



Final Report

Bubble: The Study Buddy Finder

By

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Project Scope

Our group created a web application project called Bubble. The purpose of this project was to create a social application that encouraged students to meet together in order to work on anything school related. To accomplish this, users can create study groups that other students can see and join. These user created groups would contain information that would interest potential group mates such as meeting locations, majors and class sections that the group plans on focusing on, and other notes. A secondary function that the website provides is a public bulletin board function that can be used to publicly post information for all users to see. We aim to help students not only be more proactive in their studies, but to also socialize with students in their field or classes.

Team Roles

- Cirjeffrey Baldomero: Web design team member. Styled website based on theme
- Ivan Vu: Created theme of website and helped create web pages
- Sarah Nuno: Helped plan web design interface and aided in building the web pages
- Yufei Ma: Aided in building web pages, created UML and a navigator that links pages
- Robert Gama: Database designer and PHP implementor
- Christopher Gonzalez: In charge PHP implementation and database linking

Technology/Tools

Languages

- HTML/CSS
- Javascript
- PHP
- mySQL

Other

- Database Design
 - phpMyAdmin
- XAMPP and apache
- Webstorm
- Github.com
 - Managing code
- <https://www.w3schools.com>
 - Used for reference in DB design

Previous Iterations

First Sprint

In our first sprint, we began by brainstorming ideas for our project. We decided on which tools we are going to use to complete the project. We also completed the basic designs of the first three web pages using wireframes, and created user stories for them. We were able to create basic UML diagram and CRC cards.

Second Sprint

In our third sprint, our front end developers implemented some of the wireframes into actual webpage's in basic HTML, while our back end developers implemented our ER diagram into an actual database, and began the process of linking our login page and database.

Along with this, our graphic designer created an early version of our logo design and overall theme of our web application.

Third Sprint

The third sprint, which was our final sprint for the class, we finished all the webpages and were able to have them follow the overall theme that was created in this second sprint. We also provided more labels and descriptions to make each of the web pages more user friendly and easy to navigate and consistent.

As for the functionality of the site, we were able to accomplish most of functionality we set out to have, with a few exceptions that are planned to be finished in the next few sprints. This means we were able to allow users to create groups, search for groups, as well as post to the websites bulletin board.

For the design of the logo and website, we were able to get a more polished logo that will represent the application as well as character designs for future mascots of the website that for now are used as default profile pictures.

Accomplishments/Setbacks.

Website Implementation

We decided to not use a framework when designing the website. This provided our team with the advantage of being able to control every single part of the website without having to worry about components we did not need. We were able to keep our code minimal and clean which also made it easy to find errors and debug. This was a big accomplishment for our group since the pages we wanted to work were functional without any big errors.

In our most recent iteration, we came across a few issues. We did not think about how our theme would look like in a brightly lit classroom which led to the colors looking very bright during the demo. Another issue was that we did not have a good variety of user stories. The testing was heavily contained within the group and so we did not have a variety of feedback from outside sources.

One thing we were not able to get working was hosting our website on the internet. We decided to focus on getting the website to work locally for the sake of the demo. In future iterations, we had planned on implementing a web hosting service that we can get outside users to use and test our project.

Database Implementation

For the creation of the database, due to lacking prior knowledge of MySQL language, as well as the software MySQL Workbench, a lot of research was done before the implementation of the database. Once this research was done, we began troubleshooting issues brought by MySQL Workbench and it not allowing us to connect to the local host. After successfully getting MySQL Workbench to work properly, the creation of the tables that will hold the data in the database was completed with no issues.

Next, we set out to link the login and sign up page with the database using PHP. Linking the login and sign up page took some time because we didn't know much about PHP. It also took a while to setup a machine to actually code in PHP. After a full day's research and installations, we were able to start coding in PHP to add users to the database and check the database during login. We have taken measures to make sure the password entered into the database is secure. Once we started working with PHP and PHPmyadmin, we dropped MySQL workbench and started solely using PHPMYAdmin for the rest of the project.

A problem that occurred while linking the pages to the database was that since the login and signup page were in one html file, and the signup form was inside of the login form, it was necessary to create separate pages for a login and signup. Another problem we faced is that the signup page had unnecessary input fields that needed to be cleared out and replaced for

inputs we needed for the web app. The way we dealt with this was hard coding test variables to insert into the database until we tackled the issue.

As the creation of the website continued, we found that the database had to keep growing. We not only had to keep adding new tables with multiple rows as well as adding relationships across the tuples inside the tables.

In order to test the functionality of the website in a browser, we had to install a local server, in our case we used XAMPP. For the back end developers this worked fine since we just had to change the extension of the early HTML files and then we could write PHP in the files and successfully run in the browser. The issue occurred when the rest of our team wanted to style the PHP files that we had been working on.

The way we overcame this issue was by teaching our team mates on how to install the needed software in order to run the PHP files in a browser. After this the front end developers were able to work on the styling of the site with CSS.

Ultimately, we were able to accomplish a lot of the functionality we set out to accomplish and we were happy with that.

Website Theme and Logo Design

For the rough draft of our logo, we decided to go with the three animal buddies hanging out together. The bunny and the dog represent two-somewhat-of-a-strangers thus given the unemotional faces. The cow in the middle represent our webapp, Bubble. One of Bubble's goal is to go help individuals gather together to form a study group. And this is demonstrated by having the cow smiling in the middle putting its arm around the bunny and the dog to help the two to get along. As a whole, everyone is hanging out just like a bubble.

For the final draft of the logo, we decided to get rid of the three buddies and went more of a professional looks and feel. The three buddies, though, gave the a friendly welcoming feel for the user, it took away the professional looks and feels out of the website. Thus, we took out the three buddies. One functionality of the logo button is to link back to the homepage. We know that we had to make the logo somehow feel welcoming to click on. Thus, coming up with a design that looks professional is important. So for the design of the new logo, the foreground is a three solid colored bubbles with the phrase "BUBBLE STUDY BUDDY FINDER" in the middle. These bubbles represent the three previous buddies. The colors of these bubbles were dark color contrasting with a bright yellow text in the middle to stand out.

Again, one of the challenges when designing the overall theme was the balance of aesthetic and the ease-to-navigate. The design definitely had to be easy for the user to navigate through each component of the page and at the same time having enough aesthetic elements for easing the eyes. For the background, we decided to go with a light creamy color theme to

make the website visually appealing and make the main components of the website stand out. Another benefit of having a light color theme is that the light color can mix well with other dark colors on the spectrum. This means text with colors such as black can easily stand out more making it easy to read.

Testing Bubble

During the development of each part of the website, we each did simple tests to see if we got the results we wanted. During the development of the login and signup components, we did testing to make sure that we did not get blank or invalid inputs. During the styling of the pages, we decided on the colors/look through trial and error while in development.

We also tested each other's completed component as we integrated the components together. When the bulletin board was done, we tested to see what would happen if we entered blank inputs, the pages didn't handle them as expected, so we contacted whoever made it and told them the bug for a quick and easy fix. When the pages were nicely styled we checked to see how long inputs were handled, they went off page and made the page look weird, so again we tried to fix that.

We weren't able to do any load testing because we didn't get the website running on a server.

Reflection on Overall Project

One thing we could have improved was setting up more deadlines besides the deadlines set for the whole class in order to focus on working on one individual task at a time. However, we were able to accomplish the task that we set out to in each iteration because our communication was excellent between the members. Messages were replied to quickly and thoroughly so that everyone was on the same page.

When planning on what to work on this project, team members split up to work on aspects of the website that they were comfortable with. Coming from different backgrounds and experiences, each team member had their own set of skills that they were able to apply to their parts. Throughout the development process, we all had to learn new programming languages and processes in order to get the website to work how we wanted. Members had no problem teaching one another and providing support when it came to areas that others were unfamiliar with. This helped everyone not only learn new individual skills but also how to work together as a team.

Future Iterations

Fourth Sprint

- More functionality on user profiles
 - edit profile
 - change your default picture
- Friends functionality
 - add friends
 - manage your friends list(delete friends)
- Edit Group functionality
 - invite a friend to your group
 - if you are a creator of one group, you have access to manage members of your group
 - be able to quit group
- Detailed restrictions on username, password, email address

Fifth Sprint

- Web hosting
- Chat system between users
 - group chat
 - private chat
- Integration with universities
- More security
 - password on private groups,
 - secure database for storing data,
 - SSL for an encrypted link between our web and a browser
- A “forgot my password” functionality using user’s email or cell phone number to find the password

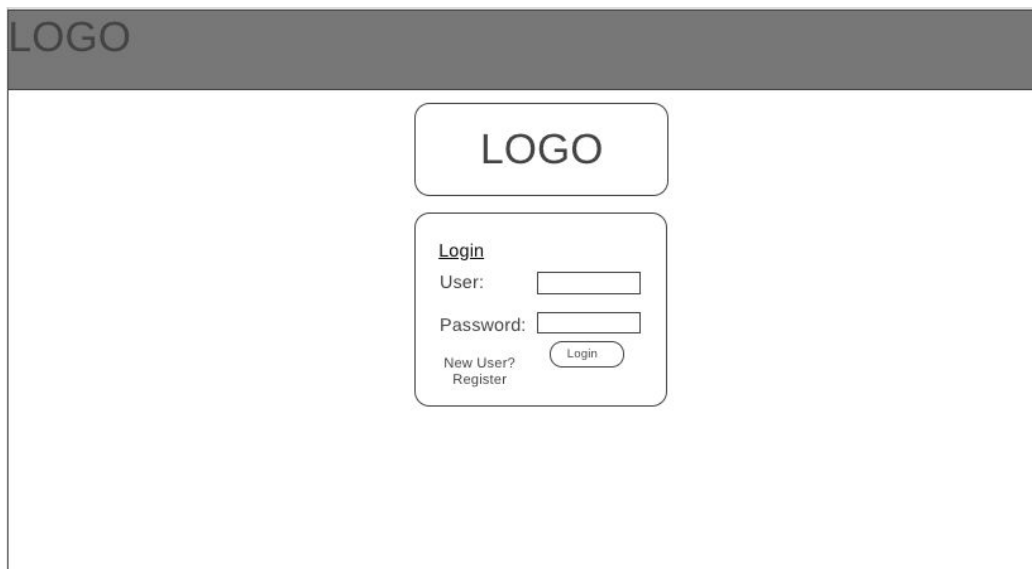
Sixth Sprint

- Give access for visitors (non-members) to the recent groups and recent bulletin board
- Showing recent groups and bulletin board on login page
- Introducing certified accounts for instructors of the university

Wireframes and User Stories

Below we have most of the wireframes that were created along with their respective user stories. We set out to have wireframes in order to give us a sense of direction for the navigation of our site, as well as functionality but we made sure to not be restricted by these diagrams, which is why some appear different from our current product.

Login Wireframe



The wireframe shows a login page layout. At the top is a dark gray header bar with the word "LOGO" in white. Below the header is a large white rectangular area. In the center of this area is a rounded rectangle containing a "LOGO" placeholder. Below the logo placeholder is a "Login" section. This section includes the word "Login" in a small font, followed by "User:" and a text input field. Below that is "Password:" and another text input field. To the right of the password field is a "Login" button. At the bottom left of the login section, it says "New User?" followed by "Register" on the next line.

Login User Stories:

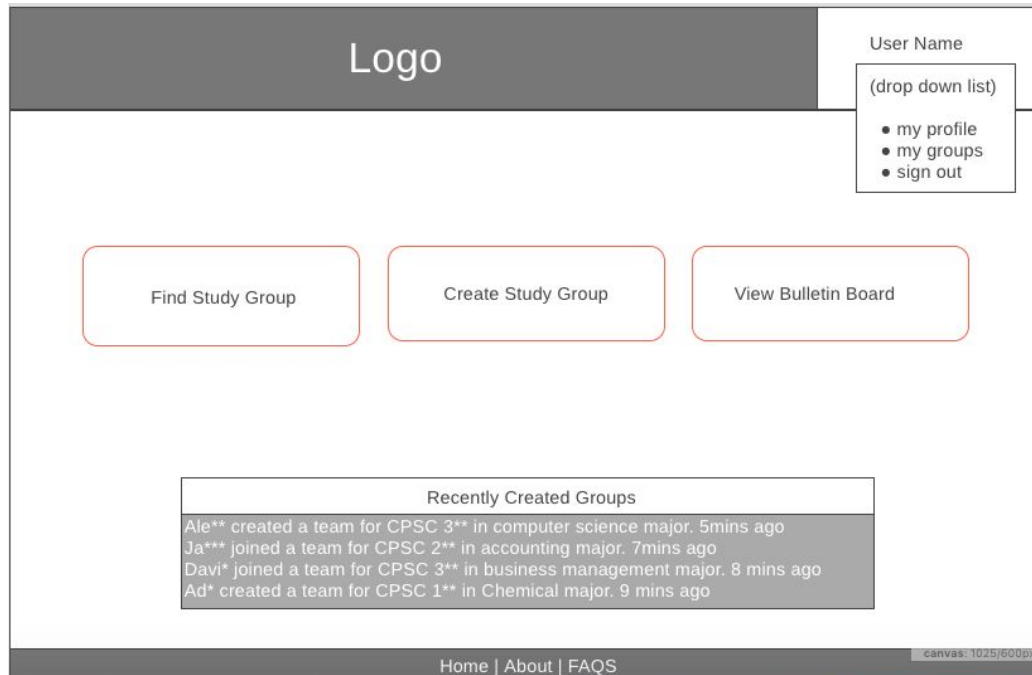
User: I want to be able to register as a new user.

Administrator: I want the user to be led to a different page made for the sole purpose of registering as a new user.

User: I want to be able to sign-in as a pre-existing user.

Administrator: I want the user to enter their username and password. When the user hits login I want the user to be sent to a different webpage, which gives them more accessibility.

After Login Wireframe



Page After Login User Stories:

User: I want to click on the “Find Study Group” that will lead me to a “search group” page that will display the existing groups and let me input a search to find the group i want.

User: I want to click on Create Study Group, that will lead me to the create study group page.

User: I want to click on View Bulletin Board, that will lead me to a page containing the bulletin board.

User: As a user I want to be able to navigate to editing/viewing my profile/account.

Create Group Wireframe

Create Group User Stories:

User: As a user, I want to create an event to finalize when my group members and I are going to meet in real life.

Administrator: I want the user to enter their class information and a name for the group.

User: As a new user, I want to introduce myself and communicate with my group members.

Administrator: Allow the users to create a chat group to easily communicate with each other.

User: As a user, I to be able to leave my group once I'm done with the class.

Administrator: I want the user to enter their class information and a name for the group.

Find Group/Search Group Wireframe

The wireframe shows a web page layout. At the top is a dark grey header with the word "LOGO" in white. Below the header is a white content area. Inside this area is a table with three columns: "Class", "Creator", and "Participants". The table contains five rows of data. Each row has a "Join" button to its right. Below the table is a text link "Didn't find what you were looking for?" and a "Create a Group" button. A vertical scrollbar is on the right side of the table. At the bottom is a dark grey footer with the text "Home | About | FAQs".

Class	Creator	Participants	
CPSC 315	BOB	1/4	<input type="radio"/> Join
CPSC 362	JANET	3/4	<input type="radio"/> Join
MATH 338	DAVE	5/6	<input type="radio"/> Join
POSC 100	WU	3/4	<input type="radio"/> Join
MATH 270A	IVAN	1/6	<input type="radio"/> Join

[Didn't find what you were looking for?](#)

[Create a Group](#)

Home | About | FAQs

Find Group/Search Group User Stories:

User: As a user, I want to be able to find an existing study group so that I can join the group.

Administrator: When given a search criteria, if no results are found, ask the user if they would like to create their own group.

User: As a user, I want to click the group name and be sent to a webpage that displays the group info.

Bulletin Board Wireframe

Bulletin Board

Subject	Creator	Replies	
Book 4 Sale	Bob	3	View
cpssc 362 Prof recommendations???	Janet	5	View
wuts gud to eat around csuf!?	Wilson	10	View
help!!!!!!	Becky	0	View
best nap spots?	Ivan	21	View

▲
▼

Post New Thread

Bulletin Board User Stories:



User: As a user I want to be able to view posts in the bulletin board as well as make a new post.

Administrator: As an administrator I want to allow the user to view the recents posts as well as let click a button that lead them to a page where they can create the new post.

User: As a user I want to be able see the subject of the post as well as view the number of replies a post has.

Website Theme Designs

Below we have the early ideas and design of the themes for the logo and website design we were going for. Take note that these are non functional designs that were created using photoshop. Some designs were improved upon while other designs were cut and will not make it to the final product.



Recent group

Sign in



Username

Password

Register

Continue

Bullentin Board



BULLETIN BOARD

Class	Creator	Members	
CPSC 315	BOB	1/4	Join
CPSC 362	JANET	3/4	Join
MATH 338	DAVE	5/6	Join
POSC 100	WU	1/6	Join
MATH 270A	IVAN	1/15	Join

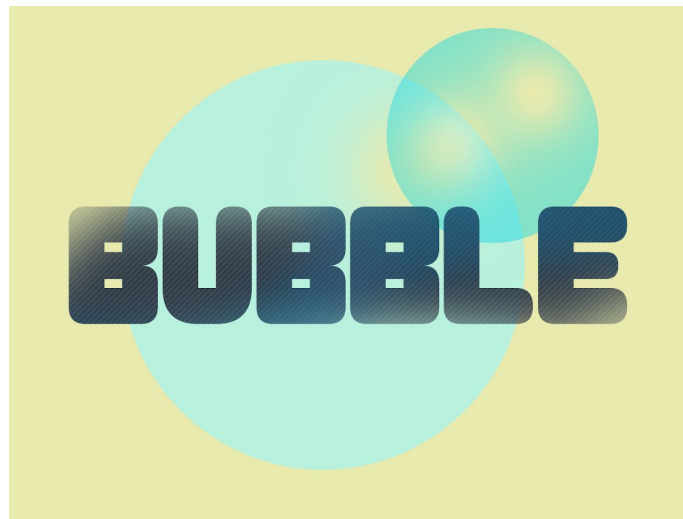
Didn't find what you were looking for?

[CREATE A GROUP](#)

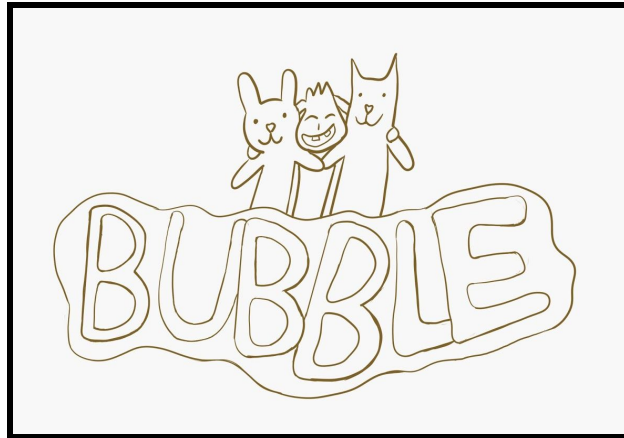
Final Overall Logo Design



Logos that did not make it



Early Logo Design Idea



Final Homepage Logo Design



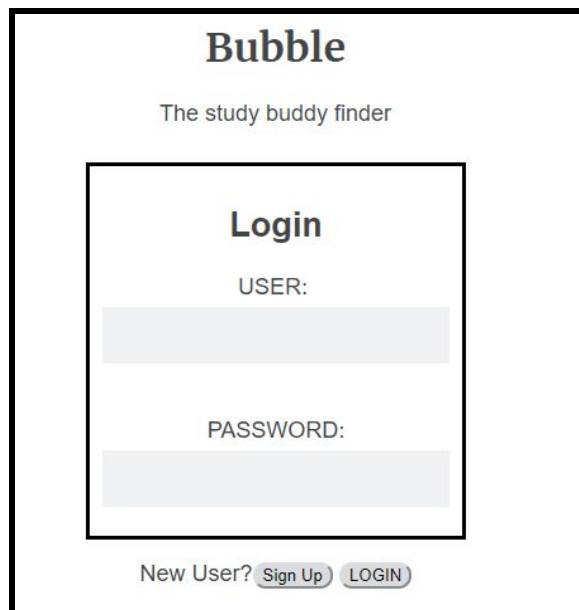
Default Profile Picture



Old vs New Website Design

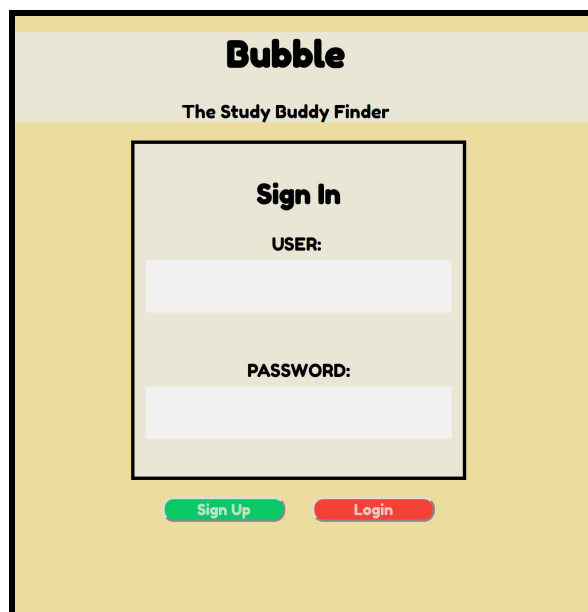
Below we are displaying the early versions of our webpages in order to give a sense of how far along the design of the website came. Take note that the new web pages being shown are actual working and functioning webpages.

Login(Old Version)



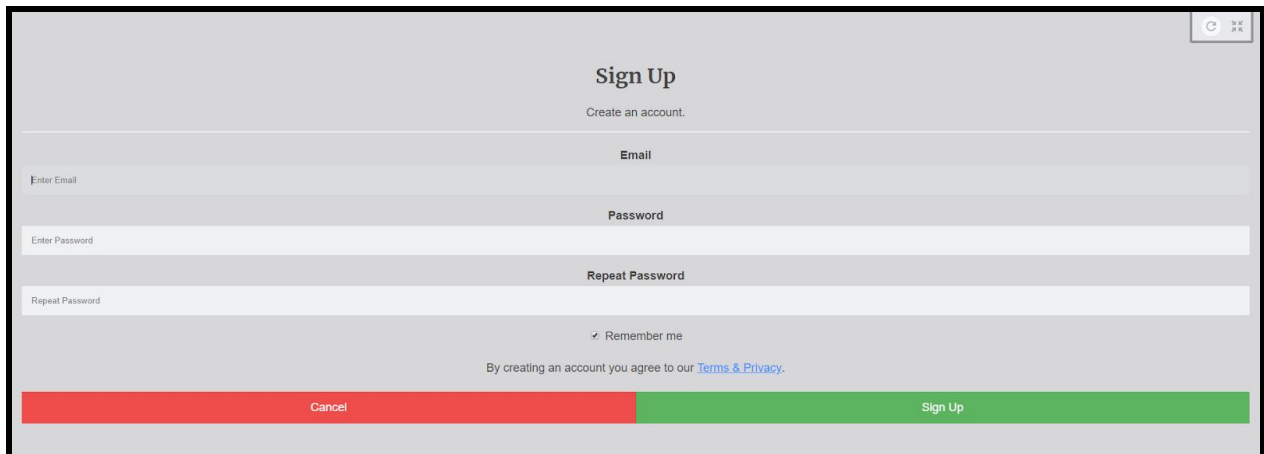
The image shows a wireframe of an old login page. At the top, the word "Bubble" is centered in a large, bold font. Below it, the tagline "The study buddy finder" is centered in a smaller font. In the center of the page is a rectangular box containing the word "Login" in bold. Below "Login" are two input fields: the first is labeled "USER:" and the second is labeled "PASSWORD:". At the bottom of the box, there is a link "New User? Sign Up" followed by a button labeled "LOGIN".

Login(New Version)



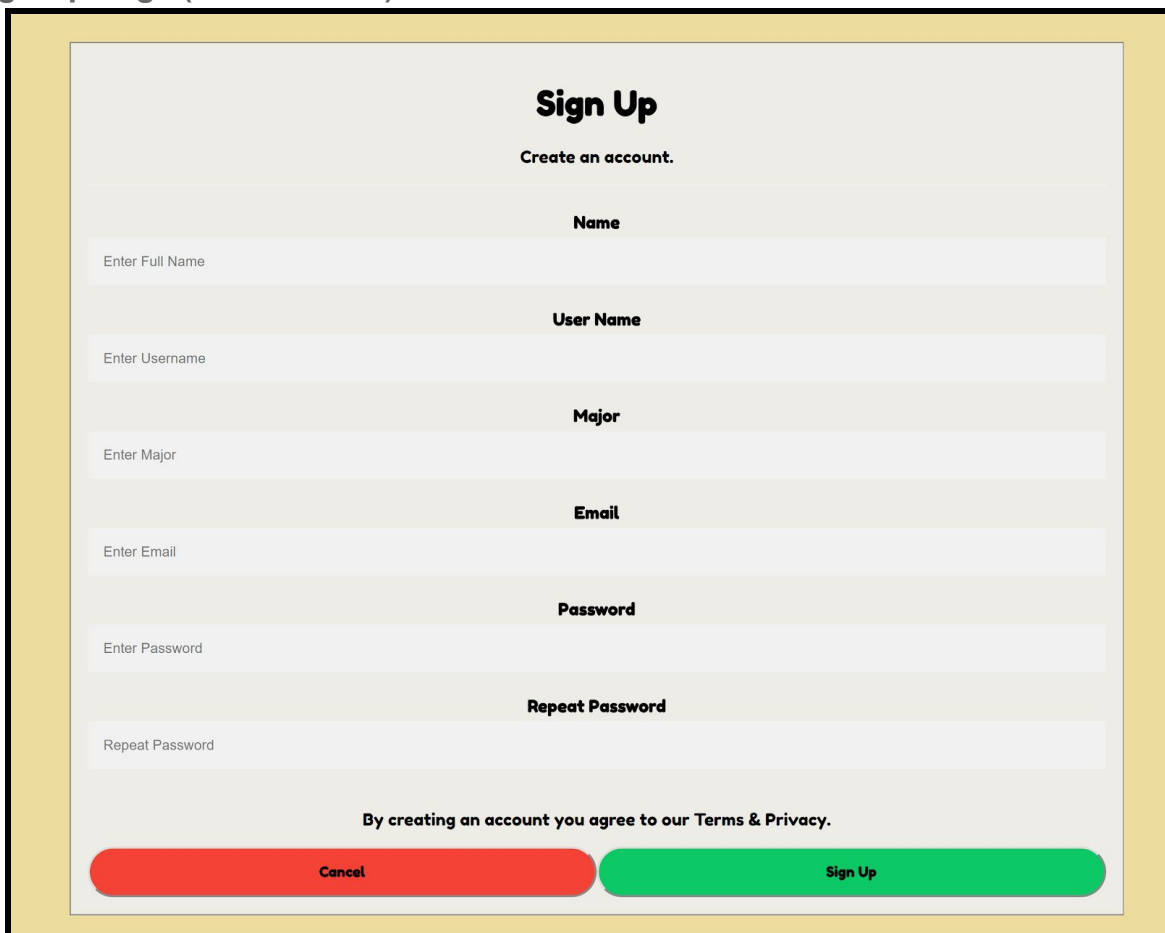
The image shows a wireframe of a new login page. At the top, the word "Bubble" is centered in a large, bold font. Below it, the tagline "The Study Buddy Finder" is centered in a smaller font. In the center of the page is a rectangular box containing the word "Sign In" in bold. Below "Sign In" are two input fields: the first is labeled "USER:" and the second is labeled "PASSWORD:". At the bottom of the box, there are two buttons: a green button labeled "Sign Up" and a red button labeled "Login".

Sign Up Page (Old Version)



The old version of the sign-up page has a light gray background. At the top right, there is a small utility bar with a circular refresh icon and a close button labeled 'X'. The main heading 'Sign Up' is centered, followed by the subtext 'Create an account.' Below this are four input fields: 'Email', 'Password', and 'Repeat Password', each with a placeholder text 'Enter [field name]'. A 'Remember me' checkbox with a checked state is positioned below the password fields. A line of text states 'By creating an account you agree to our [Terms & Privacy.](#)'. At the bottom, there are two buttons: a red 'Cancel' button on the left and a green 'Sign Up' button on the right.

Sign Up Page (New Version)

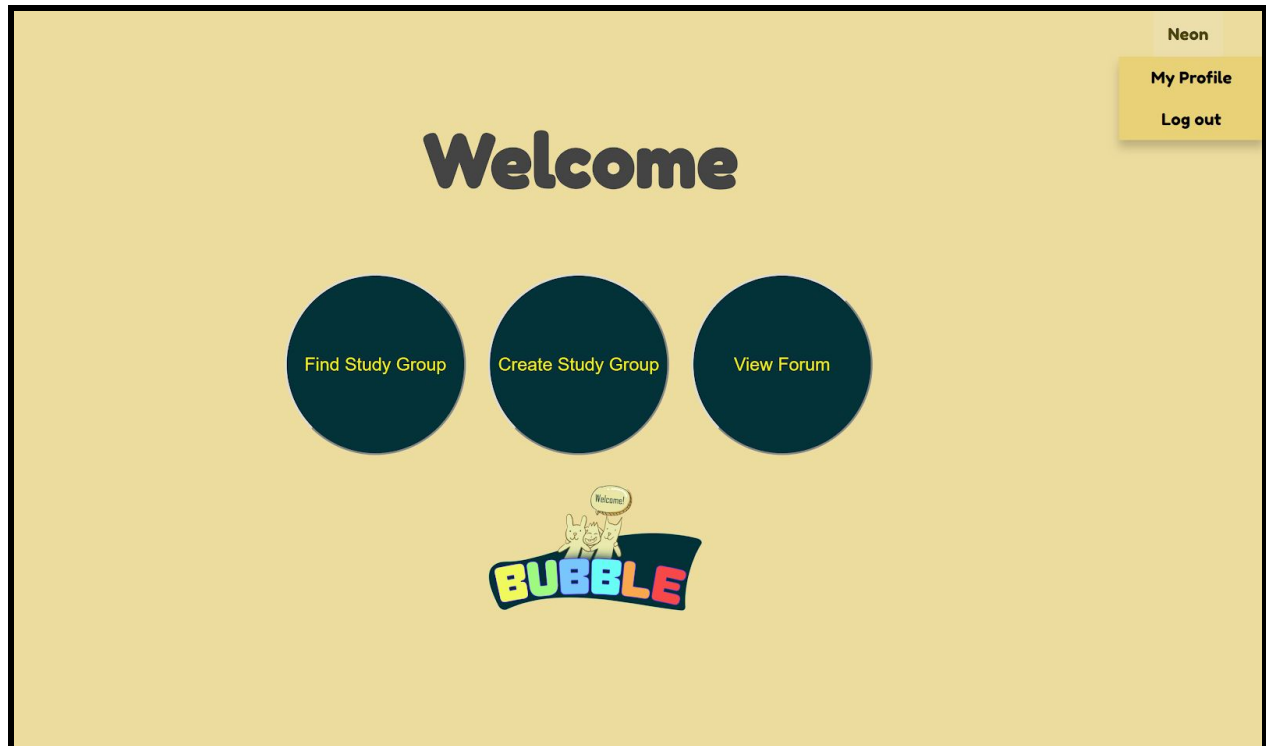


The new version of the sign-up page features a light beige background with a yellow border. The heading 'Sign Up' is bold and centered, with 'Create an account.' below it. The form includes six input fields: 'Name' (placeholder 'Enter Full Name'), 'User Name' (placeholder 'Enter Username'), 'Major' (placeholder 'Enter Major'), 'Email' (placeholder 'Enter Email'), 'Password' (placeholder 'Enter Password'), and 'Repeat Password' (placeholder 'Repeat Password'). Below the fields is a line of text: 'By creating an account you agree to our Terms & Privacy.' At the bottom, there are two rounded buttons: a red 'Cancel' button on the left and a green 'Sign Up' button on the right.

Homepage(Old Version):



Homepage(New Version):



Search For Group page(Old Version)


LOGO

Class	Creator	Participants	
CPSC 315	BOB	1/4	Join
CPSC 362	JANET	3/4	Join
MATH 338	DAVE	5/6	Join
POSC 100	WU	1/6	Join
MATH 270A	IVAN	1/6	Join

Didn't find what you were looking for?

[Create a Group](#)

Search For Group page(New Version):



[Home](#) [Bulletin Board](#) [Find Group](#) [About](#) [Neon](#)

Search by Class/Major/Creator

[Search](#)

Class	Creator	Participants	View	Join
362	123	4	VIEW	JOIN

Didn't find what you were looking for?

[Create a Group](#)

Create new group page(Old Version)

Create New Group

Subject/Class/Section

Group Name

Number of Members

Subject/Class/Section

Introduction

Location

Date

Time

Public

Private

subject

Group

subject

location

mm / dd / yyyy

-- : -- --


☐

☐

username

Create Group

Create new group page(New Version)



Home

Bulletin Board

Find Group

About

Neon

Fill Out This Form To Create A Group

Subject/Class/Section

Group Name

Number of Members

Major

Description

Location

Date

Time

Public

Private

Subject

Group

0

Major

Write a Description

Location

mm / dd / yyyy

-- : -- --

☐

☐

Create Group


Forum page(old version):

Bubbles Bulletin Board

Title	Posted By	Date Posted	Views	Replies
Criminal Justice Field Trip	mkane	2018-05-06	37	2

[add a new topic](#)

Forum page(new version):



[Home](#) [Bulletin Board](#) [Find Group](#) [About](#) jsmith

Bubbles Bulletin Board

Title	Posted By	Date Posted	Views	Replies
Tired of the food here	jsmith	2018-05-07	8	1
Best Nap Spots at CSUE?	willy	2018-05-07	6	2
CPSC 362 Professor Reccomendations???	jdoe	2018-05-07	9	2

[Add a New Topic](#)

End User Document

Signing up for Bubble

If you are **not a recurring** user then you can click on the green “Sign Up” button which will navigate you to a form in which you give your information in order for your profile to be made. Once you have finished signing up, you will be sent to a welcome screen where you click the “Login” button redirecting you to the Login screen.

Logging in

If you are **a recurring** user then you may go ahead and enter your login information and click on the red “Login” button. This will then redirect you to the Homepage which acts as the main navigational system of our website.

Logging out

In order to sign out, just simply hover over your username in the navigation bar located at the top right of the screen. There you will see a “Logout” button that should successfully end your session with Bubble.

Navigating through the Homepage

Once you are at the Homepage, there are three big circular buttons labeled “Find Study Group”, “Create Study Group”, and “View Forum.” As stated previously, this web page acts as a main navigation system once you are logged in.

Navigation Bar

In order to save you time from having to go back to the Homepage everytime you want to reach one of the other webpages in our site, we provide a navigation bar located at the top of all other web pages apart from the homepage. You may simply click on the tabs and they will redirect you to their respective web pages.

Find Study Group

When you have clicked on the “Find Study Group” button you will find yourself in the webpage in which it lists the existing study groups. In order to make it easier for you to find an existing group that may interest you, there is search box located at the top of the group list.

You may click on “View” button which will take you to the group page which holds all their info and decide to join in there or you may join an existing group immediately from this page.

Finally, if you did not find what you were looking for you may create your own group by clicking on “Create a Group” button located towards the bottom of the page. This button redirects you to the create group page in which you fill out the form and submit it, creating your own group.

Create Study Group

If you know you want to create an entirely new group instead of searching for one first, you may click the “Create Study Group” button from the homepage. This will lead you to a form that you fill in with the group information and then submit in order to create the group. You should be redirected to the group information page from here.

Bulletin Board

If you wish to simply make a new forum post in our websites “Bulletin Board” then you may click on the “View Forum” button that will lead you to our bulletin board webpage where you may look through existing posts, reply to those posts, or create your own post by clicking on “Add a New Topic” hyperlink located towards the bottom of the page.

Profile Pages

In order to reach your own profile page you may view it by hovering over your username located at the top right of the navigation bar. This will lead you to your profile with personal information that you may only see as well as the groups you are apart of. If you wish to see these groups information, simply click on their “View “ button.

When clicking on other users names that appear as hyperlink, it should redirect you to their profile page only displaying information that the user has allowed for you to see.

CRC Cards and UML Diagram

CRC Cards

Below we have the crc cards, uml diagrams, and the eer diagram for our web application.

Class: Student	
Responsibilities: Defines student's name/major Login Create a Profile Create a Study Group Join an existing Study Group Contact other students	Collaborators: Study Group Profile

Class: Study Group	
Responsibilities: Defines study group name/class/subject Shows students involved Displays location/date/time to meet as a group	Collaborators: Student Profile

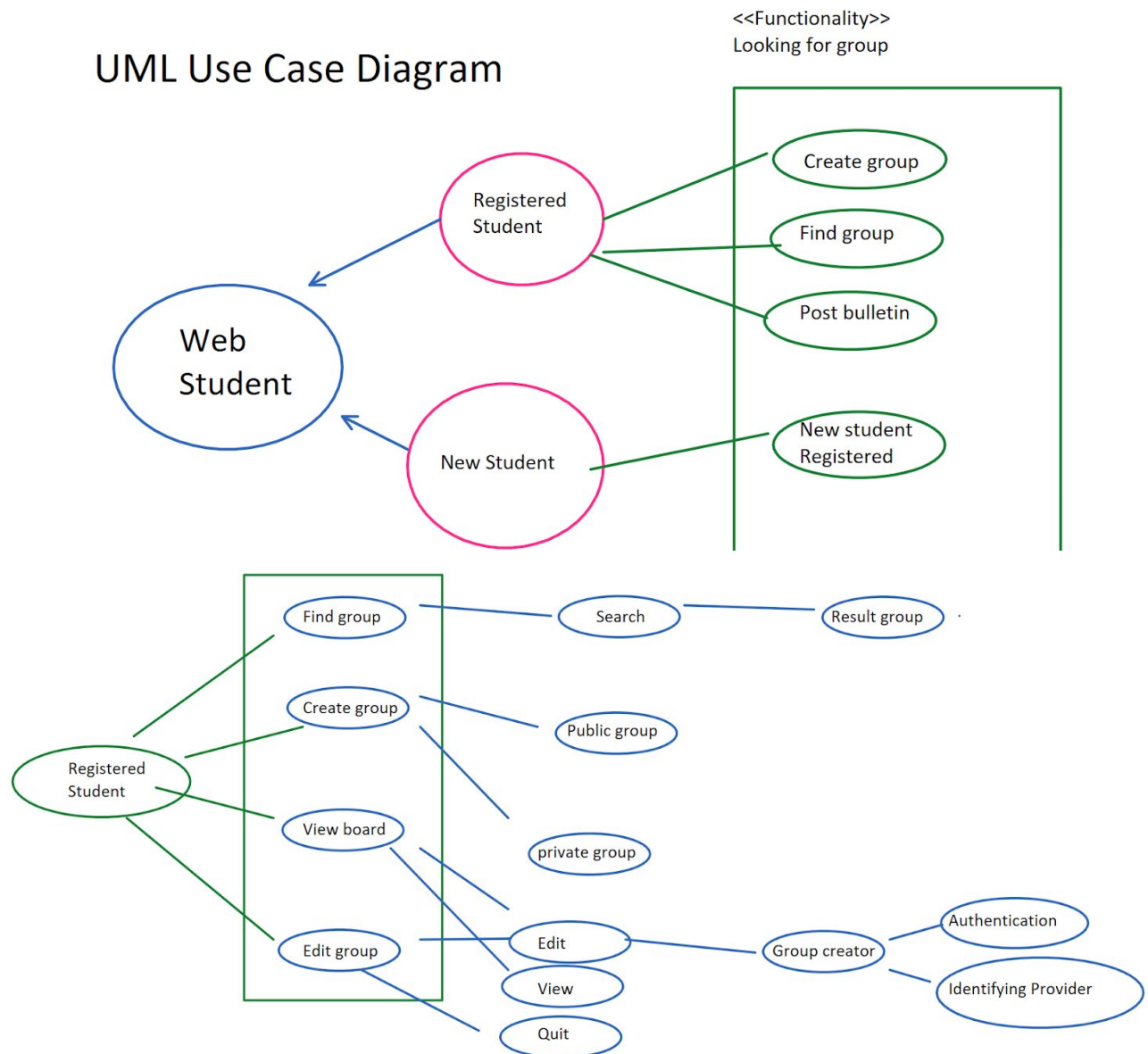
Understanding the CRC cards

As mentioned above, we created CRC cards during our first iteration in the beginning stage of designing the website. The CRC cards helped us identify some of the classes that are applicable to our project requirements. By using index cards we were able to narrow down some responsibilities and come up with specific responsibilities of the class. For instance, the Student

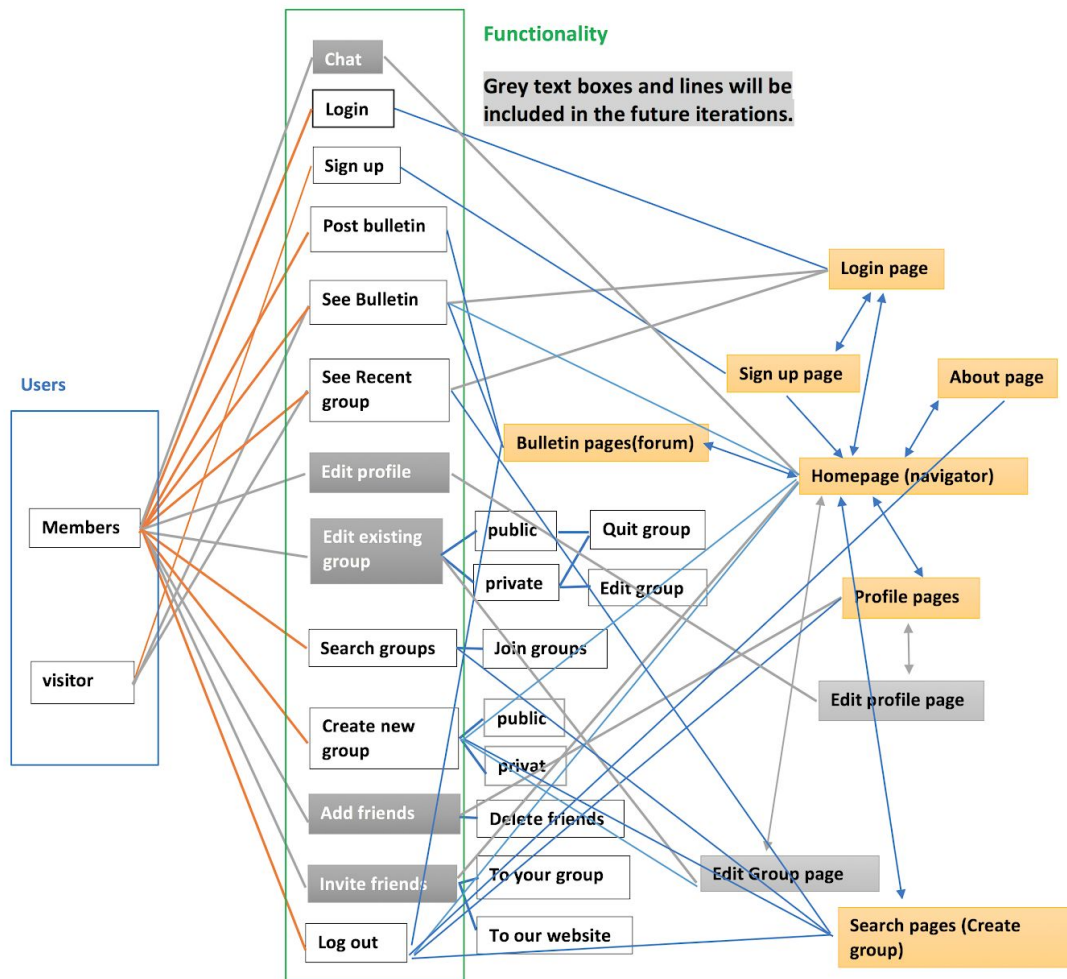
CRC card above identifies the responsibilities as basic functions that the user is able to do, while the collaborators are other classes that the Student interacts with.

UML Diagrams

UML diagram(old version):



UML diagram (new version):



Understanding the UML Diagram

In the diagram above, on the left-hand corner we can see a blue box which includes our two users: members and visitors. Our members can access all the functionalities of our website, visitors can just access parts of them, say, “sign up, see bulletin, and see recent groups”.

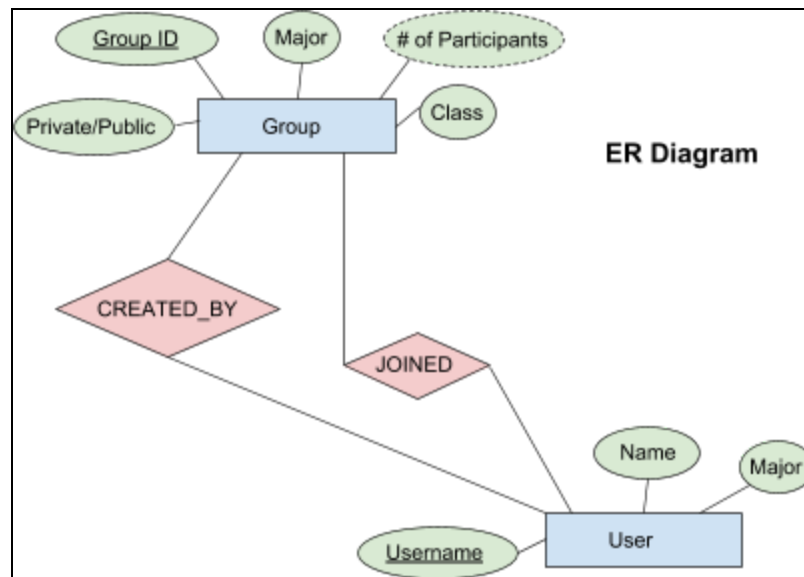
Next to the blue box, we have a green box which includes all the functionalities of our website.

And, there are some grey boxes and lines, say, “chat, edit profile, edit existing group, add friends, invite friends, etc”, they will be included in the future iterations.

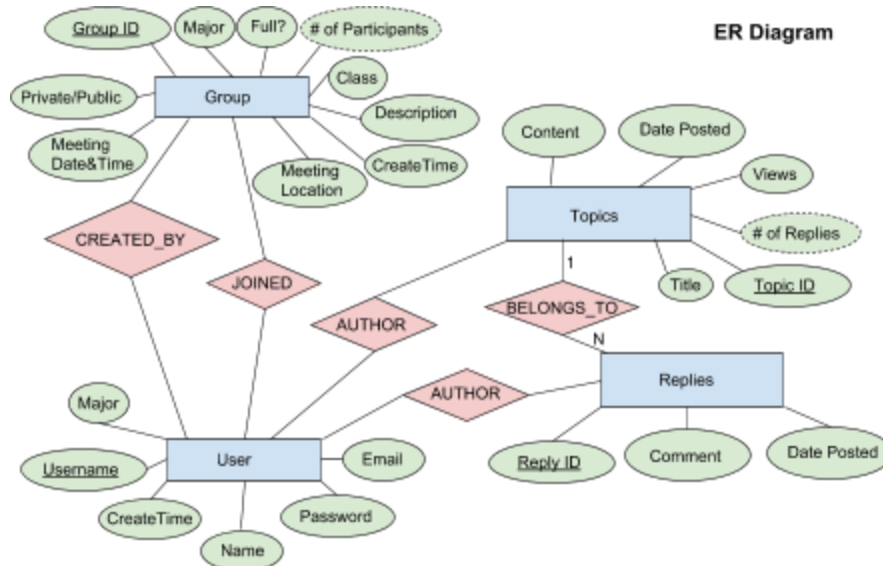
Lastly, for the yellow boxes, they are the actual websites we have made, each of them has different functionalities.

ER Diagrams

ER (old version):



ER (new version):



Understanding the ER Diagram

ER diagram is shown above as an illustration of how the database was constructed. The blue rectangles are entities that we created and the green ovals are the attributes in each entity. The red triangles display the relationships between our database.