

# **SW Engineering CSC648-848-01 Summer 2023**

## *Zenful*

Team 2 (Spider Computer Scientists)

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Milestone 2

06/28/23

History Table:

Milestone's Versions	Date
M2V1	06/28/23
M1V2	06/26/23
M1V1	06/12/23

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## Data Definitions

### General User

The General User is essentially anyone who visits the Zenful web application for the first time, or does not have an account. The General User has access only to the Home Page, which contains step-by-step instructions on using Zenful. If the General User decides that they would like to use Zenful (Journal, To-do List, Features) then they will need to complete Registration. In order to complete Registration, the General User will need to provide Zenful with a first name, last name, username, e-mail address, and password. Once the General User finishes the Registration process, they will become a Registered User.

### Registered User

The Registered User is basically a General User that has completed the Registration process. The Registered User is now able to Login to use Zenful. In order to Login, the Registered User will need to provide their username and password, which they created during Registration. Upon logging in, the Registered User will have access to Zenful: a Journal, a To-do List, and additional Features, which include animations and music. The Registered User is also able to log out at any moment.

### Admin

The Admin differs from both the Registered User and General User in several ways. First, The Admin is a member of the Zenful team, so not anyone can become The Admin. Second, The Admin has access to all data on Zenful, including permissions to modify the database. The Admin can modify user accounts, Journals, To-do Lists, and Zenful features (animations and music). Zenful takes user privacy very seriously, and The Admin only has access to data in order to ensure a smooth web application performance for all Zenful users.

### Home Page

The Home Page is accessible to all General Users who visit the Zenful web application. The Home Page serves the purpose to provide General Users with essential information: 1) What is Zenful? Zenful is your new source of relaxation, supporting not only productivity, but also peace. How so, you ask? Zenful will provide its users with a To-do List for productivity, and a Journal along with Features like music and animations for peace. 2) What do I need to do to start using Zenful? First, complete Registration to create a new account. Second, Login to Zenful. Third, Access the Todo List, Journal, and Features (music and animations) by using the corresponding links.

## Registration

Registration is the process that General Users need to complete in order to become Registered Users. In order to complete Registration, General Users will first need to click on the “Register” link at the top right corner of our Zenful web application. General Users will then need to fill out a registration form, providing their first name, last name, username, e-mail address, and password. The General User will also need to confirm their password, accept the Terms of Service and Privacy Policy, and click submit. If the username the General User provided is not already existing in our database, the e-mail address is valid, and the password matches the confirmed password, the General User will complete Registration and become a Registered User.

## Login

Login is the process that Registered Users need to complete in order to access Zenful. In order to Login, Registered Users will first need to click on the “Login” link at the top right corner of our Zenful web application. During Login, Registered Users need to provide their username along with their password by filling in the Login Form and clicking submit. If the username and password match exist in the database, the Registered User will be logged in. If the Registered User does not remember their password, they will be provided with a “Forgot Password” link in order to retrieve their password.

## Journal

The Journal is only accessible once a Registered User has logged into Zenful. Upon clicking the Journal link on Zenful, a Registered User will be provided with a journal where they can write down anything they decide to. The Journal’s aim is to provide the Registered User with a quick opportunity during work to introspect, and note or work through their thoughts and feelings.

**Relevant Data:** document files (.pdf, .txt), image files (.jpg, .png, .jpeg, .gif).

## To-do List

Similarly to the Journal, the To-do List is only accessible once a Registered User has logged into Zenful. Upon clicking the To-do List link on Zenful, a Registered User will be provided with a To-do List where they can add a number of tasks they choose. The To-do List’s aim is to provide the Registered User with a supportive method to keep track of everything they need to get done.

## Features

Zenful Features currently include: animations and music. Similarly to both the Journal and To-do List, Zenful Features are only accessible once a Registered User has logged into Zenful. Upon clicking the Features link on Zenful, a Registered User will be provided with two sections: music, and animations. Under the music section, the Registered User will be provided with options for music to play. Music will be in the relaxing theme, namely: raindrops, lo-fi, and study/meditation sounds. Under the animations section, the Registered User will be provided with an on/off toggle for animations, along with options for animations. If the Registered User chooses to toggle animations on, they will see the animation play on a loop in the corner of their screen on the Journal section.

**Relevant Data:** music audio files (.mp3), animation video files (.mp4, .mov, .avi), animation image files (.jpg, .png, .jpeg, .gif).

# Prioritized Functional Requirements

## Priority 1

### **Home Page**

- 4.1. The system shall display step-by-step instructions to use Zenful.
- 4.2. The system shall display log-in and register options for the user.

### **General User**

- 1.1. The system shall display the Home Page for all general users.
- 1.2. The system shall provide the option for all general users to register.

### **Registered User**

- 2.1. The system shall provide the option for all registered users to login.
- 2.2. The system shall provide the registered user access to Zenful once they are logged in.

### **Registration**

- 5.1. The system shall record the user's first name.
- 5.2. The system shall record the user's last name.
- 5.3. The system shall record the user's email address.
- 5.4. The system shall record the user's username.
- 5.5. The system shall record the user's password.
- 5.13. The system shall allow the user to edit their registration information before submitting the registration form.
- 5.12. The system shall generate a unique user identification number for each registered user.

### **Login**

- 6.1. The system shall allow a registered user to login.
- 6.2. The system shall require a registered user's username to login.
- 6.3. The system shall require a registered user's password to login.
- 6.7. The system shall allow a registered user to logout.

### **Admin**

- 3.3. The system shall allow the Admin to access and modify the database.

### **Journal**

- 7.6. The system shall allow a registered user to create a new journal entry.
- 7.3. The system shall allow a registered user to edit their journal entries.
- 7.1. The system shall record journal entries.
- 7.2. The system shall display existing journal entries for the registered user.
- 7.7. The system shall allow a registered user to delete a journal entry.

### **To-do List**

- 8.7. The system shall allow a registered user to create a new to-do list.
- 8.3. The system shall allow a registered user to edit their to-do lists.
- 8.4. The system shall allow a registered user to mark tasks as complete or incomplete on their to-do lists.
- 8.1. The system shall record to-do lists.
- 8.2. The system shall display existing to-do lists for the registered user.

- 8.8. The system shall allow a registered user to delete a to-do list.

## Priority 2

### **Admin**

- 3.2. The system shall provide the Admin with all data access.
- 3.1. The system shall require the Admin to login before accessing Admin permissions.

### **Registration**

- 5.6. The system shall display whether the user's username is available.
- 5.7. The system shall display whether the user's email is available.
- 5.8. The system shall display whether the password matches the confirmed password.
- 5.9. The system shall display that the user needs to choose a different email if their email is unavailable.
- 5.10. The system shall display that the user needs to choose a different username if their username is unavailable.
- 5.11. The system shall display that the password and confirmed password fields must match in order to register.

### **Login**

- 6.6. The system shall record the current signed-in registered user status.

### **Journal**

- 7.4. The system shall allow a registered user to search for a journal entry.
- 7.5. The system shall allow a user to select a journal entry for editing.

### **To-do list**

- 8.5. The system shall allow a registered user to search for a to-do list.
- 8.6. The system shall allow a user to select a to-do list.

## Priority 3

### **Login**

- 6.4. The system shall allow the registered user to select "forgot password".
- 6.5. Forgot Password: The system shall allow the registered user to enter their email address in order to receive an email with instructions to reset their password.
- 6.8. The system shall allow a registered user to change their password.
- 6.9. The system shall allow a registered user to view and edit their account details.

### **Journal**

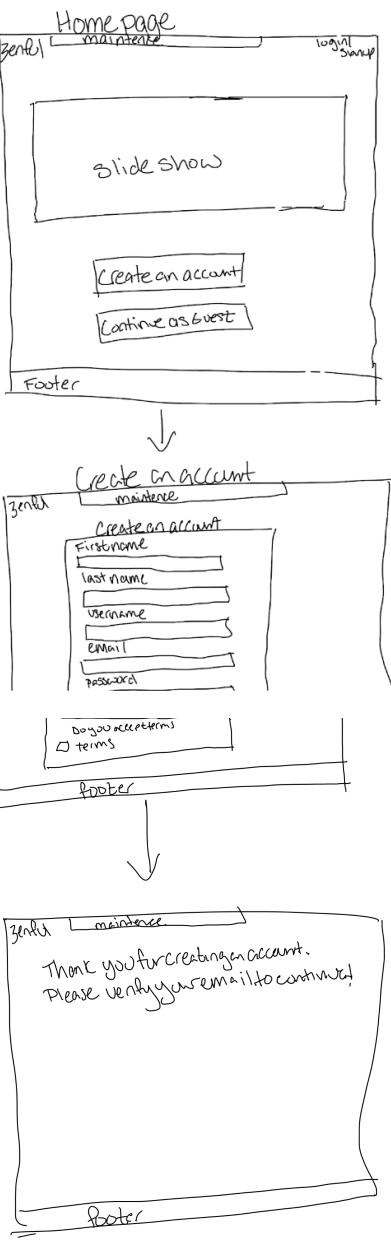
- 7.8. The system shall allow a registered user to add a 4 digit passcode to a journal entry for privacy.

### **Features**

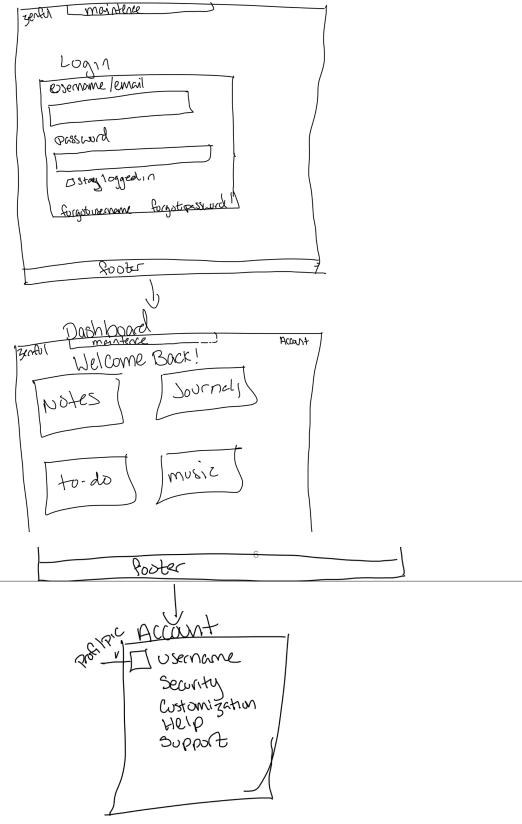
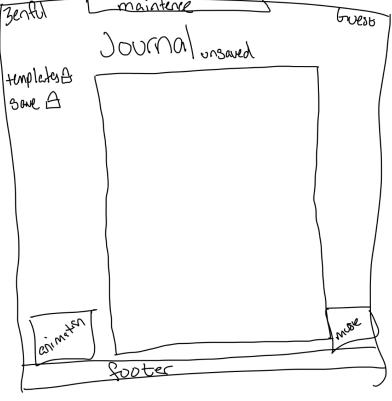
- 9.1. The system shall display an animation if animation is toggled on by a registered user.
- 9.2. The system shall allow a registered user to toggle their animation on or off.
- 9.3. The system shall allow a registered user to choose from available animations.
- 9.4. The system shall allow a registered user to upload their own animations.
- 9.5. The system shall allow a registered user to play music through Zenful.
- 9.6. The system shall allow a registered user to pause music.
- 9.7. The system shall allow a registered user to listen to available music.

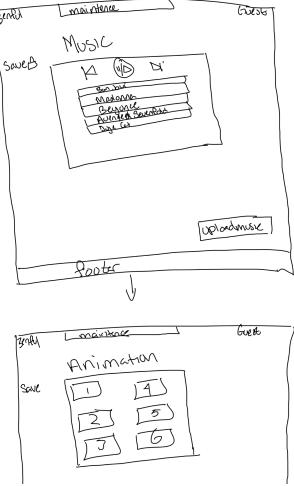
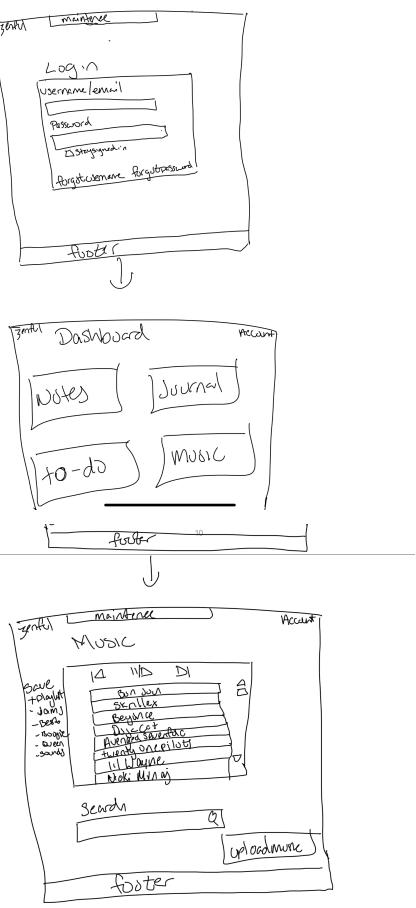
- 9.8. The system shall allow a registered user to upload their own music.
- 9.9. The system shall record uploaded music.

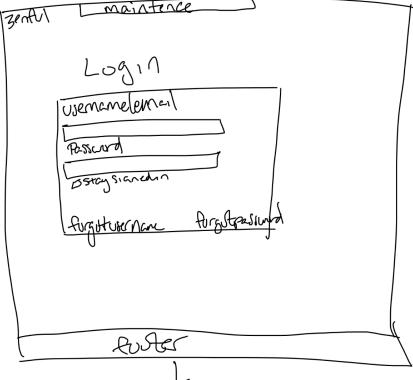
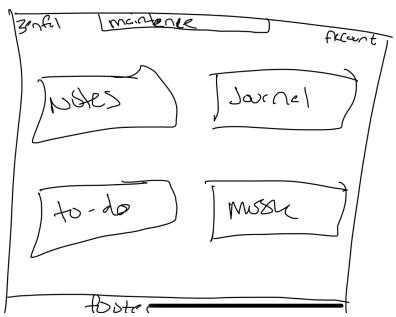
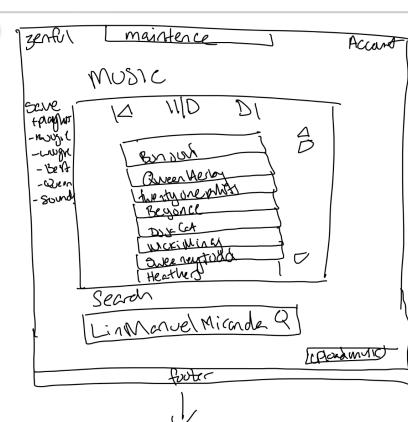
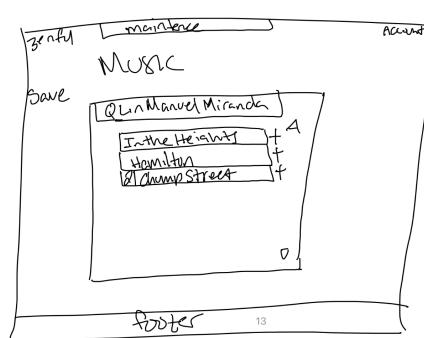
## UI Mockups and Storyboards

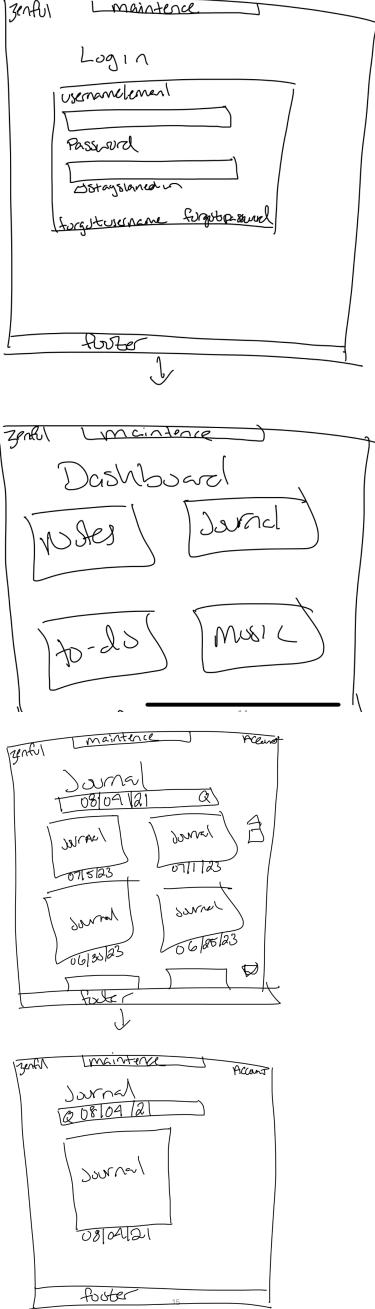
Mock-up (UI)	Description (User Case)
<p><u>Case one</u></p>  <p>The storyboard illustrates a user flow for account creation:</p> <ul style="list-style-type: none"> <li><b>Home page:</b> Shows a "slide show" section, a "create an account" button, and a "Continue as guest" button. It includes a "Zenful" logo and "mainpage" text.</li> <li><b>Create an account:</b> A form with fields for Firstname, last name, username, email, and password. It also includes a checkbox for accepting terms and conditions, and a "Create account" button. It includes a "Zenful" logo and "mainpage" text.</li> <li><b>Confirmation:</b> A message stating "Thank you for creating an account. Please verify your email to continue!" It includes a "Zenful" logo and "mainpage" text.</li> </ul>	<p>Emily loves to be productive but is having a hard time because it stresses her out. She found Zenful, and was intrigued by how you can both have a relaxing time, but be productive. She is taken to the front page where she is met by an introduction, and in the corner is a “login/create account” here. All she has to do is put her email, her name, sign terms &amp; conditions, answer security questions, and put a password. She cannot access full features until verifying with her email.</p>

Mock-up (UI)	Description (User Case)
<p><u>Case two</u></p>	<p>Dan is having issues with his login. He could've sworn his password was right, but it is not giving him access to his account. He is worried because his email isn't working, so he cannot get a "reset password" message in there. His friend, Tim, also forgot his password, but he had his email so he had an option to reset the password. He, however, has to contact customer service with the correct email address. He gets a ticket # and the company representative assists him (will ask about his security questions).</p>

Mock-up (UI)	Description (User Case)
<p><u>Case three</u></p>  <p>The wireframe illustrates a user flow starting from a login screen, moving to a dashboard, and finally to an account page.</p> <ul style="list-style-type: none"> <li><b>Login Screen:</b> Contains fields for "username / email" and "password", along with links for "Forgot login?" and "Forgot username?".</li> <li><b>Dashboard:</b> Shows a "Welcome Back!" message, four cards ("Notes", "Journal", "to-do", "music"), and a "Recent" section.</li> <li><b>Account Page:</b> Displays a profile picture placeholder, a "username" field, and links for "Security", "Customization", "Help", and "Support".</li> </ul>	<p>Ron is a registered user in Zenful. He hasn't logged into the site for a long time because he was busy with his job, where he worked 12 hours straight. His job is draining and he needs an escape. He wants to go inside his journals in this app to see how he was feeling before he joined this new job. He needs to log in. He opens his page and sees all his saved journals and saved lists.</p>
<p><u>Case Four</u></p>  <p>The wireframe shows a guest user interface for a journal page.</p> <ul style="list-style-type: none"> <li><b>Header:</b> "Zenful" logo, "maintaince" link, and "guest" status.</li> <li><b>Left Sidebar:</b> "templated" and "save A" buttons.</li> <li><b>Central Area:</b> A large empty box labeled "Journal unsaved".</li> <li><b>Bottom Navigation:</b> "animation" and "more" buttons.</li> </ul>	<p>A user wants to try out an app just for a short term homework assignment that will take them 2 hours to do. It will take them 2 hours because they usually get very distracted. A simple task takes them a long time because they have ADHD. This user is able to write a to-do list, listen to music, and write a journal. This user, however, will lose all progress once the page is refreshed because they are not a registered user of Zenful.</p>

Mock-up (UI)	Description (User Case)
<p><u>Case Five</u></p> 	<p>A user wants to play specific animation, as well as music while they color in their book they purchased from a store. They can listen to music and have animation on the site, but their progress will not be saved because they are not a registered user with Zenful. Every now and then, default animations and music might be discontinued so this user has no collection, and can only use the ones available now while they finish their coloring activity.</p>
<p><u>Case Six</u></p> 	<p>Stephanie has been a loyal user for a long time in Zenful. She enjoys being on the app because of the peace it brings her, while she stays productive but also relaxes. She had a rough day, and she was remembering how last month was a very relaxing month. She decides to log in with the intention of reading her past journal and listening to a saved song that is no longer accessible. She searches up the date of the month, and finds her past journal. She starts reading it, along with the song in the background and is awakened by hope.</p>

Mock-up (UI)	Description (User Case)
<p>Case Seven</p>  	<p>Gal has too many saved sounds and animations. She always does this, she hoards things because of the emotion they hold and now her Zenful account is very overwhelming. She wants to be able to search up ones that are from a while back, and possibly get rid of some. She is a registered user, so she logs in. All she needs to do is search up the key words and they will pop up. She now can clear her space and focus on the most important memories.</p>
 	

Mock-up (UI)	Description (User Case)
<p><u>Case eight</u></p>  <p>The wireframes illustrate a user flow: logging in, navigating to a dashboard, viewing a journal list, and finally viewing a specific journal entry in detail.</p>	<p>Jake is a registered user and has many journal entries. He wants to find the one that was on his birthday. He wants to do this because he doesn't remember what some of his friends got him due to some drinks he had later that night. He knows he received all the gifts, but we forgot who gave him what. He loves his friends and wants to send them all thank you cards. He logins in, and types in the date of his birthday, and sees his journal entry. Now he knows who got him what, and was able to reminisce.</p>

# High Level Database Architecture & Organization

## Database Requirements:

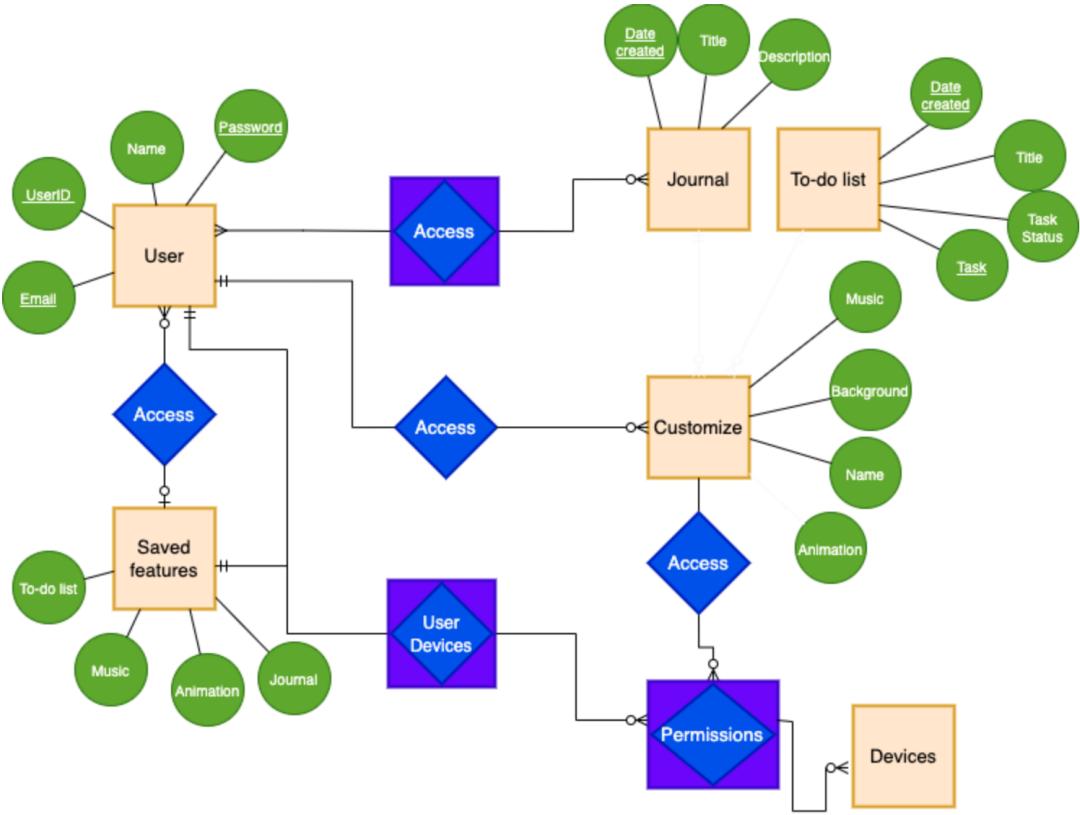
1. Users will choose if they will sign up for the site.
2. If they decide not to sign up they will see a preview of the site.
3. If they choose to sign up the user will be taken to the sign up page.
4. They will be prompted for email, password, and username.
5. They will accept the terms and conditions.
6. If denied, the session will end.
7. They will be taken to customization pages.
8. They will choose from a preset set of themes.
9. They will then move to music where they upload music or choose from the preset music.
10. They will then choose the animation they want.

## Entity Attributes, Relationships, and Domains:

Entity	Attributes	Relationships	Domains
User	Email, UserID, Name, Password	<u>User accesses Journal</u> Many-to-Many  <u>User accesses To-do List</u> Many-to-Many  <u>User accesses Saved Features</u> One-to-Many  <u>User accesses Customize</u> One-and-only-one-to-Many	<u>Email</u> varchar(100), not null, valid email address  <u>UserID</u> Primary key, integer, not null  <u>Name</u> varchar(100), not null  <u>Password</u> varchar(100), not null, valid password (fulfilling requirements, ex) 1 special character, 1 number, etc.)
Journal	Date created, Title, Description	<u>Journal is customized</u> One-and-only-one-to-Many	<u>Date created</u> Date, not null  <u>Title</u> varchar(100)

			<u>Description</u> text
To-do List	Date created, Title, Task Status, Task	<u>To-do List is customized</u> One-and-only-one-to-Many	<u>Date created</u> Date, not null  <u>Title</u> varchar(100)  <u>Task Status</u> Integer, 0 (not done) or 1 (done)  <u>Task</u> text
Customize	Music, Background, Name, Animation	<u>Customize accesses permissions</u> One-to-Many	<u>Music</u> Text (URL)  <u>Background</u> Text (URL)  <u>Name</u> varchar(100)  <u>Animation</u> Text (URL)
Saved Features	To-do List, Music, Animation, Journal	<u>Saved Features accesses permissions</u> One-and-only-one-to-Many	<u>To-do List</u> Text  <u>Music</u> Text (URL)  <u>Animation</u> Text(URL)  <u>Journal</u> Text

## Entity Relationship Diagram:



The **DBMS** we will be using is MySQL because everyone in the team is familiar with it, and because of its widely used features around the globe.

**Media storage** will be used in a file system(mysql), with audio(mp3), as well as images(mostly png).

**Search/Filter** architecture and implementation:

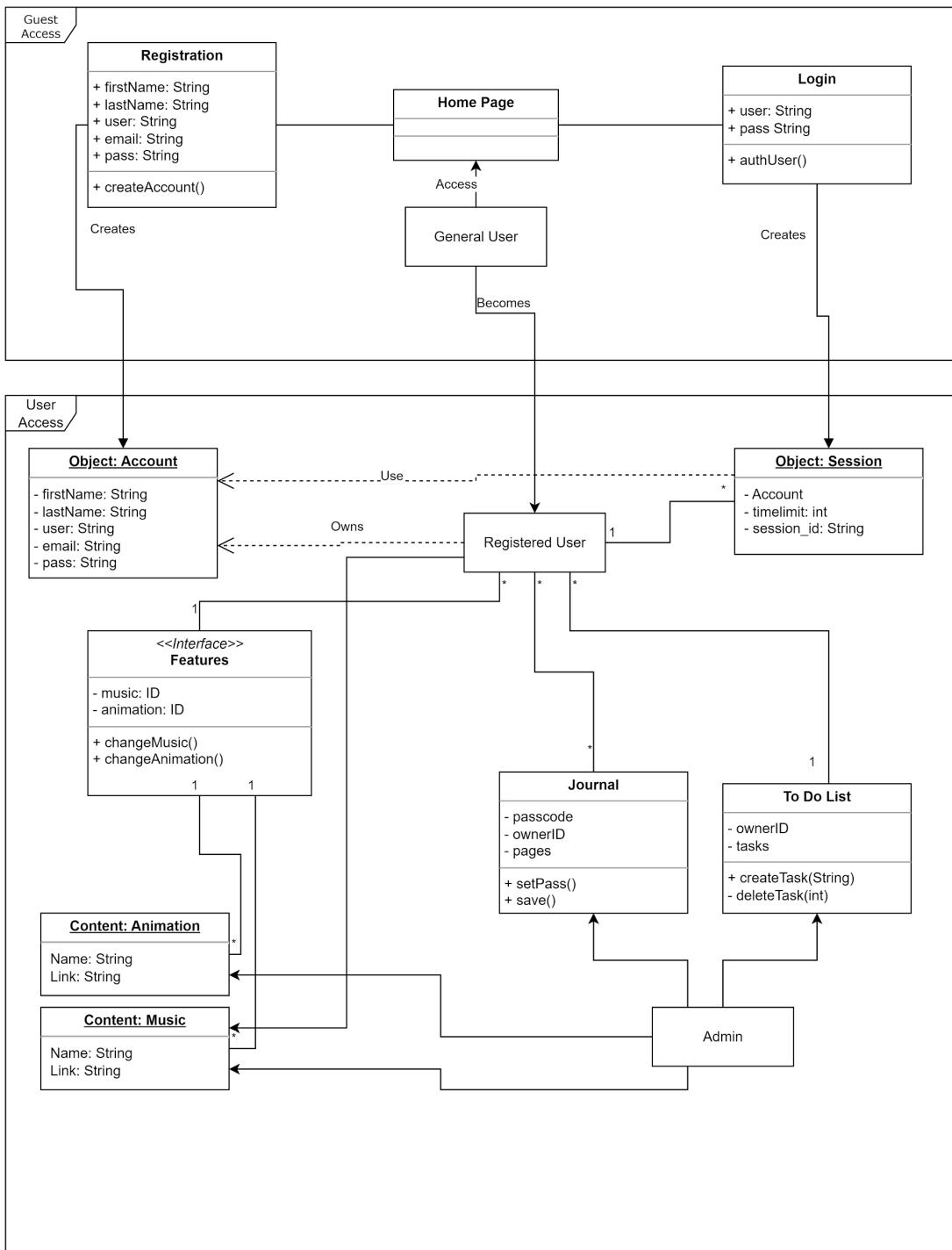
In order to search for a particular item, whether that be animation or music, the user is taken to a search bar alongside his “saved” features. He types in the string of the animation/music, and finds it being popped up. For dates in terms of journals/to-do lists, it will incorporate integers, not strings, of the particular date the journal was created. In terms of the filter, it will annihilate every single other string(if animation/music) or int(journal/to-do list) if it does not contain the keys given by the user.

## High Level APIs and Main Algorithms

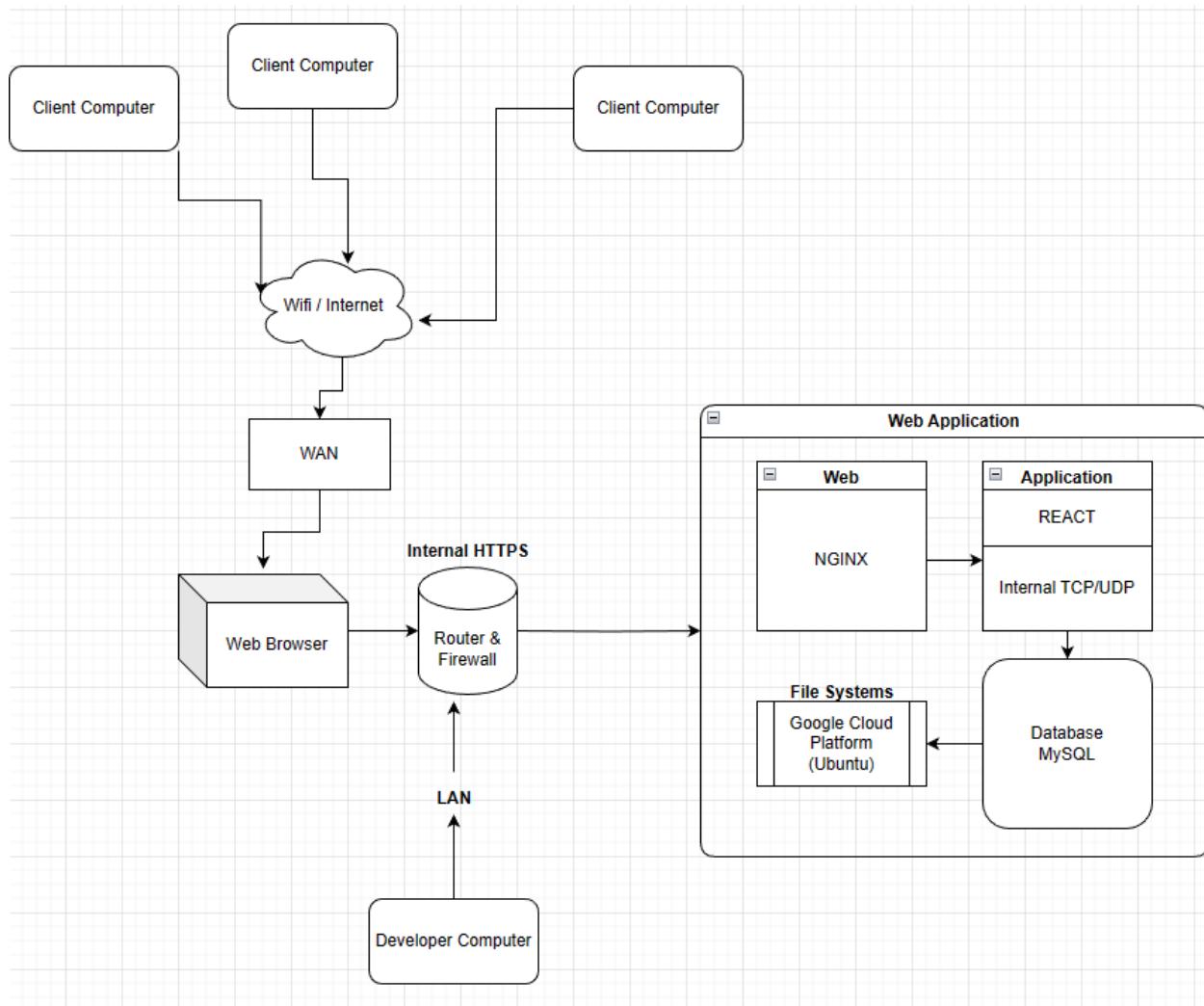
**Search Algorithm** - Users are able to post their own music as well as enjoy other user's public music. So in order for users to access other user's music, there must be a search function. Search will automatically list music and sort by most recently popular. When searching for a music or a user, the algorithm/api will provide a list of music and users with titles related to the search keywords, and still sorted by most recently popular.

**Filter Algorithm** - Users are able to search what date they did their to-do list or journal. This can be by the search bar they have, and they can filter out the specific date.

# High Level UML Diagrams



## High Level Application Network and Deployment Diagrams



## Key Risks for Project

Risk	Description	How To Solve
<b>Skills Risk</b>	<p>Most of the team seems to be skilled in javascript and has had at least a little experience with databases. However, what we lack in is experience with cloud computing and getting a web application to run on a web server and allow any user to access the web app without creating a manual instance.</p>	<p>We should teach each other and not let anyone fall behind in terms of all aspects of the code, and implementation of the project overall.</p>
<b>Schedule Risk</b>	<p>Multiple people work full-time and it would conflict with the schedule of making everything work smoothly, since everyone works at different times.</p>	<p>We should meet twice a week to touch base on everything, so that we are all on the same base and are doing what we need to do in terms of tasks.</p>
<b>Technical risks</b>	<p>There is no current security implementation, making the data accessible easily.</p>	<p>We need to implement a strong base word and not let anyone except the team + CEO have access to it.</p>
<b>Teamwork risks</b>	<p>Sometimes miscommunication lets other people do things in an incorrect way, and this is based largely on the fact that some people understand directions in a different way.</p>	<p>In order to solve this, we have to check in with each other and it will be clear what is the correct direction, and the one that is misunderstood.</p>

	This might put the group back.	
<b>Legal/content risks</b>	Musical content may be copyrighted and also there might be issues with data privacy and enforcement.	In our app, we should offer copyright free music to pick that is optimal for the user's experience, with different flavors.

## **Project management**

Trello has helped assist us on managing what the team needs to do, and when it needs to be done by. The group was able to log in, and see we have different tasks for different people. Under there, was a set of dates where we needed to have it done by. The person can also comment on how far they are in terms of the work so that everyone could be updated as well. This helped us in terms of the confusion that would surround the team sometimes on what needed to be done, by who, and by when. The way we used it was a silent update amongst each individual to all of us, the whole group. This also helped with those who wanted to double check sections after they were done. Sometimes people were confused about a section, and so seeing who had what allowed for more communication in terms of assistance or just getting things done.

The organizational aspect is always important when being in a big group, with different people who have different schedules. We have multiple people here working full time, and so being able to have an organization tool really helped. To help compliment the organizational tool of Trello, simple communication was made through Discord, along with announcements to get the team on board with how things were doing. Having an organizational platform, and having a form of communication to disclose all of the updates of the group really made us work on these things smoothly as a group.

## Detailed list of contributions

Name	Contribution	Score
Braden Dalit	<ul style="list-style-type: none"> <li>-Set up database connection (MySQL)</li> <li>-Worked on search bar/login</li> <li>-Deployed site</li> </ul>	2.3
Kimon Monokandilos	<ul style="list-style-type: none"> <li>-Front end coding, designed home page</li> <li>-Data Definitions</li> <li>-High Level Database Architecture</li> <li>-Prioritized Functional Requirements</li> </ul>	2.1
Jada Campbell	<ul style="list-style-type: none"> <li>-High Level Database Architecture</li> <li>-UI Mockups and Storyboards</li> </ul>	2
Lucas Soto	<ul style="list-style-type: none"> <li>-Helped with database connection</li> <li>-Helped with front page</li> <li>-High Level Application Network and Deployment Diagrams</li> <li>-High Level APIs and Main Algorithms</li> </ul>	1.9
Edward Chen	<ul style="list-style-type: none"> <li>-High Level UML Diagrams</li> <li>-Key Risks for Project</li> <li>-Helped with back-end</li> </ul>	1.7