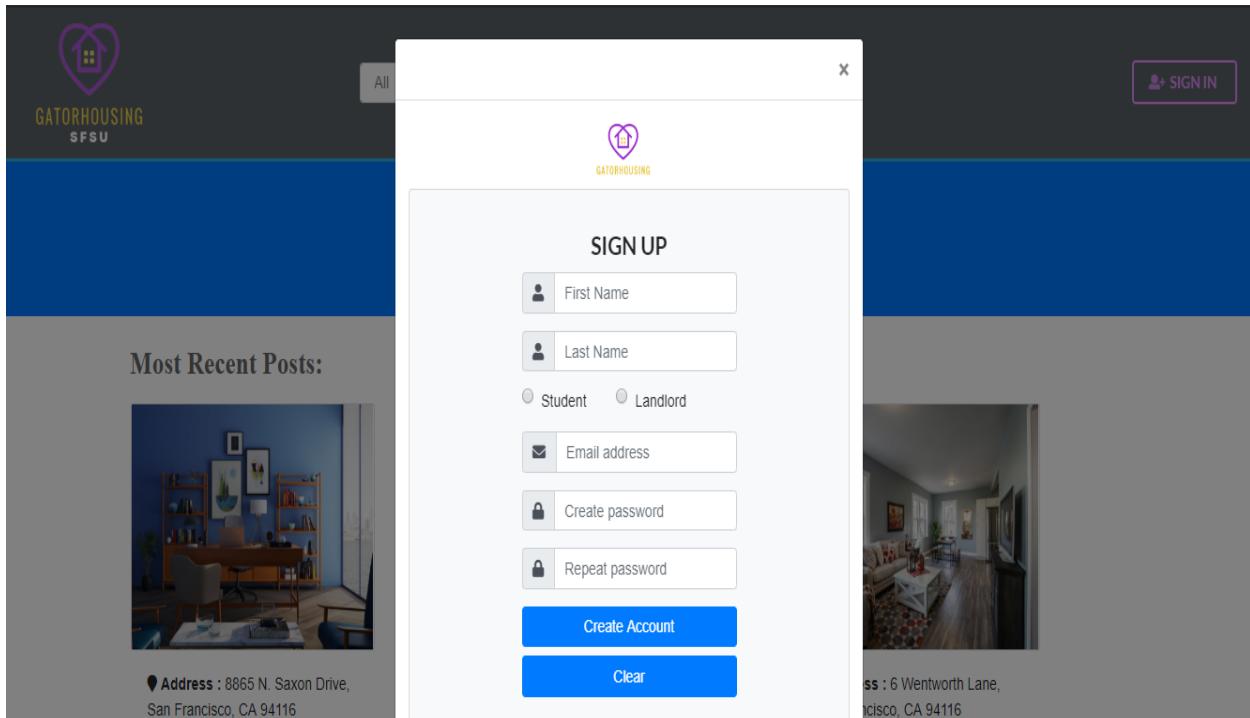


📍 Address : 43 Warren St. San

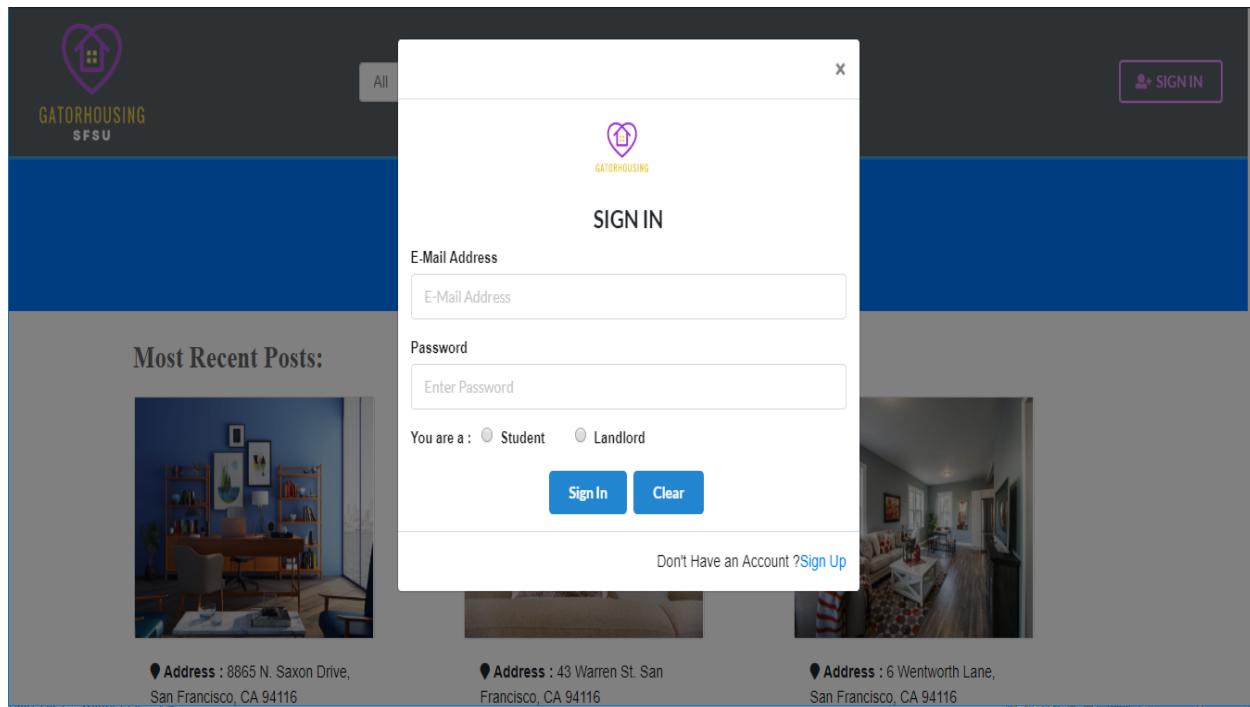


📍 Address : 6 Wentworth Lane,

Sign up



Sign In



## About Team

MEET  TEAM  
GATORHOUSING  
SFSU



Dhwan Shah  
Team Lead / Full Stack Developer

Saad Bouayad  
Backend Lead / Full Stack Developer

Mubarak Akinbola  
Backend Developer

Rajvi Shah  
Full Stack Developer

Dawit Ayele

Aye Win Sandy

Ahmad Rangeen

## Post Property

The screenshot shows the GATORHOUSING SFSU website interface. At the top, there is a dark header bar with the GATORHOUSING SFSU logo, a search bar, and navigation links for Dashboard, About, Post, and LOG OUT. Below the header, a large blue banner with the text "FILL IN YOUR PROPERTY INFORMATION". The main form area contains fields for Type (set to Apartment), Address, ZipCode, Bedrooms (1), Bathrooms (1), Price per Month (\$\$), Distance to SFSU (mi.), an optional Description (Optional) text area, and file upload controls (Choose File, Clear, Submit).

Type: Apartment

Address: Address

ZipCode: Zip code

Bedrooms: 1      Bathrooms: 1

Price per Month: \$\$\$

Distance to SFSU: mi.

Description (Optional)

Choose File No file chosen

Clear      Submit

## Logged in as Student

Find Your Home, GATORS!

**Most Recent Posts:**

  
📍 Address : 553 Church Court, San Francisco, CA 94116  
\$ Price: 4900  
Distance to SFU : 0.4  
[Contact Landlord](#)

  
📍 Address : 4 South Olive Rd, San Francisco, CA 94116  
\$ Price: 2850  
Distance to SFU : 0.2  
[Contact Landlord](#)

  
📍 Address : 8865 N. Saxon Drive, San Francisco, CA 94116  
\$ Price: 900  
Distance to SFU : 0.9  
[Contact Landlord](#)

  
📍 Address : 43 Warren St, San Francisco, CA 94116  
\$ Price: 3800  
Distance to SFU : 1  
[Contact Landlord](#)

  
📍 Address : 6 Wentworth Lane, San Francisco, CA 94116  
\$ Price: 2390  
Distance to SFU : 1.2  
[Contact Landlord](#)

  
📍 Address : 9339 Bridgerton Street, San Francisco, CA 94116  
\$ Price: 1300  
Distance to SFU : 3.5  
[Contact Landlord](#)

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Contact Information

support@gatorhousing.com  
Phone: (209)-230-0332

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Our Office Hours

Monday-Friday  
8am - 5pm

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Our Office Address

GH, 1000 Holloway Ave  
San Francisco, CA 94117

Logged in as Landlord

Hello, Abcd

All Search Dashboard About Post LOG OUT

## Rent Your Property @ GatorHousing!

**Most Recent Posts:**



📍 Address : 8865 N. Saxon Drive,  
San Francisco, CA 94116  
💲 Price: 900

📍 Distance to SFSU : 0.9

[Contact Landlord](#)



📍 Address : 43 Warren St. San  
Francisco, CA 94116  
💲 Price: 3800

📍 Distance to SFSU : 1

[Contact Landlord](#)



📍 Address : 6 Wentworth Lane,  
San Francisco, CA 94116  
💲 Price: 2300

📍 Distance to SFSU : 1.2

[Contact Landlord](#)

## Filter

**GATORHOUSING SFSU**

All Search About Post Sign In

**Filter by:**

Price	Distance to SFSU
Any	Any

**Update**

Yes



**1- Condo**

\$ Price: 4100  
Bedrooms: 3  
Bathrooms: 1  
Address : 92 West Elmwood St, San Francisco, CA 94116  
Distance to SFSU : 2.4

Contact Landlord



**2- House**

\$ Price: 5000  
Bedrooms: 6  
Bathrooms: 4  
Address : 52 Lawrence Dr, San Francisco, CA 94116  
Distance to SFSU : 2

Contact Landlord



**3- Studio**

\$ Price: 1300  
Bedrooms: 1  
Bathrooms: 1  
Address : 9339 Bridgeton Street, San Francisco, CA 94116  
Distance to SFSU : 3.5

Contact Landlord



**4- Condo**

\$ Price: 2300  
Bedrooms: 2  
Bathrooms: 1  
Address : 6 Wentworth Lane, San Francisco, CA 94116  
Distance to SFSU : 1.2

Contact Landlord



**5- Apartment**

\$ Price: 3800  
Bedrooms: 3  
Bathrooms: 2  
Address : 43 Warren St, San Francisco, CA 94116  
Distance to SFSU : 1

Contact Landlord



**6- Studio**

\$ Price: 900  
Bedrooms: 1  
Bathrooms: 1  
Address : 8865 N. Saxon Drive, San Francisco, CA 94116  
Distance to SFSU : 0.9

Contact Landlord



**7- Condo**

\$ Price: 2850  
Bedrooms: 2  
Bathrooms: 2  
Address : 4 South Olive Rd, San Francisco, CA 94116  
Distance to SFSU : 0.2

Contact Landlord



**8- House**

\$ Price: 4900  
Bedrooms: 5  
Bathrooms: 3  
Address : 953 Church Court, San Francisco, CA 94116  
Distance to SFSU : 0.4

Contact Landlord

**SESSION DATA VALUES**  
Array ( [0] => Array () [1] => 10 [2] => 7 [3] => 8 [4] => 11 [5] => 9 [6] => 5 [7] => 12 [8] => 6 )

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**Contact Information**

support@gatorhousing.com  
Phone (209)-280-4932

**Our Office Hours**

Monday-Friday  
9am - 5pm

**Our Office Address**

GH, 1800 Holloway Ave  
San Francisco, CA 94117

## Landlord Dashboard

The screenshot shows a web-based landlord dashboard. At the top, there's a dark header bar with the GATORHOUSING SFSU logo, a search bar, and navigation links for Dashboard, About, Post, and LOG OUT. Below the header, the user 'Hello, Dhwan' is logged in. The main content area has a light background. It features a profile section for 'Dhwan Shah' with links for Messages and Edit Account. A horizontal navigation bar below this includes tabs for Property, Date Posted, Status, and Manage. On the left side, there's a prominent 'Add Post +' button. At the bottom, there are three columns for Contact Information, Our Office Hours, and Our Office Address, each with specific details.

Contact Information	Our Office Hours	Our Office Address
email@gmail.com Ph: XXX-XXXX	Monday-Friday 9am - 5pm	1200 ABC Street San Francisco, CA

## Screen Shots of Key DB Tables

studnetdb.jpg ▼

The screenshot shows the phpMyAdmin interface for the 'student' table in the 'gatorhousing' database. The table has five columns: sid, fname, lname, email, and password. The 'sid' column is defined as int(11) with AUTO\_INCREMENT, while the others are varchar(30) with latin1\_swedish\_ci collation. The 'password' column is defined as varchar(40). The 'Indexes' section shows a primary key named 'PRIMARY' on the 'sid' column.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	sid	int(11)	latin1_swedish_ci		No	None	AUTO_INCREMENT	Change ↗ Drop More
2	fname	varchar(30)	latin1_swedish_ci		No	None		Change ↗ Drop More
3	lname	varchar(30)	latin1_swedish_ci		No	None		Change ↗ Drop More
4	email	varchar(100)	latin1_swedish_ci		No	None		Change ↗ Drop More
5	password	varchar(40)	latin1_swedish_ci		No	None		Change ↗ Drop More

encrypted\_pwdDB.jpg ▼

The screenshot shows the results of a SELECT query on the 'student' table. The table contains 7 rows of data with columns: sid, fname, lname, email, and password. The 'sid' column values range from 1000 to 1007. The 'password' column contains encrypted values starting with b59c67bf196a4758191e42f76670ceba.

	sid	fname	lname	email	password
<input type="checkbox"/>	1000	San Francisco	University	root11@gmail.com	b59c67bf196a4758191e42f76670ceba
<input type="checkbox"/>	1001	San Francisco	University	root18@gmail.com	b59c67bf196a4758191e42f76670ceba
<input type="checkbox"/>	1002	Saad	Bouayad	sbouayad@mail.sfsu.edu	b59c67bf196a4758191e42f76670ceba
<input type="checkbox"/>	1003	Emmanuel	Bretelle	emmanuel@gmail.com	b59c67bf196a4758191e42f76670ceba
<input type="checkbox"/>	1004	Emmanuel	Bretelle	emmanuel@outlook.com	a01610228fe998f515a72dd730294d87
<input type="checkbox"/>	1005	Saad	Bouayad	sbingodwetrust@gmail.com	6512bd43d9caa6e02c990b0a82652dca
<input type="checkbox"/>	1006	Dhwan	Shah	dshah@gmail.com	b59c67bf196a4758191e42f76670ceba
<input type="checkbox"/>	1007	Saad	Bouayad	a@a.com	b59c67bf196a4758191e42f76670ceba

property db.jpg ▼

The screenshot shows the phpMyAdmin interface for the 'gatorhousing' database. The left sidebar lists various databases and tables, including 'property'. The main area displays the 'Table structure' for the 'property' table. The table has 12 columns:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	pid	int(11)	latin1_swedish_ci	No	None			AUTO_INCREMENT	Change  Drop  More
2	price	int(11)	latin1_swedish_ci	No	None				Change  Drop  More
3	type	varchar(20)	latin1_swedish_ci	No	None				Change  Drop  More
4	address	varchar(200)	latin1_swedish_ci	No	None				Change  Drop  More
5	nBed	int(11)	latin1_swedish_ci	No	None				Change  Drop  More
6	nBath	int(11)	latin1_swedish_ci	No	None				Change  Drop  More
7	description	text	latin1_swedish_ci	No	None				Change  Drop  More
8	zipCode	int(11)	latin1_swedish_ci	No	None				Change  Drop  More
9	image	longblob	latin1_swedish_ci	Yes	NULL				Change  Drop  More
10	rentalStatus	char(1)	latin1_swedish_ci	Yes	NULL				Change  Drop  More
11	distance	float	latin1_swedish_ci	No	None				Change  Drop  More
12	owner	int(11)	latin1_swedish_ci	No	None				Change  Drop  More

dbscrenn.jpg ▼

The screenshot shows the phpMyAdmin interface for the 'gatorhousing' database. The left sidebar lists various databases and tables, including 'property'. The main area displays the 'Structure' tab for the 'gatorhousing' database. It shows the following table information:

Table	Action	Rows	Type	Collation	Size	Overhead
landlord	Browse  Structure  Search  Insert  Empty  Drop	4	InnoDB	latin1_swedish_ci	16 KIB	
messaging	Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	latin1_swedish_ci	48 KIB	
property	Browse  Structure  Search  Insert  Empty  Drop	12	InnoDB	latin1_swedish_ci	3.5 MIB	
student	Browse  Structure  Search  Insert  Empty  Drop	8	InnoDB	latin1_swedish_ci	16 KIB	
4 table(s) Sum		24	MyISAM	latin1_swedish_ci	3.6 MIB	0 B

messagingdb.jpg ▼

The screenshot shows the phpMyAdmin interface for the 'gatorhousing' database. The left sidebar lists various databases and tables, including 'messaging'. The main area displays the 'Table structure' for the 'messaging' table. The table has 5 columns:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	mid	int(11)	latin1_swedish_ci	No	None			AUTO_INCREMENT	Change  Drop  More
2	sid	int(11)	latin1_swedish_ci	No	None				Change  Drop  More
3	lid	int(11)	latin1_swedish_ci	No	None				Change  Drop  More
4	message	text	latin1_swedish_ci	No	None				Change  Drop  More
5	date	timestamp	latin1_swedish_ci	No	None				Change  Drop  More

## Google Analytics Plot for Site

The screenshot shows the Google Analytics Home page. At the top, it displays "All accounts > ec2-54-193-123-249.us-west-1.compute.amazonaws.com/front2/index.php" and "All Web Site Data". The navigation bar includes a search bar, a bell icon with 2 notifications, a grid icon, a help icon, and a user profile icon.

The main dashboard features a summary card with real-time metrics:

Users	Sessions	Bounce Rate	Session Duration
0	0	0%	0m 00s

Below this, a note says "vs last 7 days". A date range selector at the bottom shows "12 May" to "18 May".

On the left sidebar, under "REPORTS", the following categories are listed:

- Home
- Customization
- Realtime
- Audience
- Acquisition
- Behavior
- Conversions
- Discover
- Admin

On the right side, there is a blue panel titled "Active Users right now" which shows "0" active users and "Page views per minute". Below this, it says "There is no data for this view." and includes links for "Top Active Pages" and "Active Users".

At the bottom right of the main dashboard, there are links for "AUDIENCE OVERVIEW" and "REAL-TIME REPORT".

## Task Management System (Trello)

**CSC 648 - Team 03**

**To Do**

- Register Page - Landlord Form (RS) - Due Apr 14
- Rachel and Ahmad - Documentation

**Doing**

- + Add a card

**Done**

- Set a new Instance in a NEW AWS account (SB) - Due Apr 13
- Create a Database instance in AWS Server (SB) - Due Apr 13
- Register Page - Student Form (MA) - Due Apr 14
- front-end pages
- d

**Activity**

- AR Ahmad Rangeen added d to Done just now
- AR Ahmad Rangeen added front-end pages to Done a minute ago
- DS Dhwan Shah added Dawit and Rajvi - Google Analytics, Google Maps and all the frontend working proper according to the changes given by the professor. to Do May 13 at 10:07 AM
- DS Dhwan Shah added Dhwan, Saad, Mubarak - Backend Functionalities resolving and working backend for all to To Do May 13 at 10:06 AM
- DS Dhwan Shah added Rachel and Ahmad - Documentation to To Do May 13 at 10:04 AM

## Team Member Contributions

 DHWAN RAJESHBHAI SHAH  
Thu 5/16/2019 10:05 PM  
AYE SANDY WIN; Ahmad Hamed Rangeen; Rajvi Rajesh Shah; Saad Bouayad; Dawit Girma Ayele ▾

[Like](#) [Reply](#) [Share](#) [Forward](#) [More](#)

Name: Dhwan Rajeshbhai Shah  
Role: Team Lead, Frontend Developer  
Contribution:  
  
The contribution from my side was basically to make a Team working together till the website/project results with all specs achieved successfully. I divided the roles for each of the Team members according to their skill set. Frontend Team doing the Frontend Part (UI Pages), Backend Team doing the server(AWS) configuration as well as dealing with databases. I also made a Github Master which helped us to do all the operations very clearly like pushing the developed stuff, creating a new branch and not to disturb the master branch. After giving the roles the most important part was making the team members come to the meeting, share their ideas and solve the problems. So, I use to schedule meetings and team members having their tight workload somehow managed to attend the meetings and discuss the problems too. I also use to have urgent meetings with Backend and Frontend Leads to keep track of everything. I use to also drop some members from frontend and assign them to backend when the milestone like vertical Prototype had more of Backend work. So it was quite a dynamic kind of arrangement of team members. Also, with being Team Lead I am a Frontend Developer too so I developed responsive UI pages which can have a great user experience (Home Page, Profile Page, Search Page). We also individually developed our own page (About Page). Overall I had a great experience handling a team of 7 people.  
  
Best,  
Dhwan Shah

...

 Saad Bouayad  
Mon 5/20/2019 3:03 AM  
Ahmad Hamed Rangeen; AYE SANDY WIN; Rajvi Rajesh Shah; DHWAN RAJESHBHAI SHAH; Dawit Girma Ayele +1 other ▾

[Like](#) [Reply](#) [Share](#) [Forward](#) [More](#)

Name : Saad Bouayad  
Role : Back-end Lead & AWS manager  
Contributions :  
  
AWS: I set up and configured AWS twice after we faced some serious issue the first time by using RDS instance for the database deployment.  
Throughout the semester, I made sure to correctly deploy the code and update the database to ensure a working platform at all times.  
DOCUMENTATION: I was responsible of different parts for each milestone documentation, and for the formatting and editing of the first documentation.  
BACKEND: As a backend lead and member, I was responsible of implementing the recent posts feature, the search (drop down and text), the filter bar, the landlord dashboard (list of landlord listings), the messaging, the landlord messages page, redirection pages, listing post form (image), the use of blobs, the sessions (different navbars for different type of users), the database design and implementation in MySQL (tables with the proper relationships, primary keys and foreign key and indexes)  
FRONTEND: I updated as I linked all the pages accordingly, I made the proper changes in the front end, I created pages that were needed using simple HTML and CSS.  
BACKEND TEAM MANAGEMENT: I made sure to keep a good flow of energy throughout the team, handle the issues and conflict within my team and collaborate with the Front End Lead and the Team Lead to schedule meetings and assign tasks. I made sure to use Trello (Mostly from milestone 1 to milestone 4). I also scheduled 1 to 1 meetings with my team to help solve their problems and troubleshoot their code.  
As a Backend lead, I learned a lot myself about team management and conflict solving. I think I grew a lot both technically and personally.

Sent from [Mail](#) for Windows 10

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Ahmad Hamed Rangeen  
Thu 5/16/2019 7:50 PM

...

**Name:** Ahmad Rangeen

**Role:** Github Master / Front-End Team Member

**Contribution:** I help finish sections from milestone0, milestone 1, and milestone 2 documents. For milestone0, I set up the Github for team SW development. For milestone 1, I did the 'Executive Summary' section and I also did the revision for that section. For milestone 2, I worked on the 'High Level UML Diagrams' section. The front-end pages that I did were, landlord.html, landlordMessages.html and post.html. The landlord.html page is for the landlord. The landlordMessages.html is where the landlord can view all the messages that he or she received. The post.html page is where the landlord can add a post of the place they want to lease out to SFSU students.



Dawit Girma <ethdawit23@gmail.com>  
Sat 5/18/2019 1:58 AM

thumb up thumb down reply more

DHWAN RAJESHBHAI SHAH; AYE SANDY WIN; Ahmad Hamed Rangeen; Rajvi Rajesh Shah; Saad Bouayad; Dawit Girma Ayele ↗

Name : Dawit Ayele

Role: Front-End Team Lead

Contribution : In this project, I contributed in writing section of Milestone 0 to Milestone 5 documentation . I also contributed in documentation review. As a Front-End Lead, I had 3 members under me and I were responsible for defining the Front-end framework based on my team members skills and interest, assigning tasks for my team members, and managing the delivery of the each front end pages. In addition to leading my team, I also worked on the home page, filter page, and details page.

...



AYE SANDY WIN  
Thu 5/16/2019 9:22 PM

thumb up thumb down reply more

Ahmad Hamed Rangeen; Rajvi Rajesh Shah; DHWAN RAJESHBHAI SHAH; Saad Bouayad; Dawit Girma Ayele ↗

**Name:** Aye S. Win

**Role:** Front-End Team Member

**Contribution:** My role in Team 03 is mostly front-end stuffs. I and Dawit, Front-End Team Lead, are looking for the best Bootstrap choices for our team, and make the template is working perfect on both desktop and mobile device. In fact, we also test our website on different browsers to make sure the site rendered well on different browsers. Also, we try to improve the user experience on our website to provide the best browsing experience from our website. We will do the front-end coding review to make sure everything is good and if we found out some issues, we will discuss it and fix those issues as soon as possible. Besides that, I work on some parts of M0, M1, M2, M3 documentations. For M5, I and Ahmad Rangeen, a GitHub master, work on it.

...



Rajvi Rajesh Shah  
Sun 5/19/2019 6:42 PM

Ahmad Hamed Rangeen; AYE SANDY WIN; DHWAN RAJESHBHAI SHAH; Saad Bouayad; Dawit Girma Ayele; Mubarak Akinbola ▾



Name : Rajvi Rajesh Shah

Role : Back end team member

Contributions :

My role in Team 03 is mainly backend but even worked on frontend. I worked on the M0 documents elaborating and editing the document for technologies to use. I worked on competitive analysis for milestone 1 and vertical prototype for milestone 2. I worked on testing and setting up AWS, database on RDS and ec2 instance setup. I worked on troubleshooting problems encountered while migrating the database on the server. I also helped in forming tables and improving search. For milestone 3, I worked on a section and reviewed and uploaded the document on GitHub. For milestone 4 and 5, I worked on implementing custom google maps on database and frontend. I also worked on implementing the messaging page and storing them on the database. I finally, will be presenting the website during the demo day. Finally, my backend team and me will do the back-end coding review to make sure everything works.

...



Mubarak Akinbola

Mon 5/20/2019 12:52 PM

Saad Bouayad; Ahmad Hamed Rangeen; AYE SANDY WIN; Rajvi Rajesh Shah; DHWAN RAJESHBHAI SHAH; Dawit Girma Ayele ▾



Name: Mubarak Akinbola

Role: Back End team member

Contributions: During this project, being a back member I worked on setting up AWS and designing the database for our project. I was responsible for the Sign-Up/Login process of the website, making sure the data provided by the user while signing up to our website was properly and securely stored in the database by encrypting necessary data such as the user's password. I was also a part of the messaging part of the website by making sure that the message sent by the user can get stored in the database without issues. Moreover, I did the code reviews and contributed to the implementation of the search algorithm, some front-end pages, as well as the documentation of our project from Milestone 1 to 5.

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## Post Analysis

The journey of Team 03 in 648-848 Class!

DS

DHWAN RAJESHBHAI SHAH

Sun 5/19/2019 3:09 AM

Dawit Girma Ayele; Saad Bouayad; AYE SANDY WIN; Rajvi Rajesh Shah; mubarak.akinbola@gmail.com; Ahmad Hamed Rangeen; DHWAN RAJESHBHAI SHAH ✎



Hello All,

Hope you all are doing well for the finals. This mail is just to let you know the experience I had working with you guys throughout the class of 648-848. The best part is I have really good friends/developers now which I would like to work with again. The challenges which I faced during the semester and what I can do better next time is mentioned below:

### 1) Main Challenges :

Being Team Lead what I had a hard time doing was basically to make a team work together. The reason for trying to do that was because you can do more work when you are together and also you have some goals made and there is some pressure too. Also, if you are stuck with some problem you can discuss immediately and resolve it. Teammates were having their own schedule of working off-campus and also taking 5 classes which made me even tough to decide a time for 6 people to meet, discuss and work. Also one of the challenges included lack of communication. I am happy that the teammates were able to reply on text/call but at the same time, they were not active on slack because of their busy schedule. But then I really had a great thing called "Trello" where I can push the tasks and give a deadline too. Also, I didn't have any power to fire or money to increase the pay which can have an impact on the teammates. So I just had to convince them and figure it out.

### 2) What would I do better next time?

The things which I would like to implement next time being Team Lead in a more good way would be better time management. I accept that I allowed to let go at times which turned out to have more pressure at the end. I would also just pass things to someone more dexterous than the one taking more period of time to implement it.

But thank you so much for being there and handling me and my pressure till the end. I really enjoyed working with you all. I would also thank people who left their other jobs or cut their hours from other jobs just to give more time for 648 class project and to the team. You guys are really talented and I hope we get another chance to work under and we give even better performance than this time.

Thank you once again. Good Luck.

Best,

Dhwan Shah (Team Lead)