**Product Requirements**

*Depression Companion Tool*

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| **Team** | Ctrl-Alt-Elite |

# Brief problem statement

In an increasingly digital age, mental health issues, particularly depression, have become prevalent, affecting millions worldwide. Many individuals do not seek traditional resources, due to cost, or stigma, or their idea of how people will perceive them. We want to create an accessible and free application that uses AI to provide a safe and private environment for people with depression to use in order to help them through this time.

The goal of the app is to provide an outlet for the user, and a place where they can see their progress, find correlations from events in their life and their emotions, set goals, and look back over their journey.

# System requirements

The application can run on modern cellular devices, like android and iphone. Since the application will use onboard AI, the phone will need to be capable of handling common other applications.

# Users profile

# Age Group: Primarily 18-40 years, but can extend to older age groups who are tech-savvy.

# Gender: All genders, with a potential lean towards those who statistically are more open to seeking mental health assistance.

# Education: High school and above, with a potential lean towards those with some college education or higher.

# Location: Urban and suburban areas where smartphone usage is high. This can also include rural areas with access to such technology.

Tech Proficiency: User will be moderately comfortable with using technology, with an understanding of downloading applications.

Digital Preference: The user prefers to keep their information private and would rather communicate in such a fashion digitally.

Motivation: The user is seeking a self help application and understands their situation warrants such an application.

Affordability: The user is looking for a free tool to help them with their mental help.

Flexibility: The user desires the spontaneity of using the app whenever is convenient for them.

Concern: The user may be concerned about their physical wellbeing, and wants an application to help them remain safe.

Anonymity: The user prefers to keep their situation private, unless things become very bad.

# List of Features

F1. The app creates a profile for the user to contain their information and depression history.

F2. The app includes a language model in order to communicate with the user.

F3. The onboard AI gauges and stores the users emotions from conversation.

F4. The app will keep a history of the conversations, so that the user can reflect on past conversations and feelings.

F5. The user will be able to log their emotions on a tracker in the app.

F6. The application looks for common themes between conversations and users logged feelings.

F7. The app has a crisis detection and prevention method. It looks for signs of severe distress and contacts the user’s emergency contacts. It also attempts to initiate a conversation with the user in such a case

F8. The app will also include a form of goal and progress tracking for the user's reflection.

F9. The app does not share user information nor leave it vulnerable.

F10. The app contains accessibility features, allowing the user to change color themes, font sizes etc. It also possesses STT and TTS features to provide more accessibility to all users.

F11. Simple installation and initialization features. The app can simply be downloaded and used from the app store and allow the user to simply create their profile from their.

F12. The app sends periodic check ins and prompts to start a dialogue with the user.

# Functional requirements (user stories)

List the Priority as 1 (High Priority - Critical) to 3 (Low Priority – Would be nice if we have time)

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| --- | --- | --- | --- |
| **No.** | **User Story Name** | **Description** | **Priority** |
| R1 | Input Profile | As a user dealing with depression, I want to create a personal profile so that the app can provide me with a personalized experience based on my information and past history of depression. | 1 |
| R2 | Emotion History | As a user, I want the app to understand and store my expressed emotions during our conversations so that it can provide tailored support and track my emotional well-being over time. | 2 |
| R3 | Conversation History | As a user, I want to be able to revisit and reflect upon my past conversations with the app, enabling me to gain insights into my emotional journey and changes. | 2 |
| R4 | Feeling Log | As a user, I want a feature that allows me to log my emotions manually so that I can track my mood variations and identify patterns or triggers. | 2 |
| R5 | Pattern Correlation | As a user, I want the app to analyze and identify patterns between my conversations and logged feelings, helping me understand recurring themes or triggers in my emotional landscape. | 2 |
| R6 | Emergency Response | As a user, I want the app to recognize when I'm in severe distress and take immediate actions, like reaching out to my emergency contacts and initiating a supportive conversation, ensuring my safety and well-being. | 1 |
| R7 | Progress and Goals | As a user, I want to set personal goals related to my mental well-being and track my progress over time, so I can actively work towards improving my emotional health and celebrate my achievements. | 3 |
| R8 | Check In | As a user, I want the app to send me periodic check-ins or reminders, motivating me to consistently engage with the app and maintain my emotional well-being. |  |
| R9 | TTS and STT | As a user, I want the app to be able to narrate the dialogue to me, and allow me to respond with my own voice, so that I do not have to type everything out. |  |

# Non-Functional Requirements

NF1: Security - Data Encryption

The users private information is encrypted on their device, keeping their private information safe. Should information need to be sent elsewhere, their identity is abstracted.

NF2: Reliability - System Uptime

Requirement: The application is able to remain available as long as the user has power and computational room.

NF3: Usability - Response Time

Requirement: The onboard AI responds as quickly as the user's hardware allows.

NF4: Cross-Platform Compatibility - Operating Systems

Requirement: The application should be compatible and fully functional on the latest five versions of iOS and Android operating systems. Specifically

Android:

* Android10
* Android11
* Android12
* Android13
* Android14

iOS:

* iOS 13
* iOS 14
* iOS 15
* iOS 16
* iOS 17

NF5: Accuracy - Language Model Understanding

Requirement: The onboard AI language model should correctly understand and interpret user input with a minimum accuracy rate of 80%.

NF6: Accuracy – Language Model Dialogue Quality

Requirement: The language model does not feel stale of fake, and the user feels comfortable conversing with it.

NF7: Reliability – Data Backup

Requirement: The application should perform daily backups of all user data and must be capable of restoring this data in case of failures, ensuring no data loss.

NF8: Usability – Intuitive User Interface

Requirement: Users should be able to navigate and utilize the application's main features within 15 minutes of first-time use without needing external guidance.

NF9: Accuracy – Crisis Detection

Requirement: The application correctly identifies a crisis and initiates a response 90% of the time.

NF10: Usability - Accessibility Features

Requirement: The application should comply with WCAG (Web Content Accessibility Guidelines) 2.1 Level AA standards to ensure accessibility for all users, including those with disabilities.

NF11: Accuracy - Pattern Analysis

Requirement: The app's analysis of patterns between user conversations and logged feelings should have a precision rate of at least 80%, ensuring users receive relevant insights.

NF 12: Security - Privacy

Requirement: The application keeps the user’s data safe from being seen or retrieved by others. Information from inside the application cannot be stolen online nor shared by the program.

Sponsor Requirements

I have read and approve the material in this document. If there is no external sponsor, the TA or instructor will sign it for accuracy/scope.

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