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Knight's Foundation School of Computing and Information
Sciences*

Software Engineering Focus

Final Deliverable

Stress and Anxiety Management Application
Fall 2023

Team Members: Jose Fernandez, Cristina Trujillo, Chenying Wu

Product Owner(s): Liane Sangollo

Instructor: Dr. Masoud Sadjadi

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Abstract

This document serves as an informative presentation to gain an adequate understanding of the sixth iteration of the Stress and Anxiety Management App.

For this iteration, the goal was to enhance the application by adding some new interfaces to provide efficient tracking of users' daily mental health data, offering users easy access to comprehensive data visualization aiming to assist them in finding their emotional distress and patterns. The team was successful in achieving this goal during the fall semester of 2023.

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Introduction

The purpose of this capstone project was to continue the development of the fifth of the Stress and Anxiety Management mobile application, HowRU.life. Primarily, the app's goal is to be an interactive platform to help users manage stress and anxiety by first evaluating how they feel and then offering healthy practices to help eliminate the stress and/or anxiety that the user is facing. With the ever increasing demand of people suffering from mental health issues, it has been very difficult for patients to seek some cure and relief from stress and anxiety. When dealing with day to day activities, whether it is school or work, many people sometimes face stress and/or become anxious. Furthermore, there are limited resources in the market that allow for these people to help cope with stress and anxiety. The app's goal is to be an interactive platform to help users manage stress and anxiety by first evaluating how they feel and then offering healthy practices to help eliminate the stress and/or anxiety that the user is facing

Liane Sangollo intended on developing a mobile application in order for individuals of all ages and backgrounds to have a way of dealing with the mental obstacles many people face on a daily basis. HowRU is designed for users to track their mental health and document their journey in order to develop their well being. The application also offers multiple outlets on how to combat anxiety in a way that gives everyone a safe and healthy outlook.

Current System

This is the sixth iteration of the Stress and Anxiety Management Application. The current system allows users to fill in a series of questions all related to their stress and anxiety, store all user-entered data in the database, as well as providing breathing exercises for the user to assist in sleeping, to help calm themselves down, or improve their focus. The new functionality of checking past daily log data from the calendar and visualizing all the past data input has also been successfully added to the system.

Purpose of New System

First iteration

The first iteration of the Anxiety & Stress Self Management application was completed by the Capstone II team composed of Juan Arias, Robert Aguilar, Manuel Kamboykos, Daniel Navarro, and Aaron Sasenaryan. The purpose of this iteration is to create the foundation for the application by creating a base design and adding front-end and back-end components. The design was developed using Figma to assist in the specification of colors and styles for the pages within the discussion forum. This involved detailed research of the project packages that would fit the desired stack. Research on React Native and Firebase was done during the development of the project. The login, sign up, forgot password, emotion sliders, stressor/reasons, breathing, food for thought, dashboard, and mood diary was implemented. The backend was implemented using Firebase.

Second iteration

The second iteration of the Anxiety & Stress Self Management application was completed by the Capstone II team composed of Daniel Perez, Jorge Aguero, Julieta Albano, Janeel Abrahams, Raul Gutierrez Niubo and the Senior Project member, Annie Brigido. The purpose of this iteration is to expand the foundation set by the 1st iteration and add new features to enhance the usage of the app. A second breathing screen was implemented so users now have two choices of breathing exercises, between the 4-4-4-4 and 4-7-8 exercises. Push notifications were added so users can enable reminders whenever they want. Lastly, the mood diary was updated to improve user experience.

Third iteration

The third iteration of the Anxiety and Stress Self Management application was completed by the Capstone II team composed of Noah Pineiro, Cecilia Gervasoni Latorre, Luis Artimez, James Bustos, Eduardo Gomez, Tatendaishe Mahaka. We were given plenty of help and useful ideas from the Capstone I team composed of Ximena Puig, Robert Velazquez, Jose Aguiar, Ryan Neubert. The purpose of this iteration was to further improve the design that was left behind by the previous two iterations and add to the database. The colors of the backgrounds of most of the screens was changed, along with the menu and four quadrants sections getting complete overhauls.

Fourth Iteration

The fourth iteration of the Anxiety and Stress Self Management application was completed by the Capstone II team composed of Ryan Neubert, Jose Aguiar, Mayelin Espino Gavilanes, Alejandro Cartagena, Eduardo Marcucci. The purpose of this iteration was to bring back a functioning database and add some new features to the app. After the database issues were resolved there was a new Dashboard and Exercise made for the app alongside the addition of custom user inputs to the several questions.

Fifth Iteration

The fifth iteration of the Anxiety and Stress Self Management application was completed by the Capstone II team composed of Miguel Rivera-Segura, Vanesa Gomez, and Hanane Mbarki. The purpose of this iteration was to clean up the app by improving the graphics and illustrations which included changing screen colors and removing unnecessary buttons to avoid confusion when using the app.

Fifth Iteration

The fifth iteration of the Anxiety and Stress Self Management application was completed by the Capstone II team composed of Miguel Rivera-Segura, Vanesa Gomez, and Hanane Mbarki. The purpose of this iteration was to clean up the app by improving the graphics and illustrations which included changing screen colors and removing unnecessary buttons to avoid confusion when using the app.

Sixth Iteration

The sixth iteration of the Anxiety and Stress Self Management application was completed by the Capstone II team composed of Chenying Wu, Cristina Trujillo, and Jose Fernandez. The purpose of this iteration was to integrate the database to capture and record all user-entered data, create two new sections on the homepage as the

Monthly Calendar and the Dashboard to track and display the user's daily log data for any specific date and visualize the past data to better understand and analyze users' mental health patterns over time.

User Stories

The following section provides the detailed user stories that were implemented in this iteration of the Anxiety & Stress Self Management project. These user stories served as the basis for the implementation of the project's features. This section also shows the user stories that are to be considered for future development.

Implemented User Stories

- **User Story 1: As a user, I want to see the Stress & Anxiety Management App to have a clear and easy-to-use page.**
- **User Story 2: As a user, I want the Stress & Anxiety Management App to summarize my daily log data for a quick and better overview.**
- **User Story 3: As a user, I want the Stress & Anxiety Management App to offer a seamless transition between different screens.**
- **User Story 4: As a developer, I want to remove all unnecessary elements on every screen to ensure a user-friendly interface.**
- **User Story 5: As a developer, I want to develop a feature to make user to retrieve their logged data for any chosen day.**
- **User Story 6: As a developer, I want to collect and visualize all the past user-entered data into charts to help the user identify their emotion patterns.**

Project Plan

This section describes the planning that went into the realization of this project. This project incorporated agile development techniques and as such required the sprints to be planned. These sprint plannings are detailed in the section. This section also describes the components, both software and hardware, chosen for this project.

Hardware and Software Resources

The following is a list of all software resources that were used in this project:

- **Java/JavaScript:** A scripting language used to write the code for the application
- **React Native:** An open-source, front-end, JavaScript library for building user interfaces or UI components that serve open-source as the engine for the front-end of the application.
- **React Native CLI:** Used to generate react-native files and manage the projects.
- **GitHub:** A web-based version-control and collaboration platform for software developers.
- **GitHub Desktop:** Optional support application that enables Git collaboration.
- **Visual Studio Code:** a source-code editor developed by Microsoft for Windows
- **Firebase:** A backend as a service platform that was used for authentication and to handle user data.
- **Figma:** A web-based design and prototyping tool that can be used to create mobile app interfaces, and websites.

For Future Development:

- **Stripe:** Service payment provider to charge users membership fees.
- **Google AdMob:** A global ad network used to implement ads in the app.

Sprint Planning Meetings

Sprint 1 Planning Meeting:

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu

Start time: 9:00 PM

End time: 10:00 PM

After discussion, the velocity of the team was estimated to be running a little behind schedule.

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- We had a meeting with the product owner today. However, she told us to schedule another meeting on Friday to discuss the specific work we will be doing during this sprint since she wanted us to review the documentation before discussing anything. We received the documentation after the meeting, and we will be reviewing everything that has been done for this project before the next meeting with our product owner.

The team members indicated their willingness to work on the following user stories.

- Jose Fernandez, Cristina Trujillo, Chenying Wu
 - User Story 1: Review the documentation for the project
 - User Story 2: Get familiar with NextCloud

Sprint 2 Planning Meeting:

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu, Liane Sangollo (PO)

Start time: 9:00 PM

End time: 10:00 PM

After discussion, the velocity of the team was estimated to be 3 stories per sprint.

The product owner chose the following user stories to be done during the next sprint. They are ordered based on their priority.

- User Story 1: Update the figma to better reflect the current state of the app.
- User Story 2: Review and understand the code before doing any implementations.
- User Story 3: Improve on the drop down menus and have a way to see a graph reflecting multiple days of stress throughout the week.

The team members indicated their willingness to work on the following user stories.

- Jose Fernandez, Cristina Trujillo, Chenying Wu
 - User Story 1: Update the figma.
 - User Story 2: Review the code.
 - User Story 3: Improve the application.

Sprint 3 Planning Meeting:

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu, Liane Sangollo (PO)

Start time: 9:00 PM

End time: 10:00 PM

After discussion, the velocity of the team for the following spring was estimated to be 5 stories per sprint.

The product owner chose the following user stories to be done during the following sprint. They are ordered based on their priority.

- User Story 1: Update Figma
- User Story 2: Add new button to Home Page
- User Story 3: Fix issue where sound keeps playing after exiting page
- User Story 4: Change wording of Daily Stressor
- User Story 5: Remove sound icon from certain pages

The team members indicated their willingness to work on the following user stories.

- Jose Fernandez
 - User Story 1: Update Figma
 - User Story 4: Change wording of Daily Stressor
 - User Story 5: Remove sound icon from certain pages
- Cristina Trujillo
 - User Story 3: Fix sound issue
- Chenying Wu
 - User Story 2: Add button to home page

Sprint 4 Planning Meeting:

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu

Start time: 9:00 PM

End time: 10:00 PM

After discussion, the velocity of the team for the following spring was estimated to be 6 stories per sprint.

The product owner chose the following user stories to be done during the following sprint. They are ordered based on their priority.

- User Story 1: Design the dashboard
- User Story 2: Confirm the dashboard design in Figma with the PO
- User Story 3: Implement the triggers pie chart to the dashboard.
- User Story 4: Implement the bar chart for the intention to change and how in control.
- User Story 5: Implement the pie chart for how are you feeling
- User Story 6: Implement the Stress level line chart.

The team members indicated their willingness to work on the following user stories.

- All Members:
 - User Story 1: Design the dashboard
 - User Story 2: Confirm the dashboard design in Figma with the PO
- Jose Fernandez
 - User Story 3: Implement the triggers pie chart to the dashboard.
 - User Story 4: Implement the bar chart for the intention to change and how in control.

- Cristina Trujillo
 - User Story 5: Implement the pie chart for how are you feeling
- Chenying Wu
 - User Story 6: Implement the Stress level line chart.

Sprint 5 Planning Meeting:

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu

Start time: 9:00 PM

End time: 10:00 PM

After discussion, the velocity of the team for the following spring was estimated to be 3 stories per sprint.

The product owner chose the following user stories to be done during the following sprint. They are ordered based on their priority.

- User Story 1: Implement the filter for the triggers pie chart
- User Story 2: Implement the filter for the bar chart
- User Story 3: Implement the filter for the pie chart

The team members indicated their willingness to work on the following user stories.

- Jose Fernandez
 - User Story 1: Implement the filter for the triggers pie chart
- Cristina Trujillo
 - User Story 3: Implement the filter for the the pie chart for how are you Feeling
- Chenying Wu
 - User Story 2: Implement the filter for the bar chart

Sprint 6 Planning Meeting:

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu

Start time: 9:00 PM

End time: 10:00 PM

After discussion, the velocity of the team for the following spring was estimated to be 3 stories per sprint.

The product owner chose the following user stories to be done during the following sprint. They are ordered based on their priority.

- User Story 1: Fix dashboard page crashing
- User Story 2: Add chart for signs
- User Story 3: Add chart for strategies
- User Story 4: Change background color for stress level chart.

The team members indicated their willingness to work on the following user stories.

- All Members
 - User Story 1: Fix dashboard page crashing
- Jose Fernandez & Chenying Wu
 - User Story 2: Add chart for signs
 - User Story 4: Change background color for stress level chart.
- Cristina Trujillo
 - User Story 3: Add chart for strategies

Sprint 7 Planning Meeting:

This sprint was focused on documentation instead of development, so no user stories were implemented.

System Design

This section contains information on the design decisions that went into this project. The architecture patterns are outlined and explained. The entire system is shown in a package diagram and the subsystems are explained. Finally, the design patterns used in the project are discussed.

Architectural Patterns

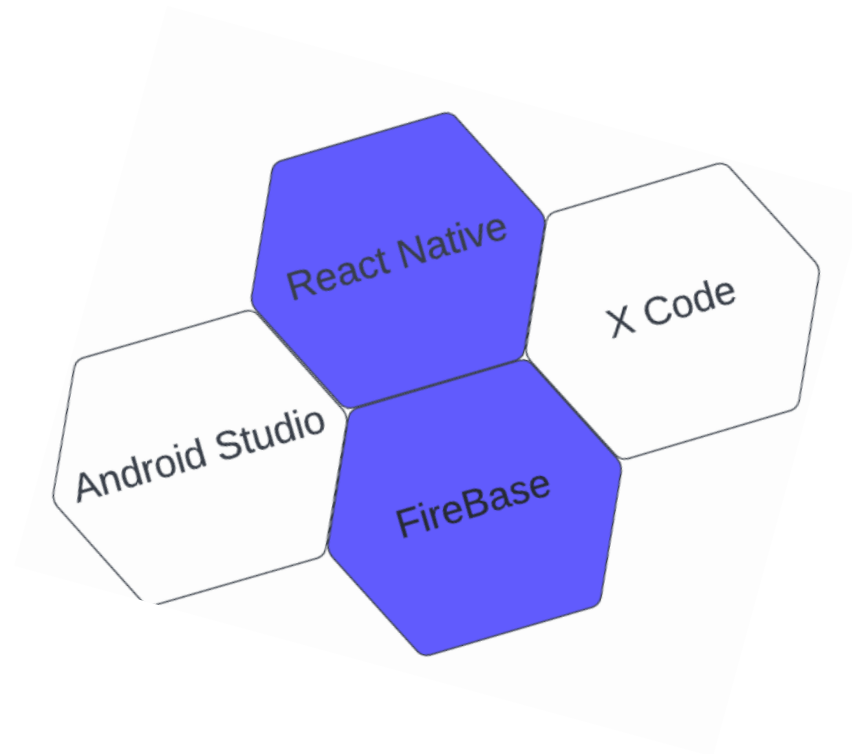
The HowRU.life app was built from the ground up; thus, there is no used code. The architecture utilizes React Native and Firebase on the Backend, along with Android Studio and XCode for Android and iPhone operating system development, respectively. A big advantage of HowRU.life is the advanced functionality of determining exercises based on the user's current mood. This could be further developed with the advancements in Artificial Intelligence technology to further make decisions on what exercise is proper for a user based on his or her current mood. This is a full-stack application that utilizes React Javascript framework as the main frontend component, whereas Firebase, Android Studio, and XCode manages backend processes. Furthermore, Firebase was mostly used as a database to store users' information and authentication. For example, when a user enters their account identification information, such as their name, email, and password, the information for that particular user is saved into the Firebase database. Therefore, when they are ready to login again after signing up, the application would connect with the Firebase server and find all users that have an account created with the application. The backend runs completely separate from the frontend, so if for some reason the backend is broken, it does not affect the way the user sees the application and its components.

System and Subsystem Decomposition

The frontend and backend of HowRU.life is heavily connected. Before a user could even use the application, he or she must register and set up with the application. The storing of information for each and every application user is performed by Firebase, which is on the backend side of the application. In addition, for future development of the application, new technologies, such as Artificial Intelligence, can help to make appropriate decisions to offer solutions for a user's current mood. In addition the main function of our application is to take in user's input and store it within our database. This information is then passed along through a sequence of functions that allow the user to interact with the UI. The frontend components are handled by React Javascript.

We also included several global style files to facilitate changes in the future such as color theme, button, and fonts.

Back-end architecture tools



This system architecture represents the deployed server version. The backend is running with React Native and FireBase.

Front-end architecture tools

This project is built off of the model, view, controller architecture to separate each of the project's components into easily understandable parts. The model is our database and data structure, the view is the user interface, and the controller accepts and converts the input.

```
"seif3yb1": [
  "users": [
    "_id": "MzRirZZ9rElVeEr5lt7",
    "profile": [
      "name": "Robert Aguilar",
      "email": "robertA@gmail.com",
      "code": "seif3yb1",
      "password": "Password123@"
    ],
    "settings": [
      "notification": "true"
    ]
  ],
  "data": [
    "04/18/2022": [
      "entry-1": [
        "mood": "3",
        "control": "3",
        "choice": [
          "dailyStressors": [
            "stressors": "",
            "reason": [ "" ]
          ],
          "exercises": [
            "exercise": "breathing",
            "music": "rain",
            "cycles": "3"
          ]
        ],
        "foodForThought": [
          "what": "",
          "who": "",
          "where": "",
          "when": "",
          "why": ""
        ],
        "date": "04/18/2022",
        "intentionToChange": "4"
      ],
      "entry-2": [
        "mood": "3",
        "control": "3",
        "choice": [
          "dailyStressors": [
            "stressors": "Work",
            "reason": ["Boss", "Communication"]
          ],
          "exercises": [
            "exercise": "",
            "music": "",
            "cycles": ""
          ]
        ],
        "foodForThought": [
          "what": "",
          "who": "",
          "where": "",
          "when": "",
          "why": ""
        ],
        "date": "04/18/2022",
        "intentionToChange": "4"
      ]
    ]
  ]
]
```

Deployment Diagram

Our team is dedicated on continuing to enrich the quality of our mobile application, however at this time we have no plans of distribution at this time.

Design Patterns

The design patterns that we used for our application are as follows: A composite design pattern, an observer design pattern, and a state design pattern. The composite design pattern consists of a simple screen of objects and components that go in those screens. The screens are organized in a hierarchy that determines the navigation between them. The observer design pattern works between the screens by having them share information among themselves using the navigation structure, and therefore making them aware of changes in each other. The state design pattern exists inside the screens and components in which states are declared and initialized, and the screens/components are updated when there is a change in the state, allowing for complex behaviors and interactions.

System Validation

Testing was done locally through emulators and mobile devices and error checking was done using the console log output in order to debug. Testing was focused on functionality, layout, and communication with the back-end. On the emulators and mobile devices, testing on the functionality of buttons and components was done, as well as checking the layout on screens of different sizes. Furthermore, back-end testing was performed to ensure that users were created correctly and that verification was performed on login.

Glossary

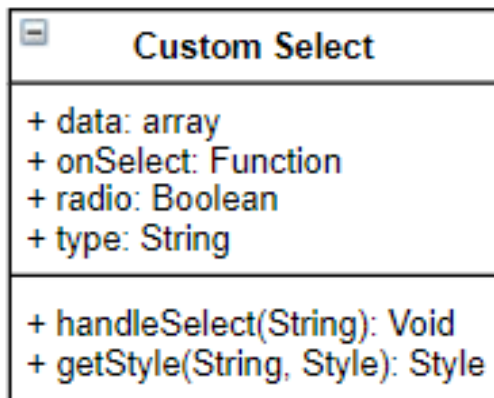
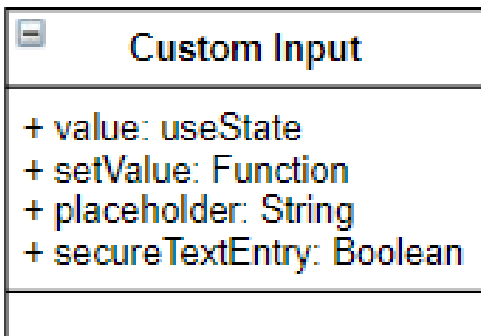
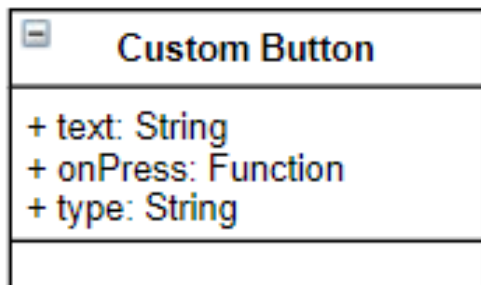
- **Java/JavaScript:** A scripting language used to write the code for the application
- **React Native:** An open-source, front-end, JavaScript library for building user interfaces or UI components that serve open-source as the engine for the front-end of the application.
- **React Native CLI:** Used to generate react-native files and manage the projects.
- **GitHub:** A web-based version-control and collaboration platform for software developers.
- **GitHub Desktop:** Optional support application that enables Git collaboration.
- **Visual Studio Code:** a source-code editor developed by Microsoft for Windows

- **Firebase:** A backend as a service platform that was used for authentication and to handle user data.
- **Stripe:** Service payment provider to charge users membership fees.
- **Google AdMob:** A global ad network used to implement ads in the app.

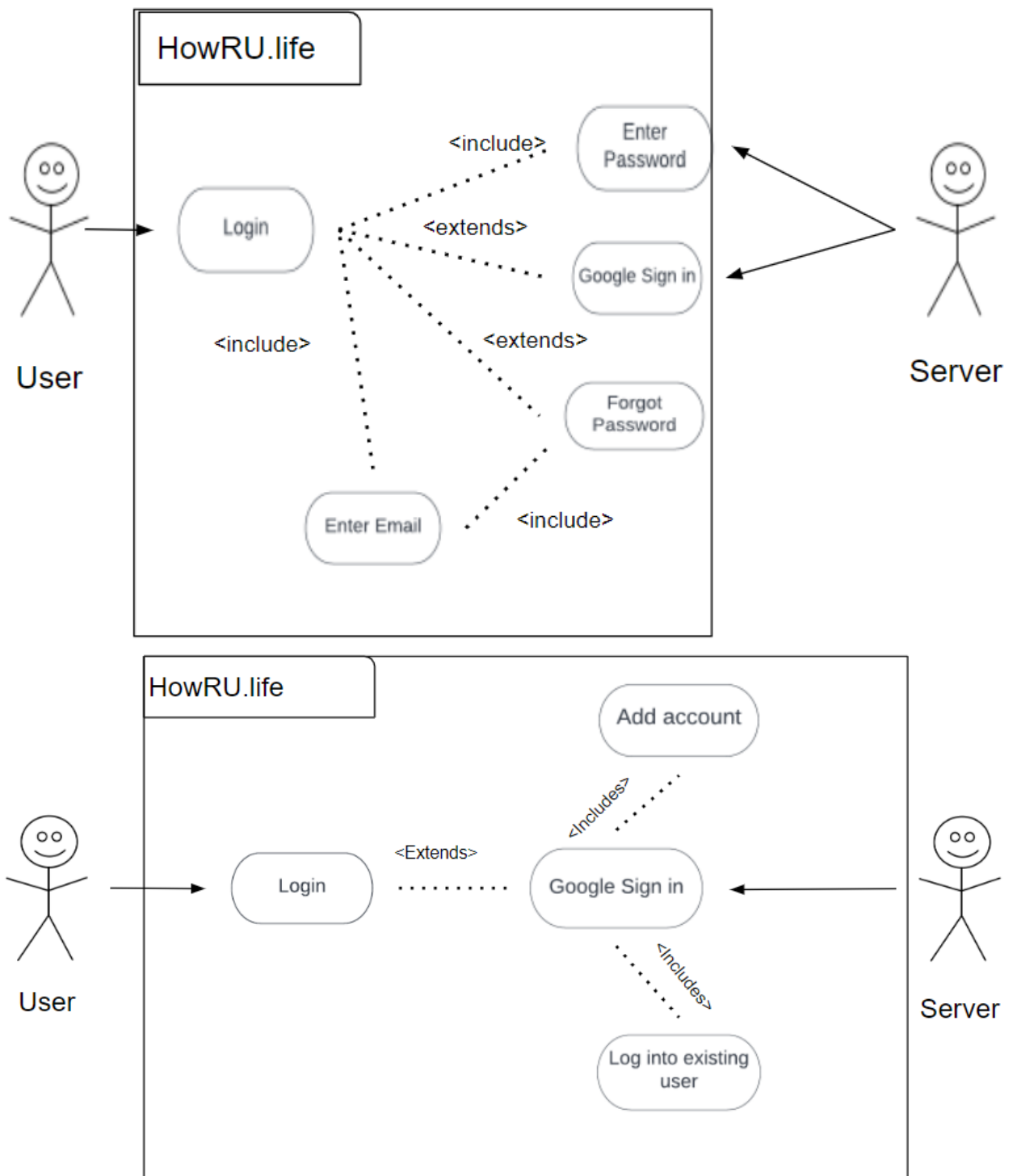
Appendix

Appendix A - UML Diagrams

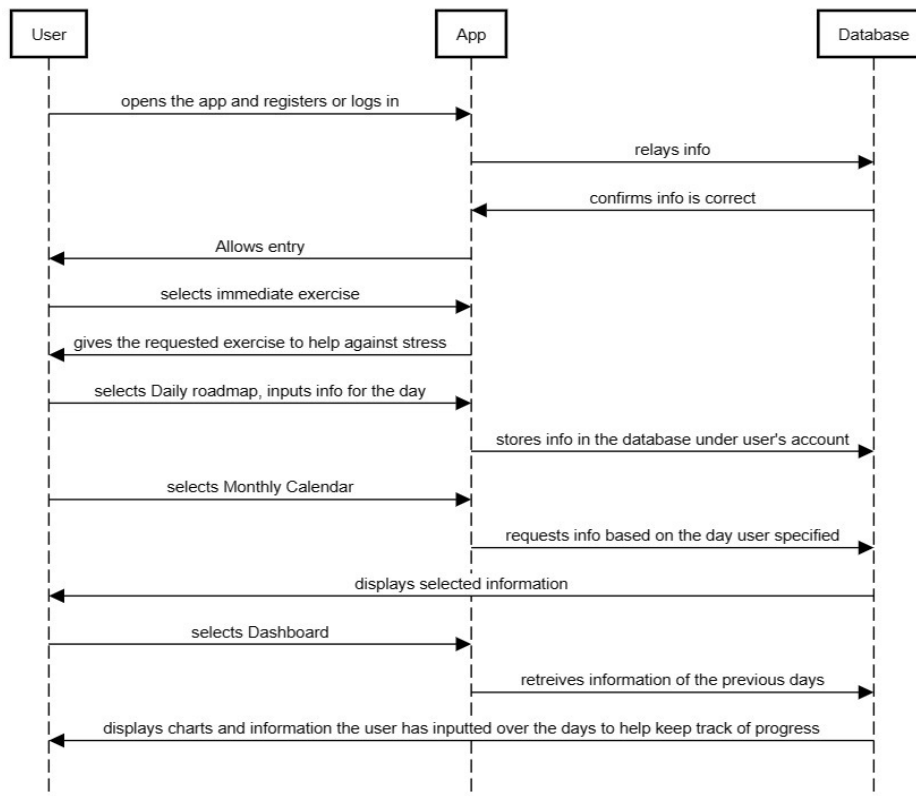
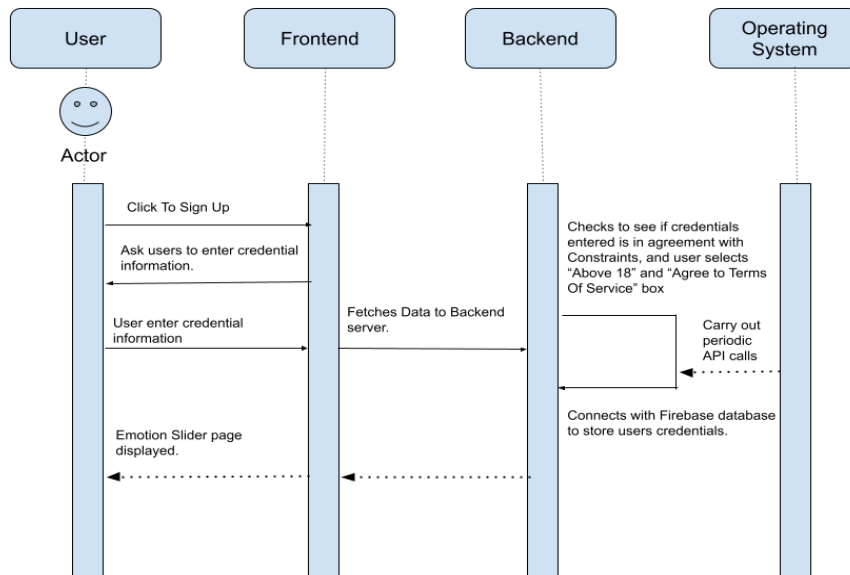
1. Class Diagram



2. Use Case Diagrams

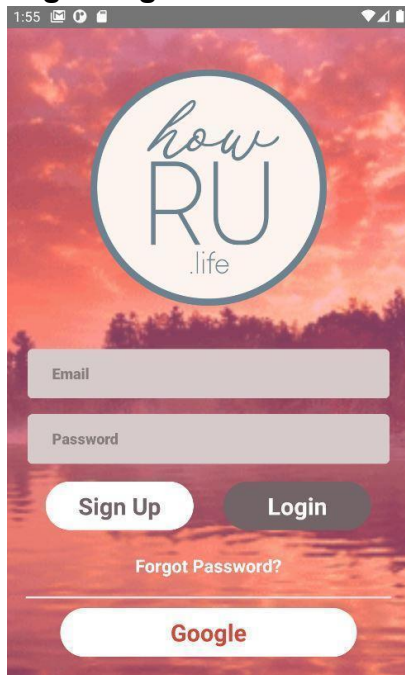


3. Sequence Diagram



Appendix B - User Interface Design

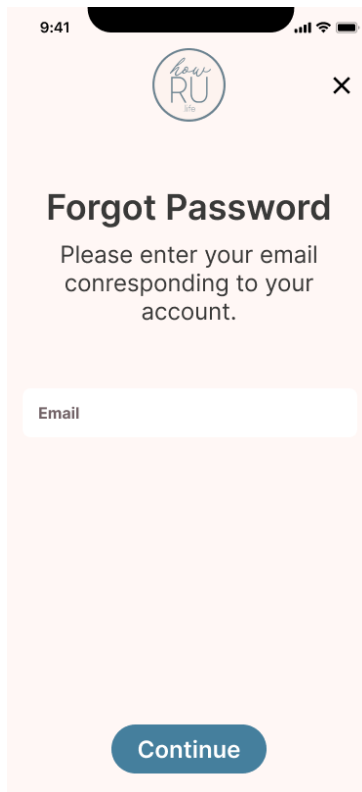
1. Login Page



2. Sign Up Page

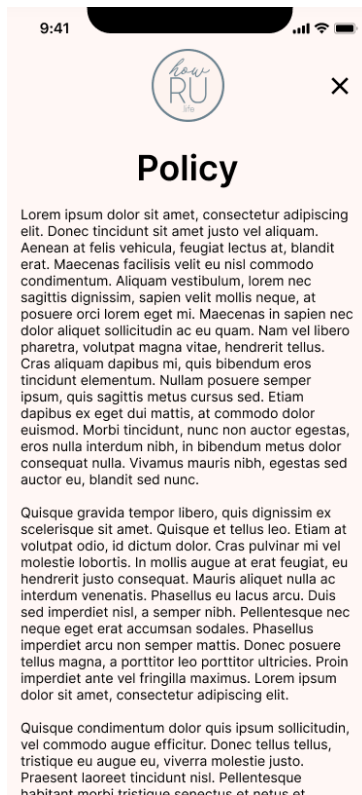
The sign up page has a light pink background. At the top left is the time '9:41'. At the top center is the 'how RU .life' logo, and at the top right is a close button 'X'. Below the logo is the title 'Sign Up' and the instruction 'Please fill in the fields below'. There are five input fields: 'Name', 'Email', 'Code *optional', 'Password', and 'Confirm Password'. Below the 'Confirm Password' field is a text block: 'longer than 8 characters, shorter than 20 characters, no white spaces, at least 1 uppercase, at least 1 lowercase, at least 1 number, at least 1 special character.' Below this are two checkboxes: 'I confirm that I am over the age of 18' and 'I confirm that I have read, consent, and agree to the terms of [policy](#)'. At the bottom is a dark blue button with the text 'Sign Up'.

3. Forgot Password Page



A mobile app mockup for the 'Forgot Password' page. The status bar at the top shows the time 9:41, signal strength, Wi-Fi, and battery. The app header features a circular logo with 'how RU' and a close button (X). The main heading is 'Forgot Password' in bold. Below it, a message reads: 'Please enter your email corresponding to your account.' There is a text input field labeled 'Email'. At the bottom, there is a blue 'Continue' button.

4. Policy Page

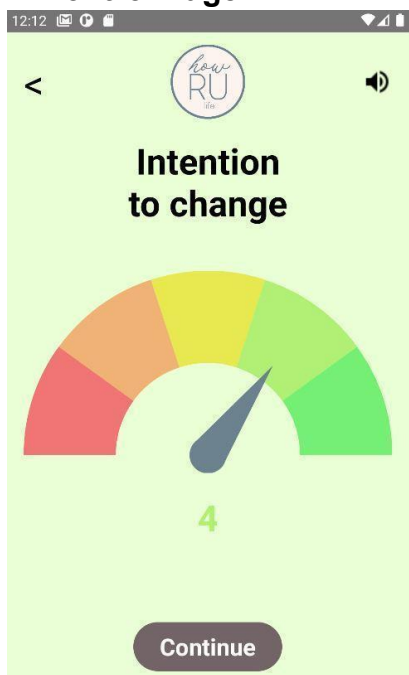


A mobile app mockup for the 'Policy' page. The status bar at the top shows the time 9:41, signal strength, Wi-Fi, and battery. The app header features a circular logo with 'how RU' and a close button (X). The main heading is 'Policy' in bold. Below it, there are three paragraphs of placeholder text (Lorem ipsum). The first paragraph is followed by a second paragraph, and the third paragraph is followed by a fourth paragraph.

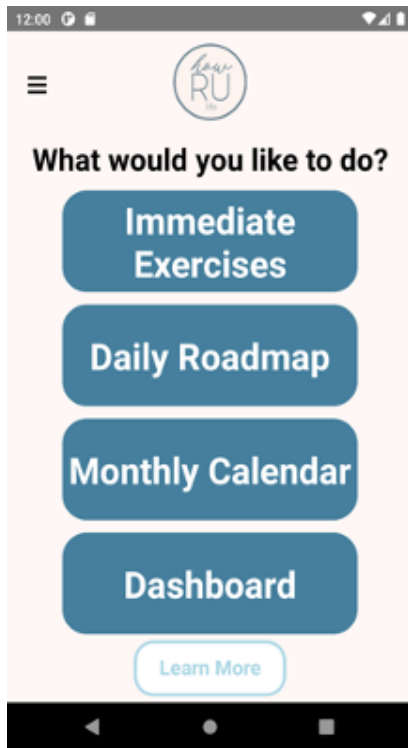
5. Emotion Page



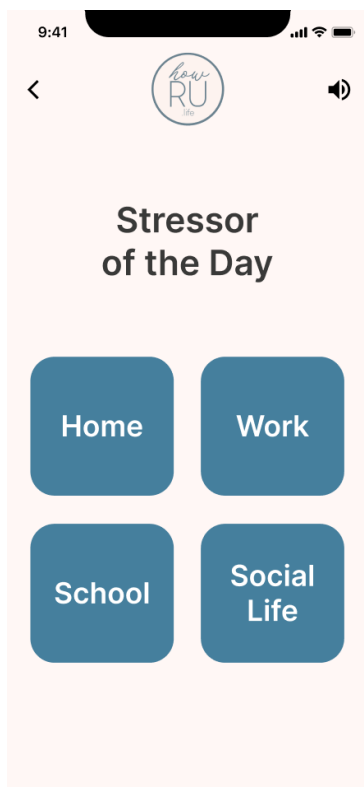
6. In Control Page



7. Homepage



8. Stressor Page



9. Reasons Page

9:41

< how RU >

What are your stressors at [-]?

Reason 1 Reason 2 Reason 3

Reason 4 Reason 5 Reason 6

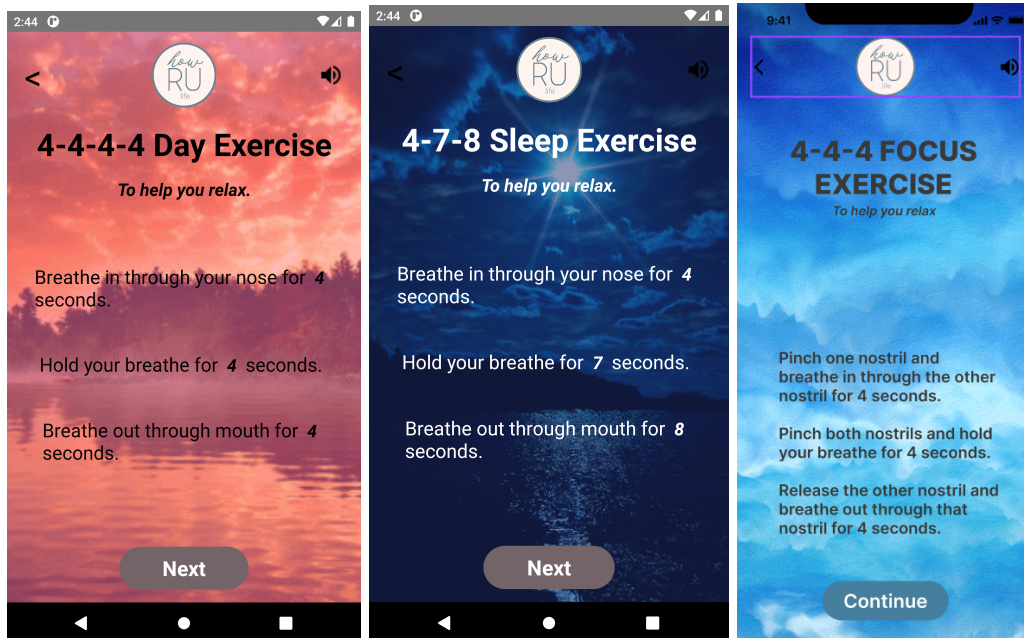
Reason 7 Reason 8 Reason 9

Reason 10 +

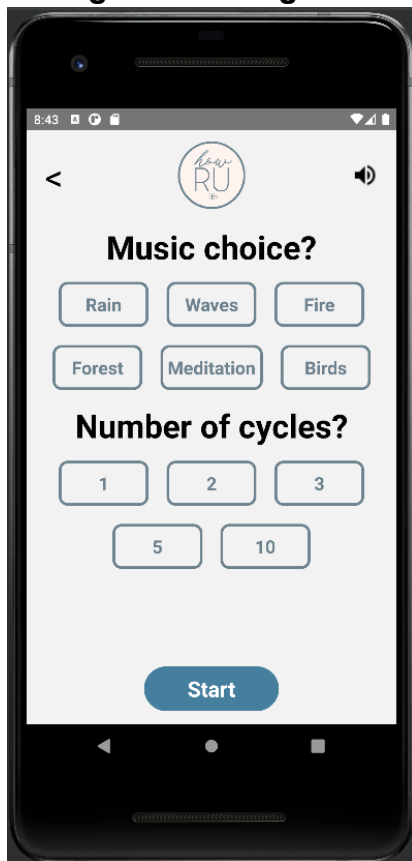
Add

Continue

10. Breathing Exercise Info Pages



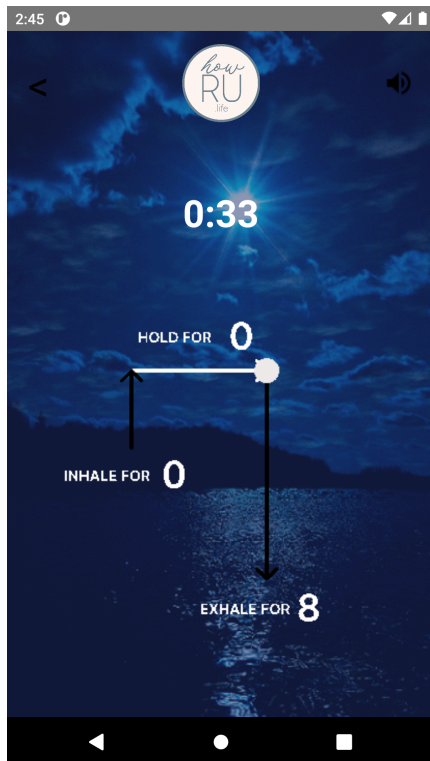
11. Breathing Control Page



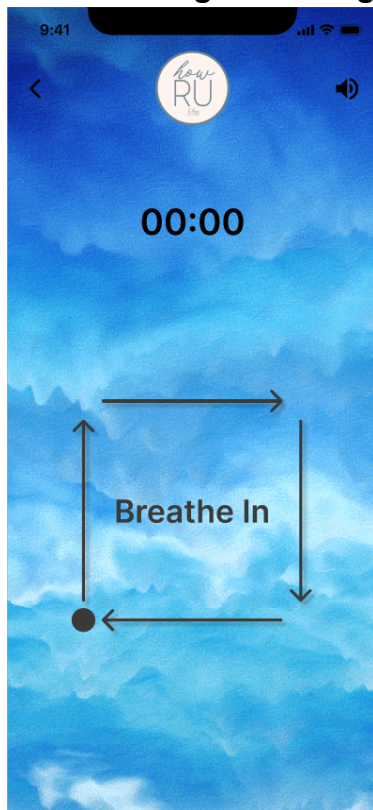
12. Day Breathing Timer Page



13. Night Breathing Timer Page



14. Focus Breathing Timer Page



15. Food for Thought Page



9:41

< how RU >

Food for thought

What

Who

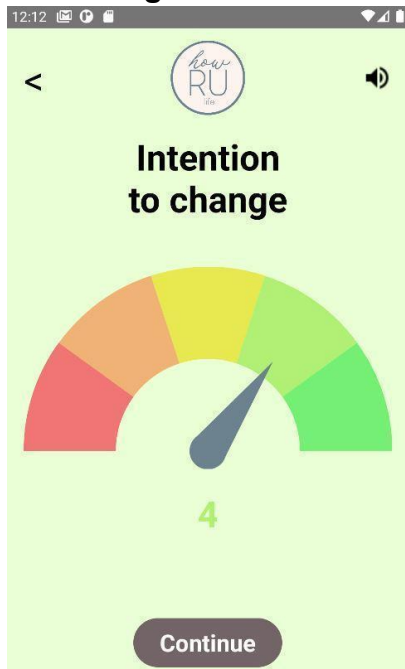
Where

When

Why

Submit

16. Intention Page



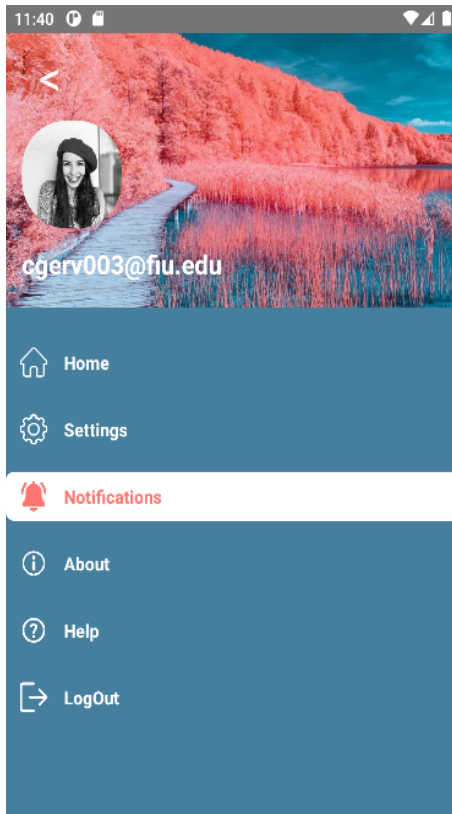
17. Awareness/Four Quadrants



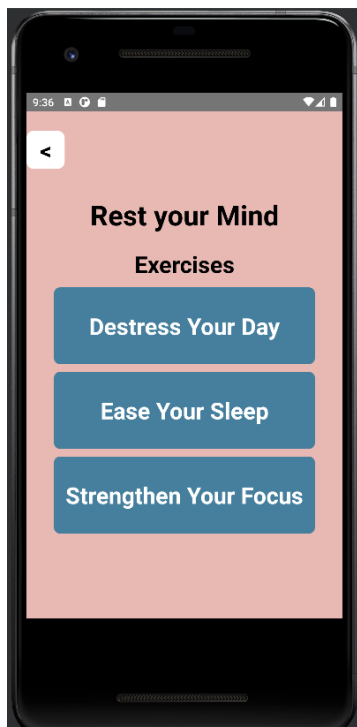
18. Daily Log

The screenshot shows a mobile app interface for 'howRU life'. At the top, the status bar displays '10:38' and signal/battery icons. The app header includes a back arrow, the 'howRU life' logo, and a speaker icon. Below the header, the title 'Daily Log' is centered. The form consists of several input fields with labels and dropdown arrows: 'What activity did you do?' (text input), 'What trigger did you experience?' (dropdown), 'What sign did you experience?' (dropdown), 'Body' (dropdown), 'Mind' (dropdown), and 'Emotions' (dropdown). The bottom of the screen shows the standard Android navigation bar with back, home, and recent apps buttons.

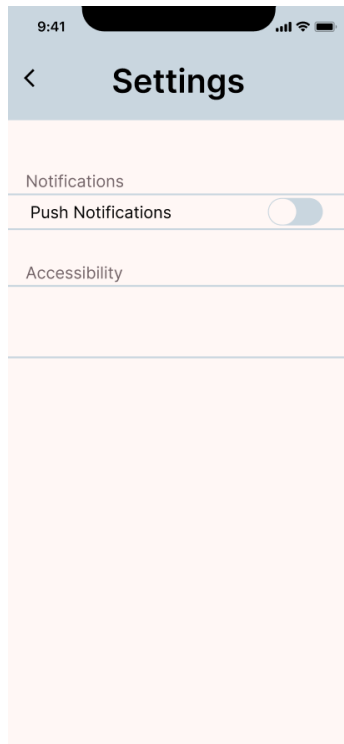
19. Menu Page



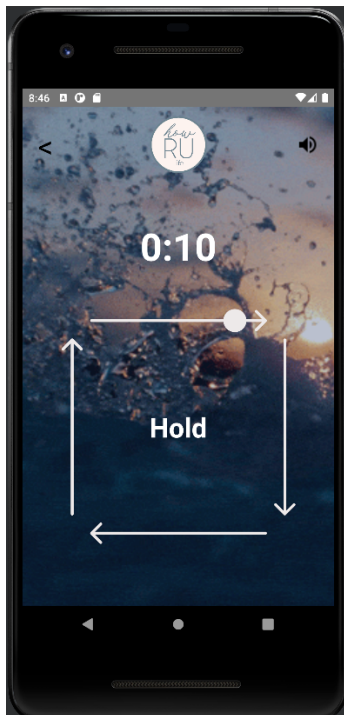
20. Exercises

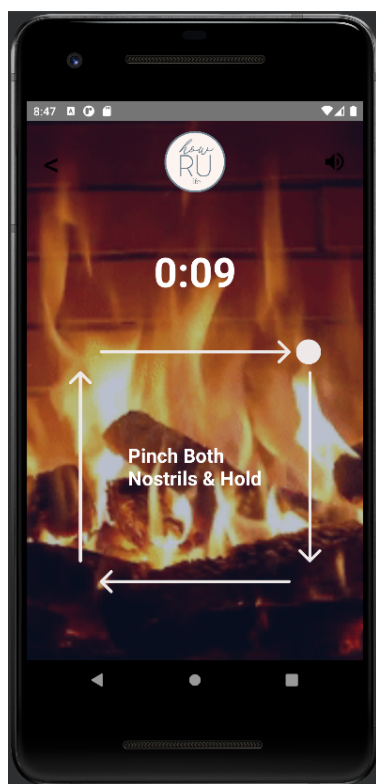


21. Settings

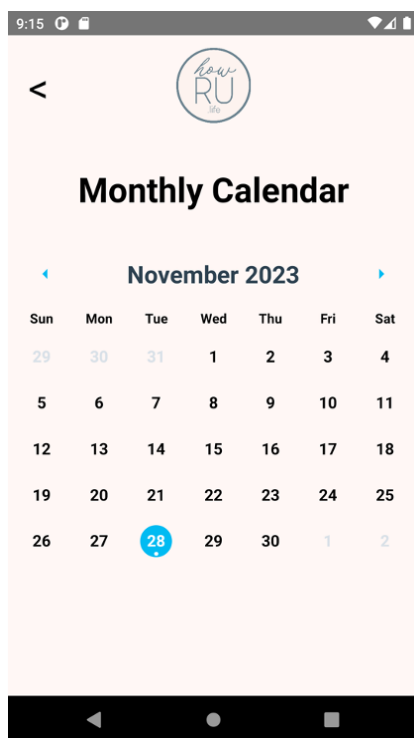


22. New Screen Exercise Choices





23. Monthly Calendar



24. Daily Log Data Screen

9:16

< how RU

Daily Log Data

What activity did you do?
Gym

What trigger did you experience?
Work

What sign did you experience?
Emotion

Body
Difficulty Breathing

Mind
Impaired Judgement

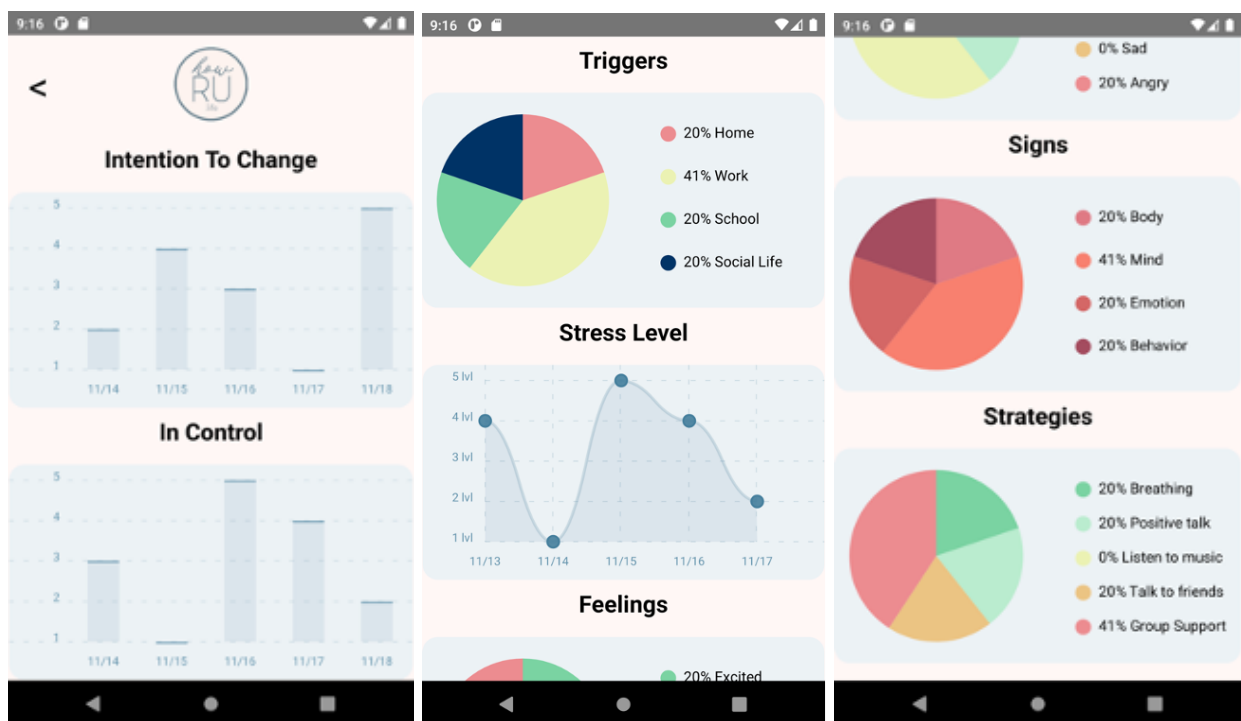
Emotions
Apathy

Behavior
Less Appetite

How stressed are you?
2

What strategies can you use?
Group Support

25. Dashboard



Appendix C - Sprint Review Reports

Sprint 1 Review Meeting Minutes

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu

Start time: 8:00pm

End time: 9:00pm

After a show and tell presentation, the implementation of the following user stories was accepted by the product owners: All.

During our first sprint, we spent time getting used to the app, setting up the programming environment and doing meetings with the PO and previous students that worked on the project.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

As mentioned on the previous paragraph, during this sprint we focused more on the basics, during the upcoming sprints we will work on making stories

Sprint 2 Review Meeting Minutes

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu

Start time: 8:00pm

End time: 9:00pm

After a show and tell presentation, the implementation of the following user stories was accepted by the product owners: All.

During this sprint, we decided to focus on fixing the figma for the app to better reflect on the current state of the product, then we decided on fixing some of the bugs and mistakes that were present on the app, for both quality of life as well as improving the presentation of the app.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

The ideas presented during our meeting with the PO were all accepted and worked on during the sprint.

Sprint 3 Review Meeting Minutes

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu

Start time: 8:00pm

End time: 9:00pm

After a show and tell presentation, the implementation of the following user stories was accepted by the product owners: All.

During this sprint, we worked on creating a database for the application. During the process, we discovered that a previous team had already been using Firebase as a database, so we switched gears.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

The ideas presented during our meeting with the PO were all accepted and worked on during the sprint.

Sprint 4 Review Meeting Minutes

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu

Start time: 8:00pm

End time: 9:00pm

After a show and tell presentation, the implementation of the following user stories was accepted by the product owners: All.

During this sprint, we worked on implementing the charts in the dashboard.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

The ideas presented during our meeting with the PO were all accepted and worked on during the sprint.

Sprint 5 Review Meeting Minutes

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu

Start time: 8:00pm

End time: 9:00pm

After a show and tell presentation, the implementation of the following user stories was accepted by the product owners: All.

During this sprint, we worked on implementing the calendar page.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

The ideas presented during our meeting with the PO were all accepted and worked on during the sprint

Sprint 6 Review Meeting Minutes

Project: Stress and Anxiety Management

Attendees: Jose Fernandez, Cristina Trujillo, Chenying Wu

Start time: 8:00pm

End time: 9:00pm

After a show and tell presentation, the implementation of the following user stories was accepted by the product owners: All.

During this sprint, we implemented new charts and fixed some errors that came as a result of implementation of features from previous sprints

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

The ideas presented during our meeting with the PO were all accepted and worked on during the sprint.

Sprint 7 Review Meeting Minutes

This sprint was focused on documentation instead of development, so no user stories were implemented.

Appendix D - User Manuals, Installation/Maintenance Document, Shortcomings/Wishlist Document, and other documents

Installation/Maintenance Document: Local Development Environment Setup Guide

There are two ways to run a development instance of the Anxiety & Stress application. The first method is running the application using an emulator on a Windows machine through Android Studio, and the second method is running the application using a simulator on a MacOS machine through XCode.

For New Prototype:

Frontend:

Downloads list:

- **Android**

Step 1: Download Node LTS Windows Installer:

<https://nodejs.org/en/download/>

Step 2: Download Visual Studio Code:

<https://code.visualstudio.com/download>

Step 3: Download Java 11.0.2 JDK:

<https://www.oracle.com/java/technologies/javase/jdk11-archive-downloads.html>

Step 4: Download and install Android Studio:

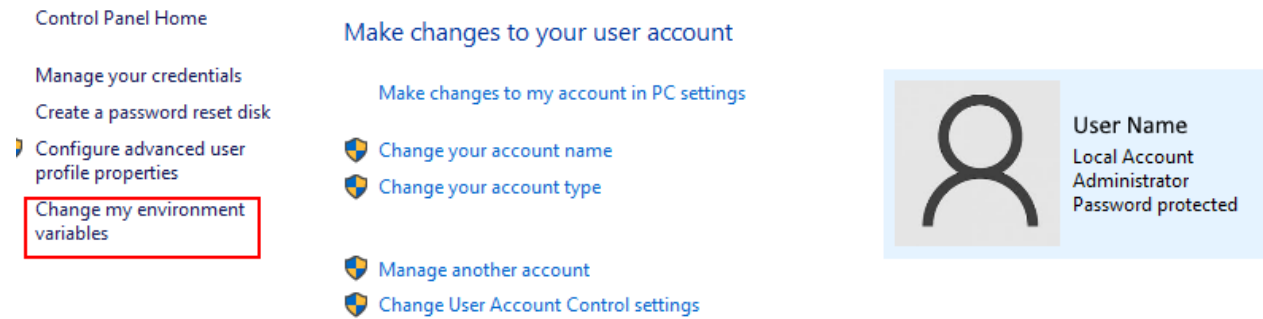
<https://developer.android.com/studio>

Step 5: Download and install GitHub Desktop:

<https://desktop.github.com/>

Step 6: Configure the ANDROID_HOME environment variable

File Explorer > Control Panel > User Account > User Accounts > Change my environment variables

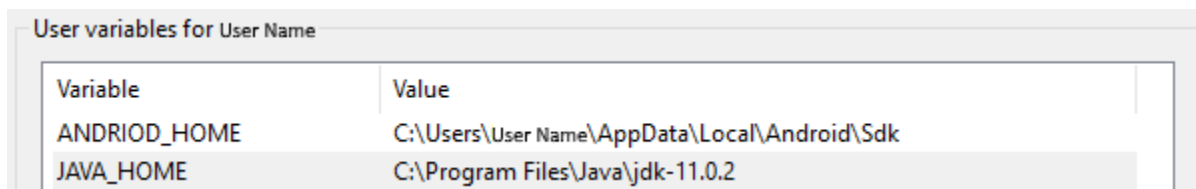


Under "user variables" > "New..."

Variable name:

ANDROID_HOME

Variable value: C:\Users\[name]\AppData\Local\Android\Sdk



Copy and paste into powershell, and verify ANDROID_HOME has been added

```
Get-ChildItem -Path Env:\
```

Step 7: Configure JAVA_HOME environment variable

File Explorer > Control Panel > User Account > User Accounts > Change my environment variables

Under "user variables" > "New..."

Variable name:

JAVA_HOME

Variable value: C:\Program Files\Java\jdk-[version]

Click "OK"

Under "user variables" > "Path" > "Edit..." > "New"

%JAVA_HOME%\bin

Click "OK"

Copy and paste into CMD, and verify JAVA_HOME has been added

echo %JAVA_HOME%

Step 8: Configure path to Android Studio platform tool (this will allow you to run the project from VSC)

Under "user variables" > "Path" > "Edit..." > "New"

C:\Users\[name]\AppData\Local\Android\Sdk\platform-tools

Click "OK"

Step 9: Open Android Studio > open settings > SDK Manager > SDK Platforms, select

Android API 32

Android 11.0 (R)

Select "Show Package Details" and under "Android 11.0 (R)" section, select

Android SDK Platform 30

Sources for Android 30

Intel x86 Atom_64 System Image

Google APIs Intel x86 Atom System Image

Google APIs Intel x86 Atom_64 System Image

Google Play Intel x86 Atom System Image

Google Play Intel x86 Atom_64 System Image

SDK Platforms SDK Tools SDK Update Sites				
Each Android SDK Platform package includes the Android platform and sources pertaining to an API level by default. Once installed, the IDE will automatically check for updates. Check "show package details" to display individual SDK components.				
Name	API Level	Revision	Status	
☐ Google Play Intel x86 Atom_64 System Image	31	9	Not installed	
▼ Android 11.0 (R)				
☒ Android SDK Platform 30	30	3	Installed	
☒ Sources for Android 30	30	1	Installed	
☐ Android TV Intel x86 Atom System Image	30	3	Not installed	
☐ China version of Wear OS 3 - Preview ARM 64 v8a System Image	30	10	Not installed	
☐ China version of Wear OS 3 - Preview Intel x86 Atom System Image	30	10	Not installed	
☐ Wear OS 3 - Preview ARM 64 v8a System Image	30	10	Not installed	
☐ Wear OS 3 - Preview Intel x86 Atom System Image	30	10	Not installed	
☐ AOSP ATD ARM 64 v8a System Image	30	1	Not installed	
☐ AOSP ATD Intel x86 Atom System Image	30	1	Not installed	
☐ ARM 64 v8a System Image	30	1	Not installed	
☒ Intel x86 Atom_64 System Image	30	10	Installed	
☐ Google TV Intel x86 Atom System Image	30	3	Not installed	
☐ Google APIs ARM 64 v8a System Image	30	11	Not installed	
☒ Google APIs Intel x86 Atom System Image	30	10	Installed	
☒ Google APIs Intel x86 Atom_64 System Image	30	11	Installed	
☒ Google Play Intel x86 Atom System Image	30	9	Installed	
☒ Google Play Intel x86 Atom_64 System Image	30	10	Installed	

Step 10: Open Android Studio > open settings > SDK Manager > SDK Tools, select

Android SDK Build-Tools 33-rc1

Android SDK Command-line Tools (latest)

Android Auto API Simulators

Android Auto Desktop Head Unit Emulator

Android Emulator

Android SDK Platform-Tools

Google Play APK Expansion library

Google Play Instant Development SDK

Google Play Licensing Library

Google Play services

Google Web Driver

IF ON INTEL: Intel x86 Emulator Accelerator (HAXM installer)

IF ON AMD: Android Emulator Hypervisor Driver for AMD Processors
(installer)

Click "OK"

SDK Platforms SDK Tools SDK Update Sites			
Below are the available SDK developer tools. Once installed, the IDE will automatically check for updates. Check "show package details" to display available versions of an SDK Tool.			
Name	Version	Status	
☒ Android SDK Build-Tools 33		Update Available: 33.0.0	
☐ NDK (Side by side)		Not Installed	
☒ Android SDK Command-line Tools (latest)		Installed	
☐ CMake		Not Installed	
☒ Android Auto API Simulators	1	Installed	
☒ Android Auto Desktop Head Unit Emulator	1.1	Installed	
☒ Android Emulator	31.2.10	Installed	
☐ Android Emulator Hypervisor Driver for AMD Processors (installer)	1.8.0	Not installed	
☒ Android SDK Platform-Tools	33.0.1	Update Available: 33.0.2	
☒ Google Play APK Expansion library	1	Installed	
☒ Google Play Instant Development SDK	1.9.0	Installed	
☒ Google Play Licensing Library	1	Installed	
☒ Google Play services	49	Installed	
☐ Google USB Driver	13	Not installed	
☒ Google Web Driver	2	Installed	
☒ Intel x86 Emulator Accelerator (HAXM installer)	7.6.5	Installed	

Step 11: Open Android Studio > open settings > Virtual Device Manager > Create device, select

Select Pixel 2

Under x86 Images, download both

R 30 x86 Android 11.0(Google APIs)

R 30 x86_64 Android 11.0

Name ▾	Play Store	Size	Resolution	Density
Pixel 3a XL		6.0"	1080x2160	400dpi
Pixel 3a	▶	5.6"	1080x2220	440dpi
Pixel 3 XL		6.3"	1440x2960	560dpi
Pixel 3	▶	5.46"	1080x2160	440dpi
Pixel 2 XL		5.99"	1440x2880	560dpi
Pixel 2	▶	5.0"	1080x1920	420dpi
Pixel	▶	5.0"	1080x1920	420dpi
Nexus 5		4.0"	480x800	hdpi
Nexus One		3.7"	480x800	hdpi
Nexus 6P		5.7"	1440x2560	560dpi
Nexus 6		5.96"	1440x2560	560dpi

Recommended x86 Images Other Images			
Release Name	API Level ▾	ABI	Target
API 33 Download	33	x86_64	Android API 33 (Google APIs)
Sv2 Download	32	x86_64	Android API 32 (Google APIs)
S Download	31	x86_64	Android 12.0 (Google APIs)
S Download	31	x86_64	Android 12.0
R Download	30	x86	Android 11.0 (Google APIs ATD)
R	30	x86_64	Android 11.0 (Google Play)
R	30	x86_64	Android 11.0 (Google APIs)
R	30	x86	Android 11.0 (Google APIs)
R	30	x86_64	Android 11.0
R Download	30	x86	Android 11.0 (AOSP ATD)
Q Download	29	x86_64	Android 10.0 (Google Play)
Q Download	29	x86_64	Android 10.0 (Google APIs)
Q Download	29	x86	Android 10.0 (Google APIs)
Q Download	29	x86_64	Android 10.0

NOTE: Select the image that has (Google APIs) on it, and press "Finish", then try launching the emulator, if it works, you're good to go.

If you get an error, try the option below

NOTE: Select the image WITHOUT (Google APIs) on it, then try launching the emulator.

If you still get an error, try the option below

NOTE: Select the image that has (Google APIs) on it, then before pressing "Finish" under the section of "Emulated Performance" change the Graphics to "Software - GLES 2.0", then try running the emulator.

If you still get an error, try the option below

NOTE: Select the image WITHOUT (Google APIs) on it, then before pressing "Finish" under the section of "Emulated Performance" change the Graphics to "Software - GLES 2.0", then try running the emulator.

If you still get an error, try the option below

NOTE: Open File Explorer > C:\Users\[name]\.android, add a new file called "advancedFeatures.ini", inside add

Vulkan = off

GLDirectMem = on

save and repeat Step 9, until one of the options above works

Step 10: Open the project in Android Studio under the "android" file that's inside of the main directory of this project. (Keep Android Studio Opened)

• IOS

Step 1: Open terminal outside of VSC (Keep this terminal open)

brew update

brew install node

brew install watchman

brew install git

Step 2: Install XCode through the app store

Step 3: Install and/or update XCode command line tools through the terminal (May take a while to download)

xcode-select --install

softwareupdate --install -a

NOTE: if you already have XCode, but your command line tools are not updating, it is likely because you might have a pending MacOS update. If this is the case run

sudo rm -rf /Library/Developer/CommandLineTools

xcode-select --install

Step 4: Open up XCode > Preferences > Locations

On the "Command Line Tools" section, make sure you have the latest version selected

Step 5: XCode > Preferences > Components

Download the iOS 15.0 Simulator (Latest Version)

Step 6: Open another terminal outside of VSC

```
sudo gem install cocoapods
```

NOTE: if you get an error installing cocoapods do

```
brew cleanup -d -v
```

```
brew install cocoapods
```

NOTE: if you see failed to link then run

```
brew link cocoapods
```

Step 7: initialize Podfile, while on the main directory do

```
cd ios
```

```
pod init
```

(If it doesn't exist) and then

```
pod install
```

IOS SETUP DONE

NOTE: if you get **** BUILD FAILED **** when attempting to start the application, you most likely will have to run the project inside of XCode itself. The file you want to open is on ANXIETY-STRESS-SELF-MANAGEMENT > ios > anxietyStressSelfManagement.xcodeproj

NOTE: if you get "fatal error: 'React/RCTBridgeDelegate.h' file not found #import <React/RCTBridgeDelegate.h>", repeat Step 6, but at the end open the workspace project and delete the build from ios folder, then start the application

NOTE: if you get "Error error SHA-1 for file is not computed" issue, do

```
npm install -i -g --force react-native-cli
```

delete the node_modules, reinstall pods, delete workspace build, re-install dependencies, and run metro and the project again

User Manual: Guide to Start the Application

Step 1: in terminal, update the version of react-native to the latest version

npm install

NOTE: If the build of the application fails for some reason, even after properly setting up the development environment, try running the following command in the root folder

npm audit fix

NOTE: To upgrade react-native to the latest version (**DO NOT DO THIS UNLESS YOU WANT TO UPGRADE THE CLI**)!!!

npm install --save react-native@latest

NOTE: if you upgrade react-native's version, you also have to update the react-native-cli (DO NOT DO THIS UNLESS YOU ARE TOLD TO)

npm install -i -g --force react-native-cli

Step 2: Start Metro (application watcher), inside your React Native project run

npx react-native start

Step 3: Start the application

(Android) open another terminal aside from the first one and run the line below

npx react-native run-android

(ios) open another terminal aside from the first one and run the line below

npx react-native run-ios

TROUBLESHOOTING: go to <https://reactnative.dev/docs/troubleshooting>

Shortcomings/Wishlist

Some of the features we did not get to implement are but not limited to:

- Filters for past 3 days, past week, past month, etc. in the dashboard
- Fix the sound issue where the sound does not stop after leaving the screen

Some of the issues that occurred when implementing this project was:

- Miscommunications between the team and the PO regarding what the app needed
- Getting the app set up on our machines, as it took longer than expected
- Dividing up the workload for certain stories that worked on the same file

Possible Future Implementations for Project could include:

- A shortcut for the user to return to the home screen, as right now they have to press the back button multiple times if they are in the middle of the Daily Roadmap
- A way to display the empty data when going into dashboard when the user has not input any information, at the moment this situation gives an error.