



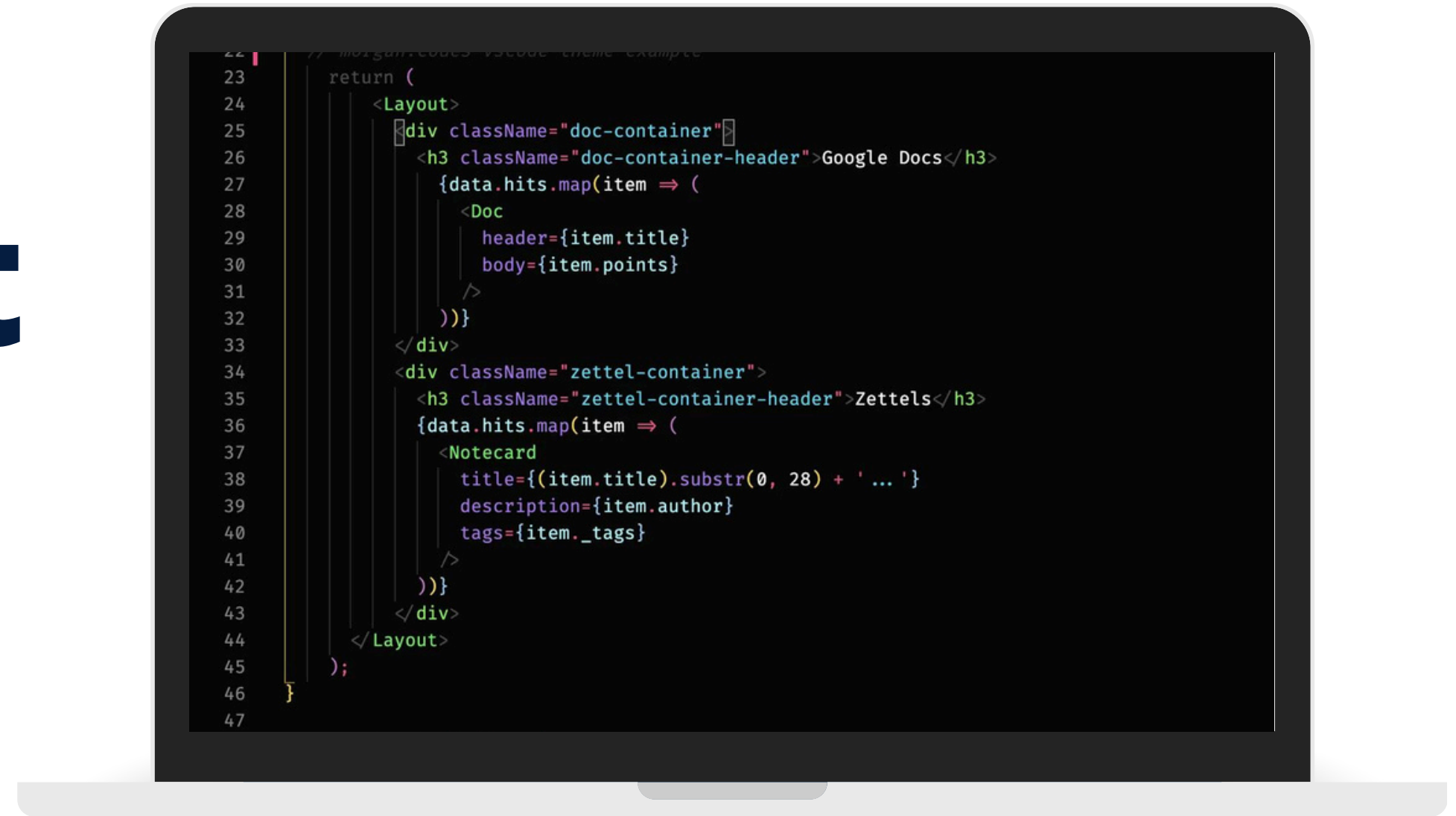
Priyadarshini College Of Engineering, Nagpur

Computer Science & Engineering
7th semester

Major Project

By: – Aarohi Kamlesh Dabrase (250)
– Anushka Sanjay Bodekar (235)
– Payal Namdeo Bansod (223)
– Sanskarika Rajesh Khode (258)

Guided By:– Dr. Namrata Khade Ma'am



Date - 24th Oct 2024

Contents -

- ▶ Introduction & Title
- ▶ Abstract
- ▶ Literature survey
- ▶ Architecture of Project
- ▶ Layout of different modules
- ▶ Conclusion



Mind Lift (personal therapist)

A project that addresses common mental health problems such as anxiety, depression, and trauma. This involves integrating various technologies along with ensuring that the project is both effective and sensitive to users needs.

01

Mood Tracking through Facial Recognition.

02

Self-Help Resources: Articles, videos, and interactive content.

03

Mood Tracking: Tools for recording and analyzing mood and symptoms.

04

Therapeutic Exercises: Cognitive-behavioral therapy (CBT) exercises, mindfulness, and relaxation techniques.

05

Professional Support: Access to therapists or counselors through contact or text.

06

Notifications and Reminders: To encourage engagement in mental health practices.

07

Personalized Recommendations: Based on user input and data analysis.

Abstract

Mind Lift is a comprehensive mental health application designed to enhance well-being through personalized support and tools. The app addresses mental health challenges affecting over 264 million people globally, as per WHO. It provides self-help resources, mood tracking via facial recognition, and therapeutic exercises like CBT and mindfulness.

Users can access professional support through chat or video calls, receive personalized recommendations, and set reminders for mental health practices. Developed using JavaScript, React, Python, Node.js, and MongoDB, Mind Lift aims to boost productivity and minimize personal conflicts.

LITERATURE SURVEY-1

TITLE	Technologies & Methodologies	FINDINGS
<p>MoodCapture: Depression Detection Using In-the-Wild Smartphone Images</p> <p>Subigya Nepal, Arvind Pillai, Weichen Wang, Tess Griffin, Amanda C. Collins, Michael Heinz, Damien Lekkass, Shayan Mirjafari , Matthew Nemesure, George Price, Nicholas C. Jacobson, Andrew T. Campbell.</p> <p>CHI '24, May 11-16, 2024</p>	<ul style="list-style-type: none">• We recruited 181 participants from across the United States using targeted online advertisements on Google and Facebook.• Each participant underwent a clinician-administered Structured Clinical Interview for DSM-5 (SCID), and only those diagnosed with Major Depressive Disorder (MDD), without bipolar disorder, active suicidality, or psychosis, were eligible for the study.• Upon qualification, participants installed our Android-based mobile sensing app on their devices, which gathered Ecological Momentary Assessments (EMA) during the 90-day study period.	<ul style="list-style-type: none">• Through this study, we have demonstrated the potential of using in-the-wild smartphone images and machine learning to detect depression.• Addressing the limitations of our study and building upon its findings, future research can contribute to the development of more robust, accurate, and ethically sound mental health assessment tools that have the potential to improve the lives of individuals affected by depression.• When we embarked on designing our MoodCapture study to investigate whether high-resolution face capture from phones could assess mood.• In the section on Ethical Considerations and User Acceptance, our study was meticulously designed to safeguard user privacy throughout, and we sought their evaluations of the MoodCapture app poststudy.

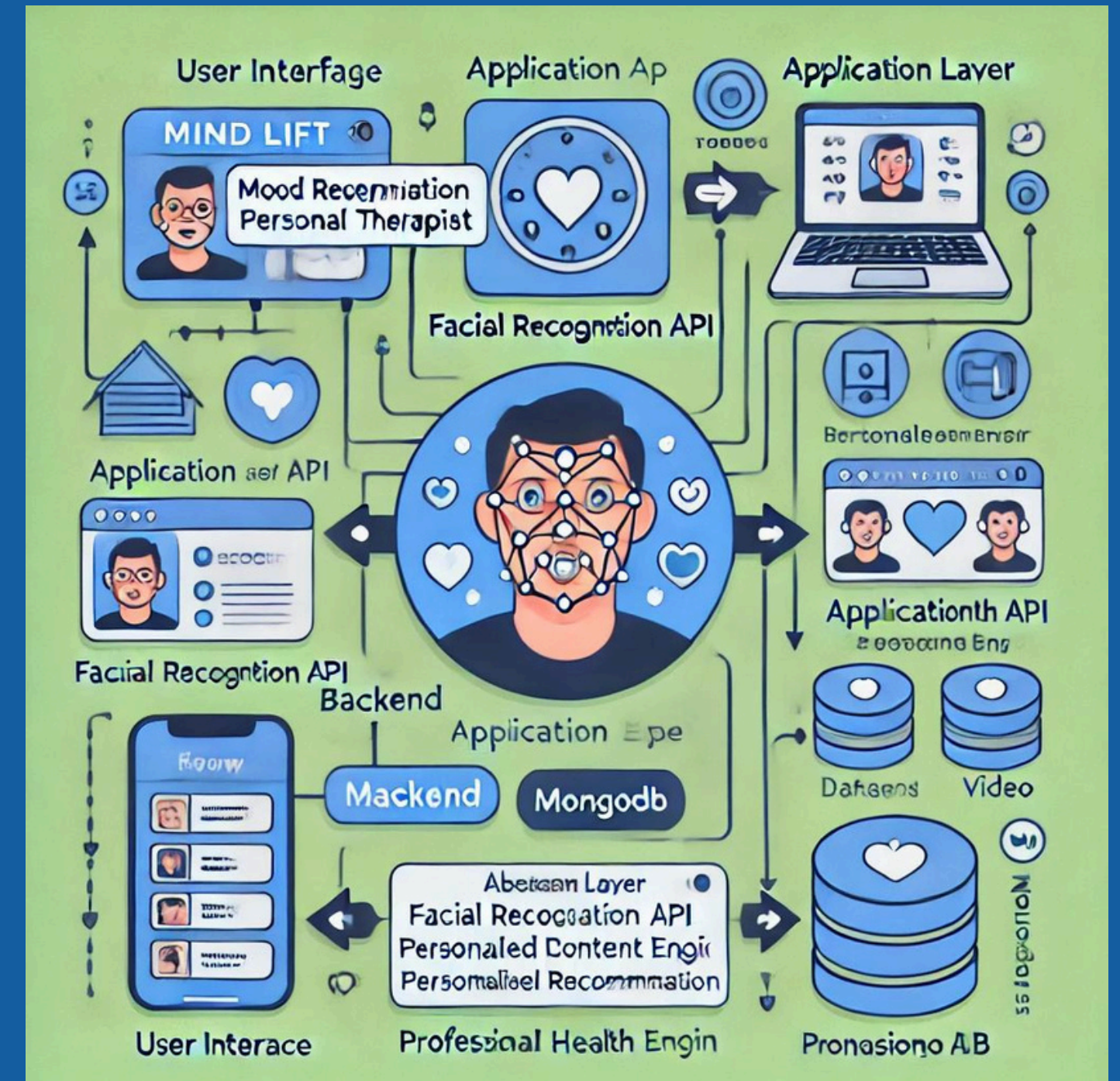
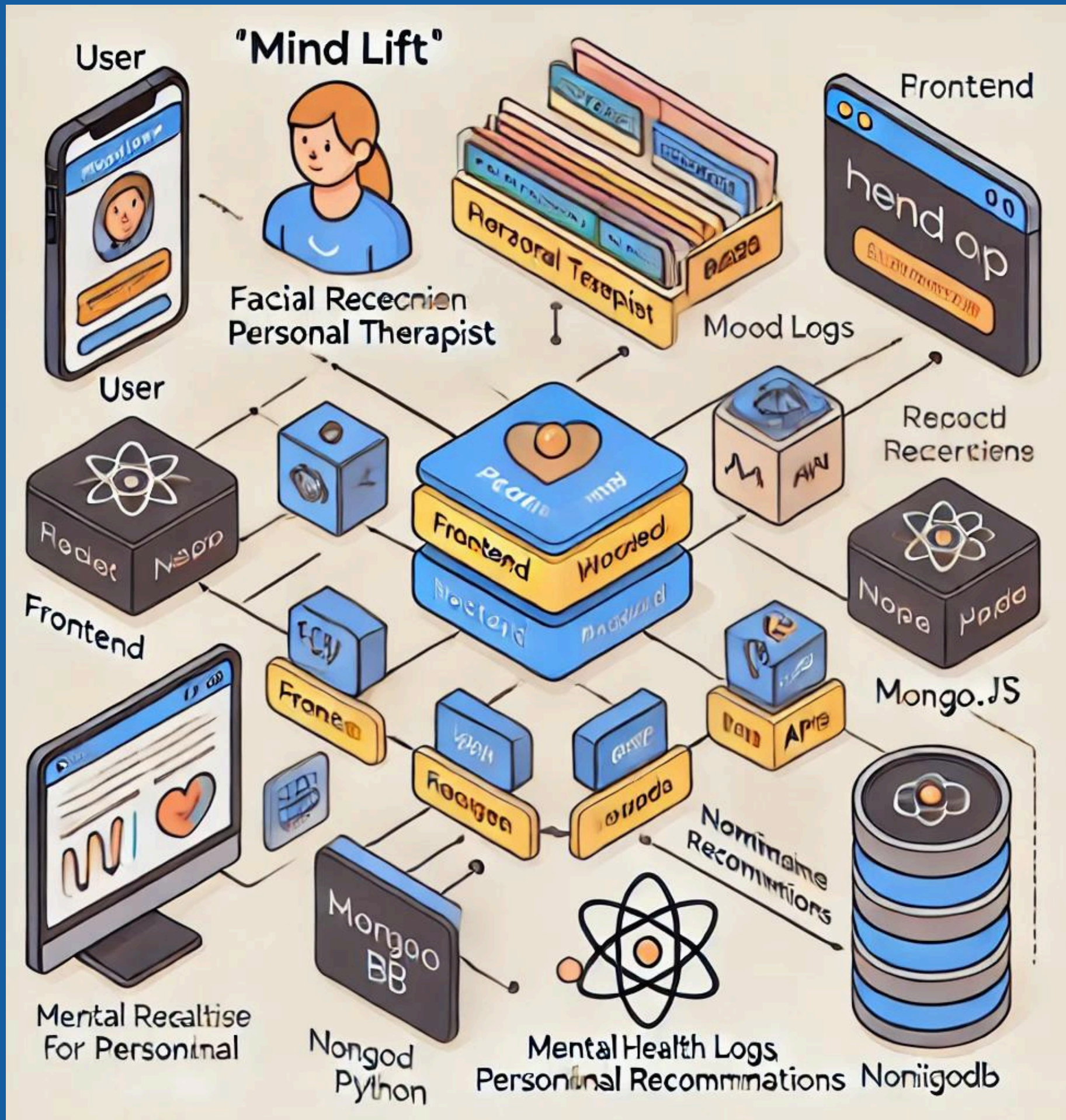
LITERATURE SURVEY-2

TITLE	Technologies & Methodologies	FINDINGS
<p>EVALUATING THE EFFICACY OF INTERACTIVE LANGUAGE THERAPY BASED ON LLM FOR HIGH-FUNCTIONING AUTISTIC ADOLESCENT PSYCHOLOGICAL COUNSELING</p> <p>Yujin Cho, Seojin Kim, Mingeon Kim, Oyun Kwon, Dohyun Lim, Ryan Donghan Kwon, Yoonha Lee.</p> <p>12 nov 2023</p>	<ul style="list-style-type: none">• The role of technology in ASD therapy has expanded significantly.• Jordan [5] discusses the use of technology by occupational therapists in various domains, including communication devices, motor skills, academics, and leisure activities. Virtual reality (VR) technology, as reviewed by Zhang et al.• The application of motion capture technology in clinical evaluation and therapy for ASD, as studied by Baasansuren et al.• Highlights its potential in objectively assessing symptoms and changes over time.• Wearable technologies for monitoring behavioral and physiological responses in children with ASD, as reviewed by Ahuja et al.	<ul style="list-style-type: none">• The evaluation of the Large Language Model (LLM) for interactive language therapy with high-functioning autistic adolescents yielded insightful results.• The assessment, conducted by a panel of clinical psychologists and psychiatrists using the developed scorecard.• Overall, the LLM demonstrated a notable capacity for empathetic and understanding responses. It consistently recognized and appropriately responded to the emotional states presented in the simulated scenarios.• . However, while the LLM showed competence in understanding and empathy, there were occasional lapses in maintaining this consistency, especially in more complex emotional scenarios.

LITERATURE SURVEY-3

TITLE	Technologies & Methodologies	FINDINGS
<p>EVALUATING THE EFFICACY OF INTERACTIVE LANGUAGE THERAPY BASED ON LLM FOR HIGH-FUNCTIONING AUTISTIC ADOLESCENT PSYCHOLOGICAL COUNSELING.</p> <p>Emily E Bernstein^{1,2} , PhD; Hilary Weingarden^{1,2} , PhD; Emma C Wolfe¹ , BA; Margaret D Hall¹ , BA; Ivar Snorrason^{1,2} , PhD; Sabine Wilhelm^{1,2} , PhD, Emily E Bernstein, PhD.</p> <p>J Med Internet Res 2022</p>	<ul style="list-style-type: none">• PubMed• PsycINFO• Embase• conducted systematic searches of 3 databases (PubMed, PsycINFO, and Embase). Broadly, eligible articles described a cognitive behavioral intervention delivered via smartphone app whose primary target was an emotional disorder or problem and included some level of human involvement or support (coaching).• All records were reviewed by 2 authors. Information regarding the qualifications and training of coaches, stated purpose and content of the coaching, method and frequency of communication with users, and relationship between coaching and outcomes was recorded.	<ul style="list-style-type: none">• Of the 2940 titles returned by the searches, 64 (2.18%) were eligible for inclusion.• This review found significant heterogeneity across all of the dimensions of coaching considered as well as considerable missing information in the published articles.• Moreover, few studies had qualitatively or quantitatively evaluated how the level of coaching impacts treatment engagement or outcomes.• Although users tend to self-report that coaching improves their engagement and outcomes, there is limited and mixed supporting quantitative evidence at present.

Block Diagram:



Architecture:

User Interface (UI) Layer:

- Frontend:
 - Built using JavaScript, React.js, React Native for web and mobile interfaces.
 - User accesses features like mood tracking, self-help resources, and therapy sessions.
- Facial Recognition Input:
 - Camera captures images for mood analysis.

Application Layer:

- Backend:
 - Node.js and Python for handling server-side operations.
 - Facial recognition API processes captured images to analyze mood.
 - Cognitive-behavioral therapy (CBT) logic, data processing, and personalized recommendation algorithms.

Data Layer:

- Database:
 - MongoDB stores user data, mood logs, session history, and personalized content.
 - Stores image data processed by the facial recognition API.

External Integrations:

- Mental Health APIs: For self-help resources, content, and professional support.
- Facial Recognition API: Processes user images to analyze emotional states in real-time.

Notification & Analytics:

- Push notifications for reminders.
- Chart.js for visualizing user mood trends and data analysis.

Layout of different modules

1. User Interface (UI) Module:

- Frontend developed using JavaScript, React.js, React Native.
- Users interact with mood tracking, self-help resources, and therapy sessions.

2. Mood Tracking (Facial Recognition) Module:

- Captures user facial data using the front camera.
- Analyzes expressions using a facial recognition API to track emotional states.

3. Therapeutic Exercises & Self-Help Module:

- Provides CBT, mindfulness, and relaxation exercises.
- Displays articles, videos, and interactive content based on user input.

4. Professional Support Module:

- Facilitates real-time communication with therapists via chat or video calls.

5. Personalized Recommendation Engine:

- Uses AI to recommend content and exercises based on user mood and preferences.

6. Database Management Module:

- Manages user data, mood history, and preferences with MongoDB.

7. Notification & Reminder Module:

- Sends notifications to engage users in mental health activities.

Each module is integral to delivering a personalized and effective mental health support experience for users.

Progress Report-

Project Status: Basic UI Implementation Completed

1.Current Phase:

- User Interface (UI) development in progress.
- Basic structure for the web and mobile versions built using React Native.

2.Tasks Completed:

- Developed initial layout for the working.
- Navigation flow between the main sections implemented.
- Initial styling for user-friendly interface design.

3.Tools & Technologies Used:

- React Native for cross-platform UI development.
- JavaScript for front-end logic.
- Basic styling using CSS or React Native Stylesheet.

4.Next Steps:

- Start integrating the backend with Node.js.
- Set up MongoDB for user data storage.
- Implement facial recognition API for mood analysis.

Conclusion-

Mind Lift represents an innovative approach to enhancing mental well-being by combining advanced technologies such as facial recognition, AI-driven mood analysis, and personalized therapeutic content. Through its integration of self-help resources, professional support, and mood tracking, the app can provide real-time insights into users' mental health. The application not only empowers users to improve their mental well-being but also reduces personal conflicts and boosts productivity. As a comprehensive solution, Mind Lift bridges the gap between technology and mental health support, offering a modern approach to wellness.

THANK YOU!