

SW Engineering CSC648-848-01 Summer 2023

Web App: Zenful

Team 2

Team lead: Suzanne Heikal ([sheikal@mail.sfsu.edu](mailto:sheikal@mail.sfsu.edu))

Front end: Kimon Monokandilos, Jada Campbell

Back end: Lucas Soto, Edward Chen

Github master: Suzanne Heikal/ Lucas Soto

“Milestone 1”

06/12/23

–History table (revisions)

N/A

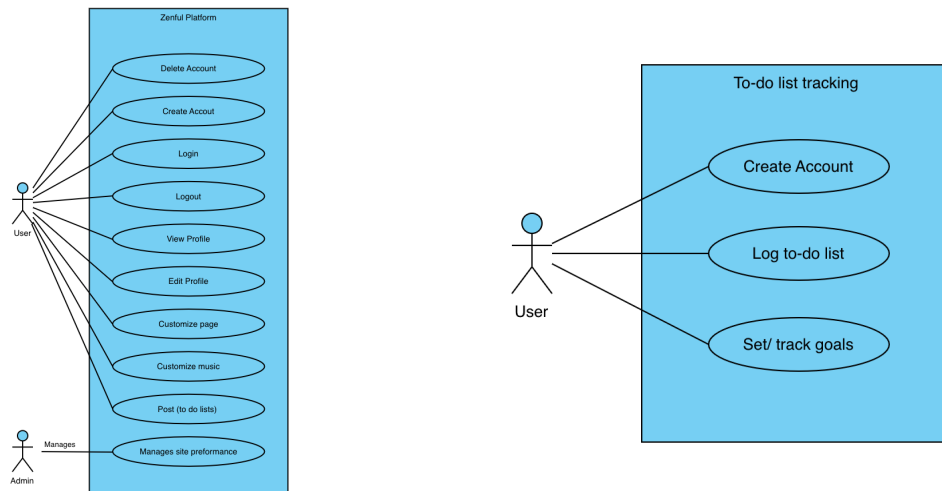
**1. Executive Summary:** Short description of the final product/application and its key advantages, novelty, value (up to 1 page). Make it as an executive summary – think of answering the question of why we should fund this project. We suggest you assign a name to your project for easier reference and good “marketing”. This summary should be readable to a general manager/executive that is not a CS specialist and is used to explain and also to advertise/promote your project. Typical outline is: one paragraph on the motivation and importance of the application you are developing, followed by a paragraph on what your application will be doing and how it helps the users (high level only, no jargon) and what is unique and special in your design-idea.

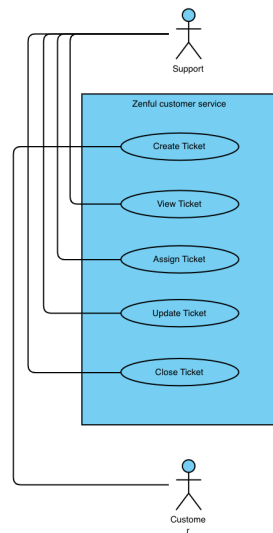
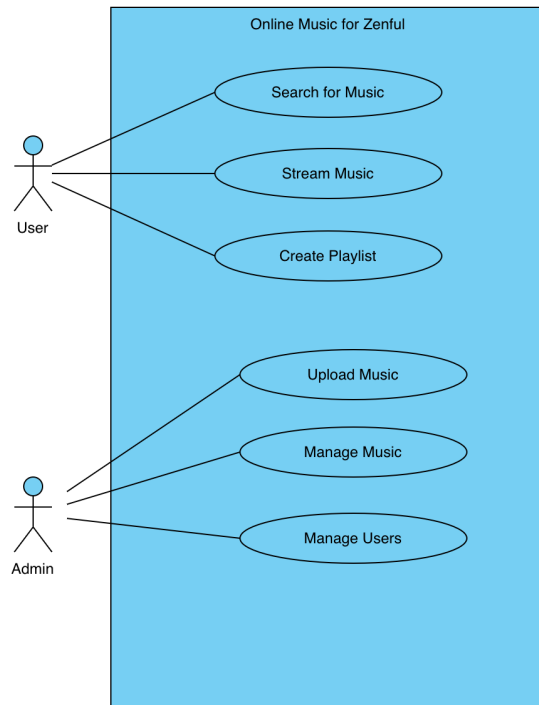
Are you feeling stressed, lonely, or lacking productivity? It seems as though it’s either or, being productive with your tasks or relaxing. We have apps that help you relax, and we have apps that keep you to stay on top of your tasks. But there is never something that can help us do both. Why is it that one has to be over the other? Why can’t both go together? A famous CEO once said, “Stress primarily comes from not taking action over something that you can have some control over.” This is Amazon’s CEO, and he goes by the name of Jeff Bezos. Why not create an application that focuses on this quote and takes it to another level, focusing on relaxation and productivity. This way, you can ease your stress in a double hit; one with being productive, and the other one by taking things slow and reflecting on where you stand mentally.

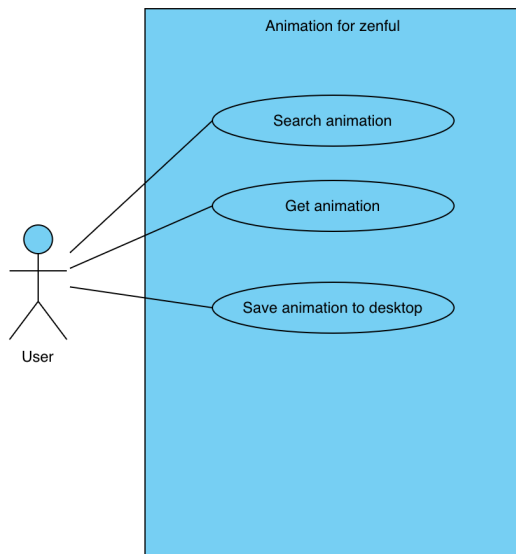
With our application, we can do both. This project is about a peaceful, mental-health positive app called “Zenful” where you can both be productive and have a relaxing session of journaling. The web app will feature a collection of calming sounds for you to play while you either make a productive to-do list, or journal about your different days. While you are doing this, accompanying you will be an animated friend that stays with you so you do not feel lonely. The importance of this application is that it is centered around you. This app takes both things that seem so parallel, relaxing and being productive, and it merges them into two. You never have to feel as though you are being unproductive while you are relaxing when you are Zenful. Everyone can create an account within the application, and you will come back to your progress as it is saved. You will have different tabs, one with a journal, one with a to-do list and one with a music listing. You can also pick your own music if you choose. Along with the music, you can pick an animated figure that will follow you in a corner so you’ll never be lonely. The application will feature organized ways to write to-do lists, including a title, and crossing off the ones that are done. With your journal, you write the date and a title to also keep your progress in check.

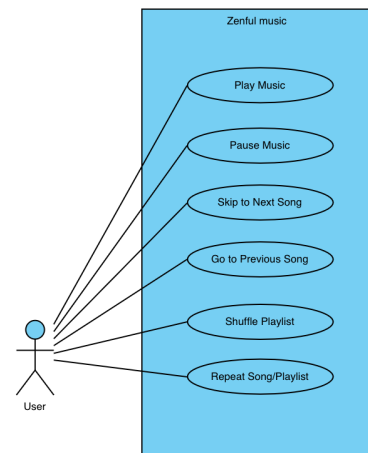
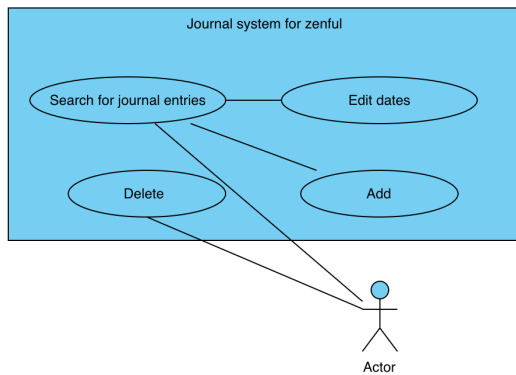
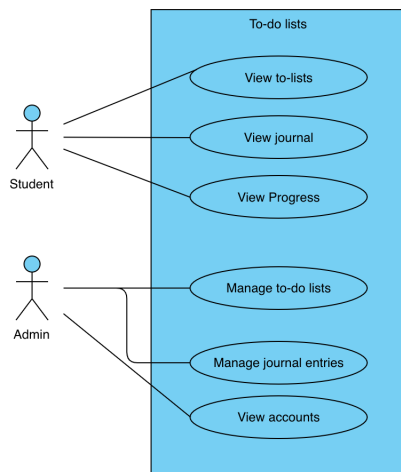
This is unique because it encompasses a music feature, and an animated feature, both centered around psychology to help the user ease, as they continue to do what is productive for them. The psychological advantages aspect of our application, mixed with our user-friendly features, topping it off with a productivity boost, makes our app the center of you.

**2. Main Use Cases:** Summarize key categories of users/actors for your application – their general characteristics, goals, skills, pain points related to the application you are developing. About 1/3 of a page per actor – see class notes. (Note: in key categories you stay general, in use cases you say how actors/users will use your app (at high level)). Then provide 8-10 main *use cases* (one paragraphs for each use case) - see class notes on more detailed format for requirements. Focus only on main use cases. **For each Use Case you develop, first create it in text format, and then describe it using a Use Case diagram. Don't forget to add in your user cases possible situations where the user or/and your app/actors do not perform actions as expected. Then, describe a possible solution. (see class slides)** – tell us a story about who and how the application is used. Focus on WHAT users do, their skill level, not on HOW is the SW implemented. NOTE: avoid specific on HOW functions will be done and text resembling user manual: this is supposed to guide the design of the future product and is NOT a description of how the product will work (you don't know that yet) – see class slides for details. Please assign a descriptive title to each use case so it can be tracked.









About:1-Emily is someone who gets stressed out easily. She just started college and is a 20 year old. She loves colors and listening to music. She values privacy and having things not be accessible to others (her journal, etc). She likes things to be very easy to use and she gets a headache easily.

Goals:1-Emily wants to be able to go somewhere safe, yet colorful, where she is able to feel productive yet calmed down. She needs something that will help her with her school work and keep her organized. She also needs something to be private.

About:2-Kyle is a 30 year old who just started a new job after being laid off. He wants to be productive but he feels as though he gets stressed out when thinking of all his tasks. His mental health hasn't been doing too good either and he wants to keep that in check.

Goals:2-Kyle wants to be productive but does not want to feel too overwhelmed. He wants to keep his journal and to-do list not too far away.

About:3-Brenda is very disorganized. She also does not get stressed out easily. She is not emotional at all. What she wants to do is get stuff done, but not be side-tracked. Her mind shifts away easily and her attention is hard to hold onto. She gets frustrated if things are too difficult to do, and she always forgets to save her information and loses her progress.

Goals:3-Brenda needs to have a user friendly application, with saving features. It has to be easy for her, while stimulating enough to keep her on.

About:4-Will have just started high school. He did not do so well in middle school, and he wants to pull himself together so that he can get into college. His mother always tells him how to do things, and he does not like that. He wants the freedom to do whatever he wants, yet still be able to be productive because he knows that's what will get him a future. He is not tech savvy, and just wants to kick back, have freedom yet be productive.

Goals:4-Will needs a PG-friendly application that is not too difficult but still offers him the same freedom he wants. He needs freedom to customize but also productivity reminders.

About:5-Susan is a control freak. Everything has to be organized and has to be done in a way that she can follow clearly. She needs things to be crossed off, and she needs her productivity lists to be neat. If something is not neat, she does not want to deal with it and walks off. In websites, she gets compulsive thoughts, and if it is not neat, she leaves.

Goals:5-Susan needs an organized application that doesn't trigger her chaotic urges so that she does not leave. She might also want to have the freedom to organize it herself.

About:6-Carol, a new mother, has been having a hard time adjusting to life. Her baby has taken her freedom, and she is not getting enough sleep. She wants to sometimes relax and think about what she has to do, however, she doesn't want to strain her eyes. The only time she can do this would be at night, and when she goes on at night, the screen makes it hard for her to keep on it. She wants something calming but also adjusts to her night shifts.

Goals:6-Carol needs a feature that takes in a lighter mode and a darker mode or a feature that incorporates different colors so that it does not give her a headache at night.

About:7-Jasmine gets lonely and does not have anyone to talk to. She owns a bunch of stuffed animals but she wishes some of them would be more animated. She also has trouble logging in and out of things, and often forgets her own password.

Goals:7-Jasmine needs a feature that can customize her friend to be with her at all times. She can also pick her friend. If she has trouble logging in, the system for forgetting passwords should be easy.

About:8-Bob, is a 61 year old man who is not too into the internet. He, however, always loses his journals and productivity lists, and can't seem to have space for all of them. He wants something that can keep multiple journals altogether without having to take too much space.

Goals:8-Bob needs a user friendly, big lettered site that can help him navigate this big change. He also needs the feature of having different features be together.

**3.List of main data items and entities** - define main terms, data structures and “items” or “entities” *at high or logical (not implementation) level* (e.g. name, meaning, usage, and NOT how the data is stored in memory) so it is easier to refer to them in the document. Focus on key terms (main data elements/records used in your app, types of users and their privileges etc. These terms and their names *must be used consistently* from then on in all documents, user interface, in naming SE components and database elements etc. In cases where you attach behavior and privileges to data items (e.g. user types) that also drives the design of the SW. In later milestones you will add more implementation details for each item. You will later expand this section with more details. This will help define planning and design for the DB for example.

**General user:** can see the about page only. Needs to login/register in order to use Zenful.

**Registered user:** can access Zenful. Can use journal, to-do list, and music sections. [components: username, password]

**Admin:** can access all data and modify the database. Needs to login/register.

**Private journal entries:** accessible only to the specific registered user that created the entry, and the admin. [components: date, title, description]

**Private to-do lists:** accessible only to the specific registered user that created the to-do list, and the admin. [components: title, task, task status (done/not done)]

**Public music sounds:** accessible to all registered users, and the admin. [components: song name, song url]



**Public animations:** accessible to all registered users, and the admin. [components: animation name, animation url]

**Private animations:** accessibility only to the specific registered user that uploaded the animation, and the admin. [components: animation name, animation url]

**4. Initial list of functional requirements** – see class notes. This refers to high level functions you plan to develop to the best of your knowledge at this point. Focus on WHAT and not HOW. Keep the user in mind. Develop these functions to be consistent with use cases and requirements above. Number each requirement with unique numeric value and use these numbers consistently from then on. For each functional requirement use 1-3 line description. At this stage no need to prioritize the requirements. I am looking for at least 50+ or so functional requirements.

**General users:**

1. General users shall be able to register a new account.
2. General users shall be able to view an introductory page about Zenful only.
3. General users shall be able to see clear step-by-step instructions about how to use Zenful.
4. General users shall be able to view frequently asked questions about Zenful.
5. General users shall be able to view an about page about our team.
6. General users shall be able to contact our team.

**Registered user profile settings:**

7. Registered users shall be able to view their profile [name, email, profile photo].
8. Registered users shall be able to edit their profile [name, email, profile photo].
9. Registered users shall be able to delete their profile and account [name, email, profile photo].
10. Registered users shall be able to contact our team, by sending an email.
11. When contacting our team, registered users shall be able to choose a category [review, update ideas, joining our team]

**Animation:**

12. Registered users shall be able to toggle their animation on/off.

13. When toggled on, registered users shall see an animated animal/character moving around in the bottom-right corner of their screen.

14. When toggled off, registered users shall not see an animated animal/character moving around in the bottom-right corner of their screen.

15. Registered users shall be able to select an animation provided by Zenful or upload their own.

#### Themes:

16. Registered users shall be able to toggle night mode on/off.

17. When toggled on, registered users shall have a dark-colored theme that is easier on the eyes during night-time.

18. When toggled off, registered users shall have a lighter-colored theme that is soothing and non-distracting (light green / beige colors).

19. Registered users shall be able to change their background color / image.

#### Font:

20. Registered users shall be able to customize how large or small the font on their screen is.

#### Organization:

21. Registered users shall have all of their to-do lists, journal entries, and music sounds in one place.

22. Registered users shall have a calming, soothing, organized view of their to-do lists, journal entries, and music sounds.

#### Registered user sign-in & viewing:

23. Registered users shall be able to sign-in to their existing account.

24. Registered users shall be able to view their existing to-do lists, if they have any.

25. Registered users shall be able to view their existing journal entries, if they have any.

#### Registered user to-do list functionalities:

26. Registered users shall be able to create a new to-do list.

27. Registered users shall be able to delete an existing to-do list.

- 28. Registered users shall be able to edit an existing to-do list.
- 29. Registered users shall be able to mark tasks as [completed / incomplete].
- 30. Registered users shall be able to scroll through a list of all of their to-do lists.
- 31. Registered users shall be able to select a to-do list that they want to view currently.
- 32. Registered users shall be able to search for a to-do list by title.

#### Registered user journal entry functionalities:

- 33. Registered users shall be able to create a new journal entry.
- 34. Registered users shall be able to delete an existing journal entry.
- 35. Registered users shall be able to edit an existing journal entry.
- 36. Registered users shall be able to scroll through a list of all of their journal entries.
- 37. Registered users shall be able to select a journal entry that they want to view currently.
- 38. Registered users shall be able to search for a journal entry by title.
- 39. Registered users shall be able to lock journal entries with a passcode.

#### Registered user music sounds:

- 40. Registered users shall be able to play the pre-selected music sounds.
- 41. Registered users shall be able to pause the pre-selected music sounds.
- 42. Registered users shall be able to start the next pre-selected music sound.
- 43. Registered users shall be able to start the previous pre-selected music sound.

#### Feature accessibility:

- 44. To-do lists shall only be accessible to the registered user that created them.
- 45. Journal entries shall only be accessible to the registered user that created them.
- 46. Music sounds shall be accessible to any registered user.

#### Feature saving:

47. To-do lists shall be automatically saved for the registered user to come back to.

48. Journal entries shall be automatically saved for the registered user to come back to.

#### Password saving:

49. Registered users shall have the option to have Zenful remember their account username and/or password between logins.

50. Registered users shall have the option to have Zenful keep them signed in on their device, so that they don't need to log-in again.

#### 5.List of non-functional requirements

For our system requirements we will be working on a webapp. It will be available on personal computers and laptops. This system should be able to service atleast a few thousand clients. It will take up about 100 GB of bandwidth a month. It will be able to process a good amount of data. The usability of the product is that it will be easy to use for those that are not tech savvy as well as good for those that know more about tech. The site will be reliable at all times and have few crashes. There will be a fast and efficient switchin between page options. If there is a delay there should only be a few seconds of delay between the different pages that a user would be going through. There will be a large storage capacity for the preloaded music as well as the music that users can add. As well as storage for the notes and journal that users are going to be doing. Zenful will be able to handle atleast 10 times its capacity if it should reach that load.

All code will have a note attached to make for easy IT work on the webapp. Users should be able to see the page in 3-5 seconds and no longer. If there is a delay it should only be for 2-4 seconds more.

The product will be available at all times of the day and week unless maintenance is required in which there should only be a short window where the webapp doesnt work as it is advertised to. A user will only need to have a computer with internet capacity in order to access the site. The site will be on a large scale with font that is easy to read for all users. A cool toned color scheme for easy adjustment of the eyes and the management of emotions on the user. There will also be the option of light and dark mode for easier adjustment of room elements.

The user will need to login in order to access any of the files on the server. This will enable them to ensure their information is kept private and not open for strangers to engage with their work. When toggled on the user will be prompted to enter a four number code for their passcode. When the user initially signs up they should have the option to go through a tour or not. Upon registering the user should be able to customize the screen and the music to their choice.

To market this product we will provide information on the key aspects of the site such as the ability to have a little animated friend that will help keep users motivated to use the app. We will also tote about how you can add your music to the library and ensure that they can customize the page in preset themes. The big point is that the app is able to have music, an animated gif or animation in the corner, customizable page themes, journal and note taking and the ability to passcode notes.

The webpage shall have the logo in the upper left hand corner on every page for easy access to homepage if needed. There will be an option for logging in on the upper right hand side of the page with links to account settings. Under the logo will be the header on the left hand side: Notes, Journals, Music, Avatar, Themes, Account. On the bottom of the page shall be links to about us, faqs, contact us, terms of use, privacy policy. The side should have a menu option to flip between the music section and the current page. The landing page with a summarization of the key points of the app with an option to sign up at the bottom. Then it will be followed by the companies information: name, address, establishment, last time site was updated.

When in the notes tab, there will be title of note, date, saving function on the left hand side. The title and date will be larger than the saving function. Under this will be the file options, edit, insert, format, and help. They will be slightly smaller than the title and date. Under this should be the Font, Zoom, Text Style, Text Size, Highlighter, Template, and Print function. On the left hand side there will be a area where the titles of notes are listed. On the right hand side there will be the Account function. The header from the dashboard will be visible in the middle of the top of the page. At the bottom of the page is the links to About Us, Faqs, Contact Us, Terms of Use, Privacy Policy. The company information and last update of site/feature. In the bottom right should be the animated gif/animation. The music player should be in the bottom left. The background should be user pick and in the foreground should be the 'paper' the user is typing on.

When in the journaling tab, there will be a date at the top left hand side. There will be the choice to add a title or leave just the date. There will be the files, insert, format, edit, and help functions under the date. The date should be larger than the files, insert, format, edit, and help functions. Under this should be font, font size, zoom, and print function. On the right hand side should be the account function as well as the passcode toggle. At the bottom of the page should be the About Us, Faqs, Contact Us, Terms of Use, Privacy Policy, Company Information and last update of site/feature. In the bottom right should be the animated gif/animation. The music player should be in the bottom left of the screen. The background should be the users pick. In the foreground should be the 'paper' the user is typing on.

When in the music tab. There should be a mini player in the top left hand side. It should have a brief summary of what is playing. It should have a play, pause, and back and forth function. On the top left under player should be the functions: Playlist(s), Browse, Just for You(U), Trending. ON the main page should be the pages that are toggled. The page should show the background

that the user has chosen. At the bottom of the page should be the About Us, Faqs, Contact Us, Terms of Use, Privacy Policy, Company Information and last update of site/feature. In the right hand side should be the account function in the upper right. In the bottom right should be the animated gif/animation.

User data that will be collected is as follows: music genres liked by user, user age, user gender. This information is gathered to help further the understanding of what the users enjoy and what can be added in the future for more user engagement. This information is only used for the furthering of user enjoyment and is not sold to any outside parties. User information is tracked through cookies. User's have all rights to their privacy information and can opt to decline accepting trackers. If user decides to decline having their information stored, their information will be placed on a list of do not track. Any changed to the privacy policy will be sent out in an email to all users for them to accept again and or decline. As well as a notice placed on the website header. Last update to privacy policy will be placed at the bottom of the page. The user has the right to request a copy of what information we have collected from them at any time

6.

Feature/Company	<a href="#">Spotify</a>	<a href="#">Apple notes</a>	<a href="#">Mimi cute notes</a>	<a href="#">Pandora</a>	<a href="#">CollaNotes</a>
strength	can upload music Access to thousands of music Access to other people's playlist Light/dark mode Save playlists Make playlists Suggests songs based on previous plays Connect to Facebook	can use Apple pen On Apple products No limit Lock feature Can scan work in Light/dark mode Can title notes Can draw notes No ads	cute 100+ themes Onboarding message Can request new themes Sticky note appearance of all notes to choose from Can title notes Customize notes background Customize app theme Passcode lock Can change font No ads	on multiple platforms Listen to music you like Keep collections Podcasts For you section Personalizes what plays next	import notes Import files Folders Annotation Light/dark mode Records audio Translation Collab with others Digital planner Can add links Can present on app Can use stylus No ads

weakness	limited skips in free mode Playlists confusing No notes No customization of background Not a planner Ads	only on Apple Can't customize background No music Hard to insert files Not a planner	no music No animation Limited to backgrounds author makes Font can be hard to read initially No stylus use Can't insert files Not a planner	no notes Can't customize background Can't upload music Limited skips in free mode Not a planner Ads	no music No customization of backgrounds Apple only No lock
pricing	free and paid Premium individual - \$9.99 a month Duo-12.99 a month Family- \$15.99 a month Student - \$4.99 a month	free	free Sticker library - \$1.99 a month / \$25.99 a year	free and premium Pandora plus - \$4.99 a month / \$54.89 a year Pandora premium - \$9.99 a month / \$109.89 a year Pandora premium family- \$14.99 a month/ \$64.89 a year Student premium - \$4.99 a month / \$59.88 a year Military premium - \$7.99 a month / \$87.79 a year	free
social media	music app Twitter Facebook	notes app None	notes app Twitter	music app Twitter Facebook	notes app Twitter Facebook

onboarding	given info first the shown how to sign up Tour after sign up	none	welcome note on homepage	given info then shown to sign up	option of beginner tips
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Feature	Mimi - Cute Notes	Spotify	Zenful
Text Search	-	+	+
Browse	-	+	+
Customization	+	-	+
Social Media	-	+	+

Zenful is a user friendly webapp that will allow for the personal note and journaling of individuals. When landing on the front page user will be given information about how the website works and all the key features like the allowing them to upload music, customize background, passcode feature, and animated friend. Users will then be prompted to sign up for an account in order to start the service. Music section on Zenful will allow users to use the preselected music or make their own playlists of their own music. Users will be able to customize their backgrounds from preselected backgrounds. There will be a light and dark mode as well. Zenful will allow users to insert pdfs, insert pictures, draw, and create a journal book that has a passcode feature. There will be preset templates as well as a blank page for notes and journal.

Weakness: No social media aspect with others. No planner feature. Unable to present with website. Unable to use stylus. Unable to change font.

**7. High-level system architecture and technologies used (complete this section only after you finish checkpoint #2):** Briefly provide itemized list of all main SW components such as frameworks, APIs, tools and systems to be used, supported browsers and deployment platform (SW and server) to be used. This list is to be the list of approved tools and systems from M1 (which may be the list you have modified during or after M1 – but get it approved). Any other external code/API/tool must be approved by instructor and you have to justify it.

**-Server Host:** Google Cloud 18.0.0



**- Operating System:** Ubuntu 23.04

**-Database:** MySQL 8.0

**-Web Server:** NGINX 1.25.1

**-Server-Side Language:** Java (20)

**-Additional Technologies:**

- **Web Framework:** React 18.2.0
- **IDE:** VS Code Codespaces
- **SSL Certification:** Lets Encrypt