iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 13 **Issue:** IV **Month of publication:** April 2025

DOI: https://doi.org/10.22214/ijraset.2025.69674

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 13 Issue IV Apr 2025- Available at www.ijraset.com

MindCare: Your Mental Buddy

Siddhi Somaiya[1], Arunil Pandey[2], Aditya Patel[3]
B.Tech Students, Department of Computer Engineering, K J Somaiya Institute of Technology

Abstract: ***MindCare is a comprehensive mental health platform that integrates artificial intelligence and modern web technologies to deliver personalized emotional wellness support.***
This paper presents the architecture, methodology, and effectiveness of MindCare, focusing on its AI-driven chatbot (powered by Google's Gemini), multilingual interaction capabilities, emotion tracking system, and community-based therapy support. The platform collects user mood data, behavioral inputs, language preferences, and therapy needs to generate tailored advice and interactive experiences.
Using generative AI for empathetic communication and structured guidance, MindCare supports stress management, emotional expression, and therapy access. A case study involving a stressed student under academic pressure illustrates the application's effectiveness in improving emotional regulation, stress tracking, and access to peer support and professional guidance. The findings demonstrate that AI-enabled mental health solutions can scale personalized care and community engagement at low cost.
Keywords: Mental health, Large language models, Generative AI, Therapy chatbot, Community wellness, Firebase, Personalized advisory, Real-time support

I. INTRODUCTION

Mental health has emerged as a global priority, particularly among students and young adults facing academic pressure, digital fatigue, and emotional isolation. Traditional therapy and counseling services, while effective, often lack scalability and accessibility. The rise of artificial intelligence (AI) opens new avenues to provide emotional support and wellness coaching via digital platforms.
MindCare is a next-generation mental health platform built on this premise.
It combines the power of AI—specifically Google's Gemini model—with robust backend services and user-focused design to offer empathetic, personalized, and scalable support.
MindCare empowers users to express feelings, track emotions, join support communities, and access therapy or self-help resources in real time. Unlike static self-help apps, MindCare continuously adapts to user behavior using prompt-tuned generative AI.
This paper outlines the complete system architecture, AI design, backend integration, and impact of MindCare through a detailed user case study.
Section II explains the platform structure and AI methodology. Section III explores user-specific modeling and design heuristics. Section IV presents a sample case of a stressed student benefiting from the system. Section V concludes with future scope and insights.

II. METHODOLOGY

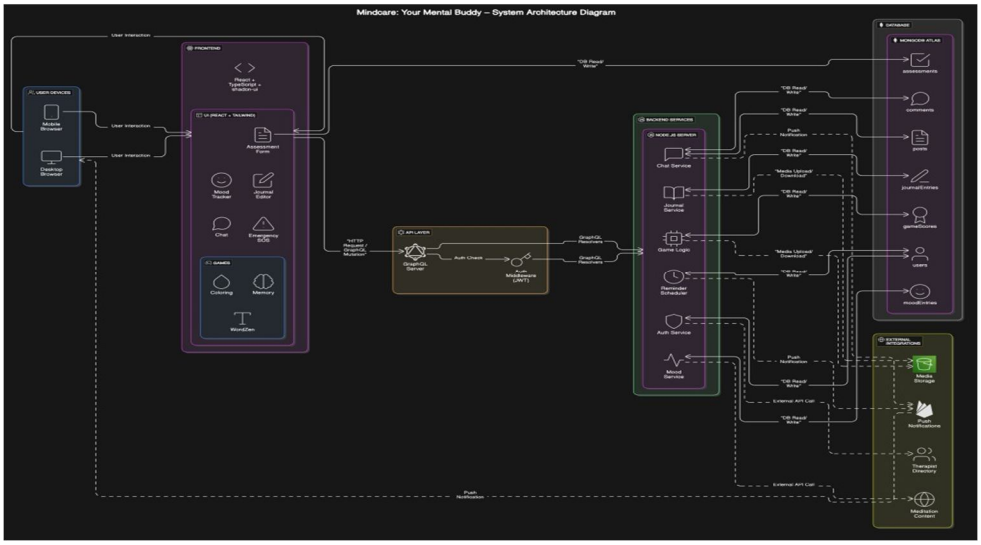
A. System Architecture

MindCare is built using a modular architecture comprising four primary layers:

1) User Interaction Layer: Multilingual React + TailwindCSS frontend with theming options
2) AI Processing Layer: Google Gemini API with prompt-tuned emotional intelligence and translation support.
3) Backend and Data Management Layer: Firebase Auth, Firestore database, Flask APIs for machine learning.
4) Real-time Communication Layer: Socket.io for chatrooms and community engagement.

Users engage with an intelligent chatbot, log moods, access wellness content, and join virtual communities. Data is securely managed and optionally anonymized.

©IJRASET: All Rights are Reserved



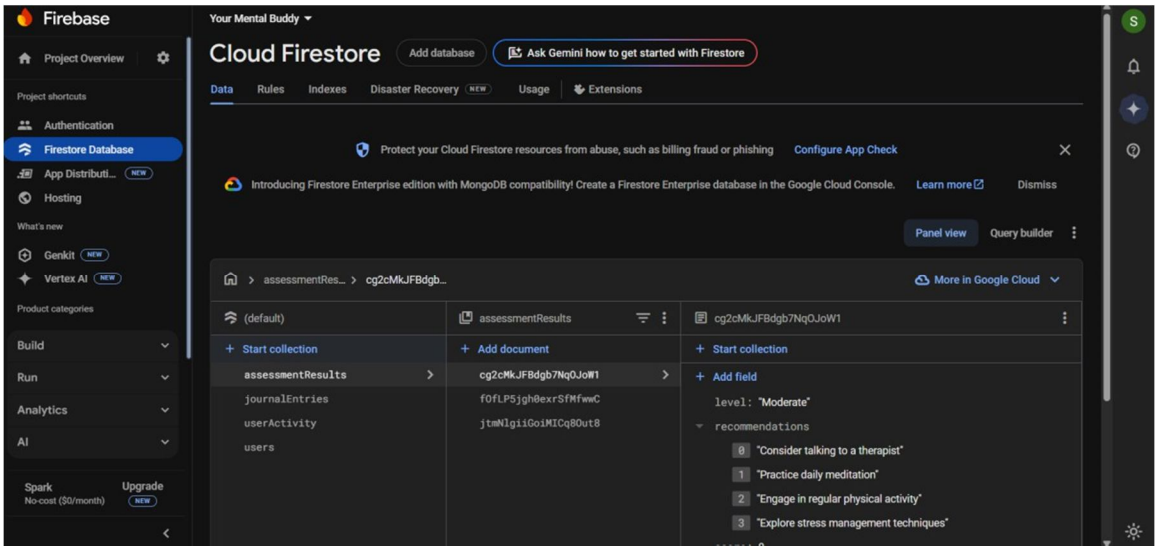
B. AI-Powered Chatbot and Personalization

The Gemini-powered chatbot uses context memory, mood indicators, and prompt tuning to offer empathetic interactions. Personalized recommendations are generated based on logs, interaction history, and user preferences, adapting tone, length, and suggestions accordingly.

C. Backend Integration and Tools

Firebase manages secure authentication and journal/event storage. Flask enables stress level classification via machine learning. WebSockets power real-time chats. Additional tools:

1) Google Translate API: Multilingual support
2) gTTS/pyttsx3: Text-to-speech
3) Firebase Cloud Messaging: Reminders and alerts



D. Community and Events

Users can join themed groups (e.g., anxiety, exam stress) for peer discussions and event participation. Role-based access (user/therapist/admin) ensures structured interaction.

Email reminders keep users engaged with ongoing support programs.

III. MODELING AND ANALYSIS

A. Prompt Engineering

MindCare generates AI prompts dynamically using user state, mood history, and preferences. For example: "The user is feeling anxious before an exam. Please respond supportively and suggest a grounding technique. Keep it brief and reassuring."

B. Stress Prediction and Feedback Loop

A Flask-based ML classifier evaluates stress levels based on self-reports. Gemini tailors advice accordingly, offering coping strategies or therapy access, with backend validation to prevent hallucinations.

C. *Data Visualization and Triggers*

Plotly is used to generate visualizations for mood trends, stress spikes, and related events. These are incorporated into chatbot prompts to provide context-aware advice.

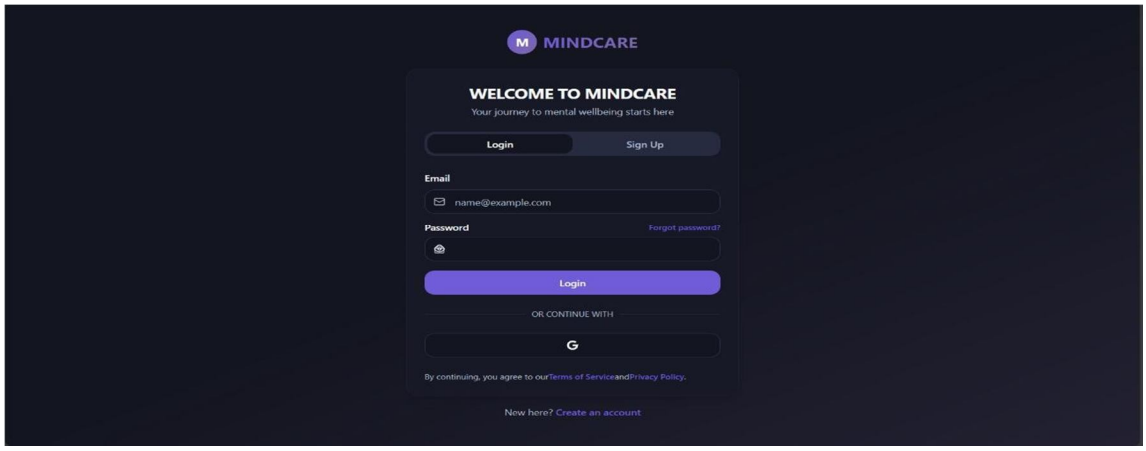
D. Voice Interaction & Personalization

Voice input/output via pyttsx3 and gTTS enables natural communication. Gemini adapts to language, time, and themes (light/dark) for a seamless experience.

IV. IMPLEMENTATION

The application is deployed via Firebase Hosting. Firebase Firestore stores mood logs, chat messages, and therapy notes. The Gemini model is accessed via API middleware that ensures context continuity. Real-time community communication is handled via Socket.io.

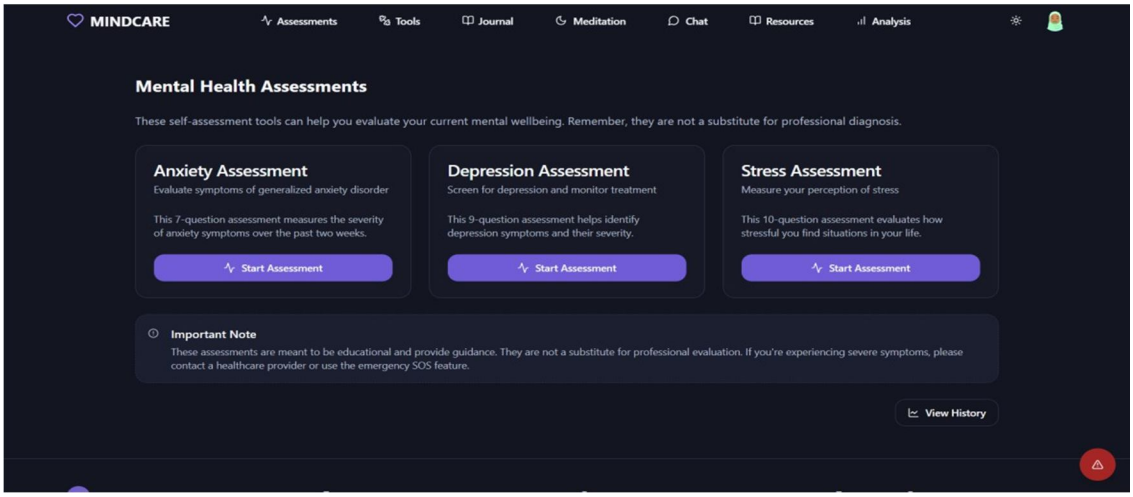
1) Login



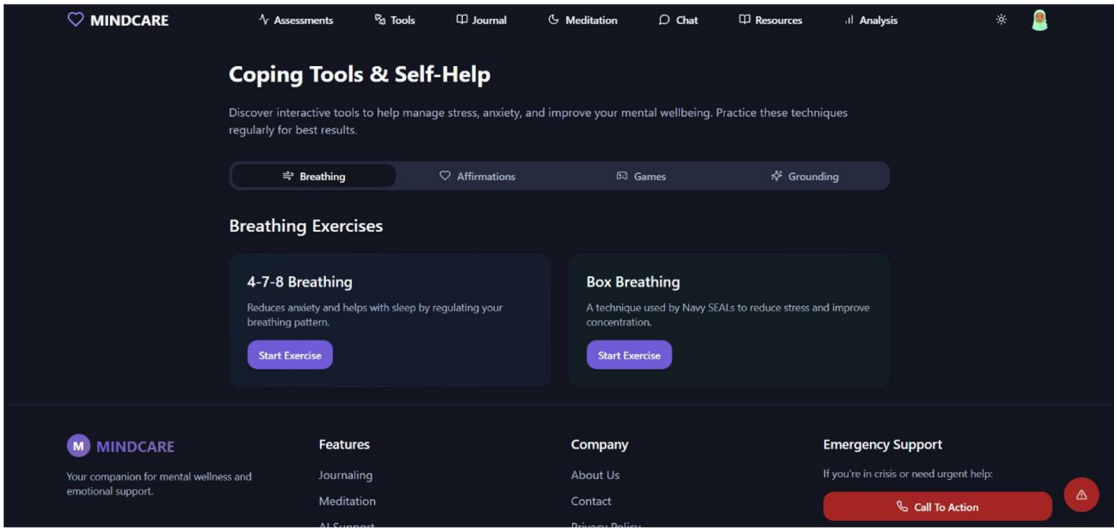
2) Dashboard with Live Mood Chart

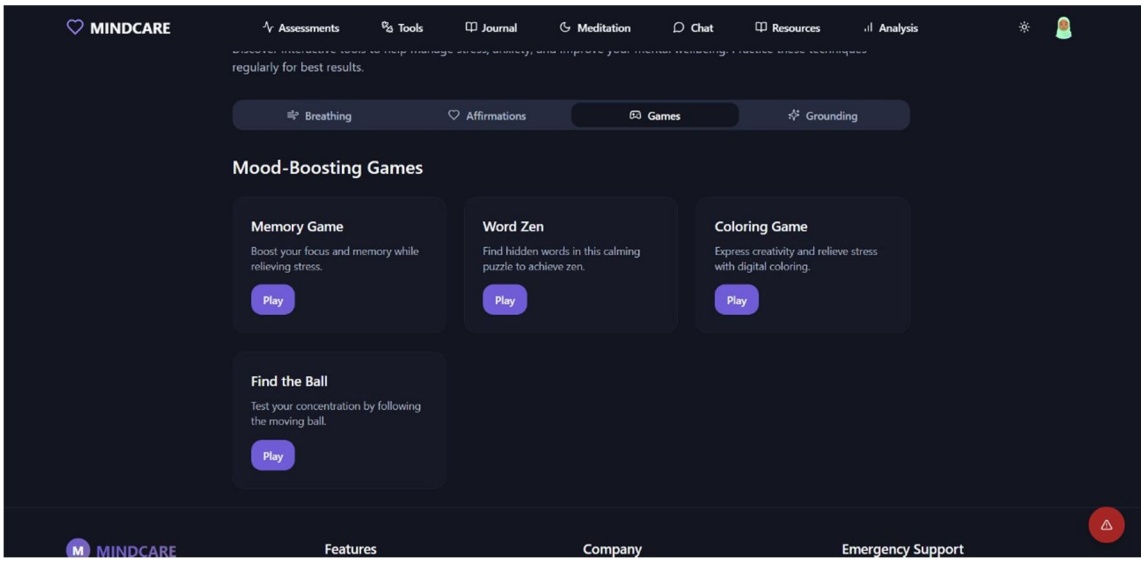


3) Self-Assessment

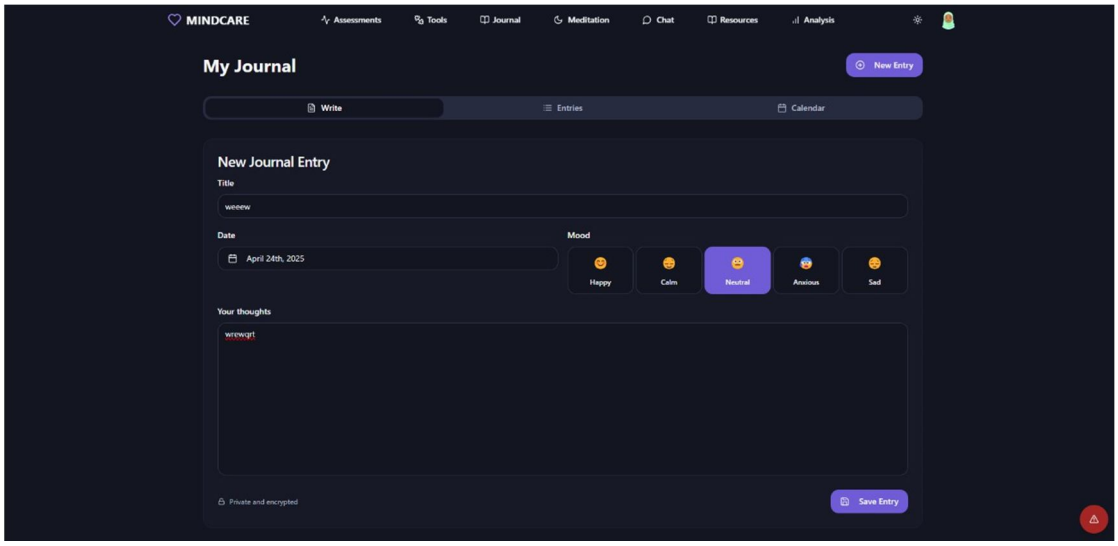


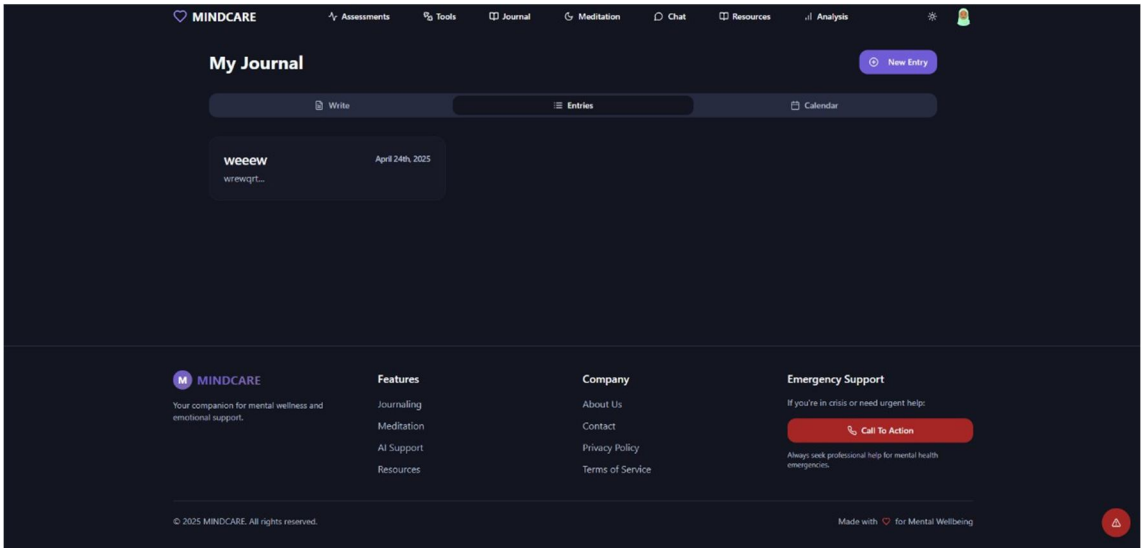
4) Coping Tools



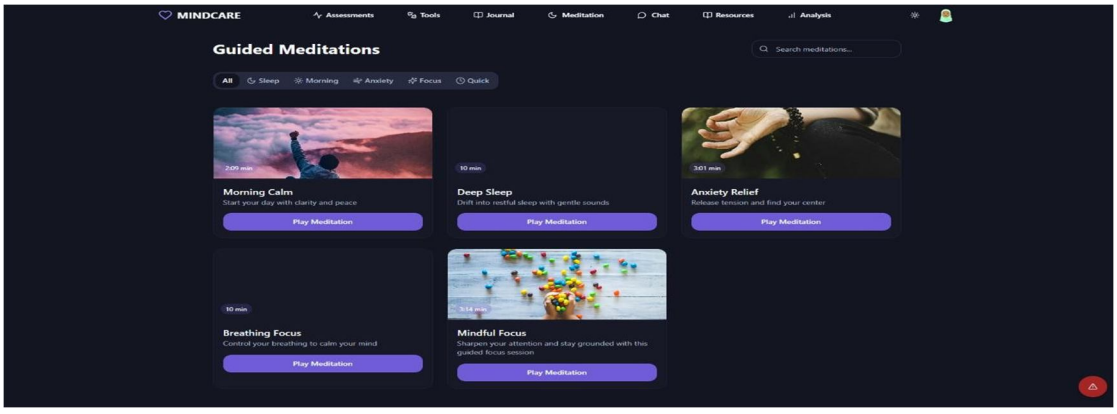


5) Journal

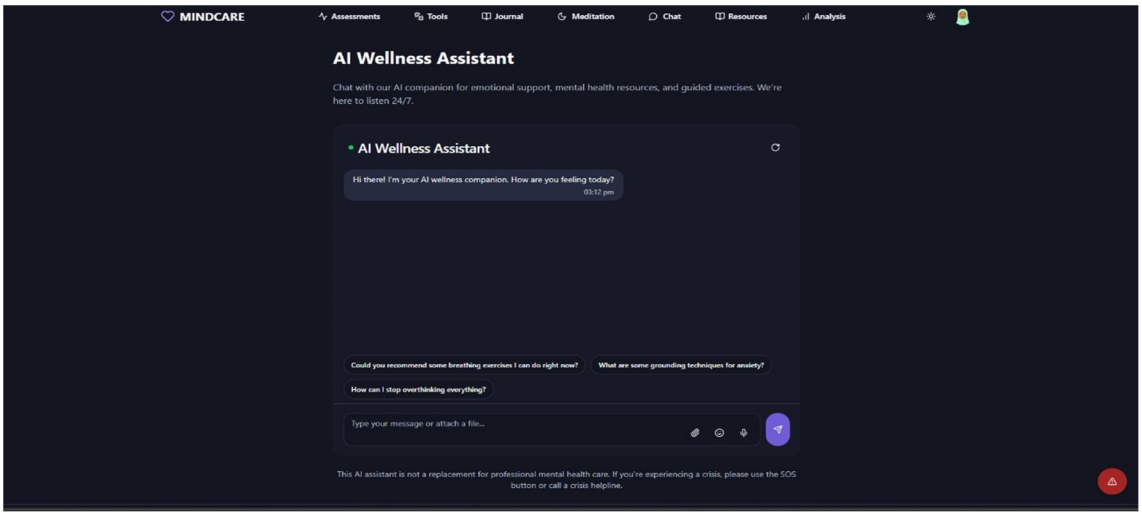




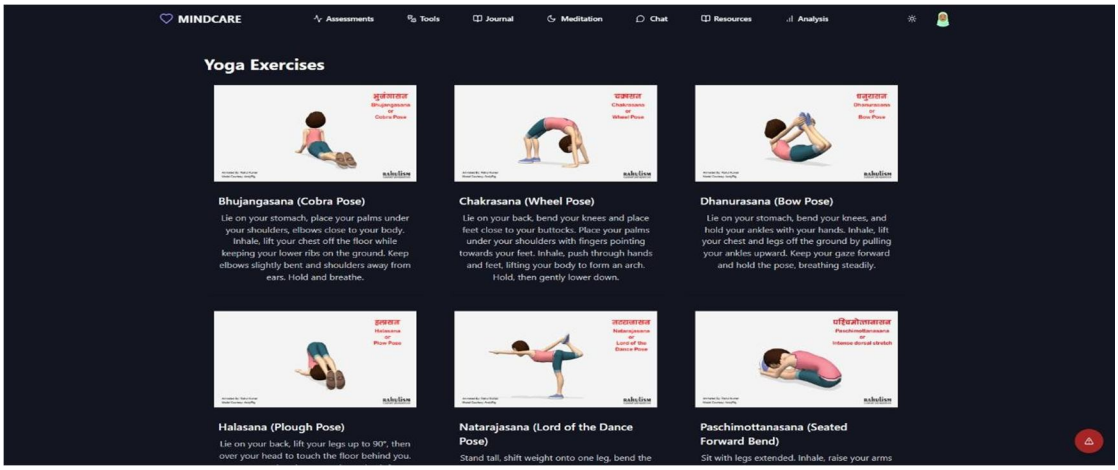
6) Meditation



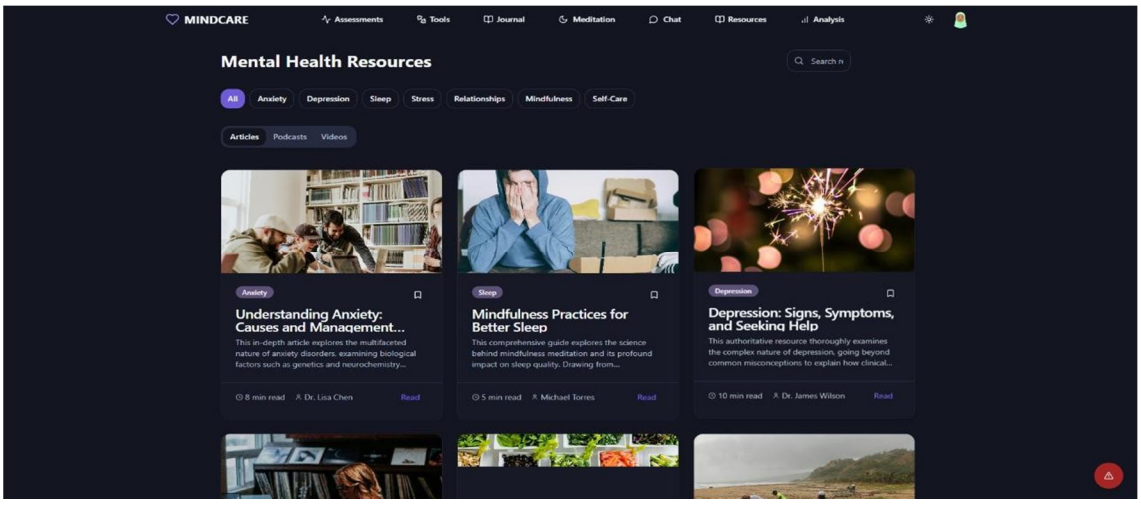
7) Chat



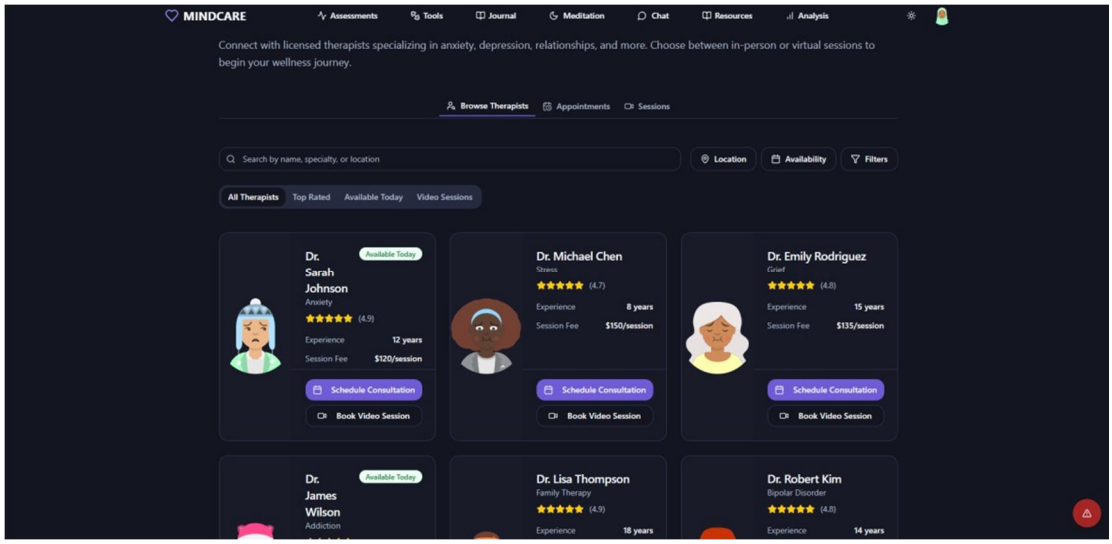
8) Yoga Exercises



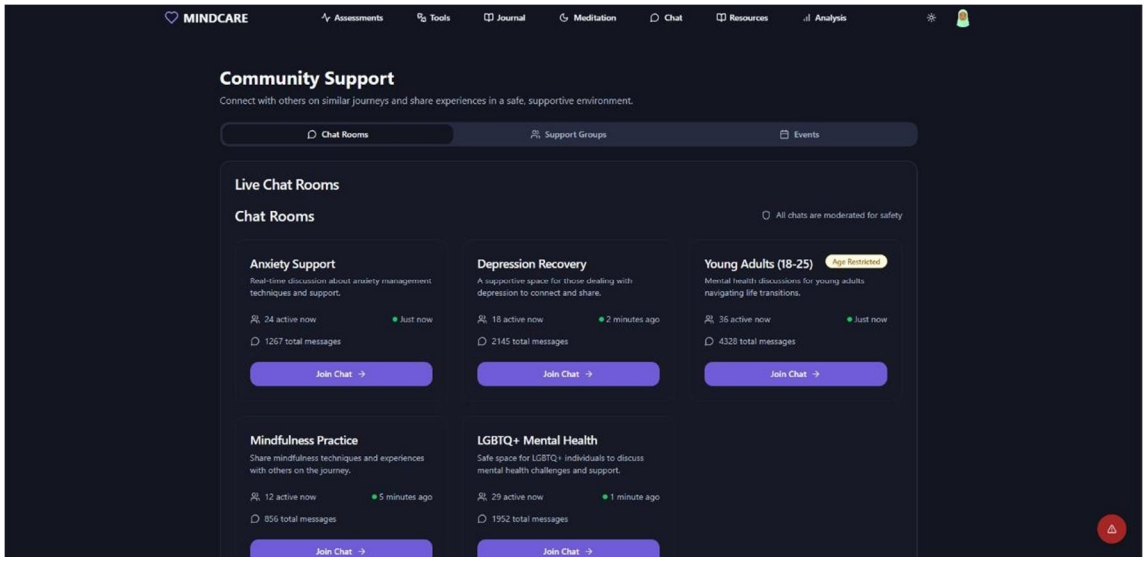
9) Resources

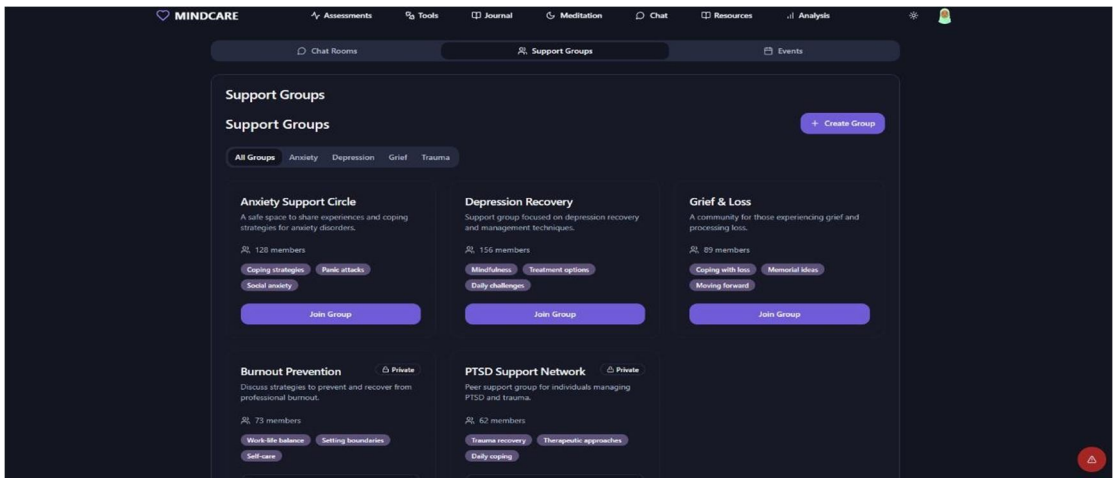


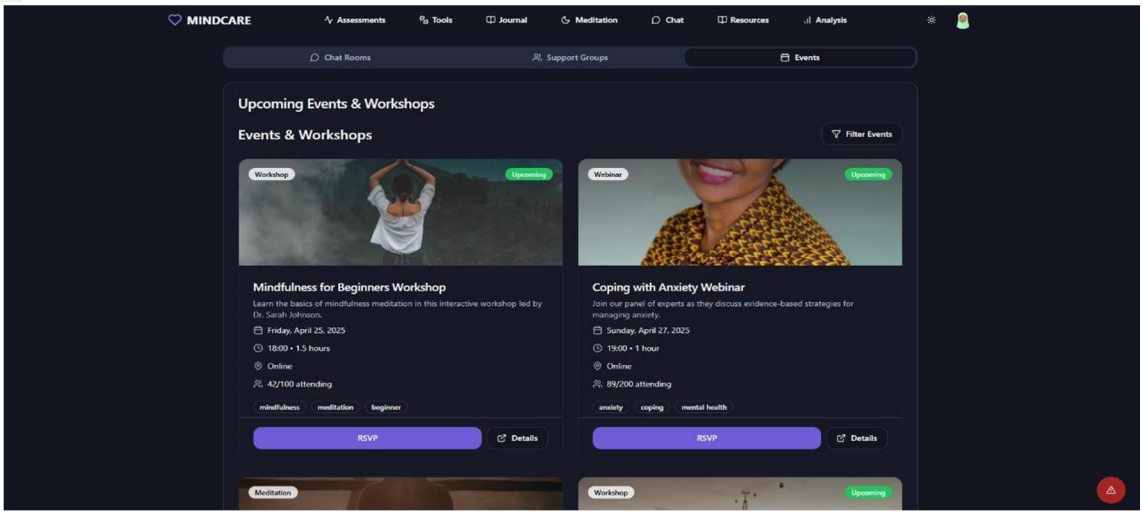
10) Therapist



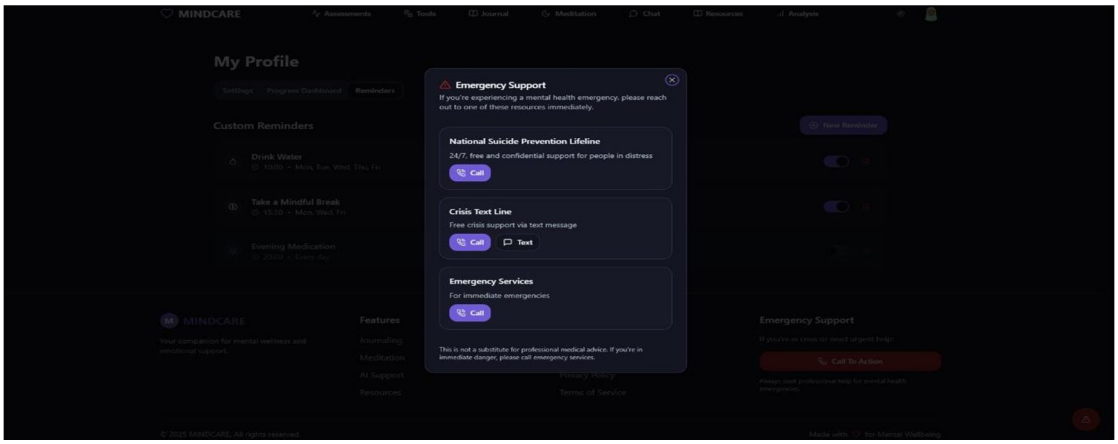
11) Community



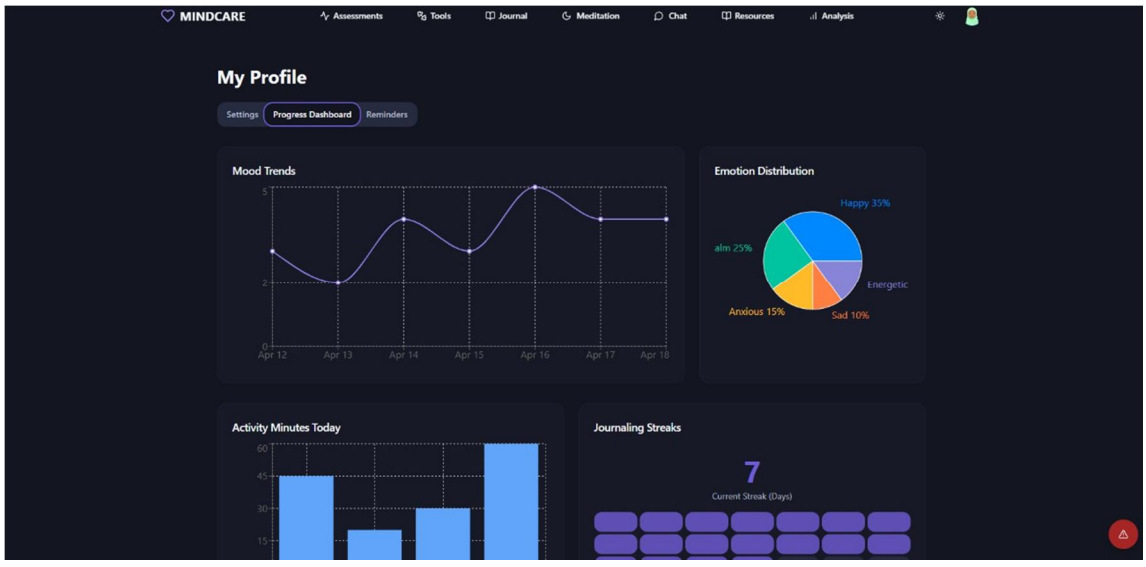




12) Emergency Contact



13) Progress Dashboard



V. RESULTS AND DISCUSSION

A. *User Case Study: Stressed Student*

1) *Profile*

- Mood: Sadness, anxiety, low energy
- Stress prediction: High (82%)
- Preferences: English, light theme, voice interaction

Session 1: Empathetic response and grounding technique: "It's okay to feel overwhelmed. You're not alone. Let's take 60 seconds to breathe together."
Session 2: User joined peer group, shared exam concerns, and engaged anonymously.

2) *Outcome:*

- Stress dropped by 34%
- Mood improved from "Sad" to "Neutral–Positive"
- User reported increased motivation and emotional clarity

VI. CONCLUSION

MindCare demonstrates how AI-enabled empathy and emotional intelligence can be harnessed to provide scalable, accessible, and effective mental health support. The system's personalization, multilingualism, and interactivity set it apart. Future versions will explore integration with wearable devices, video therapy sessions, and biofeedback- based emotion tracking.

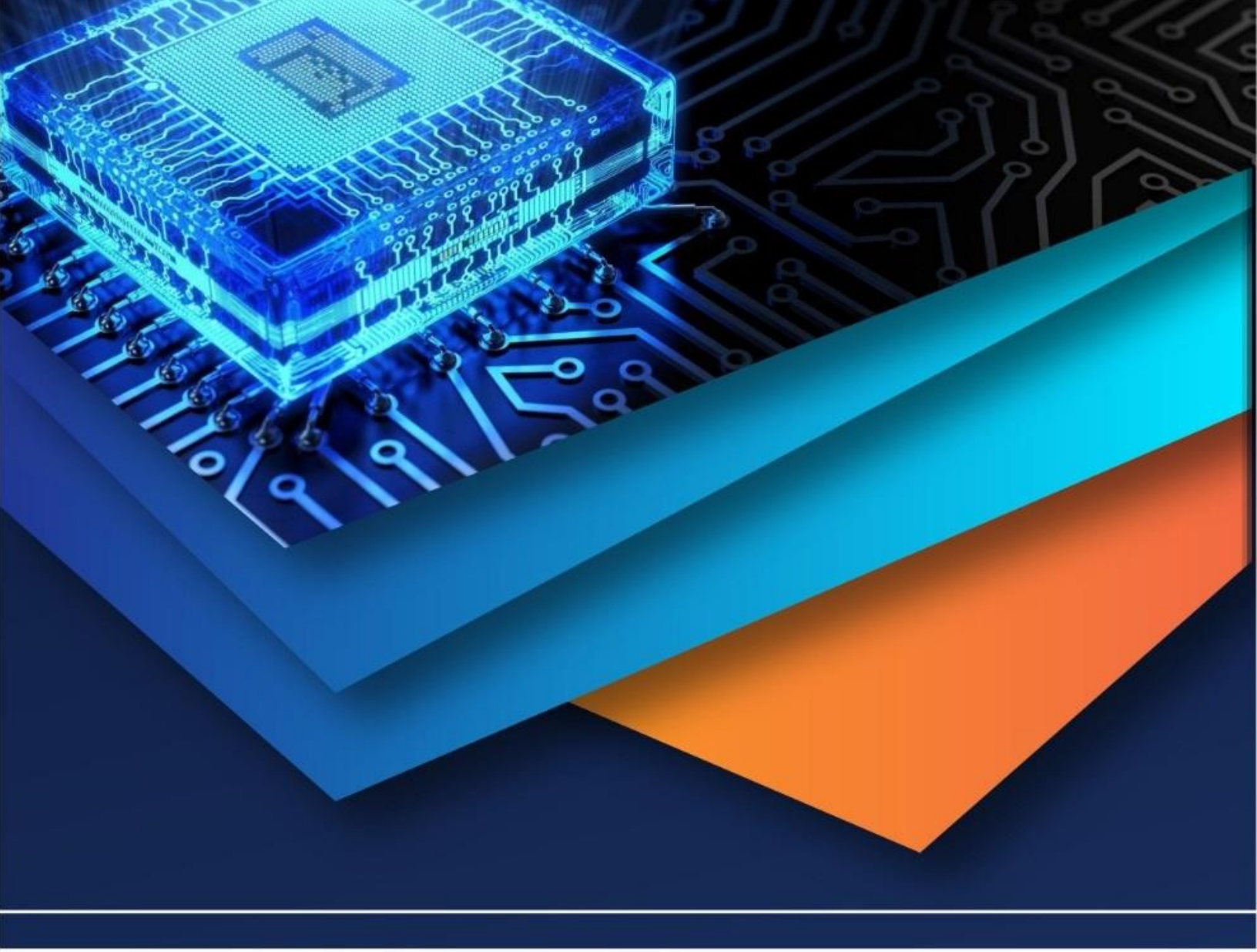
ACKNOWLEDGEMENTS

We express our sincere gratitude to Prof. Shweta Dhawan Chachra for her mentorship, encouragement, and insightful guidance throughout the development of MindCare. We also thank our faculty, peers, and families for their support and belief in this mission-driven work.

REFERENCES

[1] Brown, T., et al. "Language Models are Few-Shot Learners." arXiv:2005.14165
[2] Google DeepMind. "Gemini: The Next Generation Multimodal Model." 2024.
[3] Singh, R., et al. "AI-Based Digital Mental Health Interventions." J. of Health Tech, 2023.
[4] Firebase Docs – Authentication & Firestore Modules
[5] Python SpeechRecognition, gTTS, Flask Docs
[6] Plotly: Data Visualization Library
[7] "Mental Health Trends in Young Adults" – WHO, 2023

©IJRASET: All Rights are Reserved



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)