LIGHTED TO ENLIGHTEN 45 YEARS

MUFFAKHAM JAH
COLLEGE OF ENGINEERING & TECHNOLOGY
(THE SULTAN UL ULOOM EDUCATION SOCIETY)
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Banjara Hills, Hyderabad 500 034

ACES

HACK REVOLUTION

MJCET CSI

INSTITUTION'S INNOVATION COUNCIL
(Ministry of Education Initiative)

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Team Details

1. Selected Track - Healthcare
2. Project Name - mindscape
3. Team Name - glitch.exe
4. Team Lead - Omkar Kabde
5. Institute Name - Chaitanya Bharathi Institute of Technology

Mindscape

Millions of people struggle with mental health today . Usually, physical health is given so much importance and attention. However, when it comes to mental health people often feel isolated, unable to track their emotional health, and unsupported in hard times.

The Solution:

Introducing Mindscape:

Mindscape doesn’t just support mental health— it transforms it.

What is Mindscape?

Mindscape is your **companion in mental wellness**. It reimagines mental health support by combining tech, community and personalized care, resources-all in one platform. People can talk in judgment-free spaces, gain insights into their emotional health with tools like mood calendars and sentiment analysis, and discover personalized pathways to wellness through curated resources and guided exercises. Mindscape also makes professional help accessible.

Why Mindscape Stands Out:

Mindscape bridges the gap between technology and mental health by combining advanced features like sentiment analysis and AI-driven support. Unlike many other online platforms, it empowers individuals to take charge of their mental health journey and sticks with them through it.

Through mindscape, we can create a space where mental wellness is accessible, understood, and prioritized for everyone.

Mindscape is designed to be easily accessible for users. It is can converse in real-time with the user using state-of-the-art speech recognition and text-to-speech models.

Mindscape prioritizes privacy and security – sensitive user data is encrypted and stored, anonymous support communities, open-source AI models and secure inference.

Use Cases

- Personalized Mental health recommendations
- Private Digital Journal
- Anonymous Community support chatrooms
- Emotions/Distress Tracking
- Daily Checkups and Exercises
- Immediate Support through Mental Health Chatbot
- Sentiment Analysis
- Emergency Response & Alerts
- Self Help Resources
- Find Therapists near me
- Mental Health Assessment

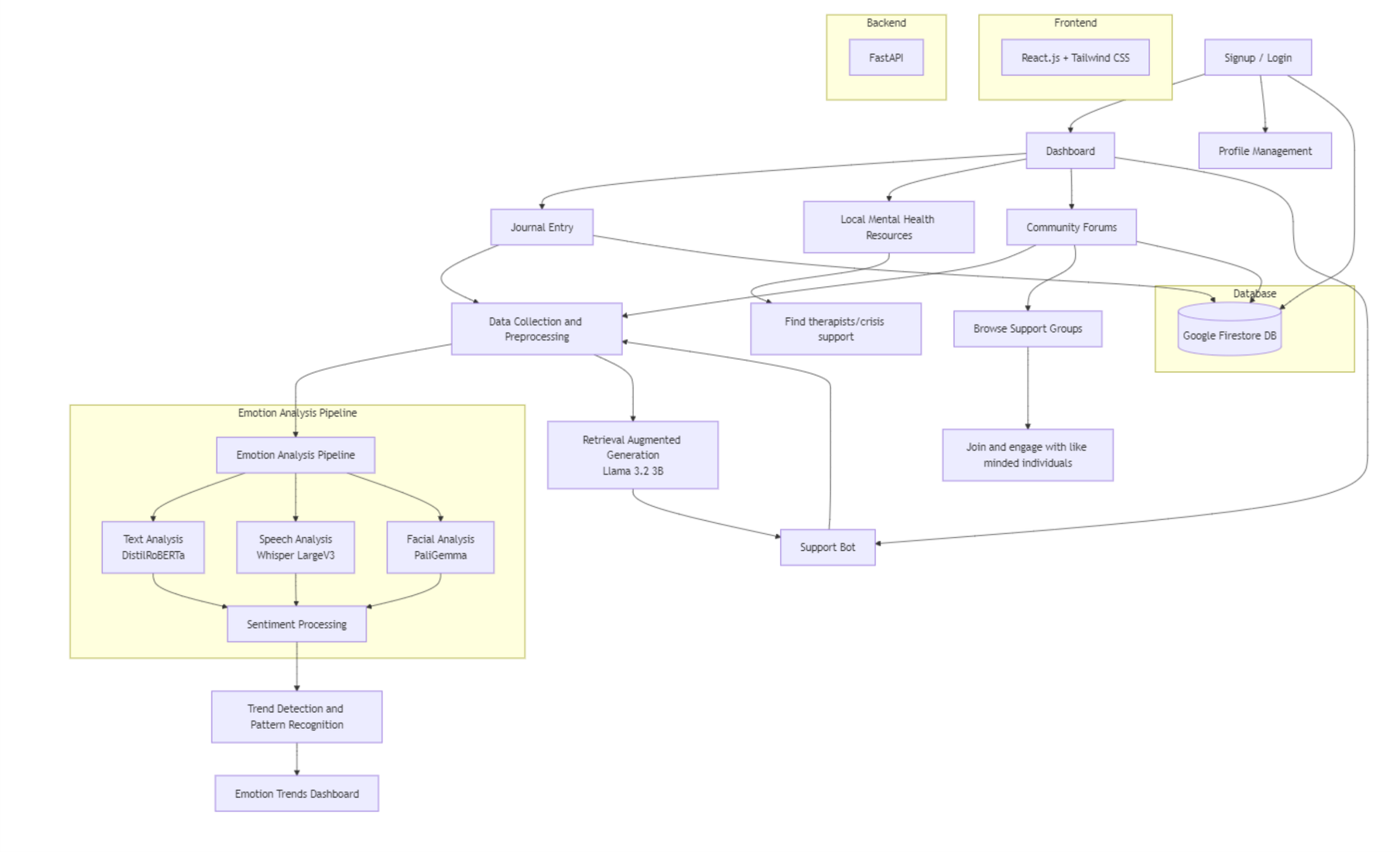
Tech Stack

Frontend
React.js: For creating a dynamic and responsive user interface.
Tailwind CSS: To ensure a modern and accessible design system.

Backend
FastAPI: For building a high-performance, RESTful API backend.
RoBERTa – fine-tuned BERT model for Sentiment & Emotion Analysis
Llama 3.2 3B – A specific fine-tuned model designed to converse empathetically.
Whisper LargeV3 – Text-to-speech and Speech-to-text models

Database – Google Firestore DB
user profiles, journal entries, and community discussions are encrypted and stored.

Block Diagram



Worl

mindscape Home Forum My Journal Support Analysis Questionnaire Meghana Sancheti Logout

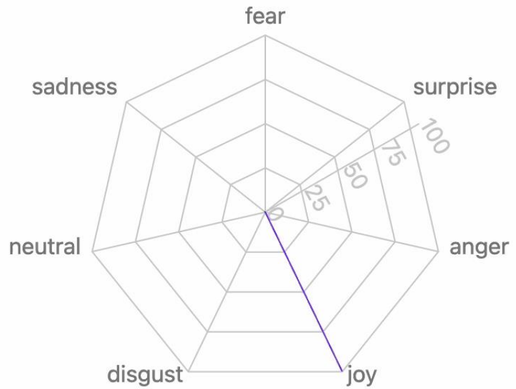
Start New Questionnaire

Mental Well-being Score
10.0/10

Emotional Balance
0.0/10

Positivity Index
10.0/10

Emotional Pattern Analysis



Emotional Response by Question

Task Given

Objective
To create a **mental health assessment tool** that evaluates a user's emotional state through their **audio** and **video.**
-to ask questions to the user that can assess their mental state
-to monitor and analyze their audio and video
-based on video and audio response, determine their mental state by classifying emotions like Happy, Sad, Angry, Surprised, and more.

What we deliver
Our tool leverages thoughtfully crafted questions to analyze voice transcribing, tone, pitch, and micro-expressions. Our tool:

- Combines **technology** and **empathy** to offer deeper insights into mental health.
- Enables non-invasive, real-time assessment through **AI-powered emotional analysis**.
- Offers better personalization in the mental health care facilities provided by the rest of our website

How we provided the solution: Tech Stack Overview

Speech Emotion Recognition:

- **Model:** OpenAI Whisper (fine-tuned for emotion classification)
- **Processing:**
  - Audio preprocessing using **Librosa** for seamless loading and feature extraction.
  - Feature extraction through the **Whisper Feature Extractor** to optimize input for accurate emotion prediction.

Facial Emotion Recognition:

- **Model:** Google **PaliGemma** (fine-tuned on the **AffectNet** dataset)
- **Processing:**
  - Image preprocessing conducted using **PaliGemmaProcessor** for optimized processing.
  - Captures user image data every **10 seconds** to analyze and interpret their behavior.

Text Recognition:

- **Model:** RoBERTa – fine-tuned BERT model for Sentiment & Emotion Analysis
- **Processing:**
  - Fine-tuning RoBERTa allows the model to learn context-specific emotional cues, enabling it to accurately classify emotions such as joy, anger, sadness, and more based on textual input.

Team Members' Information

Team Leader Name: Omkar Kabde

Year: 3 Department: CSE College Name: CBIT

Team Member 1 Name: Mohammed Imaduddin

Year: 3 Department: CSE College Name: CBIT

Team Member 2 Name: Meghana Sancheti

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Team Member 3 Name: Maddu Julia Joyce

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