



Project: AI Mental Health Companion

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Step 1: Define Scope & MVP

Focus on a Minimum Viable Product (MVP) that can be built in 24–48 hours.



Core Features to Prioritize:

Emotion detection from text input

Motivational response generation


Relaxation exercises: breathing guide,
journaling prompt

Optional: counselor contact button (mocked
or linked)

Emotion Detection Module

Input: Text or speech

Output: Emotional state (e.g., sad, anxious, stressed, happy)



Core Features to Prioritize: Tools:

1

Text

Use pre-trained sentiment/emotion models like nltk, TextBlob, or transformers (e.g., bert-base-uncased fine-tuned on emotion datasets)

2

Speech

Use SpeechRecognition + Google Speech API to convert speech to text, then apply emotion detection

Dataset (optional for training)

Step 2: Motivational Response Generator

Approach:

Map detected emotion to a curated set of motivational messages.

Use a simple rule-based system or GPT-based API (e.g., OpenAI or HuggingFace) for dynamic responses.

Example:

```
if emotion == "sad": 'response = "You're stronger than you think. This moment will pass."
```





Step 3: Relaxation Toolkit

Include:

1

Breathing Exercise

Animated GIF or timer (e.g., inhale/exhale loop)

2

Music

Embed calming tracks via Spotify API or YouTube links

3

Journaling Prompt

Display a question like "What made you smile today?"

Optional Libraries:

1

pygame or tkinter for GUI

2

streamlit for web-based interface

Step 4: Counselor Connection (Mock or (Mock or Real)

Options:

Mock

Button that says “Connecting to counselor...” with a popup message

Real

Link to mental health helplines or embed a chat widget (e.g., Twilio, Firebase)



Step 5: Architecture Overview

User Input (Text/Speech)



Emotion Detection Module



Motivational Response + Relaxation Toolkit



Optional: Counselor Connect





Step 6: Build & Demo

Tech Stack Suggestions:

- Frontend: Streamlit / Flask / React
- Backend: Python (NLP, emotion detection)
- APIs: SpeechRecognition, Spotify, YouTube, Twilio (optional)

Demo Tips:

- Show a live emotion detection + response
- Walk through relaxation features
- Highlight ethical design and student impact



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Bonus Ideas (if time permits)

- 1 Save user journaling entries locally
- 2 Add daily check-in reminders
- 3 Visualize mood trends over time

Thank You