

FIT 3175 – Usability

Submission 2 (Stage B + C)

Storyboarding and Low-Fidelity Prototypes

Group 4

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1.0 Introduction

After acquiring a good understanding of our user group through the data analysis done in the previous stage, we now proceed to design the user interface for the application. However, such an endeavour can be costly in terms of time and money. To avoid wasting these resources, we first create storyboards that allow us to understand the context in which a user might be interacting with the mental health application. This enables us to sketch a low-fidelity prototype where ideas can be visualized quickly and cheaply before refining them into a high-fidelity prototype. The following sections are based on the 4 selected user stories and their acceptance criteria. A storyboard and a low-fidelity prototype are sketched for each user story. Finally, an analysis is done to justify the application of Shneiderman's Rules and Norman's Principles in the prototype.

2.0 Selected User Stories

User Story 1:

As a civil site engineer, I want to be able to listen to calming sounds and music, so that I can relax to obtain an energy boost and virtually escape from the constant construction noise.

User Story 2:

As a full-time employee with health issues, I want to be reminded to take my medications and supplements on time, so that I don't have to feel stressed to constantly remind myself to take them or be worried if I missed them.

User Story 3:

As a person with poor social life, I want to chat with someone when I feel down so that I can be assured to have someone accompany me at all times.

User Story 4:

As a University student, I want a journaling application that gives me access to more customization features on my journal so that I can design and customize my journals how I want. (*User Story From Louis Juliano*)

3.0 Storyboards

4.0 List of Acceptance Criteria

User Story 1:

1. Display music genre categories to choose from [Done]
2. Show a list of music/songs for users to select and play [Done]
3. Provide options to play, pause, skip, rewind and shuffle music [Done]
4. Show music progress bar [Done]

User Story 2:

1. Provide option to add new or delete old medication reminders [Done]
2. Provide an interface to key in the medication name [Done]
3. Provide a dropdown list for users to select dosage amount, capsule amount, day interval, and whether to be taken before/during/after a meal [Done]
4. Allow users to upload images of medication [Done]
5. Show in-app alert for upcoming medications to be taken [Done]
6. Send push notification reminder to the phone when it is time to take the medication

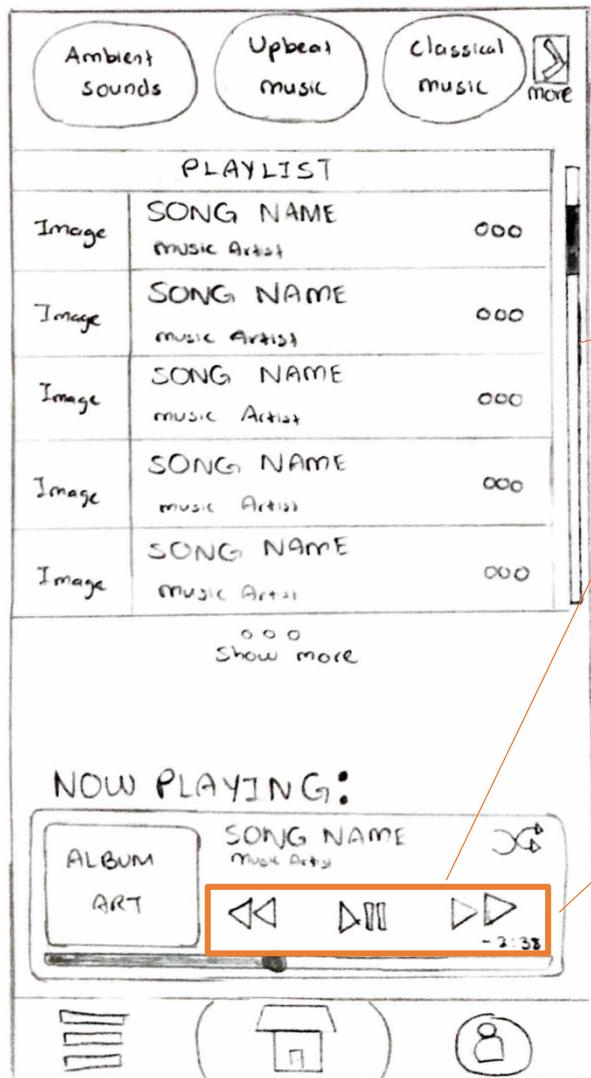
User Story 3:

1. Show frequently messaged contacts [Done]
2. Display unread message counts [Done]
3. Have a chat box interface [Done]
4. Show online status of contacts [Done]
5. Show read receipts [Done]
6. Allow sending messages to friends, nearby therapists, an AI or others on the app [Done]
7. Provide functionality to upload images, videos, gifs and documents into chat [Done]

User Story 4:

1. Provide a notepad interface where users can add text, images, links or draw on it [Done]
2. Provide different input tools such as text, pen, pencil, highlighter and shapes [Done]
3. Provide erase, undo, redo, save, add new page and clear functionalities [Done]
4. Allow users to select different background themes and pen colour options [Done]
5. Show groupings of previous journal entries by day [Done]
6. Provide options to edit previous journal entries
7. Allow users to delete journal entries [Done]

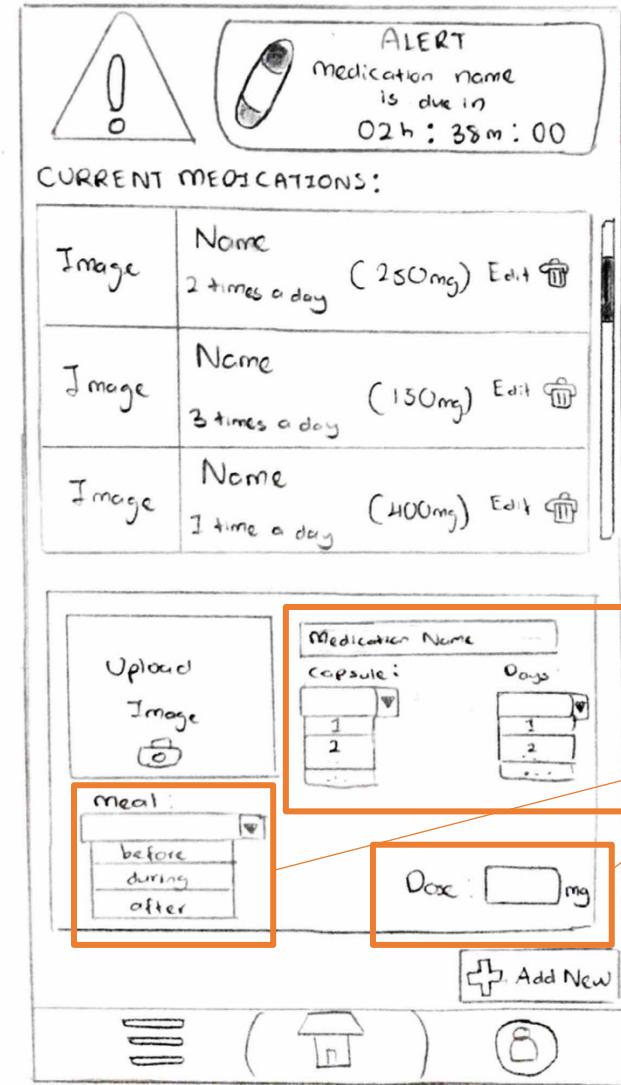
5.0 Low-Fidelity Prototypes



Screen 1: Music Playlist
For user Story 1

Scroll bar & buttons
Norman's principle –
(Mapping)

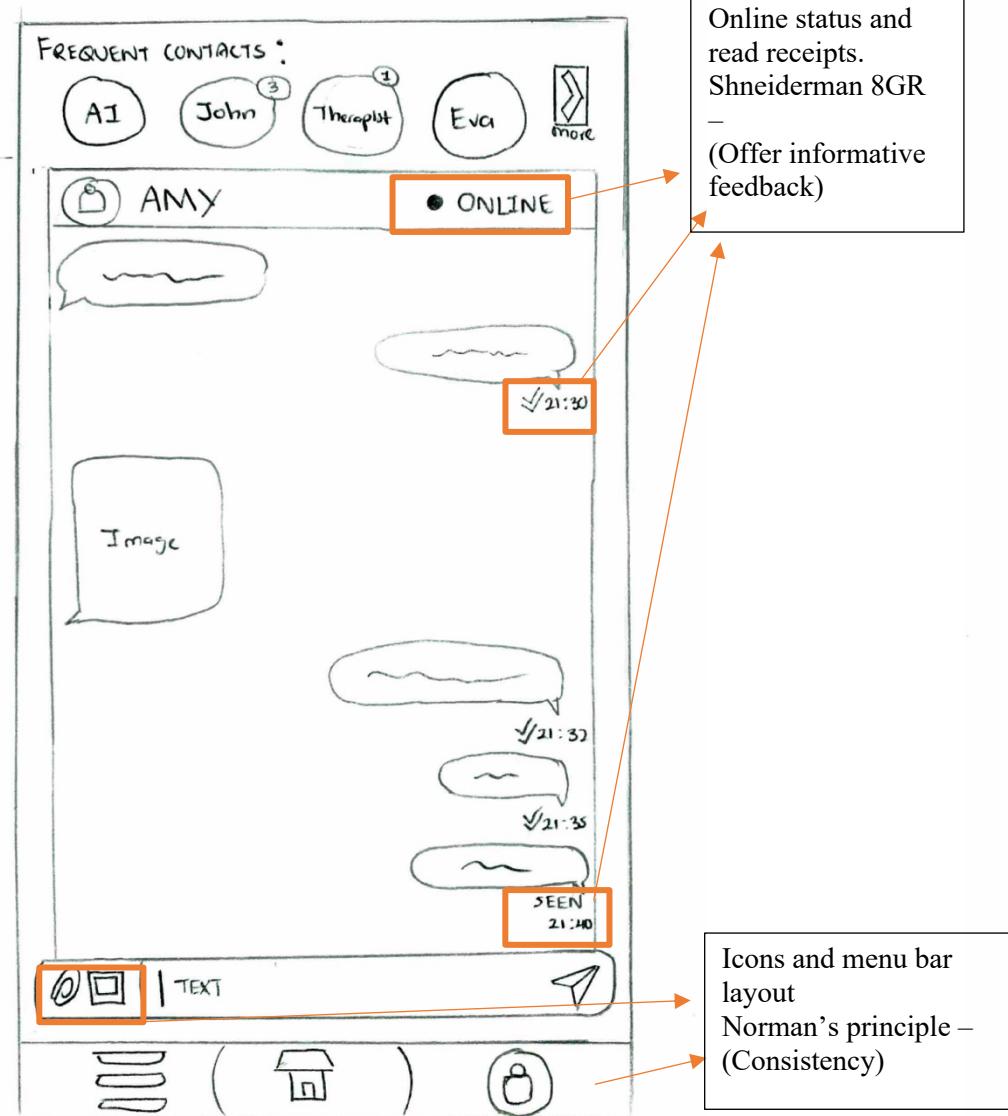
Pause, play, skip, rewind
buttons.
Shneiderman 8GR –
(Keep users in control)



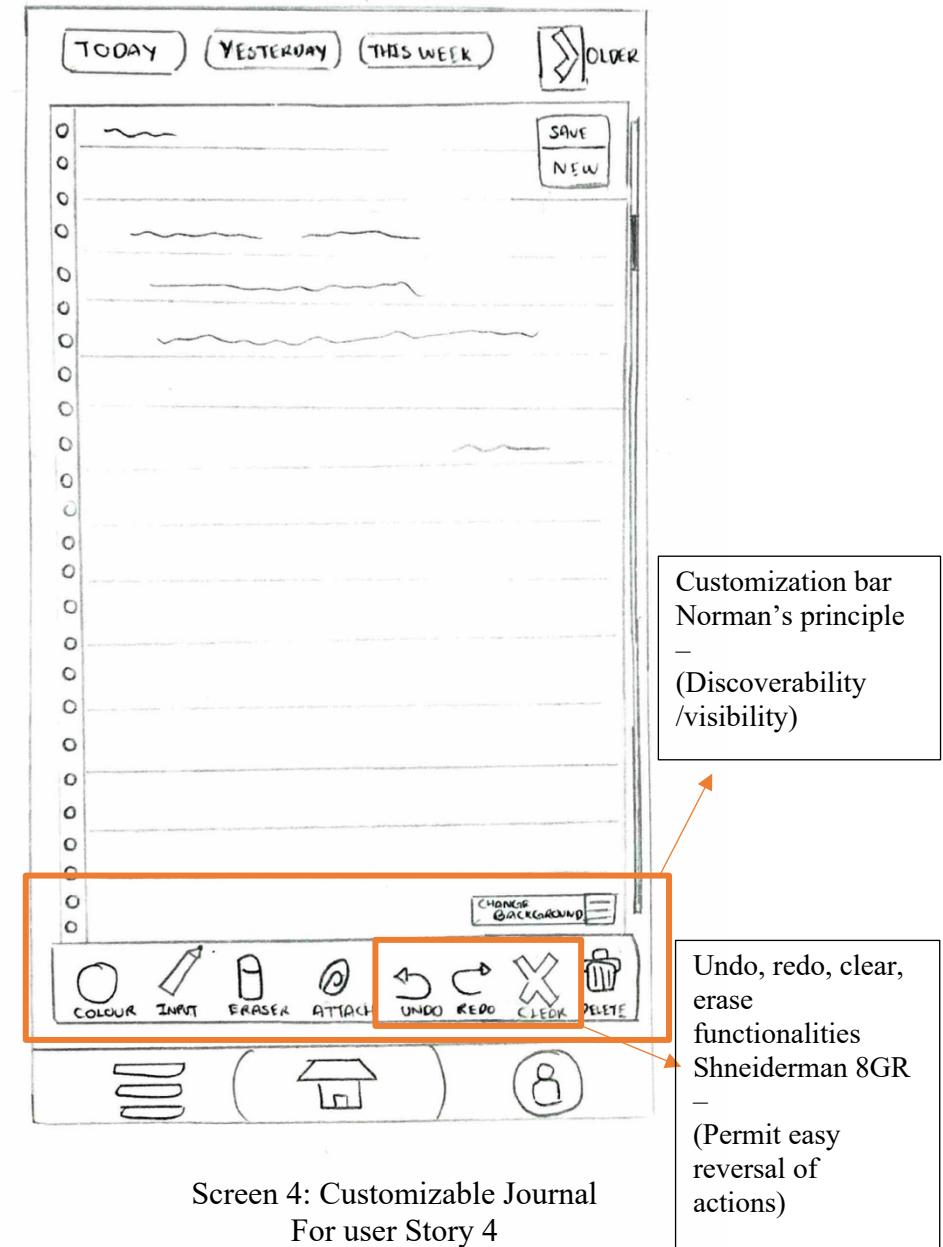
Screen 2: Medication Notification Feature
For user Story 2

Drop down list &
character
restriction –
Shneiderman
8GR –
(Prevent errors)

Norman's
principle –
(Constraints)



Screen 3: Chat Screen
For user Story 3



Screen 4: Customizable Journal
For user Story 4

6.0 Report

Justification of user stories & acceptance criteria

In the previous stage, user stories were ranked by priority using the MoSCoW method. The user stories chosen for the storyboard creation are the ones that were categorised as ‘Must Have’ and ‘Should Have’. This is because the prioritization was done by analysing the data collected from the questionnaire and identifying which of the aspects our user group would benefit from the most. These included several features that participants were keen on such as journaling, music playlist, chatting, and medication notifications. Thus, user stories 1 to 4 cater to these requirements by reflecting the persona’s needs.

User story 1 describes the need for a curated music playlist that helps users to relax and re-energize. For this feature, the acceptance criteria were formulated to capture the fundamental functionalities of a music player. The implementations of media buttons and music progress bar are the basics of how users would interact with the player. Hence, without them, controlling the music player would be difficult. Moreover, since the selection of music genre would depend on the user’s mood, it is made so that the genres can be selected and a playlist of music would be available for selection. This facilitates the users in finding the right song.

Next, user story 2 is about a medication notification feature. To ease the burden of having to remember to take their medicine, users should be able to key in important details regarding their medicine for the app to remind them later. This includes capsule amount, dosage, intake frequency and etc. The in-app alert notifies users of upcoming medications when they are using the app. The push notification was not implemented on the low-fidelity prototype screen as it is a UI element that does not reside within the app. The push notification would appear when the time is up as a dropdown banner or as a lock screen notification on the smartphone.

Furthermore, for user story 3, it is important to encourage users to chat with their friends. Hence to make it more interactive, we have incorporated acceptance criteria such as uploading media, having a clean chat interface, easy access to frequent contacts and read receipts. Since this app’s purpose is to help with users’ mental health, it was important to integrate the ability to chat with a nearby therapist. This way, users are able to seek professional help conveniently.

Lastly, for user story 4, the aim was to make journaling an engaging and fun process. This is done by allowing for high customization and personalisation by having a notepad interface where users can select a variety of input methods. In order to enable users to reflect on their day better, the inclusion of media attachments was also made a priority. The option to edit previous journal entries is not seen in the prototype as it can be done by opening up relevant journal entries and making the necessary modifications directly. As such, it does not need to be sketched.

Justification of Shneiderman's golden rules and Norman's principles

In screen 1, the play, pause, skip and rewind buttons demonstrate Shneiderman's rule of keeping users in control. This is because, in a feature like a music player, users would certainly have their own preferences and tastes. Hence, giving control to the users, provides them with the freedom to navigate the playlist on their own. This would make them feel appreciated and enable interventions when mishaps of music automation occur such as when a song that the user dislikes is played. Besides that, the playlist scroll bar and the buttons also demonstrate Norman's principle of mapping. The functionality of manipulating the music playback is mapped to the buttons which users can interact with. Besides, the arrangement of the mapping is also natural whereby, the left is commonly associated with the back, hence the left double arrow button maps to previous music played.

In screen 2, Shneiderman's prevent errors rule has been implemented where the goal is to mitigate user input error by having a drop-down list of numerical values for certain input fields and by restricting the type of input characters for others. This is done as the medication information is crucial and any input that is susceptible to human error should be disallowed as the impact it would have on users could be severe if medications are taken improperly. Moreover, this also ties into Norman's constraint principle, where user input is limited to prevent user input errors. As the input fields are made as a dropdown list of numerical values, there is no way for users to mistype or omit the fields as it provides a clear separation between numbers.

In screen 3, the online status of users and read receipts of conversations are displayed on the chat interface. This feature demonstrates Shneiderman's offer informative feedback rule. It allows users to evaluate the result of their actions and act accordingly. Since these stem from frequent minor actions of sending messages, the feedback is modestly displayed as a double tick under the message. Furthermore, Norman's principle of consistency is also applied. This is said as the exact same icons are used throughout the application such as the attachment icon that allows users to upload images and videos. Universally understood icons are also used such as the paper aeroplane. Hence, these icons would be consistent based on the user's experience and would allow them to easily navigate through the screen.

In screen 4, the notepad customization bar highlight Norman's discoverability principle as icons are well displayed and users would be able to engage with them without prior knowledge. The icons are also depictive of natural elements such as pencils and a trashcan. Hence these will aid the users in determining their range of possible actions. Besides that, the undo, redo, clear and erase functionalities demonstrate Shneiderman's permit easy reversal of action rule. This enables users to revert back their actions to the previous state and reduces their anxiety when operating the system. Furthermore, it also encourages exploration.

7.0 Conclusion

In conclusion, the storyboards that have been created based on the selected user stories, helped us to understand the user's journey and the emotional context in which they may be interacting with the app. By applying that knowledge, we were able to sketch 4 low-fidelity prototypes that satisfy the acceptance criteria for each user story. The incorporation of Shneiderman's Rules and Norman's Principles guarantees improved usability which results in a user-friendly interface. The design and features visualized at this stage are surely vital to our user group. Thus, the next stage of creating a high-fidelity prototype of the mental health app should be initiated from the learnings obtained from the sketches attached to this report.

8.0 Appendix

User Stories:

- As a civil site engineer, I want to be able to listen to calming sounds and music, so that I can relax to obtain an energy boost and virtually escape from the constant construction noise.

ROSHAN KUMAR, AN EMPLOYEE WITH POOR WORK-LIFE BALANCE

Persona by: Matin Raj

PROFILE		GOALS	PERSONAL INFO
Gender	: Male	<ul style="list-style-type: none">To have a good work life balanceSpend quality time with family when at homeNot let the harsh noisy working environment affect my mood and mental state	<p>Physical Health :</p> <div style="display: flex; align-items: center;"><div style="width: 40%; background-color: #f0f0f0; height: 10px;"></div><div style="flex-grow: 1; margin-left: 10px;">Very Poor</div><div style="flex-grow: 1; margin-left: 10px;">Excellent</div></div>
Age	: 46		<p>Mental Health :</p> <div style="display: flex; align-items: center;"><div style="width: 40%; background-color: #f0f0f0; height: 10px;"></div><div style="flex-grow: 1; margin-left: 10px;">Very Poor</div><div style="flex-grow: 1; margin-left: 10px;">Excellent</div></div>
Nationality	: Malaysian		<p>Relationship with others :</p> <div style="display: flex; align-items: center;"><div style="width: 40%; background-color: #f0f0f0; height: 10px;"></div><div style="flex-grow: 1; margin-left: 10px;">Very Poor</div><div style="flex-grow: 1; margin-left: 10px;">Excellent</div></div>
Marital status	: Married		<p>School/Work life :</p> <div style="display: flex; align-items: center;"><div style="width: 40%; background-color: #f0f0f0; height: 10px;"></div><div style="flex-grow: 1; margin-left: 10px;">Very Poor</div><div style="flex-grow: 1; margin-left: 10px;">Excellent</div></div>
Education	: Master's degree		<p>Social Life :</p> <div style="display: flex; align-items: center;"><div style="width: 40%; background-color: #f0f0f0; height: 10px;"></div><div style="flex-grow: 1; margin-left: 10px;">Very Poor</div><div style="flex-grow: 1; margin-left: 10px;">Excellent</div></div>
Occupation	: Civil Engineer		
Located in	: Kuala Lumpur		
		<h3>MOTIVATIONS</h3> <ul style="list-style-type: none">To do the tasks and job i am given to the best of my abilityBe a loving and caring husband and father	<h3>SKILLS & EXPERIENCE</h3> <p>Previous Mental Health app used: None</p> <p>Frequently used social media app: Whatsapp</p> <p>Familiarity with app functionality: <div style="width: 100%; background-color: black; height: 10px;"></div></p> <p>Mobile Apps: <div style="width: 100%; background-color: black; height: 10px;"></div></p>
<h3>BIOGRAPHY</h3> <p>I'm a married adult who works long hours at construction sites as a civil engineer. I need to be on-call at all times to supervise the ongoing work on buildings. This leads to me having a poor work-life balance. As such I spend way too much time on my phone even at home replying to calls and messages regarding work. I often find myself having a bad mood and temper due to the constant noise and harsh working environment.</p>		<h3>FRUSTRATIONS</h3> <ul style="list-style-type: none">Constantly feeling anxious about work even at homeNot being able to relax due to harsh and noisy work environment	
		<h3>WANTS & NEEDS</h3> <ul style="list-style-type: none">A way to virtually escape from the constant construction noise at work though music and soundsTo track my phone activity and to alert me if I spending too much time on my phone after working hours	

- As a full-time employee with health issues, I want to be reminded to take my medications and supplements on time, so that I don't have to feel stressed to constantly remind myself to take them or be worried if I missed them.
- As a person with poor social life, I want to chat with someone when I feel down so that I can be assured to have someone accompany me at all times.

ALICIA TAN, FRESH GRADUATE WITH POOR HEALTH AND SOCIAL LIFE

Persona by: Matin Raj

PROFILE

Gender : Female
 Age : 26
 Nationality : Malaysian
 Marital status : Single
 Education : Bachelor's degree
 Occupation : Marketing
 Located in : Penang



BIOGRAPHY

A single working adult who just recently graduated. I have poor health and I need to constantly take my medication and supplements daily. Due to my health, I cannot stand or walk for long hours. Thus, this prevents me from going out with my colleagues and making new friends as I have the fear of being judged. Most days I have no one to accompany me and this makes me feel lonely.

GOALS

- To be successful at my job and climb the corporate ladder
- To make new friends and colleagues
- To overcome my poor physical health and be confident

MOTIVATIONS

- I want to be financially independent while enjoying my job and the people I work with
- I do not want to let my poor health affect my mental state and hamper my social life

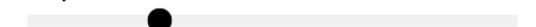
FRUSTRATIONS

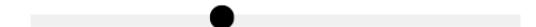
- Constantly miss out medications or supplements that need to be taken on time
- Having no company during lunch breaks or after work

WANTS & NEEDS

- I want an app that can track my medications and supplements and send me reminders of when to take them
- I want to be able to converse with someone when I feel lonely
- I want an app that can help me regain my confidence and not let my health or physical appearance get in the way

PERSONAL INFO

Physical Health : 
 Very Poor Excellent

Mental Health : 
 Very Poor Excellent

Relationship with others : 
 Very Poor Excellent

School/Work life : 
 Very Poor Excellent

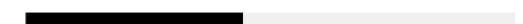
Social Life : 
 Very Poor Excellent

SKILLS & EXPERIENCE

Previous Mental Health app used:
 None

Frequently used social media app:
 TikTok

Familiarity with app functionality: 

Mobile Apps: 

4. As a University student, I want a journaling application that gives me access to more customization features on my journal so that I can design and customize my journals how I want. (*User Story & Persona From Louis Juliano*

JESSICA TANJAYA, UNIVERSITY STUDENT THAT LOVES JOURNALING

Persona by: Louis Juliano

PROFILE

Gender	:	Female
Age	:	21
Nationality	:	Indonesian
Marital status	:	In a relationship
Education	:	Bachelor's degree
Occupation	:	University Student
Located in	:	Jakarta



BIOGRAPHY

Hi, I'm Jessica and I am from Indonesia. I am currently a university student majoring in Business.

GOALS

- I want to be able to recall the happy and sad moments I have experienced in the past
- I want to be able to organize my journal in a digital form instead of a physical form.

MOTIVATION

I do journaling because it helps me with putting both my stressful and joyful thoughts into a book.

FRUSTRATIONS

I have always wanted to start journaling in a mobile phone. However, I find that the journaling app that I have been using, does not offer enough feature for me to customize and design my journals.

WANTS & NEEDS

I wish I am able to journal digitally with multiple unique customization in my application so that I can express my creativity and enjoy a more unique digital journal.

PERSONAL INFO

Physical Health :

Very Poor Excellent

Mental Health :

Very Poor Excellent

Relationship with others :

Very Poor Excellent

School/Work life :

Very Poor Excellent

Social Life :

Very Poor Excellent

SKILLS & EXPERIENCE

Previous Mental Health app used:

Finch

Frequently used social media app:

Instagram

Familiarity with app functionality:



Mobile Apps:



