

I. Cover Page

Final Project for SW Engineering Class CSC648-848 Fall 2018

Project Title: Aquirium

Team Number: 08

Names of Students (Local Team):

Jianfei Zhao (jzhao11@mail.sfsu.edu) (Team Lead)

Feras Alazzeh (Back-end Lead)

Tommy Lik (Front-end Lead)

Lileana Wright

Edward Barajas

Alex Li

Jiawei Xu

Milestone: 5

URL of the Demo: <http://54.183.220.150>

Date: 12/16/2018

II. Product Summary

i). Name of the Product

Aquirium

ii). List of ALL Major Committed Functions (Final P1 Functions)

- 1). Unregistered user shall be able to browse items.
- 2). Unregistered user shall be able to search items by text search bar together with selection group of categories.
- 3). Unregistered user shall be asked for registration when posting an item.
- 4). Registered user shall be able to post items on the website.
- 5). Registered user shall be able to log in by using username and password.
- 6). Registered user shall be able to contact seller through in-site messages.
- 7). Registered user shall be able to access the seller dashboard to view his/her items and messages.
- 8). Admin user shall be able to access the admin dashboard to approve or reject item postings.

iii). What is Unique in Aquirium

Since Aquirium is a web application designed for students at SFSU, it provides convenience for students to search for books. For example, students can utilize text search bar and input “csc” or “CSC510”, to help them narrow down the search results of books into the computer science subject.

iv). URL to Aquirium

Deployment Server: Amazon AWS

URL: <http://54.183.220.150>

III. Milestone Documents M1~M4

The documents of M1, M2, M3 (feedback summary report), and M4, are included in this folder. They have been modified according to feedback, and have been frozen for the final delivery of Milestone 5.

Please see the attached M1~M4 milestone documents in this folder for details.


IV. Product Screenshots

AQUIRIUM SFSU Software Engineering Project (Demonstration Only) TEAM POST REGISTER LOG IN

All ▾


SFSU Online Marketplace Showing 1 to 9 out of 52

« 1 2 3 4 5 6 »




Decorative Fish 3

\$17.5 CONTACT SELLER




Decorative Fish 2

\$18.15 CONTACT SELLER




Decorative Fish 1

\$16.99 CONTACT SELLER




Decorative Fish 0

\$12.35 CONTACT SELLER




T shirt 2

\$28.24 CONTACT SELLER




T shirt 1

\$27.86 CONTACT SELLER




T shirt 0

\$27.48 CONTACT SELLER



Shoes 2

\$27.1 CONTACT SELLER



Shoes 1

\$26.72 CONTACT SELLER

Figure. Home page

DETAILED ITEM INFORMATION

**Item Title**

T shirt 0

Category

Clothes

Price

\$27.48

Seller

tsunade

Post Date

2018-10-22

Description

This is the description of t-shirt 0. This is the description of t-shirt 0.

CONTACT SELLER

Figure. Detail Page of Item Information

SEND A MESSAGE TO THE SELLER

Item Title

T shirt 0



Price

\$27.48

Sent From

jzhao11

Sent To

tsunade

Message

CANCEL

SEND

Figure. Detail Page of Contacting Seller

REGISTRATION

Required fields are marked with *

Username *

Minimum of 4 characters

SFSU ID

Password *

Minimum of 6 characters

Confirm Password *



I'm not a robot



☐ **Agree to Terms ***

REGISTER

Figure. Registration Page

LOG IN

Username *

Password *

[Forgot Password?](#)

Figure. Login Page

All ▾



POST YOUR ITEM FOR SALE

Required fields are marked with *

Title *

Category *

Select a Category ▾

Price *

Description

Title Image *

Choose File

No file chosen

Your posting has to be firstly approved by the admin.
It may take 24 hrs. Thank you for your patience.

CANCEL

POST

Figure. Detail Page of Posting Item

DASHBOARD

To edit a posted item, click **View Detail**

#	Title	Seller	Price	Status	Operation
1	Shoes 0	naruto	\$26.34	Approved	View Detail
2	Mattress 2	naruto	\$23.68	Approved	View Detail
3	Kitchen 0	naruto	\$21.02	Approved	View Detail
4	Skateboards 1	naruto	\$18.36	Approved	View Detail
5	BasketBalls 0	naruto	\$15.7	Approved	View Detail
6	Math Book MATH325	naruto	\$13.04	Approved	View Detail
7	Computer Science Book CSC510	naruto	\$10.38	Approved	View Detail

Figure. Seller Dashboard of Item List

AQUIRIUM

SFSU Software Engineering Project (Demonstration Only)

TEAM

POST

DASHBOARD

LOG OUT

All

Q

NARUTO'S
SELLER DASHBOARD

Items

Messages

DASHBOARD

To view the detail of a message, click **View Detail**

#	From	To	Creation Time	Operation
1	tsunade	naruto	2018-12-16	View Detail
2	tsunade	naruto	2018-12-16	View Detail
3	tsunade	naruto	2018-12-16	View Detail
4	tsunade	naruto	2018-12-16	View Detail
5	tsunade	naruto	2018-12-16	View Detail
6	jzhao11	naruto	2018-12-16	View Detail
7	jzhao11	naruto	2018-12-16	View Detail
8	jzhao11	naruto	2018-12-16	View Detail

Figure. Seller Dashboard of Message List

DETAILED ITEM INFORMATION

To edit this item, change the details below and click **UPDATE**

[BACK TO DASHBOARD](#)

[UPDATE](#)

Status

Approved ▼

Title

Computer Science Book CSC510

Category

Books ▼

Price

10.38

Description

This is the description of Computer Science Book 0.
This is the description of Computer Science Book 0.

Title Image

No file chosen

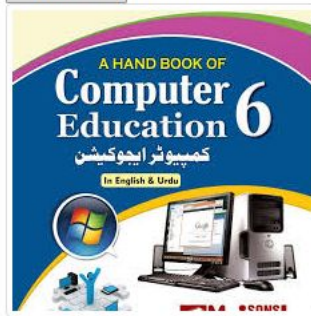


Figure. Detail Page of Editing Item (only “status” cannot be changed by the seller)

AQUIRIUM

SFSU Software Engineering Project (Demonstration Only)

TEAM

POST

DASHBOARD

LOG OUT

All ▾

Q

JZHAO11'S

ADMIN DASHBOARD

Items

Users

Messages

DASHBOARD

To view the detail of a message, click **View Detail**

#	From	To	Creation Time	Operation
1	jzhao11	tommyl	2018-12-16	View Detail
2	tsunade	naruto	2018-12-16	View Detail
3	tsunade	naruto	2018-12-16	View Detail
4	tsunade	naruto	2018-12-16	View Detail
5	tsunade	naruto	2018-12-16	View Detail
6	tsunade	naruto	2018-12-16	View Detail
7	jzhao11	naruto	2018-12-16	View Detail
8	jzhao11	naruto	2018-12-16	View Detail
9	jzhao11	naruto	2018-12-16	View Detail
10	jzhao11	itachi	2018-12-16	View Detail

Figure. Admin Dashboard of Message List

- JZHAO11'S
ADMIN DASHBOARD
- Items
- Users
- Messages

DASHBOARD

To delete a user, click **Delete**

#	Username	Creation Time	Operation
1	Alex123	2018-12-10	Delete
2	effy908	2018-12-16	Delete
3	falazzeh	2018-12-10	Delete
4	itachi	2018-11-12	Delete
5	mercurydota	2018-12-16	Delete
6	naruto	2018-11-11	Delete
7	nobodyknows	2018-11-11	Delete
8	qwerlol	2018-12-10	Delete
9	sakura	2018-11-23	Delete
10	sasuke	2018-11-11	Delete

Figure. Admin Dashboard of User List

AQUIRIUM

SFSU Software Engineering Project (Demonstration Only)

TEAM

POST

DASHBOARD

LOG OUT

All

Q

JZHAO11'S

ADMIN DASHBOARD

Items

Users

Messages

DASHBOARD

To approve/reject a posted item, click **View Detail**

#	Title	Seller	Price	Status	Operation
1	Black Shirt	falazzeh	\$50	Pending	View Detail
2	Decorative Fish 3	tommyl	\$17.5	Approved	View Detail
3	Decorative Fish 2	tommyl	\$18.15	Approved	View Detail
4	Decorative Fish 1	tommyl	\$16.99	Approved	View Detail
5	Decorative Fish 0	tommyl	\$12.35	Approved	View Detail
6	T shirt 2	jzhao11	\$28.24	Approved	View Detail
7	T shirt 1	sakura	\$27.86	Approved	View Detail
8	T shirt 0	tsunade	\$27.48	Approved	View Detail
9	Shoes 2	itachi	\$27.1	Approved	View Detail
10	Shoes 1	sasuke	\$26.72	Approved	View Detail

<<

1

2

3

4

5

6

>>

Figure. Admin Dashboard of Item List

DETAILED ITEM INFORMATION

To approve this item, choose "Approved" in **Status** and click **UPDATE**

[BACK TO DASHBOARD](#)

[UPDATE](#)

Status

Approved ▼

Title

Decorative Fish 1

Category

Fishes ▼

Price

16.99

Description

This is the description of Decorative Fish 1.
This is the description of Decorative Fish 1.

Title Image



Figure. Detail Page of Approving Item (only “status” can be changed by the admin)

V. Database Table Screenshots

Database: sfsbuysell » Table: item

id	user_id	category_id	status	title	description	price	title_img	created_at
1	2	9	0	Computer Science Book CSC510	This is the description of Computer Science Book 0...	10.38	public/uploads/image/20181021/1540115039634.jpg	2018-10-22
2	3	9	2	Computer Science Book CSC413	This is the description of Computer Science Book 1...	10.76	public/uploads/image/20181021/1540116544521.jpg	2018-10-22
3	4	9	1	Computer Science Book CSC848	This is the description of Computer Science Book 2...	11.14	public/uploads/image/20181021/1540116568719.jpg	2018-10-22

Figure. Item Table

The column “**user_id**” is the foreign key connected with **User Table**, and “**category_id**” is the foreign key connected with **Category Table**. The column “**status**” is the status of posted item, with the following meanings: 0 - “Pending”; 1 - “Approved”; 2 - “Rejected”.

Database: sfsbuysell » Table: user

id	username	password	stu_id	priority	created_at
1	nobodyknows	96e79218965eb72c92a549dd5a330112	999999001	0	2018-11-11
2	naruto	e3ceb5881a0a1fdaad01296d7554868d	999999002	0	2018-11-11
3	sasuke	1a100d2c0dab19c4430e7d73762b3423	999999003	0	2018-11-11
4	itachi	550a141f12de6341fba65b0ad0433500	999999004	0	2018-11-12
5	tsunade	5b1b68a9abf4d2cd155c81a9225fd158	999999005	0	2018-11-22
6	sakura	f379eaf3c831b04de153469d1bec345e	999999006	0	2018-11-23
7	jzhao11	96e79218965eb72c92a549dd5a330112	999999007	1	2018-12-01

Figure. User Table

The column “**password**” has already been encrypted. The column “**priority**” is the priority level of user, with the following meanings: 0 - “Registered User”; 1 - “Admin User”.

atabase: sfsbuysell » Table: message						
<div> <div>SQL</div> <div>Search</div> <div>Insert</div> <div>Export</div> <div>Import</div> <div>Privileges</div> <div>Operations</div> <div>T</div> </div>						
id	item_id	from_user_id	to_user_id	content	created_at	
1	47	7	6	Hello, is XL size available for this item?	2018-12-07	
2	46	7	5	Hi, do you have this T-shirt with white color?	2018-12-07	
7	1	7	2	Hi, is this the book for Prof. Wall's section?	2018-12-16	
5	44	7	3	Hi, do you have size 8 for this pair of shoes?	2018-12-13	
6	24	7	4	Hello, Do you have the power adapter for Thinkpad?	2018-12-16	
8	8	7	2	Hi, is this a book closely related to calculus?	2018-12-16	
9	29	7	2	Could you tell me the volume of this cooking machi...	2018-12-16	
10	1	5	2	Hi, do you have the reference answer keys for the ...	2018-12-16	
11	36	5	2	Would you mind telling me the size of this mattres...	2018-12-16	

Figure. Message Table

The column “**item_id**” is the foreign key connected with the **Item Table**, used to retrieve and pre-fill related item details such as title, image, and price. The column “**from_user_id**” and “**to_user_id**” are the foreign keys connected with the **User Table**, referring to the sender and receiver of this message.

We are using foreign keys (instead of strings) to store the item and user details in message, by following the Normal Forms of database, while avoiding redundancy of duplicate information.

atabase: sfsbuysell » Table: category	
<div> <div>SQL</div> <div>Search</div> <div>Insert</div> </div>	
id	title
1	Clothes
20	Entertainment
9	Books
12	Electronic Devices
15	Furniture
33	Fishes

Figure. Category Table

VI. Google Analytics Plot for Aquirium

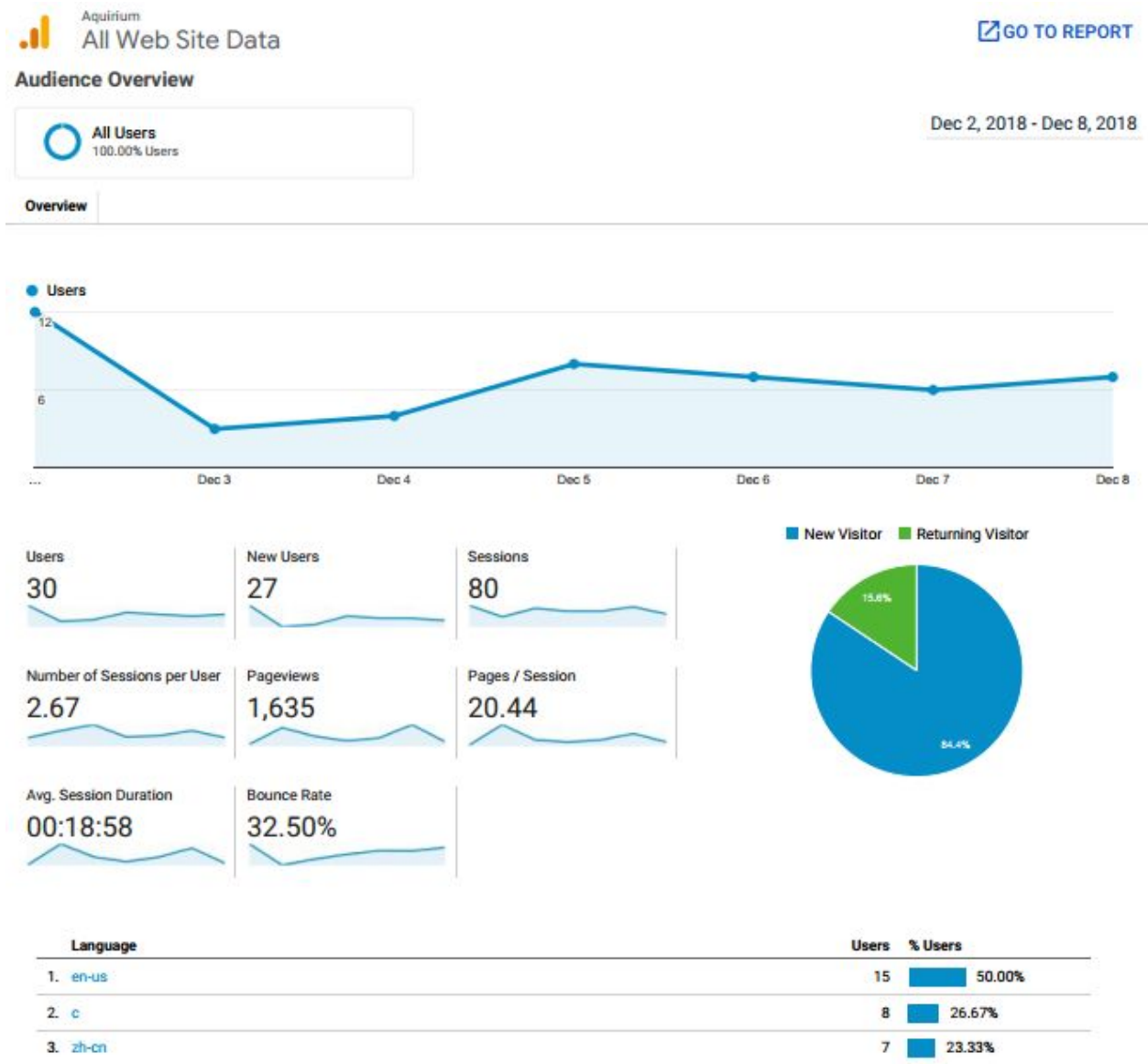


Figure. Google Analytics Report Plot for Aquirium

The Google Analytics for our team web application (Aquirium) has been inserted in the header label of the base templating page, which is extended (inherited) by all other web pages. The code for Google Analytics is available at:

<http://github.com/CSC-648-SFSU/csc648-fa18-Team08/blob/master/views/Home/base.blade.php>

VII. Team Member Contributions

Below are the summary emails for peer reviews. The commit numbers for all team members are also available at: <http://github.com/CSC-648-SFSU/csc648-fa18-Team08/graphs/contributors>. These commit numbers are collected after sending the summary emails, with some commits to the final review of code and documentation.

Re: csc648-848 fall 2018 team08 summary



Jianfei Zhao

Sat 12/15/2018 7:12 PM

To: Feras Alazzeh <falazzeh23@gmail.com>; Jiawei Xu <x1780375010@gmail.com>

Cc: Alex Li <li_alex1415@hotmail.com>; Edward Ralph Barajas;
lilywright43@gmail.com; Tommy Lee Lik



Reply all | v

Sent Items

Hi All,

As the team lead and also a member in back-end team, my contributions are:

- Assigned tasks to all team members with checkpoints
- Helped with code reviews and maintenance
- Designed high-level APIs for back-end
- Implemented message controller
- Helped with the approximate SQL search
- Helped with the lazy registration
- Helped with the control of route (url) redirection

Best,
Jianfei

Figure. Contributions Made by Jianfei Zhao (Team Lead)

Number of Commits Made by **Jianfei Zhao**: 21

Github Username: **jzhao11**

Re: csc648-848 fall 2018 team08 summary



Feras Alazzezh <falazzezh23@gmail.com>

Tue 12/11/2018 1:40 PM

To: Jianfei Zhao

Cc: Tommy Lee Lik; x1780375010@gmail.com; li_alex1415@hotmail.com;

Edward Ralph Barajas; lilywright43@gmail.com



Reply all |

Inbox

Blocked content will be shown while this message is open.

Hi,

My contributions as backend lead include:

- QA (testing application after builds)
- Helped design the database architecture
- Helped connect backend to the front end (templating tags and API)
- Helped with Git management merging branches etc.

Add on:

Helped Fix js functions and CSS controls for front-end web pages.

Best,

Feras Alazzezh

Figure. Contributions Made by Feras Alazzezh (Back-end Lead)

Number of Commits Made by **Feras Alazzezh**: 27

Github Username: **Feras Alazzezh** / **ferasalazzezh**

Re: csc648-848 fall 2018 team08 summary



Tommy Lee Lik

Tue 12/11/2018 7:42 PM

To: Lileana Wright <lilywright43@gmail.com>

Cc: ✓ Jianfei Zhao; x1780375010@gmail.com; li_alex1415@hotmail.com;

● Edward Ralph Barajas; falazze23@gmail.com ↗



Reply all | ▾

Inbox

Hello,

My contributions as front-end lead for the team project include:

- Lead the design for overall website such as: navigation bar design, item detail page, header and footer, contacting the seller, user dashboard, registration & login
- Control of css format by bootstrap
- Helped other group mates learn Figma UI design tool to help contribute towards front end process
- Ultimately helped lead the beginning development by creating storyboards and mockups

Best,

Tommy Lik

Figure. Contributions Made by Tommy Lik (Front-end Lead)

Number of Commits Made by **Tommy Lik**: 23

Github Username: **TommyL123** / **Tommylik**

Re: csc648-848 fall 2018 team08 summary



Lileana Wright <lilywright43@gmail.com>



Reply all | v

Tue 12/11/2018 7:13 PM

To: ✓ Jianfei Zhao

Cc: ● Tommy Lee Lik; x1780375010@gmail.com; li_alex1415@hotmail.com;

● Edward Ralph Barajas; falazzeh23@gmail.com ^

Inbox

Hello,

My contributions to the team project have been:

- QA testing
- Completed code review
- Helped with the UI design of some of the pages
- Completed large portions of documentation for M1-M4,

I think I have made around 15 commits.

Thanks,
Lileana

Figure. Contributions Made by Lileana Wright

Number of Commits Made by **Lileana Wright**: 21 (collected after this email)

Github Username: **lileanaw** / **Lily**

Re: csc648-848 fall 2018 team08 summary



Edward Barajas <hjamarcus2@yahoo.com>



Reply all | v

Tue 12/11/2018 8:50 PM

To: Jianfei Zhao

Cc: Tommy Lee Lik; x1780375010@gmail.com; li_alex1415@hotmail.com;
 Edward Ralph Barajas; lilywright43@gmail.com; falazzeh23@gmail.com

Inbox

Hello,

My contribution as a member of the front end team include:

- Research and descriptive table for competitive analysis
- Changes to header, navigation bar, and dashboard UI
- Register and login page
- Miscellaneous UI fixes such as changes to button colors, etc.

Best,

Edward

Figure. Contributions Made by Edward Barajas

Number of Commits Made by **Edward Barajas**: 20

Github Username: **EB21**




Re: csc648-848 fall 2018 team08 summary





Alex Li <li_alex1415@hotmail.com>

Thu 12/13/2018 8:11 PM

To:  Jianfei Zhao

Cc: x1780375010@gmail.com;  Edward Ralph Barajas; lilywright43@gmail.com; falazzeh23@gmail.com;  Tommy Lee Lik 



 Reply all | 

Inbox

Hi,

My front end tasks include:

- Helped implement static raw html webpages
 - Tasked with modifying body content of views
 - Helped implement use cases and competitive analysis
 - Helped create original mockups for contacting seller
 - Tasked with revising navigation bar
- Gave input on QA usability tests

Alex Li

Figure. Contributions Made by Alex Li

Number of Commits Made by **Alex Li**: 19

Github Username: **awexli** or **Alex Li**

Re: csc648-848 fall 2018 team08 summary



Jiawei Xu <x1780375010@gmail.com>

Thu 12/13/2018 10:25 PM

To: Alex Li <li_alex1415@hotmail.com>

Cc: Jianfei Zhao; Edward Ralph Barajas; lilywright43@gmail.com;
falazzeh23@gmail.com; Tommy Lee Lik



Reply all |

Inbox

Hi,

My contributions to the project as a back-end team member include:

- Helped design the back-end modules
- Helped with the data-retrieving process between database and webpages
- Implemented controllers for item model and user model
- Helped with inner-joint SQL queries
- Contributed to the implementation details of high-level APIs

Jiawei

Figure. Contributions Made by Jiawei (Norman) Xu

Number of Commits Made by **Jiawei Xu**: 19

Github Username: **xNormanXu / Jiawei Xu**

VIII. Post Analysis



Jianfei Zhao

Sun 12/16/2018 2:48 PM

To: Alex Li <lj_alex1415@hotmail.com>

Cc: x1780375010@gmail.com; Edward Ralph Barajas; lilywright43@gmail.com; falazze23@gmail.com; Tommy Lee Lik



Reply all | v

Sent Items

Hi All,

It is with great pleasure to work as the team lead, and collaborate with all of you to develop our software engineering project - Aquirium. All the members in team 08 have done their best to contribute to the implementation as well as documentation. Within our teamwork, the front-end team focuses more on the UI design, implementation of web pages (views), CSS/JS control, etc., while the back-end team engages in the APIs and database design (models), data retrieving process, implementation of functions (controllers), and so on.

During the entire development process, we have come across some challenges. The biggest one is how to assign members with tasks to maximize our teamwork efficiency. Although we have enough people resource (7 members), it takes us a period of time to figure out the optimal way of SE process management. We solve this by setting up schedules for weekly out-of-class meetings, which provide us more chances for communication. In group discussions, we summarize the previously completed tasks, and exchange ideas of what to do in the following week. In this way, we gradually improve our work efficiency, and therefore do not have to rush before the final milestone.

Another significant challenge is how to handle technical conflicts and code maintenance. To solve this, we use slack to contact, in which more experienced members offer help to others. Moreover, we set up checkpoints & due dates on google doc to assign different tasks to members. In this way, we avoid the conflicts where multiple members waste time on duplicate work. For code maintenance, everyone participates in code review by checking its flow and readability. We also utilize github branches to protect our project, where code is firstly submitted to the dev branch for peer review (header, variables, labels, and functions). Only readable and workable code can then be pushed to the master branch for delivery.

As the team lead, I believe that we can do better next time to address these challenges. Through this semester, everyone may have found his/her strong and weak points. As a result, we can make better checkpoints for future teamwork. According to the proficiency in different techniques and tools, each member will be given specified technical jobs that s/he is good at. For example, next time we can determine a specific member dealing with JS events, and another member handling Bootstrap CSS control. This will further improve our teamwork efficiency, while reducing code conflicts and time for code maintenance. In addition, we may also develop our own templates and resources, as the examples shown on Bootstrap.

Best,
Jianfei Zhao

Figure. Post Analysis of Team 08