

Badger Mental Health

Requirements and Specification Document

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<2021-10-01>, version 1.0

Project Abstract (Shruti)

People all around the world suffer from depression, behavioral disorders, and mental illnesses. Many can't afford traditional therapy, worry about the stigma of in-office treatment, or don't have access to treatment for various reasons. In February 2016, the University of Wisconsin– Madison participated in the Healthy Minds Study to examine student mental health and found that 21 percent of students positively for depression overall, 16 percent for anxiety disorders and 9 percent even experienced suicide ideation. A large number of these students received counseling or support for mental or emotional help from informal sources like family members, friends, significant others, support groups. A self-guided mental health application can be a very helpful resource in such cases.

Badger Mental Health app aims to not only provide Cognitive Behavioral Therapy techniques to help students overcome their mental health challenges, but will also help track study and sleep habits and help to foster a community of people facing similar mental health obstacles, share their stories, so that they can feel emotionally supported and less lonely on this journey to recovery.

Document Revision History

none

Customer

The target users for Badger Mental Health are UW-Madison, specifically those who are struggling with mental health.

Dr. Ritu Mudgal, a clinical psychologist from India, is going to be our main client. She will be guiding us through the medical assessment feature of the app. She is suggesting we take a unique route for our assessments rather than the more CBT based line of questioning and solutions. Her vision at its core is creating a set of short quizzes to assess the emotional state of the user and understand their thought patterns. This will allow us to identify issues like self-esteem, abandonment, relationship, self-acceptance, dealing with grief etc. We will then use these results to recommend to users various behavioural techniques like journaling, developing certain habits to overcome struggles, journaling etc. in the form of short modules/programs.

Competitive Landscape

Although there are many mental health self-help apps available on the Apple App Store and the Google Play Store, the competition does not focus on student mental health or community. Generally speaking, the self-help apps reviewed below focus on habit-tracking and generalized cognitive-behavioral therapy techniques. Badger Mental Health will set itself apart by including CBT techniques while also focusing on student needs and the university community. We will also include a Community Message board, a feature that is rare, on our app which is a way students will be able to find emotional support and inspiration through engaging with other students who are in the same boat as them. Furthermore, the app will be completely free for UW-Madison students unlike most of our competitor apps.

Below is a list of five popular and relevant mobile applications that offer similar services to Badger Mental Health and their primary functions.

SilverCloud (for UW-Madison)

Apple App Store (3.3 / 5): <https://apps.apple.com/us/app/silvercloud-toolkit/id975040403>

Google Play Store (3.6 / 5): <https://play.google.com/store/apps/details?id=com.silvercloudhealth.android.app>

Cost: Free to UW-Madison Students

Primary Functions: mindfulness meditations, breathing/relaxation exercises, review pages, anger management strategies; integrates with HealthKit

App Goal: address user wellbeing, life balance, time management, communication skills, goal setting, relationship management, anger management, stress management, relaxation and sleep management

Reflectly - Journal and AI Diary

Apple App Store (4.6 / 5): <https://apps.apple.com/us/app/reflectly-journal-ai-diary/id1241229134>

Google Play Store (4.3 / 5): <https://play.google.com/store/apps/details?id=com.reflectlyApp>

Cost: \$9.99 monthly or \$59.99 yearly

Primary Functions: AI-powered responsive journaling, motivational quotes and challenges, evening daily insights, mood graphs and correlations, insights and reminders,

Premium Features: unlimited stories in personal planner, new questions and reminders every day, advanced statistics, actionable insights

App Goal: improve mood, productivity, and mental health using psychological cognitive-behavioral therapy methods

Bloom: CBT Therapy & Self Care

Apple App Store (4.8 / 5): <https://apps.apple.com/us/app/bloom-cbt-therapy-self-care/id1475128511>

Google Play Store: N/A

Cost: \$14.49 monthly, \$59.99 yearly, or \$399.99 lifetime

Primary Functions: digital cognitive-behavioral therapy, guided journaling, emotional analysis, guided video classes, 100+ exercises based on CBT

Premium Features: daily video therapy sessions, CBT exercises, AI-driven emotional analysis, 300+ therapy sessions and CBT exercises

App Goal: train your mind with personalized daily mental health coaching sessions to manage anxiety and stress, improve sleep, build better habits, foster stronger relationships, and improve quality of life

Fabulous - Daily Routine Planner

Apple App Store (4.6 / 5): <https://apps.apple.com/us/app/fabulous-daily-routine-planner/id1203637303>

Android App Store (4.6 / 5): <https://play.google.com/store/apps/details?id=co.thefabulous.app>

Cost: \$35.99 yearly

Primary Functions: health advice for healthy living, smart habit tracking, diet and weight loss program, personal 1 on 1 coach, goal tracking, sleep habit tracking, guides for yoga, stretching, and workouts

App Goal: improve focus and concentration, improve sleep, help with managing stress, calm anxieties, increase happiness, foster healthier eating and exercise habits, increase motivation

MindDoc: Your Companion

Apple App Store (4.7 / 5): <https://apps.apple.com/us/app/minddoc-your-companion/id1052216403>

Android App Store (4.4 / 5): <https://play.google.com/store/apps/details?id=de.moodpath.android>

Cost: \$47.99 yearly

Primary Functions: log mental health and mood in real-time, get insights and summaries about behavior, symptoms, and general emotional well-being, take psychological courses

Premium Features: access to all available insights, access psychological courses and mindfulness exercises, statistics for mood, thoughts, and emotions, add new emotions and experiences to personalize entries

App Goal: provide a platform for mental health self-help for people suffering from depression, anxiety, insomnia, and eating disorders

User Requirements

First Time Opening App (after initial download or re-download)

- Complete mental health / goals user assessment *OR*
 - Ask assessment questions to personalize user experience:
 - Asks user questions related to mental health
 - Asks user about study habits, and gauges goals for using the app
 - Asks user about app preferences like notifications and reminders
 - Display the results of assessment → suggest programs they could follow
 - Create an account
 - Sign In Options: Google, NetID, Email/Password
- Sign-in as a returning user: Google, NetID, Email/Password

Opening App

- Home Screen - navigate to most functions in the app
 - User Profile & App Settings (see below)
 - Coping Cards
 - Community Messages
 - Study Habits
 - Sleep Habits
 - Guided Meditation
 - CBT Strategies
 - Set Goals/Targets
 - Referral to services if scored high on a test (with disclaimer).
- Navigation Bar (bottom)
 - Access user profile & account settings (see below)
 - Access community messages
 - Access home screen
 - Access coping cards
 - Access analytics

User Profile & App Settings

- Logout
- Edit account (email address, password) if not signed in with SSO
- Delete account, a grace period before it's actually deleted
- Manage notification preferences
- Update profile picture
- See current app version

Community Message Board

- See public messages posted by the community

- Interact with other users by replying to message threads
- Like message
- Save message
- Sorted by most recent
- Messages are anonymized (random usernames / profile photos generated)
- Moderators:
 - Delete posts
 - Blacklist users from posting new messages
 - Blacklist users from replying to messages
 - Make other users a moderator

Coping Cards

- Display scrolling list of coping cards
- Choose specific topics to view cards for
- User can hide or delete unhelpful cards
- Add button to allow user to add new coping mechanisms

Analytics

- Statistics / graphs:
 - Study time per day/week/month/etc
 - Sleep hours per day/week/month/etc
 - Meditation time per day/week/month/etc
 - Goal completion over time

Study Habits

- Add courses for semester
- For each course, insert number of intended hours of study
- Timer functionality - allows student to log in and start the timer at the beginning of study session
- For each course, at the end of each week, functionality to manually add number of hours spent studying
- Add this data to statistics

Sleep Habits

- Ask user to enter intended number of hours of sleep for each day of the week
- Ask user to enter intended time to go to bed
- Ask daily what time they went to bed and woke up
- Add to tracked data to statistics

Set Goals/Target

- Allow users to set sleep goals → Hours of sleep each night
- Allow users to set study goals → Study hours intended to complete
- Allow users to set meditation goals → Number of Meditation sessions
- Allow users to set program module goals → how much of the module they completed
- Use data for statistics

Guided Meditation

- An animated easy to follow breathing exercise for 3-5 minutes

CBT Strategies

- Display program that user selected to follow

- Display other suggested programs based on assessment results

Use Cases

Name	Initial Mental Health / Goals Assessment (must-have)
Actors	New Users
Triggers	Open app and click start assessment button
Events	Displays results of assessment, with a continue button before taking them to a sign up screen.
Exit Condition	Close assessment, exit the app
Post-Conditions	Complete assessment and user is taken to results page with Sign up button
Acceptance Test	User is able to click on Sign up button and be taken to sign up page

Name	Sign In (must-have)
Actors	New and Existing Users
Triggers	User selects “I am an existing user” or signs up after initial assessment
Events	User selects preference: Google, NetID, or Email/Password User enters prompted information (Google credentials, NetID credentials, or email/password) User prompted to re-enter if they provide invalid credentials
Exit Condition	User clicks Sign In button
Post-Conditions	User is taken to home screen
Acceptance Test	User is able to navigate to all tabs in the home view User is able to access modules from programs

Name	Sign Out (must-have)
Actors	Existing Users
Triggers	User goes to the sign out button in menu
Events	Switches user view from ‘authenticated’ to ‘not authenticated’
Exit Condition	Account successfully disconnected
Post-Conditions	The app is returned to the sign in screen/survey screen.
Acceptance Test	See if the app signs out, and the user can no longer access information unless they log in again.

Name	Edit Account Details
Actors	Existing Users
Triggers	Select “edit account details” within user profile
Events	Edit Profile Picture Edit contact details Edit Notification preferences
Exit Condition	User clicks on “Update Preferences”
Post-Conditions	User is taken back to the User Profile
Acceptance Test	User can see updated details under profile details User can sign in with updated password User can ensure they are not notified for unwanted things

Name	Delete Account (useful)
Actors	Existing Users
Triggers	Click “Delete Account” within user profile
Events	User informed account will lose all data within a few weeks if they do not log in again. User prompted to confirm account deletion
Exit Condition	User confirms account deletion by typing “DELETE” into text box User also clicks “Delete” button
Post-Conditions	User is signed out of application
Acceptance Test	Ensure the user is signed out, the user can no longer access user information, after a few weeks. user data is gone when signing in user must complete initial assessment again

Name	Change Notification Preferences (useful)
Actors	Existing users
Triggers	Select “update notification preferences” within user profile
Events	A list of categories with “notify” or “do not notify” checkboxes. Categories include: New post in Community Board, Time to finish weekly meditation, study, sleep goal etc.
Exit Condition	User clicks on save preferences when done.
Post-Conditions	New preferences will be updated on the server User will be taken to previous/home screen
Acceptance Test	User can test if they are notified for specified preferences or not and make further/no changes accordingly

Name	Update Profile Picture
Actors	Existing Users
Triggers	Select “update profile photo” from user profile
Events	User prompted to take photo or upload photo User takes photo or uploads photo from camera roll User crops photo as desired into square User confirms change
Exit Condition	User selects cancel or clicks “save”
Post-Conditions	User is taken to the profile page
Acceptance Test	User sees updating profile picture on profile page

Name	View Community Message Board
Actors	Existing users
Triggers	Clicks on Community tab from Navigation bar at the bottom or from the home screen
Events	Sees Most recent messages from community members
Exit Condition	Uses back button
Post-Conditions	Taken to home page
Acceptance Test	Is able to navigate to other tabs

Name	Post Community Message
Actors	Existing Users
Triggers	Click on “+” button to create new post
Events	Textbox appears that user can type in Word limit around 140 characters
Exit Condition	User clicks on “post”
Post-Conditions	Message appears at top of Community message board
Acceptance Test	Other users are able to interact with post

Name	Report Community Message
Actors	Existing Users
Triggers	Put a flag on a comment

	Will appear in moderators' private messages
Events	Moderator gets a private message of a report Then the user gets a message of a thank you for reporting
Exit Condition	The user clicks "ok" on the thank you button
Post-Conditions	The user blocks the user that they reported, if a block function is implemented
Acceptance Test	Create a user, another user and a moderator, and see if the moderator gets the report message for another user's report.

Name	Like Community Message
Actors	Existing Users
Triggers	Put a like on a comment
Events	The server stores a like counter for each message. Number of likes increase and number appears beside like button
Exit Condition	User clicks the "like" button
Post-Conditions	The like gets registered on the server. Number of likes increases by 1
Acceptance Test	User see increase in number of likes on the post

Name	Reply to Community Message
Actors	Existing Users
Triggers	There's a reply button below every message
Events	User is taken to sub-screen with other comments below post User can type in comment in a textbox below
Exit Condition	User clicks on "add"/ "send" button at the end of textbox
Post-Conditions	Comment is added to server for that post
Acceptance Test	Comment appears amongst other comments on the subscreen

Name	Delete Own Community Message
Actors	Existing Users
Triggers	There's a delete message button above all of your own posts.
Events	User Clicks on delete button User sees a prompt asking "are you sure you want to delete this post?"

Exit Condition	User selects yes or no
Post-Conditions	Message is deleted from the server
Acceptance Test	User doesn't see the message on the community message board anymore

Name	Delete Other User's Community Message
Actors	Moderators
Triggers	There's a delete message button above all posts.
Events	Click on delete button Moderator sees a prompt asking "are you sure you want to delete this post?"
Exit Condition	Moderator selects yes or no
Post-Conditions	Message gets removed.
Acceptance Test	See if the message gets removed by logging onto a user.

Name	Blacklist User from Posting Community Message
Actors	Moderators
Triggers	There's a suspend user option for each non suspended user. There can also be an unsuspend button for each unsuspended user.
Events	The server gets a suspended tag for the user, and the user can no longer post. There is an option for the moderator to delete all of the user's posts, as well.
Exit Condition	If the suspension is unsuccessful, an error message gets thrown at the moderator. Otherwise, the moderator is notified that it's successful.
Post-Conditions	The user gets suspended, and the moderator is notified that it's successful.
Acceptance Test	Log into the user to see if they are suspended.

Name	Choose Coping Card Topic
Actors	Existing users
Triggers	When the user clicks on the button for coping card topic
Events	They are taken to a menu of topics, in which they can select a topic
Exit Condition	User selects respective topic
Post-Conditions	The user clicks on a topic in the menu The user is brought to a list of coping cards for their respective topic
Acceptance Test	After adding new coping cards and sorting them into topics, make sure the user only sees the corresponding coping cards for their topic.

Name	Delete Coping Card
Actors	Existing users
Triggers	When they click on the button of deleting the coping card
Events	The server wipes the card from user's profile
Exit Condition	After the server is done deleting
Post-Conditions	The user is taken back to the coping cards screen
Acceptance Test	Test to see if coping card is deleted

Name	Create New Coping Card
Actors	Existing users
Triggers	When they click on the button for creating a new one
Events	The user is directed to a menu to create a new one, then after they click continue from that menu, the card is created and saved on the server.
Exit Condition	Coping cards aren't created. Error message on screen and prompt to enter content to the new card again. Or the user uses the back button to go back to the main coping card page.
Post-Conditions	A new coping card is created. User taken back to screen with all coping cards User can see new coping card
Acceptance Test	See if a coping card is created after doing the above.

Name	View Specific Analytics Graph
Actors	Existing Users
Triggers	User navigates to analytics page from home page or nav bar
Events	User selects which goal they want to view User selects time frame Graph displays requested data
Exit Condition	User navigates to any other page
Post-Conditions	User sees the page they navigated to
Acceptance Test	Test that data matches the requested data

Name	Add Semester Course
Actors	All Users
Triggers	User selects "add new course" from study habits page

Events	User enters course name User enters study goal time per week
Exit Condition	User selects “add course”
Post-Conditions	Data is sent to Firestore
Acceptance Test	User can see new course added to UI

Name	Study Timer (useful)
Actors	All Users
Triggers	From study habit’s screen, user selects “start study timer”
Events	User selects which class the timer is for User clicks “start” User is shown timer as it’s running
Exit Condition	User clicks “stop timer”
Post-Conditions	User is shown popup with total study time logged and progress toward goal User brought back to the study habits screen
Acceptance Test	Confirm that study time was updated for the course

Name	Manually Enter Study Time for Course (must-have)
Actors	All Users
Triggers	User selects “enter time” on study habits screen
Events	User prompted to enter study duration User selects which class the time is for
Exit Condition	User selects ‘submit’
Post-Conditions	Study time updated for course on the server
Acceptance Test	Confirm that the study time was updated for the course All courses have correct study times listed next to them

Name	Enter Bed/Wake Time
Actors	All Users
Triggers	User opens the app for the first time of the day
Events	User prompted to enter the time they went to sleep the night prior User prompted to enter time they woke up today
Exit Condition	User clicks “save”
Post-Conditions	User shown confirmation window, dismissed by clicking “ok”

	User brought to app home screen
Acceptance Test	Confirm sleep data was updated

Name	Set Sleep/Study/Meditation Goal
Actors	Existing Users
Triggers	User fills out a goal form on a relevant screen
Events	User clicks the submit button on a set goal form in a relevant form
Exit Condition	User clicks submit button
Post-Conditions	Data is sent to firestore UI is updated with new goal
Acceptance Test	User can see the new goal on their screen

Name	Complete Guided Meditation Session
Actors	Existing Users
Triggers	User clicks on the guided meditation in the navigation bar or the home screen
Events	A completion message is displayed User is prompted to navigate to home screen
Exit Condition	User navigates back to the home screen via navigation bar or back button User presses done button
Post-Conditions	User navigates to a different screen
Acceptance Test	User sees a completion message

User Interface Requirements

The user interface should be split into screens in such a way that each screen completely encapsulates one of the major features as described above. There should be a centralized home screen that contains only a logo and navigation to other features. This will allow us to compartmentalize the development of different features and easily integrate more into the ui as we go. The home screen should follow a limited color palette that is based on color adjacency.

Each screen should follow a specific color palette that is determined by the feature. Each screen should look visually distinct by color.

Navigation should be as simple as possible, a user should not have to travel through more than two screens to get to a feature they want. We should therefore keep the number of screens to a minimum.

Login or new user screen

Start Assessment
Button

Or Login:

Username

Password

Assessment Screen

Specific questions are tbd

Finish Assessment Button

New User Screen

Congrats on finishing the
Assessment!

Please enter a username and
password so we can remember
you!

User Name

Password

Register
Button

Assessment Results

Suggested Features based
on answers (i.e. try the Study
Tracker!)

Brief Tutorial

You can navigate to your
favorite features like this!

Screenshot of home screen

Next button

Home Screen

Banner with Logo and Welcome
message

Card for each major feature
with a small preview of their
content. (for example, the
coping cards would have a
small preview of the user's
cards)

Major Feature 2

Major Feature 3

Navigation bar (should have buttons
to navigate to each major feature)

Profile Screen

Your User Name: [username]

Change Password Button

App Settings: light mode / dark mode buttons

Some Stats for the user (you've spent x hours studying with the study tracker, you've made y coping cards!)

Navigation bar (should have buttons to navigate to each major feature)

Coping Cards Screen

Coping Card Options Button +

This is a Coping Card

This is a Coping Card

This is a Coping Card

This is a Coping Card

Navigation bar (should have buttons to navigate to each major feature)

Coping Cards Screen

A simple menu where you can toggle between a few Categories of coping cards

This is a

A simple form to add a new Coping Card

This is a Coping Card

Navigation bar (should have buttons to navigate to each major feature)

Community Screen

Topic 1 Like Reply Delete

Reply 1 Delete / Ban

Reply 2 Delete / Ban

Topic 1 Like Reply Delete

Moderator Controls (ban user, delete currently selected post)

Note Orange indicates that an element is only visible to moderators

Navigation bar (should have buttons to navigate to each major feature)

Set Goals Screen

New Goal From

Goal: [Text Box]

Goal Type [Drop Down Box]

Goal 1 Completed button

Goal 2 Completed button

Goal 3 Completed button

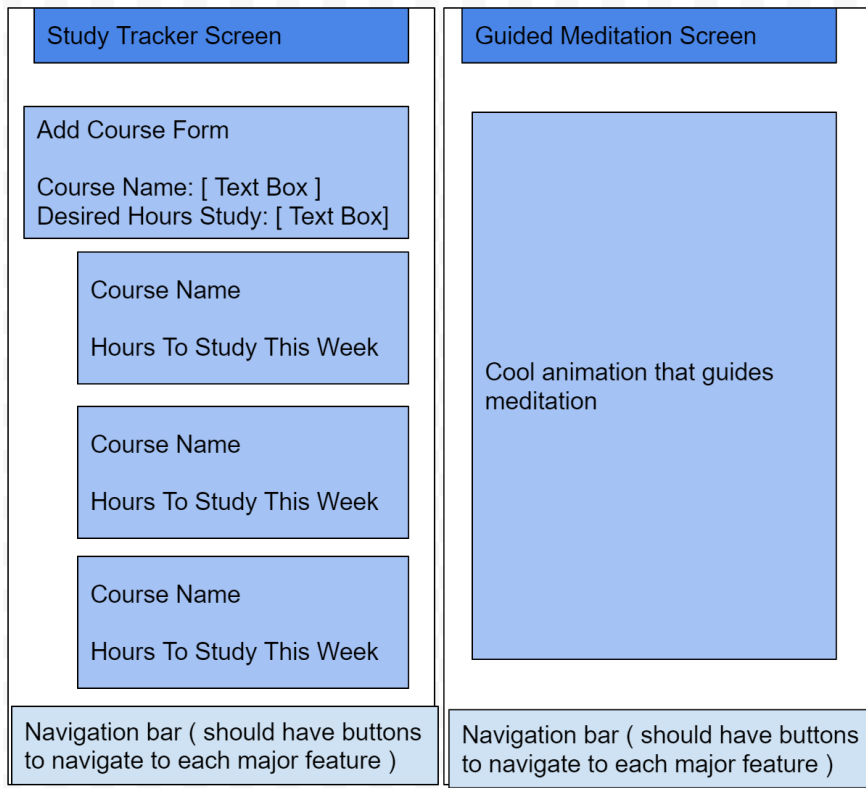
Navigation bar (should have buttons to navigate to each major feature)

Sleep Habits Screen

Your Ideal Sleep Schedule Start End

Sleep statistics (i.e. how well they've kept up with their sleep goals)

Navigation bar (should have buttons to navigate to each major feature)



Security Requirements

This app will depend on Google Firebase, the Apple App Store, and the Google Play Store as external actors. Fortunately, Firestore will handle distributed denial of service attacks as it is an api run and maintained by Google. There are some Confidentiality concerns as there are some concerns with HIPPA. To get around this, we will have to be careful about keeping everyone anonymous in the community message board.

System Requirements

For the purposes of this document, a device shall be defined as any phone or tablet with touch screen functionality running at least ios 11.0 or android 5.0. React native does not support older versions of either operating system. Some features will require an active internet connection. Downloading the app assumes the user has an Apple ID or a Google account.

Specification

