Software Requirement Specification

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1. Project Description

MHS aims to develop an app designed to support those struggling with depression. The app allows users to document their mood throughout the day through a simple mood-tracking feature. With this data, the app's AI-powered bot generates a personalized mental wellness plan for the user. In addition to wellness plans, the app offers access to a library of mental health resources to further support users in their journey.

2. Functional Requirements

FR01	The app must enable users to input their mood levels throughout the day.
FR02	Users must be able to create an account, login, and securely manage their profiles.
FR03	The system must provide secure password recovery and support two-factor authentication (2FA) during login for added security.
FR04	The app should allow users to input mood levels, add notes, and track patterns over time.
FR05	The app's AI bot generates personalized mental wellness plans based on the user's mood data.
FR06	The app provides access to a comprehensive library of mental health resources, including articles, videos, and links to external support.
FR07	Users receive reminders to track their mood at predefined intervals.
FR08	The app notifies users when new resources or updates to their wellness plan are available.
FR09	The system must securely store all user data, including mood-tracking logs and wellness plans, ensuring compliance with data privacy regulations. The system must also provide mechanisms for data encryption, secure backups, and controlled access to user data.
FR10	Provide users with an option to export or delete their data.
FR11	The app can take the overall weekly data to see improvements in mood levels.
FR12	The app should allow users to manually adjust their wellness plan once AI generated.
FRN	

3. Non-Functional Requirements

NFR01	It should support a growing user base without significant degradation in performance as the number of users or mood entries increases. Can be measured as performance decrease per 1000 users.

NFR02	The app must comply with industry standards like HIPAA for handling personal health information and clearly communicate privacy policies and allow users to opt-in or out of data collection for non-essential services (e.g., analytics).
NFR03	Implement secure authentication methods, such as OAuth or multi-factor authentication.
NFR04	The app should work across a variety of devices and operating systems, including iOS, Android, and different web browsers such as Google Chrome, Firefox, Safari, and Microsoft Edge. It should be optimized for both mobile and tablet screens.
NFR05	The app should support multiple languages, such as English, Spanish, French, and German to cater to a global user base and must adapt content and formats (such as date/time) based on the user's locale.
FRN	

4. Use Case Specification

UC01 Name:	Track Mood Levels
Description:	The user tracks their mood by inputting a mood level, adding optional notes, and reviewing historical patterns.
Actor:	User
Entry condition:	The user is logged into the app and has navigated to the mood-tracking feature.
Basic path:	1. The user selects the "Track Mood" option from the app's main screen. 2. The system displays a mood input slider with a set of predefined mood options **[PRO01]:** a. Options: i. Very Happy ii. Happy iii. Neutral iv. Sad v. Very Sad 3. The user selects their mood level. 4. The system prompts the user to add optional notes about their mood (e.g., reasons or context for the mood) **[A01]**. 5. The user enters a note and confirms the mood entry. 6. The system saves the mood level and associated notes **[E01]**. 7. The user can view a graphical representation of their mood trends over time in the "Mood History" section **[A02] [PRO02]**.
Alternative paths:	**[A01] The actor selects the skip note option** 1. The user skips adding a note:

<table>
<tr><td></td><td>
- After selecting the mood level, the user chooses not to add a note and proceeds directly to save the mood entry.

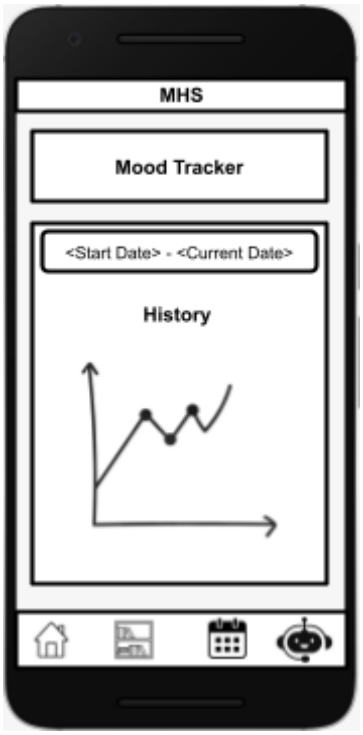
[A02] The actor modifies previous mood entry

2. The user decides to modify a previous mood entry:
   - The user navigates to the "Mood History" section, selects a specific day, and edits the mood level or note for that entry.
</td></tr>
<tr><td>Exception paths:</td><td>
[E01]Mood entry save error

1. System failure during mood entry save:

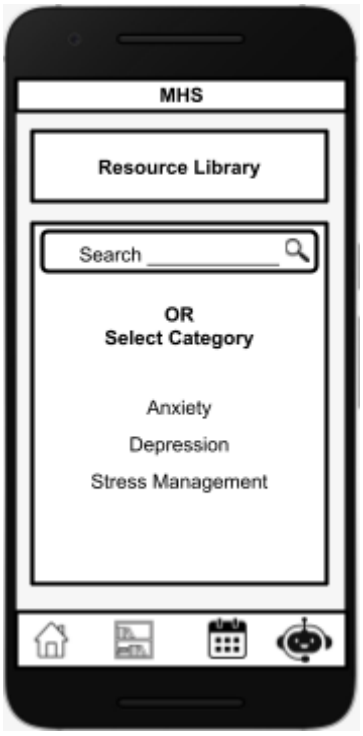
   -The system displays an error message indicating that the mood entry could not be saved and prompts the user to try again or save later.
</td></tr>
<tr><td>Business Rules:</td><td>[BR01] The system must restrict mood entries to a maximum of 5 per day to prevent over-tracking.
[BR02] The system must not allow mood entries for future dates.</td></tr>
<tr><td>Data description</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Length</th><th>Mask</th><th></th></tr>
<tr><td>Mood Level</td><td>Enum</td><td>1</td><td>N/A</td><td></td></tr>
<tr><td>Note</td><td>String</td><td>250</td><td>N/A</td><td></td></tr>
<tr><td>Timestamp</td><td>Date</td><td>N/A</td><td>YYYY–MM–DD HH</td><td></td></tr>
</table>
</td></tr>
<tr><td>Prototype:</td><td>[PRO01] Mood tracking input screen featuring a slider or buttons for mood levels and a text box for notes.</td></tr>
</table>

[PRO02] Mood history screen displaying a line graph or calendar view of mood patterns over time.



UC02 Name:	Access Mental Health Resource Library
Description:	The user accesses a comprehensive library of mental health resources, including articles, videos, and links to external support services.
Actor:	User
Entry condition:	The user is logged into the app and has navigated to the "Resource Library" section.
Basic path:	1. The user selects the "Resource Library" option from the app's main screen. 2. The system displays search and categories of resources including **[A01] [PRO01]**: a. Options: i. Search ii. Anxiety iii. Depression iv. Stress Management 3. The user selects a category of interest. 4. The system displays a list of resources within the selected category, including articles, videos, and links to external support services **[A02]**. 5. The user clicks on a resource to view its details. 6. The system opens the resource (either by displaying an article, playing a video, or redirecting to an external support link) **[E01] [PRO02]**. 7. The user can bookmark or save the resource for future reference.
Alternative paths:	**[A01] The actor performs search action** 1. The user uses the search function: - Instead of browsing categories, the user types a keyword in the search bar to find specific resources (e.g., "meditation techniques"). **[A02] The actor applies resource filters**

<table>
<tr><td></td><td>1. The user filters resources:
- The user applies filters to refine the resource list by content type (e.g., videos only, articles only) or relevance (e.g., most recent, highly rated).</td></tr>
<tr><td>Exception paths:</td><td>[E01] External link is broken or unavailable:
- The system displays an error message indicating that the external link is unavailable and suggests the user try a different resource.</td></tr>
<tr><td>Business Rules:</td><td>[BR01] Resources must be categorized and searchable by topic, content type, and relevance.
[BR02] External links should be verified regularly to ensure they remain active and relevant.</td></tr>
<tr><td>Data description</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Length</th><th>Mask</th><th></th></tr>
<tr><td>Resource Name</td><td>String</td><td>100</td><td>N/A</td><td></td></tr>
<tr><td>Resource Type</td><td>Enum</td><td>1</td><td>N/A</td><td></td></tr>
<tr><td>Category</td><td>String</td><td>50</td><td>N/A</td><td></td></tr>
<tr><td>URL</td><td>String</td><td>255</td><td>N/A</td><td></td></tr>
<tr><td>Description</td><td>String</td><td>500</td><td>N/A</td><td></td></tr>
</table>
</td></tr>
<tr><td>Prototype:</td><td>[PRO01] Resource library home screen with categories and a search bar at the top.</td></tr>
</table>

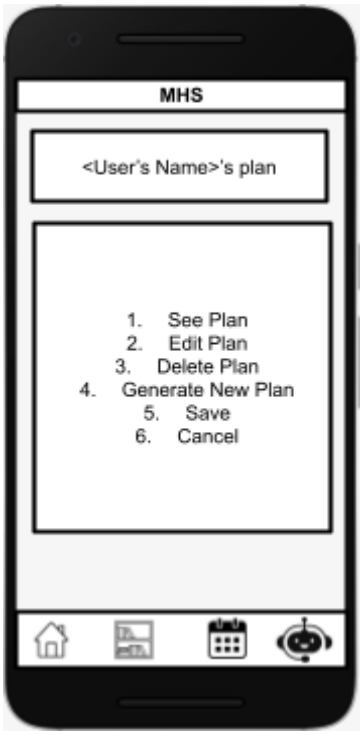


[PRO02] Resource detail page displaying the selected article, video player, or external support link.

UC03 Name:	AI Bot For Mental Wellness
Description:	The app's AI bot generates personalized mental wellness plans based on the user's mood data.
Actor:	User
Entry condition:	The user navigates to the AI bot, which is accessible in the corner of the app.
Basic path:	1. The user selects the AI bot icon on the app's main screen. 2. The system prompts user to input mood data or sync with existing data. **[A01] [PRO02]** 3. The user selects "Generate Wellness Plan". 4. The system processes mood data and generates a personalized wellness plan based on their input. **[E01] [E02]** 5. The system displays a daily plan that includes activities, resources, and strategies for mood improvement. 6. The system displays a daily wellness plan containing **[PRO01]**: a. Activities b. Resources c. The option: i. Next 7. The user selects the option Next 8. The system presents a screen for editing the plan containing **[A02]**: a. The options: i. See Plan ii. Edit Plan iii. Delete Plan iv. Generate New v. Save vi. Cancel 9. The user confirms plan and selects Save 10. The system includes new wellness plan 11. The system returns to main screen
Alternative paths:	**[A01] Wellness plan deviation alert** 2. Upon entering mood data that significantly deviates from trends in current data, an alert is generated that asks users if they would like to update their current wellness plan.

[A02] The actor creates wellness plan with AI suggestions

2. Users can manually make wellness plans with suggestions from the AI bot.



<table>
<tr><td>Exception paths:</td><td>[E01] Insufficient mood data entries
2. If the AI bot fails to generate a plan due to the lack of data the system will suggest that the user must put more mood entries in.

[E02] Mood data processing error due to temporary server issues

3. If the system encounters an error while processing the mood data due to a server issue the system will display an error message that it temporarily cannot generate a wellness plan. The user will be prompted to either contact support or wait a specific amount of time until trying again.</td></tr>
<tr><td>Business Rules:</td><td>[BR01] . The AI bot can only generate a wellness plan if there are at least three mood entries logged in by the user in the last week to make sure data is accurate and up to date
[BR02] .
The AI bot updates the wellness plans once per day but only if a significant change in mood levels is detected.</td></tr>
<tr><td>Data description</td><td>
<table>
<tr><th>Name</th><th>Type</th><th>Length</th><th>Mask</th><th></th></tr>
<tr><td>Mood level</td><td>Enum</td><td>1</td><td>N/A</td><td></td></tr>
<tr><td>Time Stamp</td><td>string</td><td>N/A</td><td>YYYY–MM–DD HH</td><td></td></tr>
<tr><td>Notes</td><td>string</td><td>250</td><td>N/A</td><td></td></tr>
<tr><td>Plan updates</td><td>Boolean</td><td>1</td><td>N/A</td><td></td></tr>
</table>
</td></tr>
<tr><td>Prototype:</td><td>[PRO01] Wellness Plan overview for user to review and accept

[PRO02] Wellness Plan change alert that appears when there is significant deviations in mood data.</td></tr>
</table>