Informatics 113

Homework 6 - Systems Requirement Specification (SRS) Document

By: Edgar Partida, Ryan La, Sammy Wong, Kentrick Kepawitono

Table of Contents

1.Introduction

1.1 Purpose

College is an environment that can place immense pressure on the students at UCI. Due to the rigorous coursework and intense speed of the quarter system, students may face mental health issues. To combat these issues, UCI has developed AntMentalHealth to focus and support the health needs of the UCI community. The system will be utilized by the students, faculty and staff of UCI and is responsible for connecting the user to a mental health professional and/or a mental health hotline. This new system aims to provide high quality services, features, and tools that will collectively monitor and improve the user's mental health.

1.2 Scope

AntMentalHealth is a mental health self-care/tracking app which will allow users to take charge of their mental health. Through the app, UCI students, faculty, and staff alike will be able to engage with the app in a way that allows them to organize chaotics schedules, decompress through relaxing activities, and have 24/7 access to mental health support. Additionally, users will be able to set appointments with mental health professionals for counseling sessions, or interact with other users anonymously to seek advice. Overall, AntMentalHealth will act as a medium for diverse users to access critical mental health resources, work on improving their mental health, as well as track patterns in their mental health in order to identify and eliminate problem trends.

1.3 Definition, Acronyms, and Abbreviations

UCI	University of California, Irvine
OIT	Office of Information Technology
CSWHP	Center for Student Wellness and Health Promotion
UCI Affiliate	Any UCI student, faculty member, or staff of various on-campus facilities (counseling center, dining hall, financial aid office, etc.)
UCIPD	University of California, Irvine Police Department
ID	Identity
IT	Information Technology
UI	User Interface

1.4 References

- UCI Student Health Center (https://shc.uci.edu/)
- Depression Facts (https://www.who.int/news-room/fact-sheets/detail/depression)
- Depression Statistics (https://www.verywellmind.com/depression-statistics-everyone-should-know-4159056)
- Student Wellness Resource (https://studentwellness.uci.edu/)
- YouGov Survey Data (https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/81oe8szfre/UpdateBaseLabels%20-%20Results%20for%20YouGov%20RealTime%20(Suicide%20Prevention)%20203%208.21.2019.xlsx%20%20[Group].pdf)

2.General Description

Mental health is now a worldwide concern of epidemic proportions. Mental health can make people miserable and at the end cause problems in their daily life. Mental problems may cause its patients to feel down and excessive fears or worries. This problem may then lead the patients to have suicidal thoughts. According to YouGov, a British international Internet-based market research and data analytics firm, close to half (48%) of adult participants confess that they know someone who died as the result of suicide. More than one of ten participants have attempted suicide themselves. This large number of suicide attempts by people undergoing mental health problems urge UCI CSHWP to be more active in resolving mental health problems.

However, CSWHP has limited agents to help patients resolve their mental health problems. Therefore, they decided to have the AntMentalHealth app developed to help meet the health needs of university populations everywhere. AntMentalHealth app will help CSWHP agents to remind people having mental health problems to continuously do calming activities, such as meditating, stretching, and playing games. The app will also give the opportunity for the users to actively ask and answer questions related to mental health problems through the forum page. In any way a patient cannot meet with CSWHP professionals due to location and time restriction, they can contact them through voice call, video call, and live chat features provided by AntMentalHealth app.

2.1 Product Perspective

AntMentalHealth is part of the AnteaterHealth system which aligns with the goal of CSWHP of “striving to be a leader in collegiate health promotion by focusing on the unique and relevant health needs and concerns of UCI students to support their academic success”. AntMentalHealth will and can be used from a mobile device and non-mobile devices. The goal is

to lay the groundwork for other UC schools and beyond to promote the wellness and mental health of students.

2.2 Product Functions

The AntMentalHealth is intended for use by the entire UCI campus population. UCI students, faculty and general staff, will all be able to connect with mental health professionals in order to improve their mental health, as well as be put in contact with mental health hotlines in the most serious situations. Alternatively, users will also have the option to contact each other through anonymous, moderated forums, and be able to provide each other with emotional support. Additionally, users will be able to achieve organization in their lives (which improves mental health) through personalized planners/schedules made through the app, as well as maintain that organization through reminders. The app will also support various activities and tutorials for calming exercises that users can access at any time in order to de-stress. The app will also learn to recommend/suggest activities to users during times when they are stressed. Users' mental health will be tracked by the app in the form of daily mood checks upon login, as well as through regular to sem-regular mental health assessments. More comprehensive tracking will be provided to users who wish to also upload medical history records regarding their mental health, and the users will be able to view their overall progress.

2.3 User Characteristics

The tech literacy and education level of AntMentalHealth's user base is very diverse. Student users (whether pursuing Bachelor's or Graduate degrees) can range from moderately to well-educated, while having high tech literacy due to being younger and thus more familiar with technology trends. Faculty users are likely to be very well-educated, but their tech literacy might skew lower amongst the older faculty members. Staff users are assumed to be extremely diverse in their education (from zero to multiple degrees), as well as in their tech literacy (none to professional). Early iterations of the system will be designed with the assumption that users are dexterous enough to navigate the app and also do not have any visual impairments.

2.4 General Constraints

One of the general constraints that the AntMentalHealth system has is that it will be strictly for users that have an affiliated UCINetID and email. This is a test ground to see the full potential of such a system. The current budget and time that have been given to develop the system will be a constraint. For an error prone system to be fully operational, the span of six months is not enough time to develop as well as the budget of $600,000. While this is being developed for most mobile and non-mobile browsers it is limited to Chrome, Firefox, Microsoft Edge, Safari and Opera. The AntMentalHealth system will be used as a tool to promote mental health wellness but will not replace current counselors available.

2.5 Assumptions and Dependencies

1. The application must be able to handle all users from the University of California, Irvine.
2. Logins will only be accepted from users with a UCINetID.
3. Administrators will be properly in charge of the forums and inappropriate posts will be deleted.
4. Moderators will be active within the forums.
5. A user will be able to reserve one session at a time.

2.6 Apportioning of Requirements

While we fully intend for all of the specific functionalities to be included in AntMentalHealth's full release, there may be a delay in implementing the full functionality of features pertaining to medical records, if a delay is necessary. While knowledge of medical history would help the app improve individualized recommendations, we are confident that in-app assessments are more than sufficient for personalizing the users' experience as far as an initial release is concerned. Also worth mentioning is that we will initially aim to have a simple library of tutorials and games for the recommended activities section. Given that the core features have been completed in a timely manner, we will work on adding a richer variety of exercises and games to the app's library. Otherwise, adding to the library's content will be something that we will continuously work on for later versions of AntMentalHealth.

3. Specific Requirements

3.1 Essential Requirements

3.1.1 Functional Requirements

3.1.1.1 Recommend Activities

ID: FUNC1
TITLE: Guide Meditation
DESCRIPTION: The system shall guide the user through meditative activities.
SOURCE: Elicitation questions: 1, 32, and 42; Class diagram: N/A , Use Case Diagram: "Perform Meditation;" Goal Models: 3
PRIORITY: Low
INPUT: Selecting the "Meditation" Option
OUTPUT: Different types of exercises/activities for meditation

ID: FUNC2
TITLE: Perform Brain Exercise
DESCRIPTION: The system shall allow the user to complete brain teasers.
SOURCE: Elicitation questions: 32 and 42; Class diagram: N/A , Use Case Diagram: “Perform Brain Exercises;” Goal Models: 3
PRIORITY: Low
INPUT: Selecting the “Relaxing Games” Option
OUTPUT: Different types of games that can be considered as a brain teaser

ID: FUNC3
TITLE: Utilize Stretching
DESCRIPTION: The system shall guide the user through sets of relaxing stretches.
SOURCE: Elicitation questions: 1, 32, and 42; Class diagram: N/A , Use Case Diagram: “Perform Stretches;” Goal Models: 3
PRIORITY: Low
INPUT: Selecting the “Stretching” Option
OUTPUT: Chart of what kind of stretches the user can do to relax

ID: FUNC4
TITLE: Start Game
DESCRIPTION: The system shall allow the user to start the selected non-competitive activities from the application interface.
SOURCE: Elicitation questions: 1, 24, 37, and 39; Class diagram: N/A , Use Case Diagram: “Complete In-App Activity;” Goal Models: 6
PRIORITY: Low
INPUT: Selection of the “Start Game” Button
OUTPUT: Visualization of the game loading and starting.

3.1.1.2 Forums

ID: FUNC5
TITLE: Search For Forums
DESCRIPTION: The system shall allow the user to search the forums for common situations.
SOURCE: Elicitation questions: 8, 20, and 22; Class diagram: N/A , Use Case Diagram: “Searching Forum” and “Connecting to Professional;” Goal Models: 1
PRIORITY: Medium
INPUT: User queries an input for their specific problem.
OUTPUT: Lists of posts are filtered and displayed to the user

ID: FUNC6
TITLE: Create Post
DESCRIPTION: The system shall allow the user to create post for discussion amongst the forum.

SOURCE: Elicitation questions: 20 and 22; Class diagram: N/A , Use Case Diagram: “Responding to a Post in the Forum;” Goal Models: 1
PRIORITY: Medium
INPUT: User selects the “Create Post” on the screen.
OUTPUT: Text box for the user’s problem is displayed

ID: FUNC7
TITLE: Reply to Forums
DESCRIPTION: The system shall allow the user to respond to forums they feel connected to.
SOURCE: Elicitation questions: N/A; Class diagram: N/A , Use Case Diagram: “Reposting to a Post in the Forum;” Goal Models: 1
PRIORITY: Medium
INPUT: User selects the “Reply” button on the screen.
OUTPUT: Text box for the user to enter their reply is displayed.

3.1.1.3 Connect with Mental Health Professionals

ID: FUNC8
TITLE: 1-1 Appointment Scheduling
DESCRIPTION: The system shall allow the user to schedule an appointment with a mental health professional.
SOURCE: Elicitation questions: 23; Class diagram: N/A , Use Case Diagram: N/A; Goal Models: 3
PRIORITY: Medium-High
INPUT: User selects “Connect to Professional” Option
OUTPUT: List of different ways to connect with a professional is displayed

ID: FUNC9
TITLE: Video Call with Professional
DESCRIPTION: The system shall allow the user to interact with a mental health professional through a video call.
SOURCE: Elicitation questions: 10; Class diagram: N/A , Use Case Diagram: “Connecting to Professional;” Goal Models: 1
PRIORITY: Medium-High
INPUT: User selects video call with professional
OUTPUT: User is connected to a video chat with the professional

ID: FUNC10
TITLE: Voice Call with Professional
DESCRIPTION: The system shall allow the user to interact with a mental health professional through a voice call.
SOURCE: Elicitation questions: 10; Class diagram: N/A , Use Case Diagram: “Connecting to Professional;” Goal Models: 1

PRIORITY: Medium-High
INPUT: User selects voice call with professional
OUTPUT: User is connected to a voice chat with the professional

ID: FUNC11
TITLE: Text Chat with Professional
DESCRIPTION: The system shall allow the user to interact with a mental health professional through a text based chat
SOURCE: Elicitation questions: 10; Class diagram: N/A , Use Case Diagram: “Connecting to Professional;” Goal Models: 1
PRIORITY: Medium-High
INPUT: User types to a message to a professional
OUTPUT: User waits for the mental health professional to respond in a separate chat box

3.1.1.4 Handle Crisis

ID: FUNC12
TITLE: Determine Crisis Type
DESCRIPTION: The system shall do a short assessment during user crises to determine if an incident is an emergency or non-emergency
SOURCE: Elicitation questions: 38; Class diagram: N/A , Use Case Diagram: “Get Immediate Mental Health Assistance;” Goal Models: 6
PRIORITY: High
INPUT: Slide the “SOS Emergency” button
OUTPUT: Successful phone connection to the hotline

ID: FUNC13
TITLE: Record Crisis
DESCRIPTION: The system shall maintain a record of user crises by type, date, and time
SOURCE: Elicitation questions: 38; Class diagram: N/A , Use Case Diagram: N/A; Goal Models: N/A
PRIORITY: High
INPUT: The date and time recorded when the “SOS Emergency” button slided and the type of crisis told by the person at risk
OUTPUT: Data saved in the system

ID: FUNC14
TITLE: Crisis Response
DESCRIPTION: The system maintain 24/7 support for responses to user crises
SOURCE: Elicitation questions: 11 and 22; Class diagram: N/A , Use Case Diagram: “Get Immediate Mental Health Assistance;” Goal Models: 6
PRIORITY: High
INPUT: Slide the “SOS Emergency” Button

OUTPUT: A responder will interact with the user

ID: FUNC15
TITLE: Hotline Directory
DESCRIPTION: The system maintain a directory for mental health hotlines
SOURCE: Elicitation questions: 10, 11, 22, 27, 43, and 44; Class diagram: N/A , Use Case Diagram: “Connect to Emergency Hotline;” Goal Models: 6

PRIORITY: High
INPUT: User selects “Hotline” option
OUTPUT: List of different hotlines are displayed

ID: FUNC16
TITLE: Connect to Hotline
DESCRIPTION: The system shall connect users in emergency crises to appropriate mental health hotlines
SOURCE: Elicitation questions: 10, 11, 22, 27, 43, and 44; Class diagram: N/A , Use Case Diagram: “Connect to Emergency Hotline;” Goal Models: 6
PRIORITY: High
INPUT: User selects the specified hotline
OUTPUT: Successful phone connection to the hotline

ID: FUNC17
TITLE: Notify professionals
DESCRIPTION: The system shall notify mental health professionals of any crises that their patients experience
SOURCE: Elicitation questions: 10, 11, 22, 27, 43, and 44; Class diagram: N/A , Use Case Diagram: “Connect to Emergency Hotline;” Goal Models: 6
PRIORITY: High
INPUT: User requests a professional
OUTPUT: Professional receives a notification on their device

3.1.1.5 Track Mental Health

ID: FUNC18
TITLE: Upload Records
DESCRIPTION: The system shall be able to collect and store the records from the users.
SOURCE: Elicitation questions: 15; Class diagram: N/A , Use Case Diagram: “Upload Records;” Goal Models: N/A
PRIORITY: Low
INPUT: User takes a picture of their medical history and uploads their record to the AntMentalHeath app.
OUTPUT: Data is successfully received by the database

ID: FUNC19
TITLE: Issue Bi-monthly Mental Health Assessment
DESCRIPTION: The system shall issue a mental health assessment for the user on a bi-monthly interval.
SOURCE: Elicitation questions: 55; Class diagram: N/A , Use Case Diagram: “Get Immediate Mental Health Assistance;” Goal Models: 3
PRIORITY: Low-Medium
INPUT: User opens app on a specific day.
OUTPUT: A mental health assessment is displayed to the user to complete.

ID: FUNC20
TITLE: Daily Login Mood Check
DESCRIPTION: The system shall issue a daily login check for the user to complete.
SOURCE: Elicitation questions: 5; Class diagram: N/A , Use Case Diagram: “Perform Daily Login;” Goal Models: 8
PRIORITY: Low-Medium
INPUT: User selects a displayed option of their mood.
OUTPUT: Recommended activities based on their check will be displayed.

3.1.1.6 Organize User Routine

ID: FUNC21
TITLE: Personalize Meal Plan
DESCRIPTION: The system shall create a personalized meal plan for the individual based on the records provided from the individual and collected from the app.
SOURCE: Elicitation questions: 3; Class diagram: N/A , Use Case Diagram: N/A, Goal Models: N/A
PRIORITY: Low-Medium
INPUT: Age, gender, diet goal, calorie goal.
OUTPUT: A personalized meal plan is created and displayed for the user

ID: FUNC22
TITLE: Personalize Sleep Schedule
DESCRIPTION: The system shall create a personalized sleep schedule for the individual based on the records provided from the individual and collected from the app.
SOURCE: Elicitation questions: 42; Class diagram: N/A , Use Case Diagram: “Create Sleep Schedule;” Goal Models: 3
PRIORITY: Low-Medium
INPUT: Age, gender, schedule.
OUTPUT: A personalized sleep schedule is created and displayed for the user

ID: FUNC23

TITLE: Maintain a Calendar of Important Events/Deadlines
DESCRIPTION: The system shall maintain a calendar of important events and deadlines for the user.
SOURCE: Elicitation questions: 56; Class diagram: N/A , Use Case Diagram: N/A Goal Models: N/A
PRIORITY: Low-Medium
INPUT: Dates, class schedule, extracurricular activities, exam dates, appointments.
OUTPUT: A list of important events and deadlines is displayed for the user.

ID: FUNC24
TITLE: Send Reminders for Marked Events
DESCRIPTION: The system shall send reminders to the user for specially marked events.
SOURCE: Elicitation questions: 57; Class diagram: N/A , Use Case Diagram: N/A Goal Models: N/A
PRIORITY: Low
INPUT: Input the event name and description
OUTPUT: A notification is sent to the user to remind them of upcoming events.

ID: FUNC25
TITLE: Recommend Personalized Schedules for Completing Tasks
DESCRIPTION: The system shall suggest personalized schedules for the user to complete their tasks in a timely fashion.
SOURCE: Elicitation questions: 58; Class diagram: N/A , Use Case Diagram: N/A Goal Models: N/A
PRIORITY: Low
INPUT: None
OUTPUT: A personalized schedule is created and is displayed for the user.

3.1.2 Non-functional Requirements

3.1.2.1 Reliability of AntMentalHealth

1. The system shall operate with a failure rate of < 5%.
    a. Sources: Elicitation Question #52
    b. Priority: High
    c. Stability: High

3.1.2.2 Security

1. The system shall only allow users with a UCI email and password to access the system.
    a. Sources: Elicitation Question #35
    b. Priority: High
    c. Stability: High

2. The system shall allow users to utilize faceID to validate login.
    a. Sources: Elicitation Question #36
    b. Priority: Medium-High
    c. Stability: Medium
3. The system shall allow users to utilize touchID to validate login.
    a. Sources: Elicitation Question #36
    b. Priority: Medium-High
    c. Stability: Medium

3.1.2.3 Scalability

1. The system should be able to change in size and adapt if many users are on at the same time.
    a. Sources: Elicitation Question #45
    b. Priority: High
    c. Stability: High

3.1.2.4 Efficiency/Performance

1. The system shall have a screen refresh time within 5 seconds
    a. Sources: Elicitation Question #46
    b. Priority: Low-Medium
    c. Stability: Low

3.1.2.5 Portability

1. The system shall be accessible to iOS, Android, and web browsers.
    a. Sources: Elicitation Question #29
    b. Priority: High
    c. Stability: High
2. The system should easily be able to migrate from one system to the next when the current system is down.
    a. Sources: Elicitation Question #53
    b. Priority: Medium-High
    c. Stability: Medium-High

3.1.2.6 Responsiveness

1. The system shall have a response time within 24 hours for non-emergency situations.
    a. Sources:
    b. Priority: High
    c. Stability: High
2. The system shall have a response time within 5 minutes for emergency situations.
    a. Sources:
    b. Priority: High
    c. Stability: High

3.1.3 External Interface Requirements

3.1.3.1 User Interfaces

AntMentalHealth is currently ready for iOS and Android devices. Figures 1 to 11 show the UI of AntMentalHealth. The desktop version of AntMentalHealth is still under development and it is expected to have a similar UI as the iOS and Android devices have.

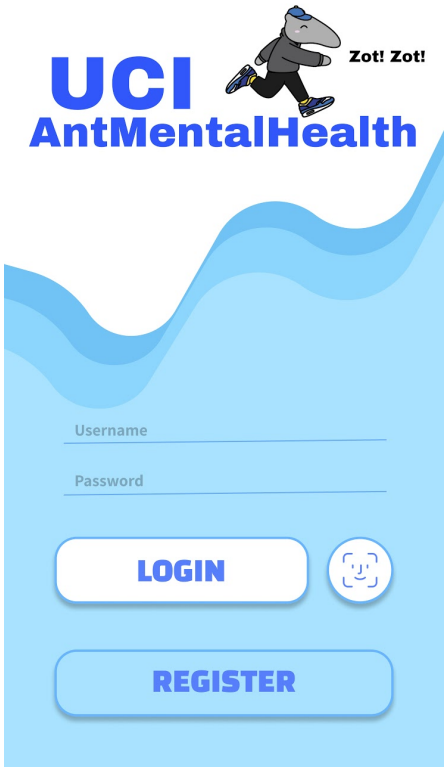


Figure 1

“Login” is the page that first appears when a first-time user opens the AntMentalHealth app. The “Login” page prompts for the user’s credentials. Another alternative is that the user can log in with either FaceID or TouchID (depending on the phone feature). If the phone has TouchID or FaceID capabilities, the user can log in by pressing the button on the right side of the “Login” button. Please note that this only works if the user has logged in by entering credentials once prior to logging in with TouchID or FaceID.

If the user has no AntMentalHealth account, the user can click on the “Register” button, which will direct the user to the registration page (Figure 2 and Figure 3).

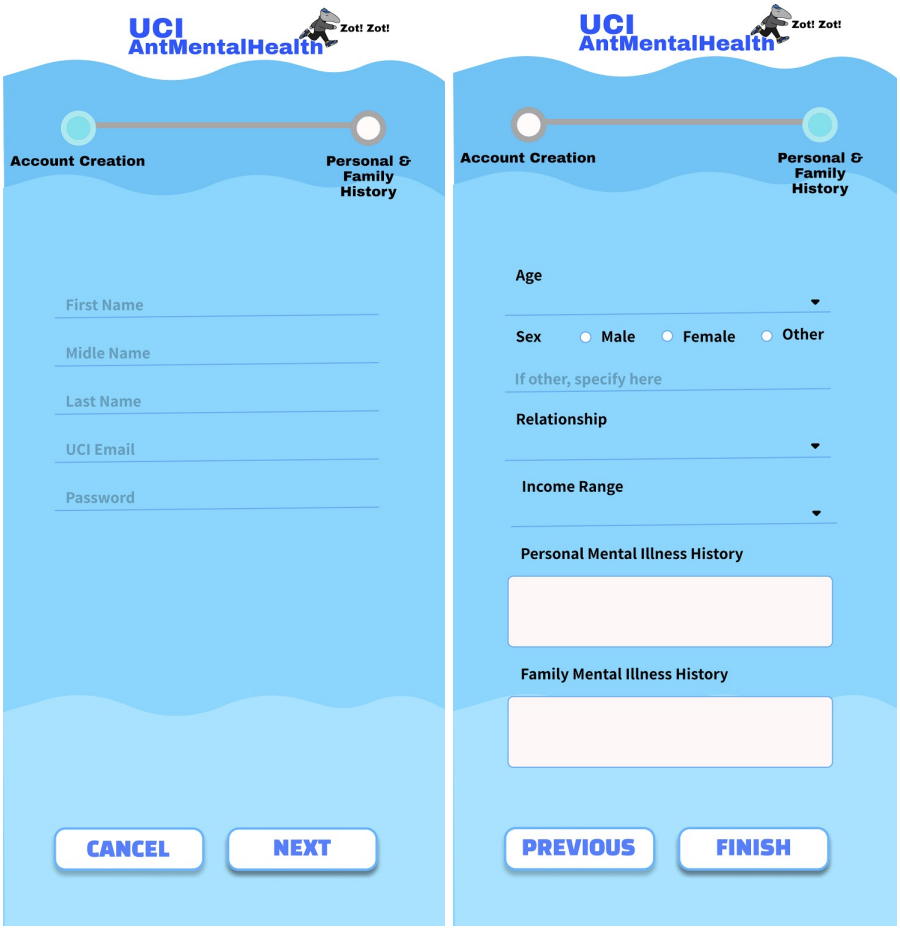


Figure 2 and Figure 3

The registration page pops up when the user clicks on the “Register” button on the “Login” page. During the account creation, the user must enter the name, UCI email, and password. UCI email and the password will be used for the login process. For the app to be effective, the user must input his/her personal and family background such as age, sex, personal and family mental illness history, etc.

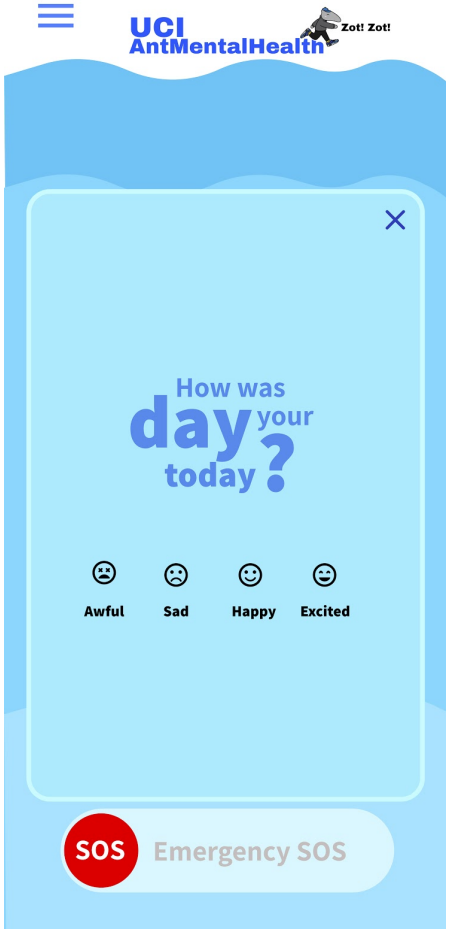


Figure 4

Once the user either register an account or log in to his/her account. A pop-up message opens up. This will ask the user to select a face that matches their mood when they open the app. It will be administered daily. Whenever the user wants to skip this process, he/she can click on the ‘x’ button on the upper right corner; however, it is recommended to select a face so that the app can assess the user's mental health.

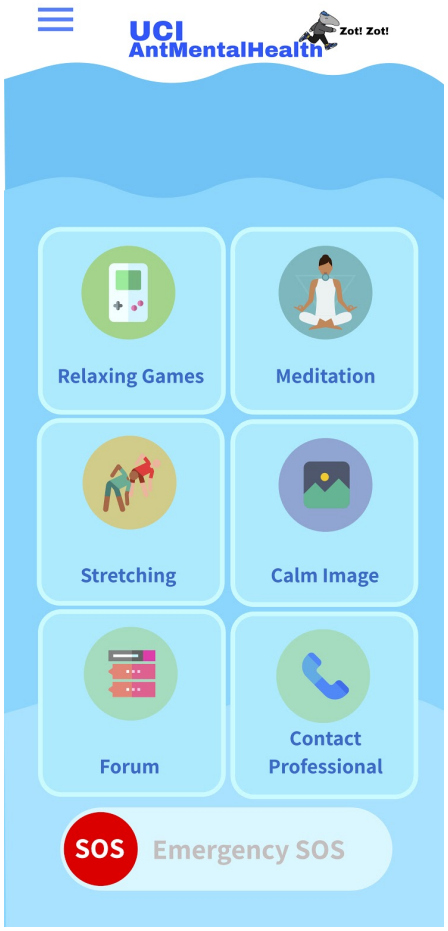


Figure 5

The user will be greeted with the home page with different choices to choose from. The user can choose to play games, meditate, stretch, or stare at calm images to calm himself/herself down. The forum page can be opened from the home screen as well. During a non-emergency situation, the user can contact CSWHP professionals through the “Contact Professional” button. During an emergency situation, the user can contact a 24/7 hotline by sliding the emergency SOS button to the right. Notice that there is a 3-stripes button on the upper left corner of the app. It is the menu button that gives the user options to settings, etc.

Figure 6

When the user chooses to play games, the game page opens up. The box on top is the choice of games. By default, the app has included *I Love Hue* and *2048*; however, the user can add other non-competitive games by clicking on the '+' button in the upper top box. The user can click on the "back" button on the upper left corner to go back to Home.

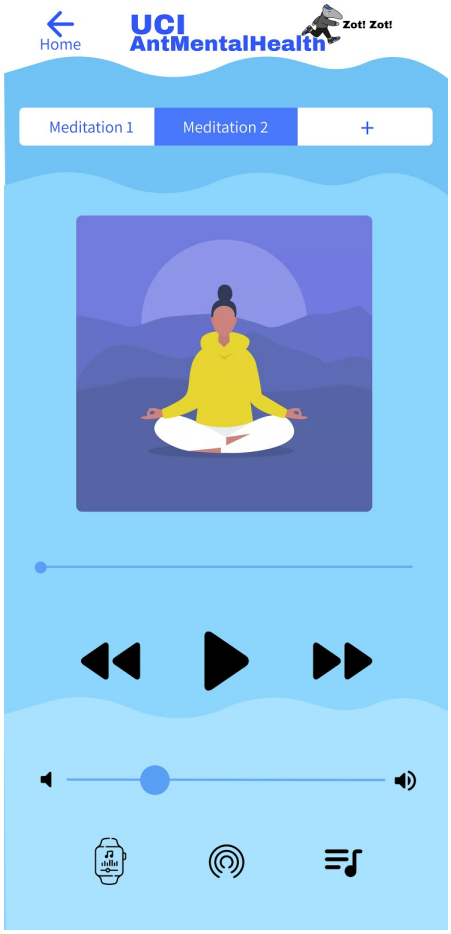


Figure 7

When the user chooses to meditate, the meditation page opens up. The user can pick what kind of meditation they want to do in the upper top box. It can add other types of meditation by clicking on the '+' button in the box. Pressing the "play" button will trigger the meditation speaker's recording to start. The user can click on the "back" button on the upper left corner to go back to Home.

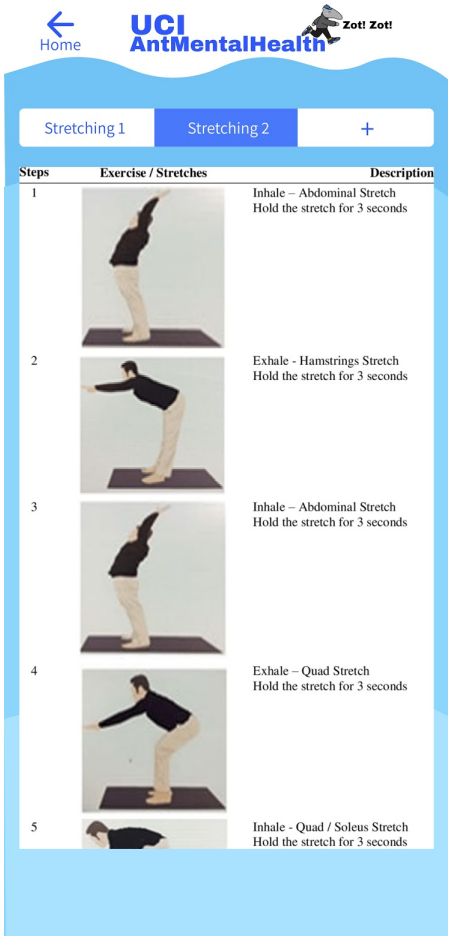


Figure 8

When the user chooses to stretch, the stretching page opens up. The user can pick what kind of stretching they want to do in the upper top box. It can add other types of meditation by clicking on the '+' button in the box. Choosing the type of meditation will trigger the app to direct the user on what to do for the stretching exercise. The user can click on the "back" button on the upper left corner to go back to Home.

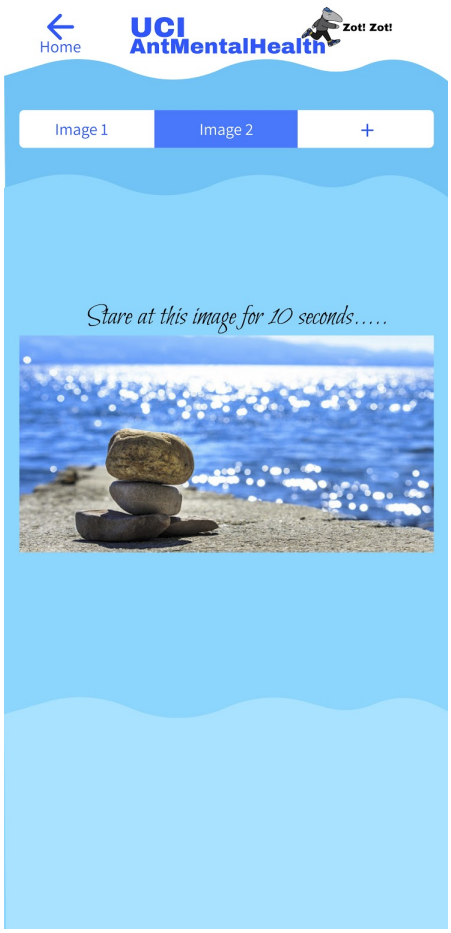


Figure 9

When the user chooses to stare at calm images, the calm image page opens up. The user can pick what picture to stare in the upper top box. It can add other calm images by clicking on the '+' button in the box. The user can click on the "back" button on the upper left corner to go back to Home.

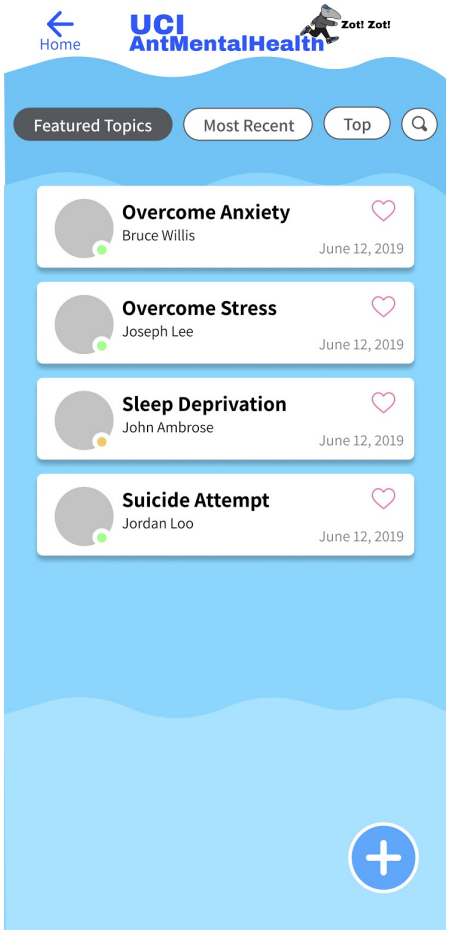


Figure 10

When the user chooses to read or post a forum page, the forum page opens up. The user can choose to read featured topics, most recent, or top forum pages by clicking the buttons on the upper top box. The user has the capability of searching a forum as well by clicking on the magnifying glass button. Whenever the user wants to post a question on the forum page, he/she can click the '+' button in the box. The user can click on the "back" button on the upper left corner to go back to Home.

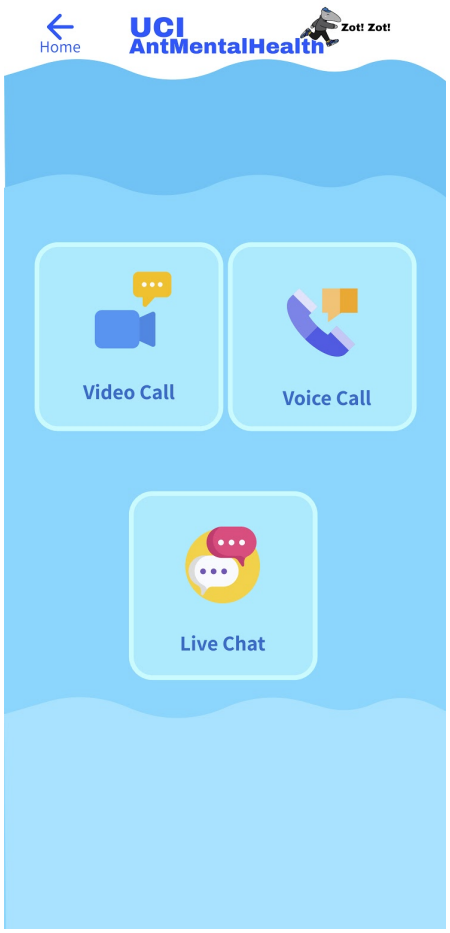


Figure 11

When the user chooses to contact a professional to consult a non-emergency situation, the contact page opens up. The user can pick to either contact the professional using a voice call, video call, or live chat. Clicking one of the buttons will connect the user with one of the representatives of CSWHP professionals. The session should last one hour each. Please keep in mind that these three features are only available during CSWHP business hours. The user can click on the “back” button on the upper left corner to go back to Home.

3.1.3.2 Hardware Interfaces

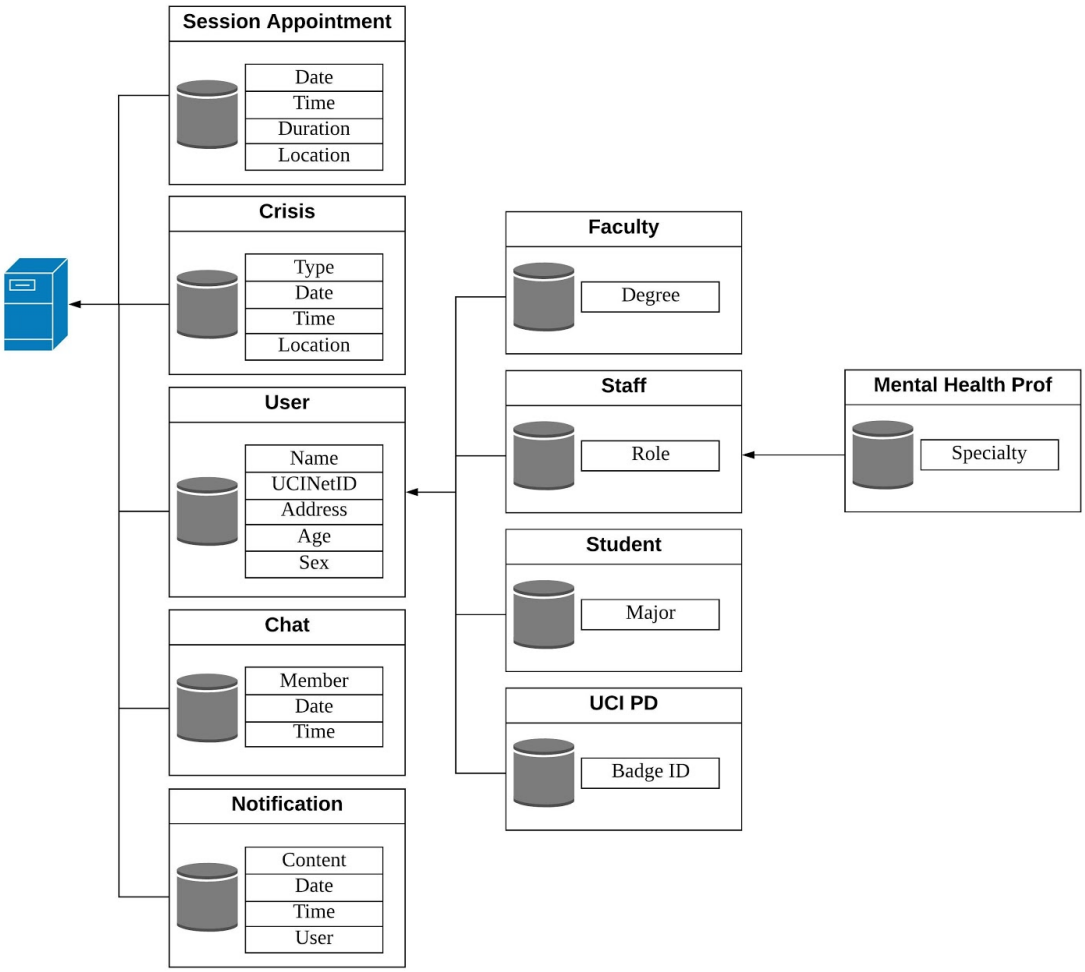
The AntMentalHealth is designed to work on any Android and iOS supported devices and also on desktops and notebooks with any web browsers (under development). Therefore, the system does not have any particular requirements about hardware.

3.1.3.3 Software Interfaces

Following are the softwares that interact with the system:

Software	Description
Web browser: Chrome, Mozilla Firefox, Safari, Microsoft Edge, Opera	These are some of the examples of web browsers that should work with AntMentalHealth system
Database	To save the users' information and all other related information, we have chosen MySQL database
Swift	To develop the app in an iOS environment, we have chosen to use Swift. It works best to develop an app in iOS environment
Java	To develop the app in an Android environment, we have chosen to use Java. It works best to develop an app in Android environment
HTML5, CSS3, Jquery, Bootstrap	To develop the system in the web environment, we have chosen to use HTML5, CSS3, Jquery, and Bootstrap because these are modern web development languages that will help us develop the system

3.1.4 Logical Data Model



The database will contain the following information:

User: User will include the storage of the name, UCI ID, address, age and sex. Faculty, Staff, Student, and UCI PD are the different types of users in the database.

Faculty: Faculty will be able to display their degree and perform their jobs as specified by the University.

Staff: Staff will be able to display their role and complete the assessment of the users who have made contact with them.

Mental Health Professional: Mental health professionals extend from the staff and will be able to counsel students.

Student: Students will be able to display their major and report their current mood.

UCI PD: UCI PD will have their badge ID displayed and will be able to respond to emergencies.

Session: Session will include the storage of date,time, duration, and location. During a session, the user will be able to communicate with other users via voice call, video call, or a texted based system.

Crisis: Crisis will include the storage of type, date, time, and location. The database will be able to assess whether or not the reported crisis is a non-emergency or emergency.

Chat: Chat will include the storage of member, date, and time. The chat will have different forms of communications such voice call, video call, and a text-based system.

Notification: Notification will include the storage of content, date, time, and user. The notification system will remind users for specially marked events.

Appendix

A.1 Analysis Models

A.1.1 Elicitation Document

1. What do you think is a good way to relax?
    Answers
    a. Deep breathing, stretching, mindful meditation, staring at a calming image, and exercising are all good ways to relax.
    b. Avoid competitive games.
2. How often do you think about your mental health?
    Answers
    a. Every day, every other day, rarely, and around midterms/ finals week
3. When would you find a mental health app useful?
    Answers
    a. “During an anxiety attack”
    b. “When there’s an exam coming up”
    c. “Before a job interview”
4. What factors cause you to be stressed?
    Answers
    a. Thinking about my career, romantic relationships, worrying about money, worrying about school, future endeavors.
5. How should mental health assessments be administered?

Answers

a. Daily “feeling” indicators where users select a face that matches their mood when they open the app
b. Short-semi frequent questionnaires about the user’s mental state

6. How long should it take to complete the project?
   Answers
   a. Our clients suggested the project to be completed in a span of six months and to prioritize mobile development.
7. How should users be connected to mental health professionals?
   Answers
   a. Everyone covered under UCSHIP will have access to a mental health professional.
   b. The users will instant message with mental health professionals through the app
   c. Users seeking counseling will be assigned to a mental health professional/counselor, who is assigned a limited number of patients at a time
   d. After not logging in for a certain amount of time, the user will be notified by the system and asked if they are feeling ok
      i. No response will result in the user being unassigned from their counselor
8. Will users be able to interact with other users (not professionals)? How?
   Answers
   a. Interactions between non-professional users should take place on public forums with qualified individuals as moderators
   b. Anonymity will be the default on these forums but users can choose not to be anonymous to other users
9. What information is visible to other users?
   Answers
   a. Users may have profile pictures and names displayed but otherwise, anonymity between users is the default
10. When will users be able to connect to professionals?
    Answers
    a. Counseling should be available during limited times of the day through voice call or video call.
    b. Emergency responses will be available 24/7, such as connecting users to relevant hotlines and will not require professionals to be online
11. Who should be the first responder when a patient requires immediate help in a mental health crisis through the system?
    Answers
    a. The app should link the user to hotlines related to the particular mental health crisis that they are encountering
    b. Alternatively, the police may be contacted if the user has shared location data with the app
    c. Crises may differ in severity, and in some cases suggesting in an activity or initiating a calming exercise through the app may be sufficient

12. Who is qualified to treat the users of the system?
    Answers
    a. Anyone who is licensed to give emotional counseling or mental health treatment.
    b. Non-UCI counselors should go through specific training for counseling through the app.
13. Do mental health officials have to be affiliated with UCI?
    Answers
    a. No, the mental health officials do not have to be affiliated with UCI but should have the required training to treat the patients.
14. What does an “individualized plan” look like?
    Answers
    a. Based on conversations they have with users, professionals will come up with a routine of activities that will help users work towards their mental health goals.
15. What personal information is required in order for the app to be effective?
    Answers
    a. An initial questionnaire will be conducted when the user registers on the app, asking questions about personal & family history with mental illness, home environment, relationships, demographics, income, etc.
    b. Name and email used for registration (UCI email is required)
    c. Medical records may be submitted by the user.
16. Should the app ask users for their location?
    Answers
    a. The user will be able to opt-in or out of location services in the app settings (default is off).
17. How responsible is this app for handling an emergency situation?
    Answers
    a. Two points of view:
        i. The authorities should be called if the users are a harm to themselves or others
        ii. The app is not responsible for ensuring users don’t hurt themselves, it is simply a resource for users to access
18. Should the app try to contact the users if they don't respond?
    Answers
    a. If a user does not log in for a certain amount of time, a one time automated message will be sent to check in on them. Beyond that, the app will not try to contact the user.
19. Should the users be able to disable notifications?
    Answers
    a. Yes, the users should be able to have the option to disable or enable notifications from the app
20. In what ways will the app monitor user behavior?
    Answers

a. Results from regular assessments will be used to keep track of the user's mental state
b. Forum moderators and counselors can assess users' mental states based on their posts and messages respectively
c. Schedules and plans will be analyzed and compared with assessment results to determine likely patterns of distress
d. If users have external devices, such as smartwatches and activity wristbands, in hand, the app will be able to retrieve data from such devices with the users' consent.

21. What is the budget for this project?
    Answers
    a. The budget for this project is $600,000.
22. How is an emergency or crisis response triggered?
    Answers
    a. Forum moderators and counselors can suggest contacting emergency services (police or hotlines) if they have reason to believe that users are at risk based on posts or messages
        i. i.e. professionals on the app will be able to use their discretion to "raise the alarm"
    b. Users should easily be able to elicit an emergency response from the app manually and be asked a few short questions to help direct them to the appropriate resources
23. Is this app solely going to be text-based?
    Answers
    a. The app will have other types of interactions, preferably users will be able to schedule calls with a mental health professional.
24. What are some calming activities that can be included in the app?
    Answers
    a. Responses: staring at calming images, non-competitive games, puzzles, word searches, "anything stimulating"
25. Who will maintain and keep secure the users' data?
    Answers
    a. The responsibility for users' data will be in the hands of the developers; this includes storing the data
26. What needs to be updated every month?
    Answers
    a. The developers will be in charge of updating the app for bug fixes. In some cases, they will also update the app for new features that are approved by CSWHP.
27. Who can the users, peer counselors, and users ask to learn more about the program?
    Answers
    a. If users are having difficulties in using the app, they can refer to the FAQ page the app provides. The FAQ page should answer most technical difficulties.

However, if they still need help, they can contact the support team through the hotline.

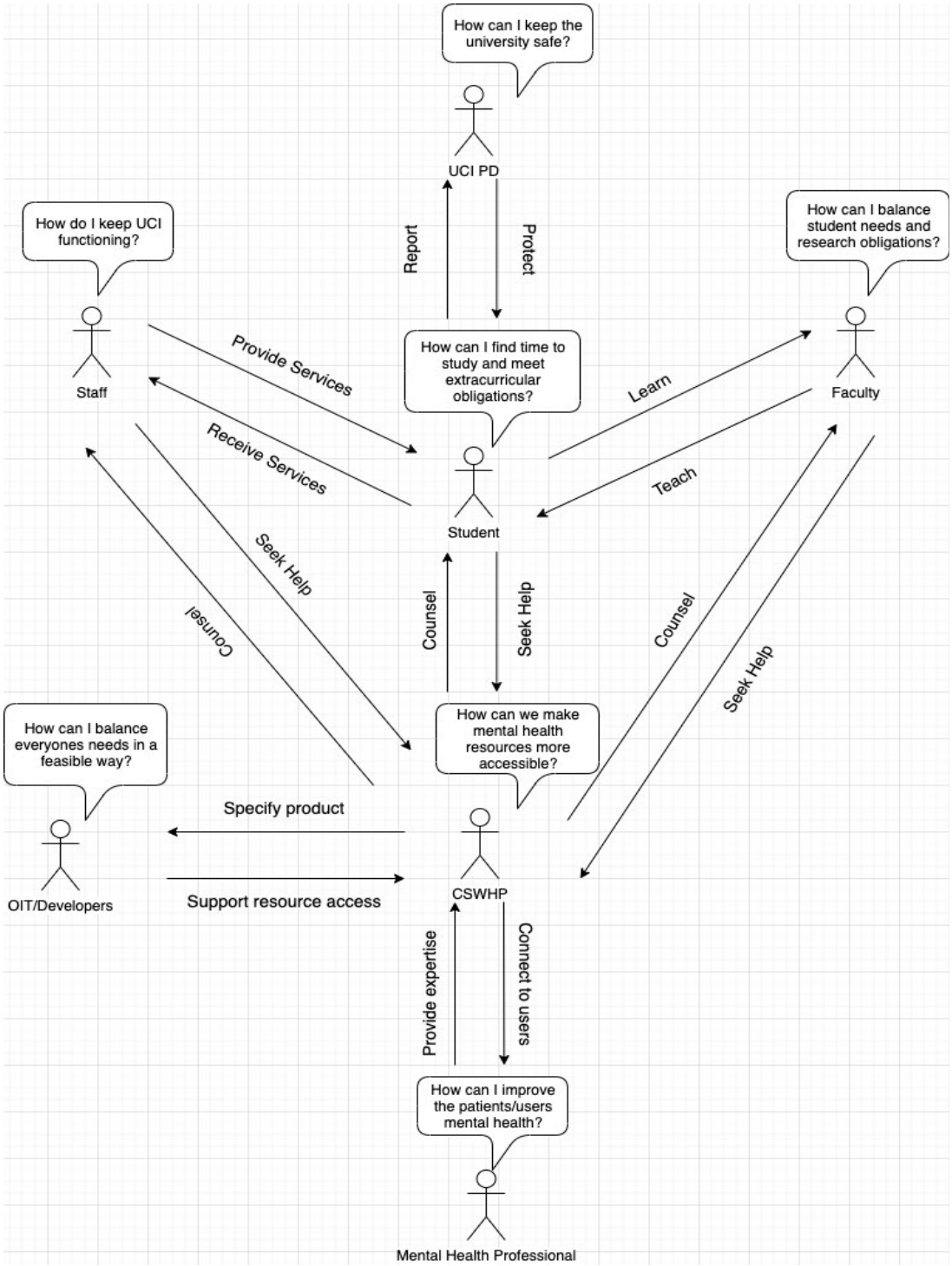
28. What features do the users want the chat messaging functionality has in order to interact with therapists, peer counselors, and other users for support?
    Answers
    a. The chat system within the app should just simply chat rooms capable of sending simple messages. Sending pictures, videos, or locations are not supported by the chat system within the app. In the case they need to send large files, such as pictures and videos, they can send it through UCI health center email.
29. Aside from Android, iOS, and web-browsers, are there any other operating platforms we should target?
    Answers
    a. The application should support Android, iOS, and web-browsers for now.
30. Should the user have different options when completing the survey?
    Answers
    a. Yes the user should have different options that match the user.
31. During a non-crisis situation, how will the user feel after the recommendations?
    Answers
    a. By doing the activities, the user will see an increase in calmness, improvements in communications, and improvement in productivity.
32. How do you expect the user to improve their mental health?
    Answers
    a. By increasing exercise and reducing stress. Utilizing activities such as meditating, stretching, and brain exercises.
33. How would a user manage their organization skills?
    Answers
    a. If the user creates consistency and manages their schedule, their organization skills will improve.
34. How do you want the users to customize their data sharing settings?
    Answers
    a. Users could enable location sharing, microphone settings, and camera settings. They will be able to turn it off and on.
35. Should the user require username and password?
    Answers
    a. Yes a UCI account should be required with proper username and password requirements.
36. Will the user be able to use FaceID and TouchID?
    Answers
    a. Yes that should be enabled.
37. What does the app do to help users?
    Answers
    a. The app is responsible for reducing stress, anxiety, and sadness of its users.

b. The app might either recommend physical activities or recommend in-app games.

38. Should we record the incident (i.e. user feel depressed) that is happening to the user?
    Answers
    a. Yes, the incident should be recorded. The data that should be recorded including time, place, and incident type.
39. What are some examples of games that you find relaxing?
    Answers
    a. I Love Hue, 2048, Minecraft
40. What kinds of sounds do you find relaxing?
    Answers
    a. Nature sounds, ocean sounds, cooking sounds
41. Who is creating the sleep schedule for the user?
    Answers
    a. The system tailors sleep schedules based on daily age sleep requirements and recommended practices
42. Who is recommending the stretches, brain exercises, and meditation techniques?
    Answers
    a. The system has predefined set of stretches, brain exercises, and meditation techniques. Depending on the user's criteria, it will recommend the option they have selected most.
43. Can the user contact UCI police directly or he/she must contact the hotline first?
    Answers
    a. The user should be able to contact the Police directly during life threatening situations.
44. What are the required information of the users for the hotline agent to respond to the user's problem?
    Answers
    a. The hotline agent should acquire name, adress, and level of emergency.
45. How long will the sessions last for the individual and mental health professional?
    Answers
    a. The session should last one hour each.
46. How does the UI should look like so that the app is easy to use?
    Answers
    a. The UI should look like most other health apps. This will help reduce the user's learning curve.

A.1.2 Stakeholder Model

A.1.2.1 Rich Picture



A.1.2.2 Textual Stakeholder Analysis

UCI Police Department

1. Priority Level: 4
    a. UCIPD is designated as 4th priority (which is the lowest priority) as their needs also conflict with privacy concerns on behalf of the users (student, faculty, staff) who hold 1st priority.
2. Relation to other stakeholders, including authority relations, peer relations, competitive relations, etc.
    a. Students (authority relation)
        i. The UCIPD enforces rules as well as protects students from self-harm and harm from others.
3. Area of expertise/knowledge and level of expertise in that area
    a. They have a high level of expertise in public safety but might not be properly trained to deal with various mental health crises in a professional fashion.
4. Primary concern(s) as it relates to the system
    a. Their primary concern is to make sure that users are safe and are not a threat to themselves or others through the app. They are possibly more concerned with safety than with the privacy of the users.

UCI Students

1. Priority Level: 1
    a. Students are designated as 1st priority since UCI students usually fall within the ages of 18 and 25. Individuals within that range tend to get depressed easily. Declaring UCI students as 1st priority prevents unwanted behavior to happen and resolve mental health crisis quickly.
2. Relation to other stakeholders, including authority relations, peer relations, competitive relations, etc.
    a. UCI Staff (authority relation)
        i. Staff provides students' with administrative/other resources such as financial aid, major guidance, etc.
    b. UCI Faculty (authority relation)
        i. Faculty provide students with education about mental health. Students can ask questions regarding general mental health issues. For example, faculty can answer basic questions, such as: what are the cause of depression? How do I overcome depression?
    c. CSWHP (authority relation and peer relation)

        i. CSWHP provides consultation concerning students' mental health. Whenever students consult their problems that are beyond their knowledge, CSWHP can refer them to mental health professionals for further treatment.
3. Area of expertise/knowledge and level of expertise in that area
    a. Students are knowledgeable about the user-end of the application. They know what features the system should provide (e.g. reminders, calming games).
4. Primary concern(s) as it relates to the system
    a. UCI students are afraid that the system would not bring significant changes to their mental health. For instance, the system's mental health exercises, such as games, do not bring them comfort, instead, the games bring them tension.

OIT/Developers

1. Priority Level: 3
    a. OIT and the developers do not have that high of a priority on the list, 3rd on the list. Their role is to develop software for CSWHP that allows its users to access the resources provided by the center.
2. Relation to other stakeholders, including authority relations, peer relations, competitive relations, etc.
    a. CSWHP (authority relation)
        i. CSWHP employs the OIT to develop the software that allows users to access the content that promotes better mental health. They are developing an app that supports students by providing ease of access to CSWHP's resources.
3. Area of expertise/knowledge and level of expertise in that area
    a. They are good at developing an application equipped with resources that are approved by CSWHP.
    b. The area of expertise is high for this node as they are the key to developing the app. OIT has been chosen to develop and maintain the app and any problems that were to arise would be resolved through them.
4. Primary concern(s) as it relates to the system
    a. One of the main concerns of OIT/developers would be "How can they balance everyone's needs in a feasible way?"
    b. They are to develop an app that is easy to navigate through and use. It should scale with the accessibility of the mobile app and if one of the users is having trouble, there will be a web version for better viewing.

Mental Health Professionals

1. Priority Level: 2
    a. Mental health professionals have 2nd priority because they will use the system to provide help to the students, faculty, and staff through CSWHP.
2. Relation to other stakeholders, including authority relations, peer relations, competitive relations, etc.
    a. CSWHP (peer relation)
        i. Mental health professionals receive referrals from CSWHP whenever there are students who need further treatment.
3. Area of expertise/knowledge and level of expertise in that area
    a. Mental Health Professionals are knowledgeable in their field and are qualified to help a person overcome a mental health concern.
4. Primary concern(s) as it relates to the system
    a. One of the Mental Health Professional concerns is accurately providing enough information to the CSWHP to treat any of the staff, students, or faculty concerns.
    b. Mental health professionals are concerned with the suggestion they sent to UCI students through the system messaging system. They are afraid that there will be miscommunication, which may lead the students to develop more severe problems.

Staff

1. Priority Level: 1
    a. The staff has 1st priority because they have the right to get the same treatment as UCI students and the app is made for them as well.
2. Relation to other stakeholders, including authority relations, peer relations, competitive relations, etc.
    a. Student (authority relation)
        i. Staff help to distribute resources and advise students on administrative/other issues such as academic counseling, financial aid, housing, etc.
    b. CSWHP (authority relation)
        i. Staff can also seek help regarding their mental health. Staff can receive consultation from CSWHP. Whenever staff consults their problems that are beyond their knowledge, CSWHP can refer them to mental health professionals for further treatment.
3. Area of expertise/knowledge and level of expertise in that area
    a. Staff is capable of fulfilling prescription drug the students need.

    b. Staff is also capable of providing medical equipment to students for them to maintain their mental health.
4. Primary concern(s) as it relates to the system
    a. Staff worries that they will be making medicines for students who are faking prescription letters to get the medicine they want. If something happens to the student, the staff or the department may get sued.
    b. Staff is afraid that the system would not bring significant changes to their mental health. For instance, the system's mental health exercises, such as games, do not bring them comfort, instead, the games bring them tension.

Faculty

1. Priority Level: 1
    a. The faculty have 1st priority because they have the right to get the same treatment as UCI students and staff.
2. Relation to other stakeholders, including authority relations, peer relations, competitive relations, etc.
    a. Student (authority relation)
        i. Faculty teach students about basic knowledge about mental health. For example, they can hold a workshop that teaches students what causes mental health problems or how to deal with mental health problems.
        ii. Faculty teachers who foster positive relationships increase the student's ability to learn and meet academic needs.
    b. CSWHP (authority relation)
        i. Faculty can also seek help regarding their mental health. Faculty can receive consultation from CSWHP. Whenever faculty consult their problems that are beyond their knowledge, CSWHP can refer them to mental health professionals for further treatment.
3. Area of expertise/knowledge and level of expertise in that area
    a. Faculty understand some basic concepts about mental health. They are good at delivering these concepts to students.
4. Primary concern(s) as it relates to the system
    a. Faculty are afraid that the system would not bring significant changes to their mental health. For instance, the system's mental health exercises, such as games, do not bring them comfort, instead, the games bring them tension.

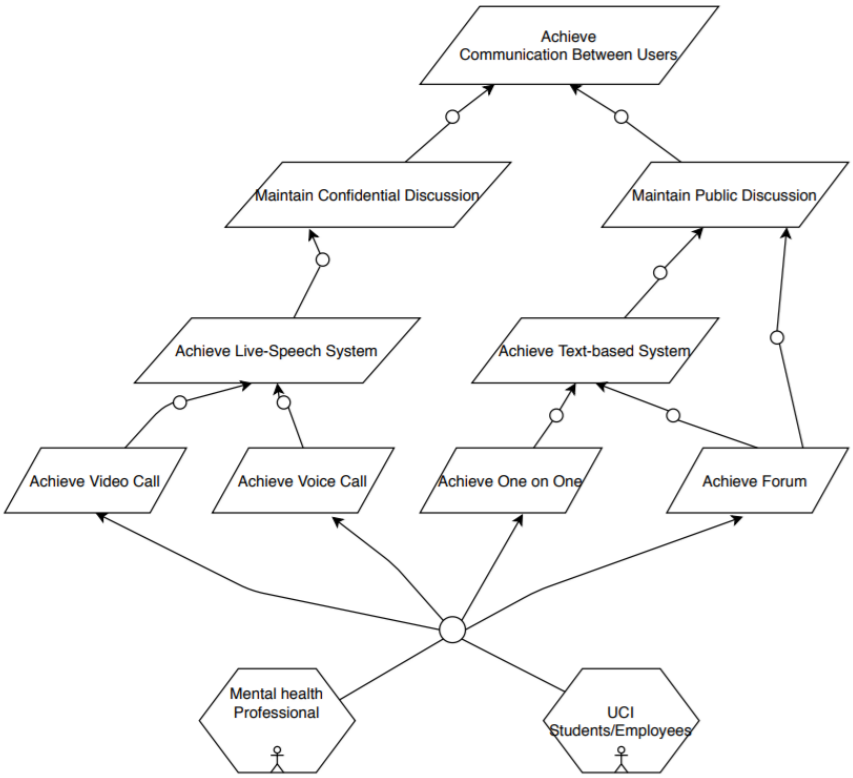
CSWHP

1. Priority Level: 2

    a. CSWHP will be in level 2 priority because they will be the first responder to any mental health crisis through the system.
2. Relation to other stakeholders, including authority relations, peer relations, competitive relations, etc.
    a. Student (authority relation)
        i. The students consult their mental health problems with CSWHP. The students may be prescribed medication or certain treatment by CSWHP to help them deal with their mental health problems.
    b. Developers/OIT (authority relation)
        i. Software developers work alongside CSWHP to develop an application full of resources to help patients overcome their mental health problems.
    c. Staff (authority relation)
        i. The staff consults their mental health problems with CSWHP. The staff may be prescribed medication or certain treatment by CSWHP to help them deal with their mental health problem.
    d. Faculty (authority relation)
        i. The faculty consult their mental health problems with CSWHP. The faculty may be prescribed medication or certain treatment by CSWHP to help them deal with their mental health problem.
    e. Mental health professional (peer relations)
        i. CSWHP works together with mental health professionals to help patients overcome their mental health problems. Whenever a patient needs further treatment, CSWHP will refer him/her to a mental health professional.
        ii. CSWHP also helps mental health professional to cure their mental health problems by following the instructions given by mental health professionals.
3. Area of expertise/knowledge and level of expertise in that area
    a. They have basic mental health knowledge that they can use to consult students about their mental health. Due to limited knowledge of mental health, they are required to refer students to mental health professionals if it is a life-threatening case.
4. Primary concern(s) as it relates to the system
    a. CSWHP concerns with the suggestion they sent to patients through the system messaging system. They are afraid that there will be miscommunication, which may lead the students to develop more severe problems.

b. During the referral process, CSWHP is afraid that the system would not give enough functionality to include important information about the patients. For example, CSWHP worries that it will have difficulties to forward lab results to a mental health professional.

A.1.3 Goal Models



Goal Model #1: Achieve Communications Between Users

Name: Achieve Communications Between Users

- Definition: The app aims to be the intermediary between the users, CSWHP agents, and mental health professionals. Through the app, the users will be able to consult their problems easily from anywhere.
- Type: High level goal
- Source: Question 7, 8, and 10 from elicitation with customers.
- Priority: 1

Name: Maintain Confidential Discussions

- Definition: Discussion between mental health professionals and users or CSWHP agents and users will be kept confidential. Only specific CSWHP agents or mental health professionals assigned for a particular patient can access his/her personal data.
- Type: Behavioral (Maintain)
- Source: Question 8 from elicitation with customers.
- Priority: 2

Name: Maintain Public discussions

- Definition: Forum within the app should always be public, allowing any users of the app to post questions and read answers.
- Type: Behavioral (Maintain)
- Source: Question 8 from elicitation with customers.
- Priority: 2

Name: Achieve Live-Speech System

- Definition: The app should be able to give users access to contact CSWHP agents and mental health professionals through voice call or video call.
- Type: Behavioral (Achieve)
- Source: Question 10 from elicitation with customers.
- Priority: 3

Name: Achieve Text-based system

- Definition: Considering that some users minimize direct interactions with CSWHP agents and mental health professionals, the app should allow users to contact them through text-based chat systems.
- Type: Behavioral (Achieve)
- Source: Question 10 from elicitation with customers.
- Priority: 3

Name: Achieve Video call

- Definition: The app should be able to allow users to contact CSWHP agents and mental health professionals face-to-face through video calling system.
- Type: Behavioral (Achieve)
- Source: Question 10 from elicitation with customers.
- Priority: 4

Name: Achieve Voice Call

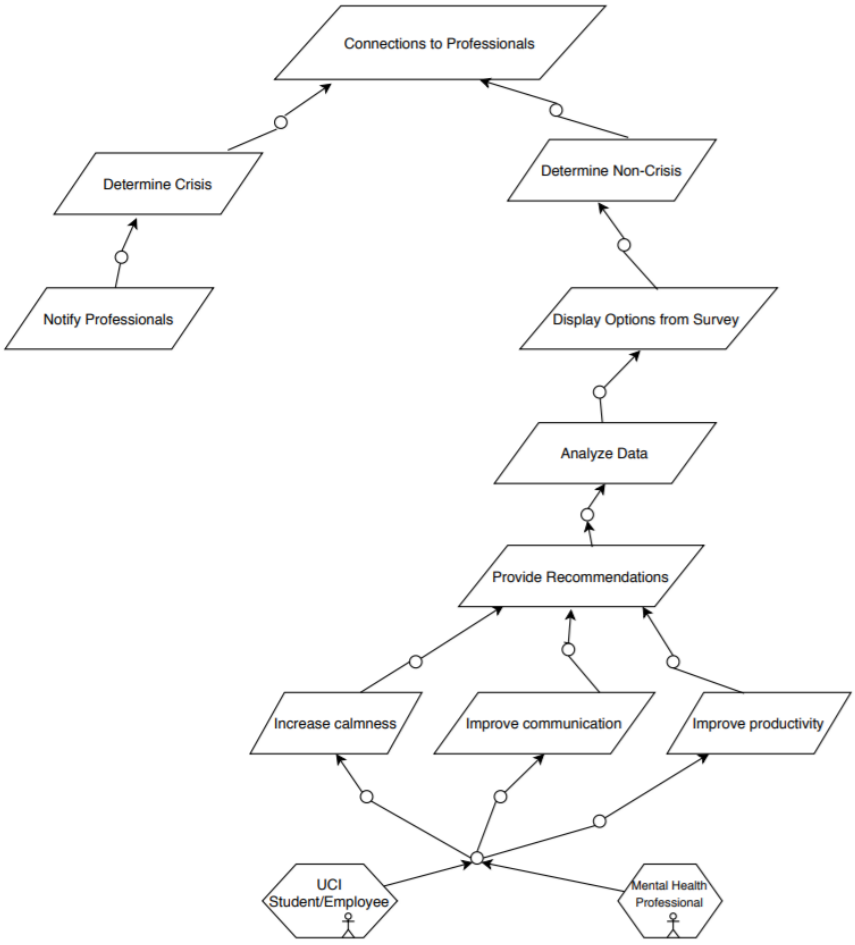
- Definition: When the user chooses not to contact CSWHP agents and mental health professionals face-to-face, the app should be able to connect them through voice calling system.
- Type: Behavioral (Achieve)
- Source: Question 10 from elicitation with customers.
- Priority: 4

Name: Achieve One-on-one

- Definition: The app should support a one-on-one messaging system when the users want to discuss something personal with CSWHP agents or mental health professionals.
- Type: Behavioral (Achieve)
- Source: Question 10 from elicitation with customers.
- Priority: 4

Name: Achieve Forum

- Definition: The app should provide a forum page for users to ask general questions and share their positive experience to other users.
- Type: Behavioral (Achieve)
- Source: Question 8 from elicitation with customers.
- Priority: 4



Goal Model #2: Connect with Professionals

Name: Connect with Professionals

- Definition: The app aims to establish a good communication system for users to contact professionals during crisis and non-crisis situations.
- Type: High level goal
- Source: Question 7 and 23 from elicitation with customers.
- Priority: 1

Name: Determine Crisis

- Definition: One of the two primary scenarios where the user could be in a crisis situation and must be connected to certain services.
- Type: Behavioral (Maintain)
- Source: Question 11 and 22 from elicitation with customers.
- Priority: 2

Name: Determine Non-Crisis

- Definition: One of the two primary scenarios where the user could be in a non-crisis situation and must be connected to certain services.
- Type: Behavioral (Maintain)
- Source: Question 11 and 22 from elicitation with customers.
- Priority: 2

Name: Display Options From Survey
- Definition: Options will be displayed from a survey to see the mental health status of the user to make sure they are no harm to themselves.
- Type: Behavioral (Achieve)
- Source: Question 30 from elicitation with customers.
- Priority: 3

Name: Notify Professionals
- Definition: In a crisis situation, the appropriate professionals will be notified to deal with the user who is in need of help.
- Type: Behavioral
- Source: Question 7 from elicitation with customers.
- Priority: 3

Name: Analyze Data
- Definition: Data will be analyzed to ensure the safety of the user during non-crisis situations.
- Type: Behavioral
- Source: Question 20 from elicitation with customers.
- Priority: 4

Name: Provide Recommendations
- Definition: Recommendations will be provided to the user to improve their mental health state. It will include certain activities.
- Type: Behavioral
- Source: Question 31 from elicitation with customers.
- Priority: 5

Name: Increase Calmness
- Definition: By doing the provided recommendation, the goal is to help the user increase their overall calmness.
- Type: Soft
- Source: Question 31 from elicitation with customers.

- Priority: 5

Name: Improve Communications

- Definition: By doing the provided recommendation, the goal is to help the user increase their overall communication with others.
- Type: Soft
- Source: Question 31 from elicitation with customers.
- Priority: 5

Name: Improve Productivity

- Definition: By doing the provided recommendation, the goal is to help the user increase their overall productivity..
- Type: Soft
- Source: 31
- Priority: 5

Goal Model #3: Improve Mental Health

Name: Improve Mental Health

- Definition: CSWHP strives to focus on health needs and concerns of UCI students.
- Type: High Level Goal
- Source: Question 32 from elicitation with customers.
- Priority: 1

Name: Increase Exercise
- Definition: Users should increase exercise to improve mental health and mood. This will release chemicals that will make you feel more relaxed and calm.
- Type: Soft
- Source: Question 32 from elicitation with customers.
- Priority: 1

Name: Reduce Stress
- Definition: Less stress translates to less anxiety from the user.
- Type: Soft
- Source: Question 32 from elicitation with customers.
- Priority: 2

Name: Utilize Meditation
- Definition: Meditation techniques will enhance self awareness and promote emotional wellbeing from the user.
- Type: Behavioral (Maintain)
- Source: Question 32 from elicitation with customers.
- Priority: 3

Name: Utilize Stretching
- Definition: Stretching reduces muscular tension and enhances muscular relaxation. Users that are involved with stretching will see increase in circulation of the blood
- Type: Behavioral (Maintain)
- Source: Question 32 from elicitation with customers.
- Priority: 3

Name: Utilize Brain Exercises
- Definition: Brain exercises include doing crossword puzzles, listening to music, and drawing.
- Type: Behavioral (Maintain)
- Source: Question 32 from elicitation with customers.

- Priority: 3

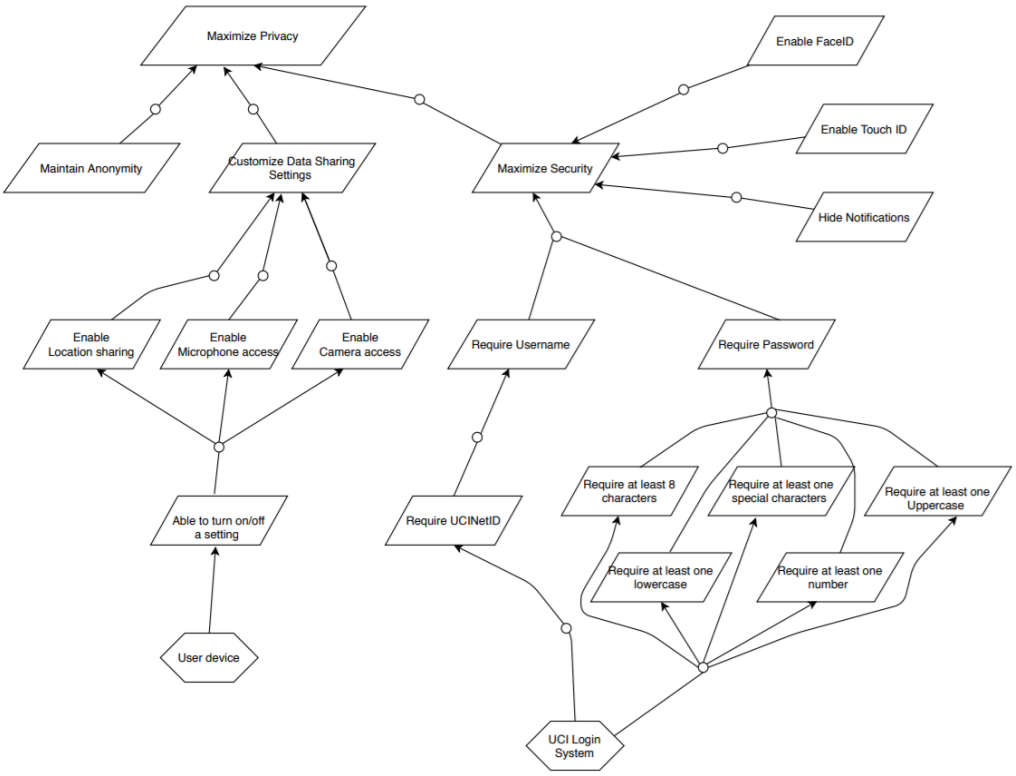
Name: Maximize Organization
- Definition: Organization allows for productivity and allows you to realize how balance or unbalanced your life is.
- Type: Soft
- Source: Question 33 from elicitation with customers.
- Priority: 2

Name: Create Consistency
- Definition: Creating consistency allows you to stick and accomplish your goals.
- Type: Behavioral (Maintain)
- Source: Question 33 from elicitation with customers.
- Priority: 3

Name: Decluttering Personal Space
- Definition: The act of decluttering personal space allows for a more open-minded approach to life
- Type: Behavioral (Maintain)
- Source: Question 33 from elicitation with customers.
- Priority: 3

Name: Make Sleep Schedule
- Definition: Maintaining an internal sleep schedule will promote better sleep in terms of falling asleep faster and waking up more easily.
- Type: Behavioral (Maintain)
- Source: Question 33 from elicitation with customers.
- Priority: 4

Name: Make Meal Plans
- Definition: Maintaining meal plans will allow you to save money on food, save time, and create good eating habits.
- Type: Behavioral (Maintain)
- Source: Question 33 from elicitation with customers.
- Priority: 4



Goal Model #4: Maximize Privacy

Name: Maximize Privacy

- *Definition*: The app should allow the user to fully customize their privacy setting.Through the app the user will be able to set what has access to their devices.
- *Type*: High Level Goal
- *Source*: Question 8, 9, and 16 from elicitation with customers.
- *Priority*: 1

Name: Maintain Anonymity

- *Definition*: Data being collected for the systems should remain anonymous. This keeps the user's mind at ease and they know that they cannot be tracked back with the data that is being collected.
- *Type*: Behavioral (Maintain)
- *Source*: Question 8 and 9 from elicitation with customers.
- *Priority*: 2

Name: Customize Data Sharing Settings

- *Definition*: The user is allowed to customize data sharing settings within their device. A message will be prompted to the user to ask for permission.

- *Type*: Soft
- *Source*: Question 20 from elicitation with customers.
- *Priority*: 2

Name: Maximize Security
- *Definition*: Security will be increased with the use of a verified username and password with the system checking the strength of each.
- *Type*: Soft
- *Source*: Question 25 from elicitation with customers.
- *Priority*: 2

Name: Enable Location Sharing Option
- *Definition*: The app will ask for the user's location in case of a crisis, they can be easily found with their device's location.
- *Type*: Behavioral (Achieve)
- *Source*: Question 16 from elicitation with customers.
- *Priority*: 3

Name: Enable Microphone Option
- *Definition*: The app will ask for the device's access to the microphone for audio communication between mental health professionals and the user.
- *Type*: Behavioral (Achieve)
- *Source*: Question 34 from elicitation with customers.
- *Priority*: 3

Name: Enable Camera Option
- *Definition:* The app will ask for the device's access to the camera for visual communication between mental health professionals and the user.
- *Type*: Behavioral (Achieve)
- *Source*: Question 34 from elicitation with customers.
- *Priority:* 3

Name: Required Username
- *Definition:* For the user to access contents of our app, a username is required which has to be verified through the system.

- *Type*: Behavioral (Maintain)
- *Source*: Question 35 from elicitation with customers.
- *Priority*: 3

Name: Required Password
- *Definition*: To maximize the user's privacy and security, a password with certain specifications must be met. This is to ensure that their account won't be hacked into.
- *Type*: Behavioral (Maintain)
- *Source*: Question 35 from elicitation with customers.
- *Priority*: 3

Name: Enable FaceID
- *Definition*: Another form of security will be to enable FaceID. This will act as a form of two-way factor authentication.
- *Type*: Behavioral (Maintain)
- *Source*: Question 36 from elicitation with customers.
- *Priority*: 3

Name: Enable TouchID
- Definition: Another form of security will be to enable TouchID. This will act as a form of two-way factor authentication.
- *Type*: Behavioral (Maintain)
- *Source*: Question 36 from elicitation with customers.
- *Priority*: 3

Name: Hide Notifications
- *Definition:* Hiding notification is to secure the user's personalized data to themselves. For instance, the user has their phone the table and has notifications on, someone may look at their notification and see what issues they could be potentially dealing with.
- *Type:* Behavioral (Maintain)
- *Source:* Question 19 from elicitation with customers.
- *Priority:* 3

Name: Required ON/OFF setting
- *Definition:* This option is just for the above settings to be turned ON/OFF within the app and gives the user a freedom of choice.

- *Type*: Behavioral (Maintain)
- *Source*: Question 35 from elicitation with customers.
- *Priority*: 4

Name: Required UCINetID
- *Definition:* UCINetID is required because this is being developed for the AnteaterMentalHealth system. This ensures that in the beginning of the app that only UCI students/staff can use it.
- *Type:* Behavioral (Maintain)
- *Source*: Question 35 from elicitation with customers.
- *Priority*: 4

Name: Required At least eight Characters
- *Definition*: To provide maximum security for the user's data, the password must contain at least eight characters as standard for strong passwords.
- *Type*: Behavioral (Maintain)
- *Source*: Question 35 from elicitation with customers.
- *Priority*: 4

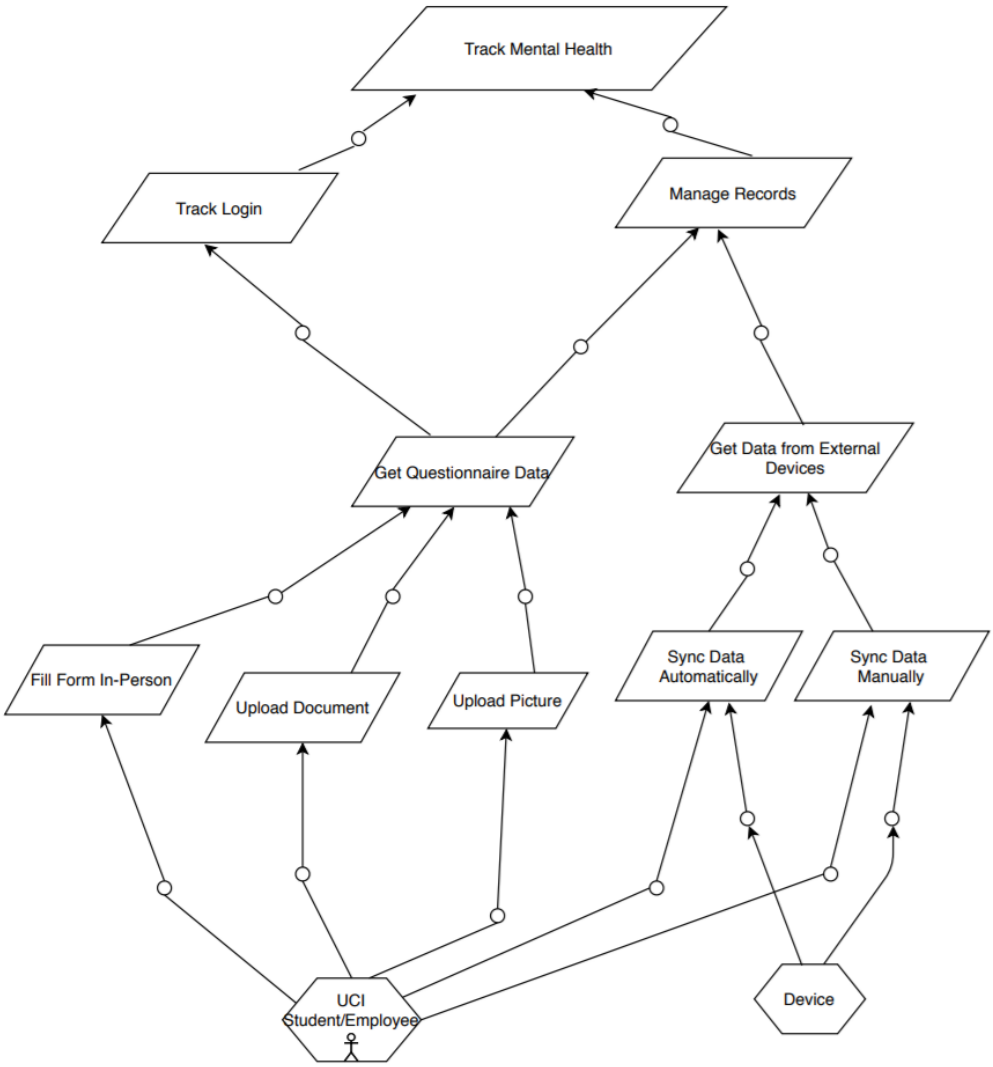
Name: Required At least one Special Characters
- *Definition*: To provide maximum security for the user's data, the password must contain at least one special character as standard for strong passwords.
- *Type*: Behavioral (Maintain)
- *Source*: Question 35 from elicitation with customers.
- *Priority*: 4

Name: Required At least one Uppercase
- *Definition*: To provide maximum security for the user's data, the password must contain at least one uppercase character as standard for strong passwords.
- *Type*: Behavioral (Maintain)
- *Source*: Question 35 from elicitation with customers.
- *Priority*: 4

Name: Required At least one lowercase
- *Definition*: To provide maximum security for the user's data, the password must contain at least one lowercase character as standard for strong passwords.
- *Type*: Behavioral (Maintain)
- *Source*: Question 35 from elicitation with customers.
- *Priority*: 4

Name: Required At least one number

- *Definition:* To provide maximum security for the user's data, the password must contain at least one number as standard for strong passwords.
- *Type:* Behavioral (Maintain)
- *Source*: Question 35 from elicitation with customers.
- *Priority*: 4



Goal Model #5: Track Mental Health

Name: Track Mental Health

- *Definition*: The app should be able to track the mental health of its users from the data they received from questionnaires and from external devices, such as smartwatches.
- *Type*: High Level Goal

- *Source*: Question 5, 15, 18, and 20 from elicitation with customers.
- *Priority*: 1

Name: Track Login

- *Definition*: If a user does not log in for a certain amount of time, a one time automated message will be sent to check in on them. Beyond that, the app will not try to contact the user.
- *Type:* Behavioral (Maintain)
- *Source:* Question 18 from elicitation with customers.
- *Priority*: 2

Name: Manage Records

- *Definition*: The app will manage records by asking the users with a simple questionnaire or syncing health data from external devices, such as smartwatches and activity bands.
- *Type*: Behavioral (Maintain)
- *Source:* Question 5, 15, and 20 from elicitation with customers.
- *Priority*: 2

Name: Get Questionnaire Data

- *Definition:* The app will ask question(s) every time users open the app. The question(s) will be in the form of a simple questionnaire which should only take less than one minute. For instance, when the app is opened, a popup window will require users to input their anxiety level by choosing a rating from 1 to 5, where 1 denotes less anxiety and 5 denotes high anxiety
- *Type:* Behavioral (Achieve)
- *Source*: Question 5 and 15 from elicitation with customers.
- *Priority*: 3

Name: Get Data from External Devices

- *Definition*: If the users have external devices, such as smartwatches, with them, the app will periodically sync data, including heart rate and sleep patterns, from it. The data will be analyzed to determine the users' mental health.
- *Type*: Behavioral (Achieve)
- *Source:* Question 20 from elicitation with customers.
- *Priority*: 3

Name: Fill Form In-person

- *Definition:* Whenever external devices are not around, the user can add their health information to the app manually.
- *Type:* Behavioral (Achieve)
- *Source:* Question 5 and 15 from elicitation with customers.
- *Priority:* 4

Name: Upload Document

- *Definition:* The user can upload documents to the app for the app to analyze it. It will save the data in the app system. Documents supported including Docx and PDF files.
- *Type*: Behavioral (Achieve)
- *Source*: Question 5 and 15 from elicitation with customers.
- *Priority*: 4

Name: Upload Picture

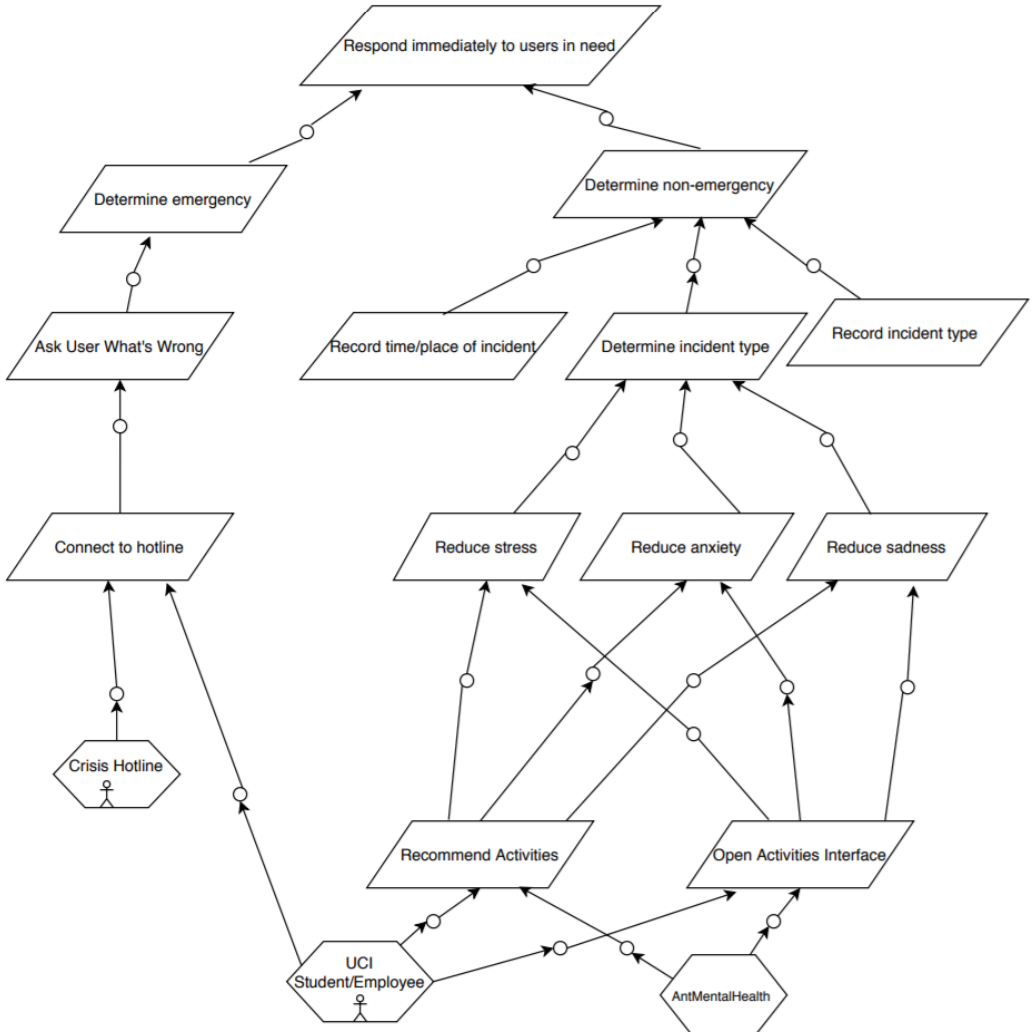
- *Definition*: The user can upload pictures to the app for the app to analyze it. It will save the data in the app system. Pictures supported including PNG and JPEG files.
- *Type*: Behavioral (Achieve)
- *Source*: Question 5 and 15 from elicitation with customers.
- Priority: 4

Name: Sync Data Automatically

- *Definition*: The user has the option to sync the health data from external devices automatically for more accurate analysis of the users' mental health.
- *Type:* Behavioral (Maintain)
- *Source:* Question 20 from elicitation with customers.
- *Priority*: 4

Name: Sync Data Manually

- *Definition:* The user can opt-out the option to sync the health data from external devices automatically. Instead, the user can choose to sync data manually through the app.
- *Type*: Behavioral (Maintain)
- *Source:* Question 20 from elicitation with customers.
- *Priority*: 4



Goal Model #6: Immediate Response System

Name: Immediate Response System

- *Definition*: The app should have an immediate response system in case the user is having trouble dealing with their anxiety, stress, and sadness on their own.
- *Type:* High Level Goal
- *Source*: Question 11 from elicitation with customers.
- *Priority*: 1

Name: Determine Emergency

- *Definition*: The app should be able to determine whether the user is in an emergency situation or not. The app can determine this by analyzing the chat activities within the app.
- *Type:* Behavioral (Achieve)
- *Source:* Question 10, 17, and 22 from elicitation with customers.
- *Priority*: 2

Name: Determine Non-Emergency

- Definition: The app should be able to determine whether the user is in an emergency situation or not. The app can determine this by analyzing the chat activities within the app or when the user presses the emergency button.
- Type: Behavioral (Achieve)
- Source: Question 10, 17, and 22 from elicitation with customers.
- Priority: 2

Name: Ask User What's Wrong

- Definition: The app should ask what's wrong with the user that makes him/her presses the emergency button.
- Type: Behavioral (Achieve)
- Source: Question 5, 15, and 22 from elicitation with customers.
- Priority: 3

Name: Record Time/Place of Incident

- Definition: The app should be able to record the time and place when the user reports a non-emergency incident.
- Type: Behavioral (Achieve)
- Source: Question 38 from elicitation with customers.
- Priority: 3

Name: Determine Incident Type

- Definition: The app should determine what type of incident the user is in.
- Type: Behavioral (Achieve)
- Source: Question 38 from elicitation with customers.
- Priority: 3
-

Name: Record Incident Type

- Definition: Once the incident type is determined, the app should be able to record it into their system.
- Type: Behavioral (Achieve)
- Source: Question 38 from elicitation with customers.
- Priority: 3

Name: Connect to Hotline

- Definition: In an emergency situation, the app should be able to direct the user in crisis to the appropriate hotline.

- Type: Behavioral (Achieve)
- Source: Question 22 and 27 from elicitation with customers.
- Priority: 4

Name: Reduce Stress
- Definition: The app should help users to reduce the stress by suggesting different activities.
- Type: Soft Goal
- Source: Question 4 and 37 from elicitation with customers.
- Priority: 4

Name: Reduce Anxiety
- Definition: The app should help users to reduce anxiety by suggesting different activities.
- Type: Soft Goal
- Source: Question 3 and 37 from elicitation with customers.
- Priority: 4

Name: Reduce Sadness
- Definition: The app should help users to reduce sadness by suggesting different activities.
- Type: Soft Goal
- Source: Question 37 from elicitation with customers.
- Priority: 4

Name: Recommend Activities
- Definition: The app should help users to reduce stress, anxiety, and sadness by recommending physical activities to the users. These activities may include: deep breathing, stretching, mindful meditation, staring at a calming image, and exercising.
- Type: Behavioral (Achieve)
- Source: Question 1, 24, and 32 from elicitation with customers.
- Priority: 4

Name: Open Activities Interface
- Definition: The app should help users to reduce stress, anxiety, and sadness by opening the in-app games.
- Type: Behavioral (Achieve)
- Source: Question 24, 32, and 37 from elicitation with customers.

- Priority: 4

A.1.4 Scenarios

Scenario 1: Improve Mental Health
By: Ryan La
Field Notes/Goal Models: Elicitation #32 and #33 and Goal Model #3
Scenario: Tim Derebenskiy is a 21 year old college student. It is his junior year and he feels stressed out during the middle of the quarter. His energy is low and he has not been eating throughout the day. He finds it hard to enjoy life and generates unhealthy thoughts about himself. His roommates notices his inability to follow the rules they have set out at the beginning of the quarter, such as washing dishes and cleaning up the apartment. His roommates are worried about his problems and suggests he goes to meet with a mental health therapist and utilize the AntMentalHealth response system. The mental health therapist recommends an increase in exercise and a stronger focus on organization skills to alleviate some of his problems. After going to the therapist, Tim follows the list of recommendations provided to him. He starts first by meditating to redirect negative thoughts and increase his awareness of himself and his surroundings. Next, he utilizes stretching to get the blood flowing through his body. Finally, he incorporates brain exercises including crossword puzzles, music, and drawing. Tim saw an increase in energy after performing these exercises after the week. He implements organization skills provided by his therapist to his daily routine shortly after. Tim created his own sleeping schedule and started meal prepping every Sunday to create a consistent habit. He declutters personal space by arranging and cleaning his room as well as communicating with his roommates about the chores that need to be taken care of. Because of the steps he has taken, Tim saw an increase in energy and mood levels again.
Assumptions:
- Understand how to use the software system.

Future Questions/Gaps:
- Will there be any games added in the future?

Scenario 2: Track Mental Health
By: Kentrick Felix Kepawitono
Field Notes/Goal Models: Elicitation #5, #15, #18, and #20 and Goal Model #5
Scenario: After visiting the CSWHP, Tim Derebenskiy's therapist suggests that he records his mental health condition. He decides to use the CSWHP mental health app to record his mental health condition. Once he downloaded the app, he opt-in the option

for the app to send a notification to Tim to make sure that he is okay every time he is inactive for several days. After a week not opening the app, the app system sends him a notification reminding him to open the app and fill in a quick questionnaire or upload a document or a picture. Tim responds to the notification by filling in a quick questionnaire in the form of scaling questions. After finishing filling in the form, Tim gets a pop-up message saying that the app works better with Apple Watch and other smartwatches. The message mentions that with the smartwatch integration, he can monitor his mental health to the next level. Therefore, he decided to go to the nearest Apple Store and purchase an Apple Watch. Once he purchases the watch, he syncs his Apple Watch with the app, while being guided by the app. In the end, he can monitor his stress level and heartbeat effectively, allowing the system to analyze his mental health even better.

Assumptions:

- The user knows how to operate a smartphone
- The user knows how to set up a new smartwatch

Future Questions/Gaps:

- Should smartwatches only monitor the user's mental health?

Scenario 3: Immediate Crisis Response

By: Edgar Partida

Field Notes/Goal Models: Goal Model #6

Scenario: Mit Yiksnebered is studying for finals and realizes he only has a day left before his test, and starts to have a panic attack. He uses AntMentalHealth's immediate response system by pushing the "crisis" button on the main page. AntMentalHealth determines that Mit is not facing a life threatening emergency and brings up a questionnaire that determines the incident type (anxiety, stress, etc.). Based on Mit's answer, the app diagnoses Mit with a panic attack and asks him if this is an accurate assessment. Once he confirms, the incident type, as well as the time, date, and location (if enabled) are recorded. AntMentalHealth switches to the "recommended activities" interfaces, which contains instructions for calming stretching and breathing routines. The app lets Mit go through a recommended routine step by step at his own pace. Once Mit completes the routine (by clicking through the last step), the app checks in with Mit again to assess his mood. Mit responds with an input indicating a mood better than what he previously indicated, and the app will remember the effectiveness of this particular routine he completed.

Assumptions:

- The user is mobile enough to perform any of the recommended activities
- The user will think to use the app in a "breakdown" type situation

Future Questions/Gaps:

- Should users be able to filter out activities beforehand if they know they would not enjoy them?

Scenario 4: Communicate with Other Users

By: Sammy Wong

Field Notes/Goal Models: Goal Model # 1

Scenario: Mit Yiksnebered has been feeling down recently due to midterms and his bike breaking down. He wants to meet other users like him and go through similar situations. He is searching through the app's public interface but doesn't find a forum talking about issues related to his situation, so he makes his own post that people can join and respond to. He scrolls through the message lifetime options and sets it to be indefinite so that people in the future can see his posts in case they are going through something similar. He gets notifications when people respond to his posts, who are automatically set to follow his post after they respond to him. After talking with several users through his post, he follows the advice of one user to talk to a mental health professional on the app that the user said helped them greatly. He finds the professional on the list of counselors/therapists currently online, and connects with him to start a one on one session. Mit opts not to use the voice or video functions, and talks with the professional over a text-based chat. Mit finds great comfort in listening to the advice and guidance provided by this professional.

Assumptions

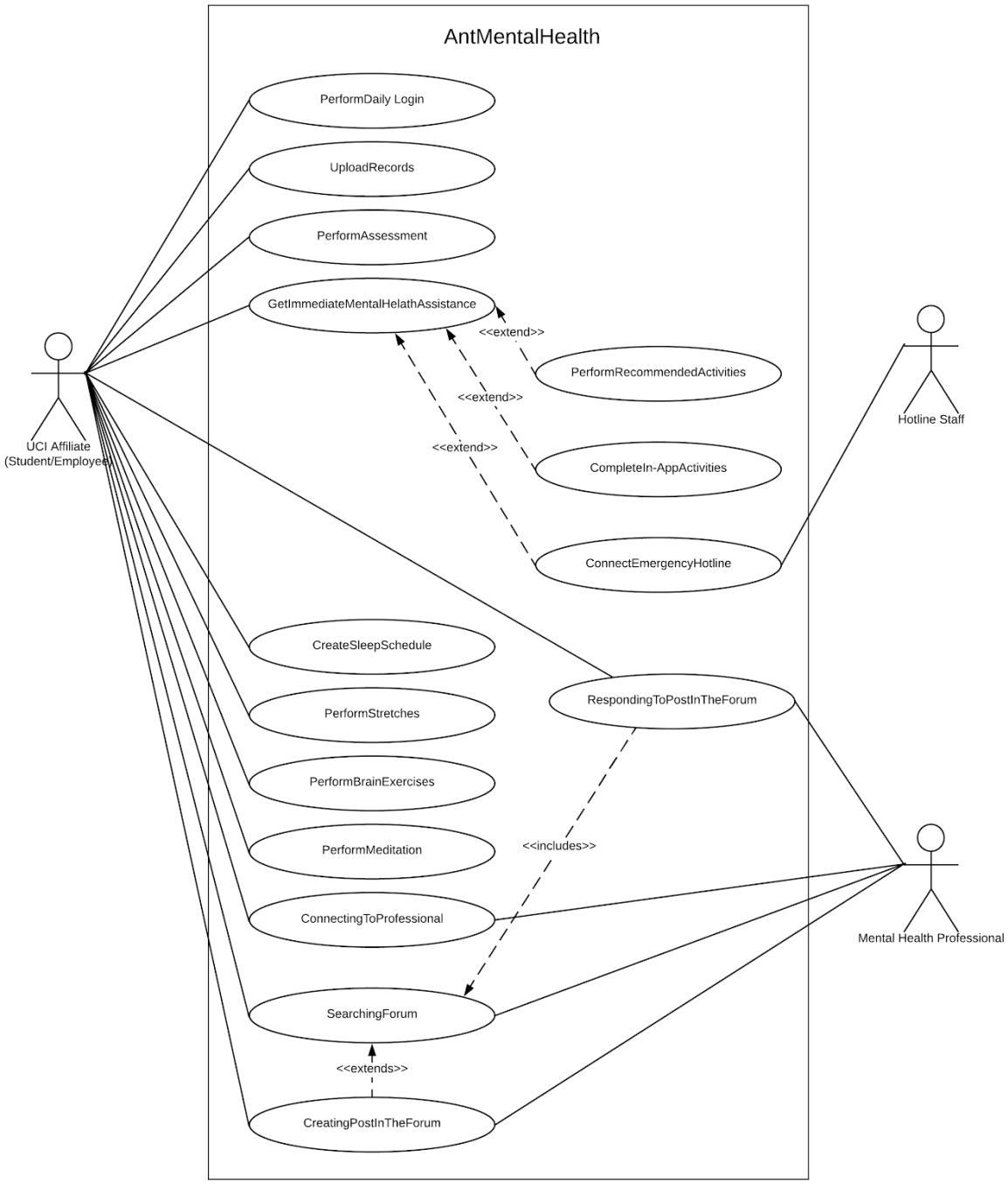
- The user knows how to operate a smartphone.

Future Questions/Gaps

- Can the user add some other users as favorites if they talk with each other a lot?

A.1.5 Use Case Model

A.1.5.1 Use Case Diagram



A.1.5.2 Use Case Descriptions

Use Case Name	**Connecting to Professional**
Author	Sammy Wong
Priority	High
Source	Goal Model #1; Elicitation Question #10
Short Description	This use case occurs when the user wants to talk to a mental health counselor or therapist.
Goal(s)	To receive professional advice on how to improve mental health.
Primary Actor	UCI Student/Employees
Secondary Actors	Mental Health Professional
Preconditions	Mental Health Professional has to be online. The user has to be a UCI affiliate. The user has to have an account with the app.
Success End Condition	The user meets and receives guidance from a professional.
Failed End Condition	The user cannot get professional advice.
Trigger	The user sends a connection request to an online professional.
Basic Flow	1. The user sends a request to an online professional 2. When the professional accepts the request user can choose text-based or live-speech communication 3. The user receives advice from mental health professional
Alternative Flows	1. The user sends a request to an online professional 2. The user decides to cancel request for online professional 3. The user reads forums for help or articles by an mental health professional
Exception Flows	1. No professional is currently online 2. The user can queue a request that will be accepted by

	the next available professional. 3. Return to basic flow step 2
Relationship to Other Use Cases	None
Supplementary Information	None
Open Issues	The professionals are busy.

Use Case Name	**Searching Forum**
Author	Sammy Wong
Priority	Medium
Source	Goal Model #1; Elicitation Question #8, 20, 22
Short Description	This use case occurs when the user wants to search for others who might be in a similar situation as them.
Goal(s)	To find other users who might be struggling with the same mental health problem.
Primary Actor	UCI Student/Employee
Secondary Actors	Mental Health Professional
Preconditions	The user has to be a UCI affiliate. The user has to have an account with the app.
Success End Condition	The user finds others that have a similar problem and tries different ways on how to cope with their situation.
Failed End Condition	The user cannot get professional advice.
Trigger	The user searches for others that might be going through the same thing.
Basic Flow	1. The user opens forum interface. 2. The user enters topics that they want to search by. 3. Posts relevant to the searched topics are displayed for the user.

Alternative Flows	None
Exception Flows	1. The user opens forum interface. 2. The user topics that they want to search by. 3. No posts relevant to the search topics exist. 4. “No posts found” is displayed to the user.
Relationship to Other Use Cases	Extended by Creating a Post Included in Responding to a Post
Supplementary Information	None
Open Issues	Will the user have the option to create a post that does not exist after searching?

Use Case Name	**Creating a Post in the Forum**
Author	Sammy Wong
Priority	Medium
Source	Goal Model #1; Elicitation Question #8, 20, 22
Short Description	This use case occurs when the user wants to create a post for discussion on their situation.
Goal(s)	To talk to others about what kind of situation they have.
Primary Actor	UCI Student/Employee
Secondary Actors	Mental Health Professional
Preconditions	The user has to be a UCI affiliate. The user has to have an account with the app.
Success End Condition	The post will be available to view for all the UCI affiliates.
Failed End Condition	The user cannot get professional advice.
Trigger	The user selects the “New Post” option.
Basic Flow	1. The user navigates to the forum interface. 2. The user selects the “New Post” option.

	3. The user types put any information necessary to their post. 4. The user creates the post for the forum to see.
Alternative Flows	None
Exception Flows	None
Relationship to Other Use Cases	Extends Searching Forum
Supplementary Information	None
Open Issues	None

Use Case Name	**Responding to a Post in the Forum**
Author	Sammy Wong
Priority	Medium
Source	Goal Model #1; Elicitation Question #8, 20, 22
Short Description	This use case occurs when the user is searching through the forum and sees a post that they are interested in and starts to respond.
Goal(s)	To give users the ability to share with other users that might be in a similar mental health situation.
Primary Actor	UCI Student/Employee
Secondary Actors	Mental Health Professional
Preconditions	The user has to be a UCI affiliate. The user has to have an account with the app.
Success End Condition	The user reads about another user that has gone through a similar situation and follows the steps for recovery.
Failed End Condition	The user finds the response of another user not helpful at all.
Trigger	The user finds a post that they are willing to share their experience with.
Basic Flow	1. The user navigates to the forum interface.

	2. The user finds a post that they can relate to. 3. The user selects the option to reply to the original post. 4. The user types their response in a text box. 5. The user submits their experience to the post for others to see.
Alternative Flows	None
Exception Flows	None
Relationship to Other Use Cases	Includes Searching Forum
Supplementary Information	None
Open Issues	None

Use Case Name	**Get Immediate Mental Health Assistance**
Author	Edgar Partida
Priority	High; Needed for 24/7 user support
Source	Goal Model #6; Elicitation Question #10
Short Description	This use case occurs when a users experiences some sort of mental health crisis and would like a fast response
Goal(s)	To ensure support for users 24/7
Primary Actor	UCI Students and Employees
Secondary Actors	None
Preconditions	The user must be a UCI affiliate The user must have an account with the app
Success End Condition	The user’s crisis is resolved and mood is improved
Failed End Condition	The user’s state of mind does not improve
Trigger	The user presses the “crisis” button found on the home page

Basic Flow	1. The user clicks on the “crisis” button. 2. App determines if this crisis is life threatening 3. App proceeds with non-emergency measures 4. User decompresses through prescribed activities 5. The user feels better
Alternative Flows	None
Exception Flows	None
Relationship to Other Use Cases	Extended by “Perform Recommended Activities” Extended by “Complete In-App Activities” Extended by “Connect to Emergency Hotline”
Supplementary Information	None
Open Issues	None

Use Case Name	**Perform Recommended Activities**
Author	Edgar Partida
Priority	Low
Source	Goal Model #6; Elicitation Question #1
Short Description	This use case deals with users following instructions for performing recommended activities in stressful situations, not performed through the app interface
Goal(s)	To help the user reduce stress, anxiety, etc.
Primary Actor	UCI Students and Employees
Secondary Actors	None
Preconditions	The user must be a UCI affiliate The user must have an account with the app
Success End Condition	Users have learned a new way to help improve their mood in times of mental distress
Failed End Condition	Users have not been able to improve their mood

Trigger	Users asked the app for an emergency response but the incident is determined to be non-life threatening
Basic Flow	1. The user is asked what kind of emotions they are feeling 2. The app determines what kind of incident they are experiencing 3. The user confirms this diagnosis 4. The user follows instructions for completing the recommended de-stressing activity
Alternative Flows	1. The user is asked what kind of emotions they are feeling 2. The app determines what kind of incident they are experiencing 3. The user rejects this diagnosis 4. The app asks for more follow up questions to tune up the diagnosis 5. The app issues a diagnosis that the user confirms 6. The user follows instructions for completing the recommended de-stressing activity
Exception Flows	None
Relationship to Other Use Cases	Extends “Get Immediate Mental Health Assistance”
Supplementary Information	None
Open Issues	None

Use Case Name	**Complete In-App Activity**
Author	Edgar Partida
Priority	Low
Source	Elicitation Question #39; Goal Model #6
Short Description	This use case is related to users interactions with in-app puzzles/games meant to help them relax
Goal(s)	To stimulate the user through puzzles/games in order to

	improve their mood
Primary Actor	UCI Student/Employee
Secondary Actors	None
Preconditions	The user must be a UCI affiliate The user must have an account with the app
Success End Condition	The user has derived satisfaction from the activity and feels happier
Failed End Condition	The activity could not be engaged with and users mood does not improve
Trigger	The user has triggered an immediate, non-emergency response
Basic Flow	1. The user presses the “crisis” button to get immediate support 2. The app determines that user is not in a life-threatening situation and asks questions about their mood 3. App diagnoses user mood and user confirms diagnosis 4. The app records incident time and date, and determines that stimulating activities would be best treatment 5. The app switches interfaces to let user start the activity 6. After activity completion, app asks users mood and records it
Alternative Flows	None
Exception Flows	None
Relationship to Other Use Cases	Extends “Get Immediate Mental Health Assistance”
Supplementary Information	None
Open Issues	None

Use Case Name	**Connect to Emergency Hotline**
Author	Edgar Partida
Priority	High
Source	Goal Model #6; Elicitation #10, Elicitation #11
Short Description	This use case describes how users can be put in touch with emergency services
Goal(s)	To promote user safety and de-escalate life-threatening situations
Primary Actor	UCI Students/Employees
Secondary Actors	Hotline Staff
Preconditions	User has pressed the “crisis” button The user must be a UCI affiliate The user must have an account with the app
Success End Condition	The user has been de-escalated
Failed End Condition	The user’s crisis was not resolved
Trigger	The app has determined the user is in a life threatening situation
Basic Flow	1. The app determines that user is in a life threatening situation 2. The app asks a few questions to determine what kind of crisis the user is facing 3. The app reroutes the user to an appropriate hotline 4. Any professionals the user is currently connected with will be notified
Alternative Flows	None
Exception Flows	None
Relationship to Other Use Cases	Extends “Get Immediate Mental Health Assistance”
Supplementary Information	None

Open Issues	None

Use Case Name	**Perform Daily Login**
Author	Kentrick Felix Kepawitono
Priority	High
Source	Elicitation Question #8
Short Description	This use case is initiated when the user opens the app for the first time that day
Goal(s)	To keep track of the users mood changes day by day through their login activity
Primary Actor	UCI Students and Employees
Secondary Actors	None
Preconditions	The user must be a UCI affiliate The user must have an account with the app
Success End Condition	The app has recorded the users mental health state for that day
Failed End Condition	The app has no record of users mood for that login day
Trigger	The user opens the app
Basic Flow	1. A pop up window appears on the screen. 2. The user selects the icon/option that best reflects their mental health state. 3. That input is read and recorded by the app for future reference in assessments 4. Daily check-in is successful
Alternative Flows	1. A pop up window appears on the screen. 2. The user selects the icon/option that best reflects their mental health state. 3. User indicates a poor mood 4. The app prescribes activities to cheer the user up 5. The app asks the user how they feel after the activity 6. The users inputs are read and recorded by the app for future reference in assessments

	7. Daily check-in is successful
Exception Flows	None
Relationship to Other Use Cases	None
Supplementary Information	None
Open Issues	None

Use Case Name	**Upload Records**
Author	Kentrick Felix Kepawitono
Priority	Low
Source	Elicitation Question #15
Short Description	This use case lets users upload files/pictures of files of mental health records
Goal(s)	For users to get more personalized assessments based on previous mental health history
Primary Actor	UCI Students and Employees
Secondary Actors	None
Preconditions	The user must be a UCI affiliate The user must have an account with the app The user must have mental health document(s) to upload
Success End Condition	The system successfully collects the user's records.
Failed End Condition	The records are not in the correct format.
Trigger	The user hit "upload" button
Basic Flow	1. The user opens the app 2. The user hits "upload" button on the UI 3. The user takes a picture of the mental health records

	4. The user makes sure that the picture being taken is clear 5. The user saves the picture
Alternative Flows	1. The user opens the app 2. The user hits “upload” button on the UI 3. The user navigates internal storage of the phone 4. The user picks the appropriate file 5. The user uploads the file to the app system
Exception Flows	None
Relationship to Other Use Cases	None
Supplementary Information	None
Open Issues	Records must remain private

Use Case Name	**Perform Assessments**
Author	Kentrick Felix Kepawitono
Priority	Low
Source	Elicitation Question #15
Short Description	The user will have a short questionnaire upon logging in to the app
Goal(s)	To keep track of the users mood changes day by day for the app to analyze
Primary Actor	UCI Students and Employees
Secondary Actors	Hotline Staff
Preconditions	The user must be a UCI affiliate The user must have an account with the app
Success End Condition	The app has recorded the users mental health state
Failed End Condition	The app has no record of users mood from the assessment

Trigger	The user login through the app
Basic Flow	1. The user opens the app 2. The user enters credentials to log in 3. A pop up message comes up giving short questionnaire 4. The user answers the questions
Alternative Flows	None
Exception Flows	1. The user opens the app 2. The user enters credentials to log in 3. A pop up message comes up giving short questionnaire 4. The user click “skip” button to skip the questionnaire
Relationship to Other Use Cases	None
Supplementary Information	The user is able to skip the questionnaire, although it is recommended. Questionnaire should only be asked once a day.
Open Issues	None

Use Case Name	**Create Sleep Schedule**
Author	Ryan La
Priority	Low
Source	Goal Model #3; Elicitation Question #42
Short Description	This use case deals with users wanting to make more consistent sleeping schedules
Goal(s)	The goal is to improve users sleeping habits (and therefore mental health)
Primary Actor	UCI Students and Employees
Secondary Actors	None
Preconditions	The user must be a UCI affiliate The user must have an account with the app

Success End Condition	The user has a concrete regimen for improving their sleeping habits
Failed End Condition	The user does not change their sleeping habits.
Trigger	When the user clicks on the “Sleep” tab in the app
Basic Flow	1. The user confirms time and date settings 2. The user answers questions about important times and tasks of the day 3. The user answers questions about current sleep patterns 4. The system tailors a sleep schedule for the user based on when they need to do parts of their daily routine
Alternative Flows	None
Exception Flows	1. The user’s time and date settings are not properly formatted. 2. A valid sleep schedule can not be created.
Relationship to Other Use Cases	None
Supplementary Information	None
Open Issues	None

Use Case Name	**Perform Stretches**
Author	Ryan La
Priority	Low
Source	Goal Model #3; Elicitation Question #43
Short Description	This use case deals with users engaging in recommended stretching exercises to relax their mental state
Goal(s)	To improve mood and clarity of thought
Primary Actor	UCI Students and Employees
Secondary Actors	None

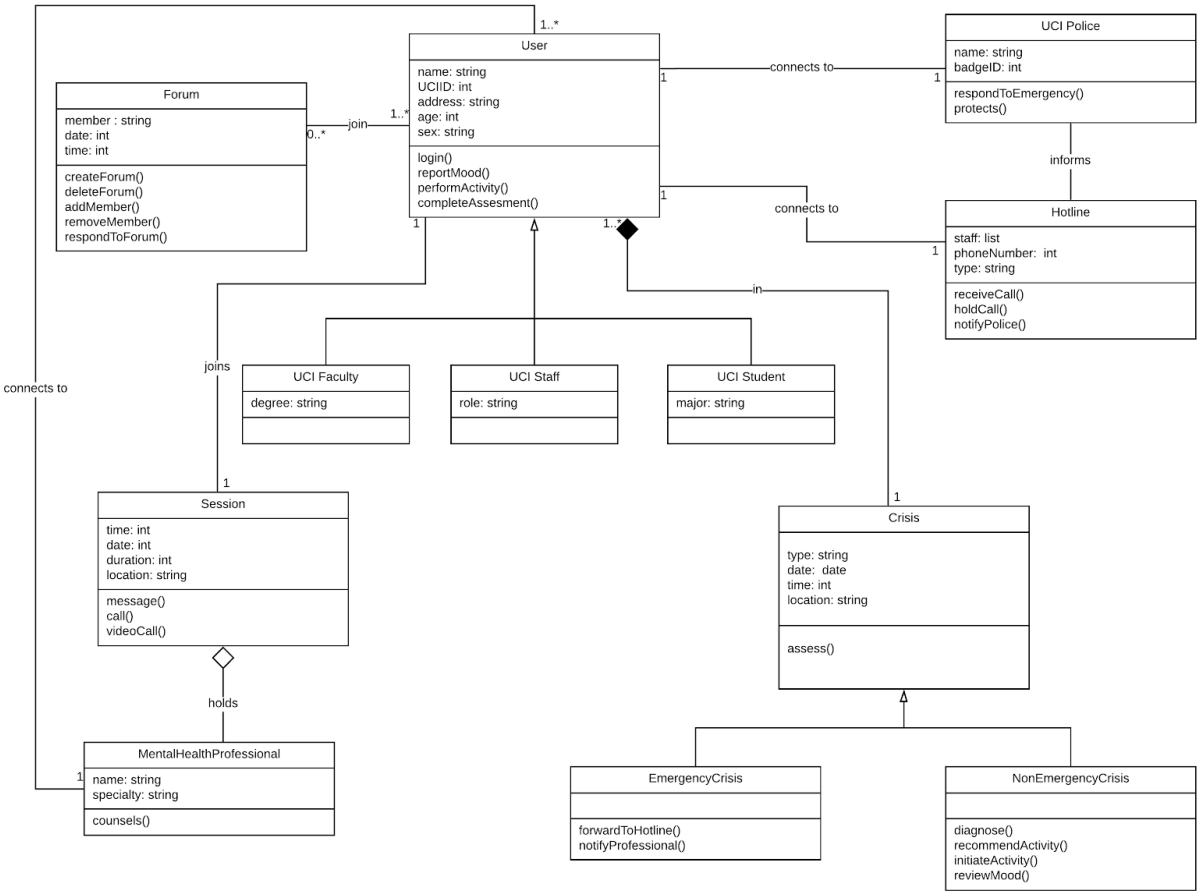
Preconditions	The user must be a UCI affiliate The user must have an account with the app
Success End Condition	The user is more mentally relaxed and less physically tense
Failed End Condition	The user's mood does not improve.
Trigger	When the user clicks on the "Stretches" tab in the app
Basic Flow	1. The user is guided to an instructional interface 2. The user is shown steps for performing stretches, with diagrams and text included 3. The user clicks through each step 4. After completing a stretch, the user has the option to perform another stretch.
Alternative Flows	None
Exception Flows	1. User skips all recommended, built in stretching guides 2. The app shows a list of links to resources that the users can access to learn more about stretches on their owns should they want to
Relationship to Other Use Cases	None
Supplementary Information	None
Open Issues	None

Use Case Name	**Perform Brain Exercises**
Author	Ryan La
Priority	Low
Source	Goal Model #3; Elicitation Question #43
Short Description	This use case deals with users engaging in recommended brain exercises to relax their mental state.
Goal(s)	To improve mood and clarity of thought

Primary Actor	UCI Students and Employees
Secondary Actors	None
Preconditions	The user must be a UCI affiliate The user must have an account with the app
Success End Condition	The user is more mentally relaxed and less physically tense
Failed End Condition	The user's mood does not improve
Trigger	When the user clicks on the "Brain Exercises" tab in the app
Basic Flow	1. The user is guided to brain exercise interface 2. The user gets the choice to play games, listen to musics, or draw a picture 3. The user chooses to play a game, such as crossword puzzle
Alternative Flows	1. The user is guided to brain exercise interface 2. The user gets the choice to play games, listen to musics, or draw a picture 3. The user chooses to listen calm musics 4. The system plays calm musics 1. The user is guided to brain exercise interface 2. The user gets the choice to play games, listen to musics, or draw a picture 3. The user chooses to draw a picture 4. The app provides canvas on the screen
Exception Flows	1. The user is guided to brain exercise interface 2. The user gets the choice to play games, listen to musics, or draw a picture 3. The user chooses nothing and exit the app
Relationship to Other Use Cases	None
Supplementary Information	None
Open Issues	None

Use Case Name	**Perform Meditation**
Author	Ryan La
Priority	Low
Source	Goal Model #3; Elicitation Question #43
Short Description	This use case deals with users engaging in recommended meditation exercises to relax their mental state.
Goal(s)	To improve mood and clarity of thought
Primary Actor	UCI Students and Employees
Secondary Actors	None
Preconditions	The user must be a UCI affiliate The user must have an account with the app
Success End Condition	The user is more mentally relaxed and less physically tense
Failed End Condition	The user's mood does not improve
Trigger	When the user clicks on the "Meditation" tab in the app
Basic Flow	1. The user is guided to an instructional interface 2. The user is shown steps for performing meditation, with diagrams and text included 3. The user follows the instruction 4. After completing a meditation, the user has the option to perform another meditation.
Alternative Flows	None
Exception Flows	1. User skips all recommended, built in meditation guides 2. The app shows a list of links to resources that the users can access to learn more about meditation on their owns should they want to
Relationship to Other Use Cases	None
Supplementary Information	None
Open Issues	None

A.1.6. Class Diagram



A.1.6.1 Class Objects

User

The User class represents the agents of the AnteaterMentalHealth app. There are roles that inherit from this parent class such as Faculty, Staff, and Student. Each agent/user will have their name, UCI ID, and phone number associated with their account for the system to use. The user will have access to the other classes such as joining a forum or a session as well as connecting to the hotline and UCI Police.

UCI Faculty

Derived from the parent class, User. Each faculty shares the same attributes and operations of the user but includes an additional attribute, degree, to the class.

UCI Staff

Derived from the parent class, User. Each staff member shares the same attributes and operations of the user but includes an additional attribute, role, to the class.

UCI Student
Derived from the parent class, User. Each student shares the same attributes and operations of the user but includes an additional attribute, major, to the class. The students are likely the primary actors using this system.

Forum
This class represents an area where users can create a forum and express their thoughts to other users. They are able to create or delete a post while adding or removing existing members. Other users have the ability to respond to the forum to express their thoughts and comment on the situation.

Hotline
The class allows users to connect to the hotline where they can be put in touch with emergency services. The hotline class promotes user safety and de-escalate life-threatening situations. Operations for this class include receiving calls from the user, holding calls when the service is at full capacity, and notifying UCI police if the crisis is life-threatening.

UCI Police
This class allows the police to respond to the emergency situation and protect the users. The hotline is in charge of informing the police and notifying them of the situation.

Session
The class allows users to communicate with mental health professionals. For the duration of the session, the user will be able to message, call, or video call the mental health professional for any needs that should be assisted.

Mental Health Professional
This class allows mental health professionals to display their specialty and provide counseling for users who are in need of their assistance.

Crisis
The Crisis class is a generalization of the two types of crises that the system will support.

EmergencyCrisis
Derived from the parent class, Crisis. During emergency situations, the system will be able to forward the user to a Hotline and simultaneously notify the appropriate professionals/authorities.

NonEmergencyCrisis

Derived from the parent class, Crisis. During non-emergency situations, the users will be able to diagnose themselves. After a diagnosis, the user will be recommended activities that they can choose to do.

A.2 Traceability

ID: FUNC1
TITLE: Guide Meditation
SOURCE: Elicitation questions: 1, 32, and 42; Class diagram: N/A , Use Case Diagram: “Perform Meditation;” Goal Models: 3
EVENTS/USE CASES: Perform Meditation [Use Case Descriptions]
SUPPORTING MATERIAL:A.1.5.2 Use Case Descriptions
HISTORY: Elicited from customers during 1/17 and 1/27 sessions

ID: FUNC2
TITLE: Perform Brain Exercise
SOURCE: Elicitation questions: 32 and 42; Class diagram: N/A , Use Case Diagram: “Perform Brain Exercises;” Goal Models: 3
EVENTS/USE CASES: Perform Brain Exercises [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.5.2 Use Case Descriptions, A.1.3 Goal Model
HISTORY: Elicited from customers during 1/17 and 1/27 sessions

ID: FUNC3
TITLE: Utilize Stretching
SOURCE: Elicitation questions: 1, 32, and 42; Class diagram: N/A , Use Case Diagram: “Perform Stretches;” Goal Models: 3
EVENTS/USE CASES: Perform Stretches [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Elicited from customers during 1/17 and 1/27 sessions

ID: FUNC4
TITLE: Start Game
SOURCE: Elicitation questions: 1, 24, 37, and 39; Class diagram: N/A , Use Case Diagram: “Complete In-App Activity;” Goal Models: 6
EVENTS/USE CASES: Complete In-App Activity [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Elicited from customers during 1/17 and 1/27 sessions

ID: FUNC5
TITLE: Search For Forums
SOURCE: Elicitation questions: 8, 20, and 22; Class diagram: N/A , Use Case Diagram: “Searching Forum” and “Connecting to Professional;” Goal Models: 1

EVENTS/USE CASES: Searching Forum [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Feature conceived during communication with customers during 2/3 and 2/6 sessions

ID: FUNC6
TITLE: Create Post
SOURCE: Elicitation questions: 20 and 22; Class diagram: N/A , Use Case Diagram: “Responding to a Post in the Forum;” Goal Models: 1
EVENTS/USE CASES: Responding to a Post in the Forum [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Feature conceived during communication with customers during 2/3 and 2/6 sessions

ID: FUNC7
TITLE: Reply to Forums
SOURCE: Elicitation questions: N/A; Class diagram: N/A , Use Case Diagram: “Reposting to a Post in the Forum;” Goal Models: 1
EVENTS/USE CASES: Responding to a Post in the Forum [Use Case Diagram]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Feature conceived during communication with customers during 2/3 and 2/6 sessions

ID: FUNC8
TITLE: Appointment Scheduling
SOURCE: Elicitation questions: 23; Class diagram: N/A , Use Case Diagram: N/A; Goal Models: 3
EVENTS/USE CASES: N/A
SUPPORTING MATERIAL: NA
HISTORY: Elicited from customers during 1/17 and 1/27 sessions

ID: FUNC9
TITLE: Video Call with Professional
SOURCE: Elicitation questions: 10; Class diagram: N/A , Use Case Diagram: “Connecting to Professional;” Goal Models: 1
EVENTS/USE CASES: Connecting to Professional [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Elicited from customers during 1/17 and 1/27 sessions

ID: FUNC10
TITLE: Voice Call with Professional
SOURCE: Elicitation questions: 10; Class diagram: N/A , Use Case Diagram: “Connecting to Professional;” Goal Models: 1

EVENTS/USE CASES: Connecting to Professional [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Elicited from customers during 1/17 and 1/27 sessions

ID: FUNC11
TITLE: Text Chat with Professional
SOURCE: Elicitation questions: 10; Class diagram: N/A , Use Case Diagram: “Connecting to Professional;” Goal Models: 1
EVENTS/USE CASES: Connecting to Professional [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Elicited from customers during 1/17 and 1/27 sessions

ID: FUNC12
TITLE: Determine Crisis Type
SOURCE: Elicitation questions: 38; Class diagram: N/A , Use Case Diagram: “Get Immediate Mental Health Assistance;” Goal Models: 6
EVENTS/USE CASES: Get Immediate Mental Health Assistance [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Feature conceived during communication with customers during 2/3 and 2/6 sessions

ID: FUNC13
TITLE: Record Crisis
SOURCE: Elicitation questions: 38; Class diagram: N/A , Use Case Diagram: N/A; Goal Models: N/A
EVENTS/USE CASES: N/A
SUPPORTING MATERIAL: N/A
HISTORY: Feature conceived during communication with customers during 2/3 and 2/6 sessions

ID: FUNC14
TITLE: Crisis Response
SOURCE: Elicitation questions: 11 and 22; Class diagram: N/A , Use Case Diagram: “Get Immediate Mental Health Assistance;” Goal Models: 6
EVENTS/USE CASES: Get Immediate Mental Health Assistance [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Feature conceived during 1/17 and 1/24 elicitation sessions

ID: FUNC15
TITLE: Hotline Directory
SOURCE: Elicitation questions: 10, 11, 22, 27, 43, and 44; Class diagram: N/A , Use Case Diagram: “Connect to Emergency Hotline;” Goal Models: 6
EVENTS/USE CASES: Connect to Emergency Hotline [Use Case Descriptions]

SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Feature partly conceived during communication with customers during 2/3 and 2/6 sessions and during 1/17 and 1/24 elicitation sessions

ID: FUNC16
TITLE: Connect to Hotline
SOURCE: Elicitation questions: 10, 11, 22, 27, 43, and 44; Class diagram: N/A , Use Case Diagram: “Connect to Emergency Hotline;” Goal Models: 6
EVENTS/USE CASES: Connect to Emergency Hotline [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Feature partly conceived during communication with customers during 2/3 and 2/6 sessions and during 1/17 and 1/24 elicitation sessions

ID: FUNC17
TITLE: Notify professionals
SOURCE: Elicitation questions: 10, 11, 22, 27, 43, and 44; Class diagram: N/A , Use Case Diagram: “Connect to Emergency Hotline;” Goal Models: 6
EVENTS/USE CASES: Connect to Emergency Hotline [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Feature partly conceived during communication with customers during 2/3 and 2/6 sessions and during 1/17 and 1/24 elicitation sessions

ID: FUNC18
TITLE: Upload Records
SOURCE: Elicitation questions: 15; Class diagram: N/A , Use Case Diagram: “Upload Records;” Goal Models: N/A
EVENTS/USE CASES: Upload Records [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.5.2 Use Case Descriptions
HISTORY: Acquired during 1/17 and 1/24 elicitation sessions

ID: FUNC19
TITLE: Issue Bi-monthly Mental Health Assessment
SOURCE: Elicitation questions: 55; Class diagram: N/A , Use Case Diagram: “Get Immediate Mental Health Assistance;” Goal Models: 3
EVENTS/USE CASES: Get Immediate Mental Health Assistance [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Acquired during 2/21 and 2/22 communication sessions with the other group

ID: FUNC20
TITLE: Daily Login Mood Check
SOURCE: Elicitation questions: 5; Class diagram: N/A , Use Case Diagram: “Perform Daily Login;” Goal Models: 8
EVENTS/USE CASES: Perform Daily Login [Use Case Descriptions]

SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Acquired during 1/17 and 1/24 elicitation sessions

ID: FUNC21
TITLE: Personalize Meal Plan
SOURCE: Elicitation questions: 3; Class diagram: N/A , Use Case Diagram: N/A, Goal Models: N/A
EVENTS/USE CASES: N/A
SUPPORTING MATERIAL: N/A
HISTORY: Acquired during 1/17 and 1/24 elicitation sessions

ID: FUNC22
TITLE: Personalize Sleep Schedule
SOURCE: Elicitation questions: 42; Class diagram: N/A , Use Case Diagram: “Create Sleep Schedule;” Goal Models: 3
EVENTS/USE CASES: Create Sleep Schedule [Use Case Descriptions]
SUPPORTING MATERIAL: A.1.3 Goal Model, A.1.5.2 Use Case Descriptions
HISTORY: Acquired during 2/15 and 2/17 elicitation sessions

ID: FUNC23
TITLE: Maintain a Calendar of Important Events/Deadlines
SOURCE: Elicitation questions: 56; Class diagram: N/A , Use Case Diagram: N/A Goal Models: N/A
EVENTS/USE CASES: N/A
SUPPORTING MATERIAL: N/A
HISTORY: Acquired during 2/21 and 2/22 communication sessions with the other group

ID: FUNC24
TITLE: Send Reminders for Marked Events
SOURCE: Elicitation questions: 57; Class diagram: N/A , Use Case Diagram: N/A Goal Models: N/A
EVENTS/USE CASES: N/A
SUPPORTING MATERIAL: N/A
HISTORY: Acquired during 2/21 and 2/22 communication sessions with the other group

ID: FUNC25
TITLE: Recommend Personalized Schedules for Completing Tasks
SOURCE: Elicitation questions: 58; Class diagram: N/A , Use Case Diagram: N/A Goal Models: N/A
EVENTS/USE CASES: N/A
SUPPORTING MATERIAL: N/A
HISTORY:Acquired during 2/21 and 2/22 communication sessions with the other group

A.3 Meeting Minutes and Field Notes

Field Notes for Homework 6 (February 25 - March 6)

47. How do you want the system to scale?
    Answers
    a. The system should be able to change in size and adapt if many users are on at the same time.
48. How fast do you want the screen to refresh?
    Answers
    a. The system shall have a screen refresh time within 5 seconds
49. How do you want the information of the users to be stored
    Answers
    a. The users' information should be managed by the MySQL database
50. What language do you want to use to develop the app in Android, iOS, and web?
    Answers
    a. The Android app should be developed with Java
    b. The iOS app should be developed with Swift
    c. The web should be developed with HTML5, CSS3, Jquery, and Bootstrap
51. What web browsers should be compatible with the system?
    Answers
    a. Any well-known web browsers, such as Chrome and Firefox
52. How low should the failure rate for the system be?
    Answers
    a. The system shall operate with a failure rate of < 5%.
53. What happens when the current system is down?
    Answers
    a. The system should easily be able to migrate from one system to the next when the current system is down.
54. How fast should the system respond to non-emergency and emergency crisis?
    Answers
    a. The system shall have a response time within 24 hours for non-emergency situations.
    b. The system shall have a response time within 5 minutes emergency situations.
55. What is the interval to do a mental health assessment
    Answers
    a. The system shall issue a mental health assessment for the user on a bi-monthly interval.
56. Should the system mark important events on a calendar?
    Answers
    a. The system shall maintain a calendar of important events and deadlines for the user
57. Should reminders be sent to users for specially marked events?
    Answers

a. The system shall send reminders to the user for specially marked events

Team Meeting Minutes

Team ID: SKER SKER	**Date: March 5, 2020**

Team Members (Name)	**Role**
1. Ryan La	Participant
2. Sammy Wong	Recorder
3. Edgar Partida	Facilitator
4. Kentrick Kepawitono	Participant

Agenda for this meeting, List of agenda items	**Outcomes**
1. Meet up for the first time and assign roles to the Homework 6	We each were assigned specific roles to complete for the assignment
2. Complete Section one: Introduction of the assignment	The introduction was completed.
3. Created the user interface	Got familiar with the software and started designing
4.	

Problems encountered	**Resolution**

1. Teammate would not meet up early for the assignment so we had to start a bit later.	We utilized techniques that would help speed up the process.
2. Time issue	We completed section one and prepped to complete section two the next day.
3.	
4.	

Plans for next meeting: Activity	**Responsibility**
1. Continue to work on Homework 6	Organize and plan group meetings to complete the assignment.
2. Start section two of Homework 6	Spend all day on section two and section three
3.	
4.	

Team ID: SKER SKER **Date: March 6, 2020**

Team Members (Name)	Role
1. Ryan La	Participant
2. Sammy Wong	Recorder
3. Edgar Partida	Facilitator
4. Kentrick Kepawitono	Participant

Agenda for this meeting, List of agenda items	Outcomes
1. Start on section two and section three of the assignment	Completed section two but still a work on progress for section three.
2.	
3.	
4.	

Problems encountered	Resolution
1. The team misunderstood the meeting time.	We had to schedule a different time to meet up
2. The team had trouble developing functional requirements for the assignment	We had to look back at our previous homework and our case study to form the right functional requirements
3.	

4.

Plans for next meeting: Activity	Responsibility
1. Continue to work on Homework 6	Organize and plan group meetings to complete the assignment
2.	
3.	
4.	

Team ID: SKER SKER **Date: March 8, 2020**

Team Members (Name)	**Role**
1. Ryan La	Participant
2. Sammy Wong	Recorder
3. Edgar Partida	Facilitator
4. Kentrick Kepawitono	Participant

Agenda for this meeting, List of agenda items	**Outcomes**
1. Complete Logical Data Model	Section was completed
2. Complete Traceability Section	Section was completed
3.	
4.	
5.	

Problems encountered	**Resolution**
1. We were confused because the functional requirements and traceability were similar	Asked on piazza and got our questions answered
2.	
3.	
4.	

Plans for next meeting: Activity	**Responsibility**
1. Start Homework 7	Meetup and assign roles for the new homework
2. Collect questions and have them ready for our sponsors	We each created questions to collect from our sponsors.
3.	
4.	

A.4 Missing Information

- We need to obtain more information on how the forums will be managed.
- We are unsure who will be in charge of the forums. The people who are in charge of the forums serve as the administrators that are allowed to delete a post if it is inappropriate.
- We are unsure on who will be moderating the posts.
- Will the posts be editable or permanent once created?
- What are the means of communication between hotline agents and UCI Police?
- Are there any limitations on the number of sessions a user can reserve?