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Inner Peace Assistant

An App for mental health

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Abstract : Inner Peace Assistant is an innovative application designed to provide initial support for individuals grappling with mental health challenges, particularly concerning depression, anxiety, and addiction. It aims to offer a structured approach to comprehending and managing emotions, thoughts, and behaviour. By incorporating sentiment analysis and transformer-based models, the application tailors specific support for each emotional state, be it anxiety, depression, or addiction. Through its user-friendly interface and empathetic communication, the Inner Peace Assistant seeks to emulate a supportive friend, fostering a safe space for users to seek solace and understanding. The expected positive outcomes of the application are founded on research, indicating a potential reduction in stress levels and an enhancement in emotional well- being with consistent usage.

Keywords **– Android Application, NLTK library, Python**

I.INTRODUCTION

Mental health challenges have become increasingly prevalent, affecting individuals across diverse demographics. The Inner Peace Assistant is an innovative application designed as a preliminary response to the complex issues of mental illnesses such as depression, anxiety, and addiction. Developed with a user-centric approach, the application aims to provide a structured framework for comprehending and managing one's thoughts, emotions, and behaviours.

Mental health concerns have escalated into a pressing global issue, with a significant portion of the population encountering these challenges at some point in their lives. Acknowledging the rising incidence of mental health issues, our application serves as a proactive solution, especially tailored for individuals who may not have immediate access to traditional medical support. Through the Inner Peace Assistant, we aim to bridge the gap, ensuring that individuals in underserved communities and remote areas have a resource to turn to during times of emotional distress.

At the core of our application's functionality lies a sophisticated algorithm that facilitates an empathetic and understanding interaction with the user. The process begins with the user's input, serving as the initial point of engagement. Leveraging the VADER sentiment analysis, we identify the user's emotional state, whether it be feelings of anxiety, depression, or signs of addiction. To gain a deeper understanding, we utilize Transformer- based models, allowing us to provide tailored support specific to each emotional state.

For users struggling with anxiety, we provide a range of relaxation techniques, offering effective methods to manage heightened emotional responses. In cases of depression, we prioritize the provision of emotional support, creating a safe space for individuals to express their feelings without fear of judgment. For those dealing with addiction, our application offers comprehensive support throughout the recovery process, guiding individuals towards a path of healing and rehabilitation.

II. LITERATURE SURVEY

Mobile Application for Mental Health Using Machine Learning, 1st edition, December 2022, E.S Mendis, L.W Kasthuriarachchi, H.P.K.L Samarasinha , Sanvitha Kasthuriarachchi, Samantha Rajapaksa [1].It can detect early signs of mental health issues.Mental health data is sensitive, and the app needs to ensure user information is completely secure. Any data breaches could discourage users and damage trust.

The Smart Watch for Depression Detection, 2021, Rishi Chauhan Piyush Kumar [2] provides a comprehensive overview of previous work in this field, which we have incorporated into our paper. It has continuous monitoring System .The use of wearable devices and continuous data collection raises privacy and ethical concerns regarding the use of personal data for mental health monitoring.

Mobile application for campus-based psychosocial wellness program, 2019, Chad Errol R. Booc Jaime D.L. Caro [3] uses Voice

Analysis. It is Relatively comfortable and low-stress way for users to provide data about their mental Health.TheReliance on self-reported data and potential misrepresentation of issues by users due to anonymity, which could lead to inappropriate or inadequate support.

Our application tackles the issues the users can face. Inner peace assistant is user friendly and keeps the users data secure and safe.it is an user friendly AI based Assistant with many other features. It involves clear and concise communication, logical workflows, and providing meaningful feedback to users. Having AI assistant anytime and anywhere a user will feel like just he is talking with her own friend.

III. PROPOSED SYSTEM

In today's fast-paced world, finding inner peace and maintaining emotional well-being is of paramount importance. The demands of modern life can leave us feeling overwhelmed, stressed, and disconnected from ourselves. This is where the Inner Peace Assistant steps in— a user-friendly AI-based companion designed to guide you on a journey to wellness and balance

3.1 Mood-Responsive Assistance:

Have you ever wished for someone to talk to when you're feeling down or anxious? The Inner Peace Assistant can be that someone. It responds to your mood and provides guidance, support, or a listening ear based on how you're feeling. Whether you're joyful, stressed, or introspective, your AI companion is there for you.

3.2 Mood Tracking:

The Inner Peace Assistant keeps a record of your moods, helping you recognize emotional patterns and triggers. By simply logging your feelings, you gain valuable insights into your emotional well-being. It's like keeping a mood diary, but with a supportive and interactive twist.

3.3 Personal Sleep Consultant:

A good night's sleep is fundamental to our physical and emotionalhealth.

3.4 Sleep Tracking:

The app monitors your sleeping patterns, allowing you to see how well you're resting. It records the duration and quality of your sleep, helping you identify areas that need improvement.

3.5 Customized Recommendations:

The Inner Peace Assistant offers personalized recommendations on how many hours of sleep you need per day to feel your best. It helps you set achievable sleep goals and offers practical tips for improving your sleep quality.

3.6 Logical Workflows:

The app is designed with logical workflows that guide you through various wellness-related tasks. Whether you're tracking your mood, setting sleep goals, or seeking advice, the Inner Peace Assistant streamlines the process.

IV. REQUIREMENT ANALYSIS

The Inner Peace Assistant application is an intricate system that integrates both user-facing features and complex backend functionality to provide comprehensive mental health support. To ensure its optimal performance, specific hard-and software requirements have been outlined to guide the development process effectively.

4.1 Hardware Requirements:

The application demands a system running on Windows 10 or macOS Catalina, or later versions, with at least an Intel Core i5 processor or its equivalent for smooth performance. To handle the computational demands of the application, a minimum of 8 GB RAM is recommended, although higher capacities are preferable for better efficiency.

A substantial storage capacity of at least 256 GB SSD or larger is necessary to accommodate data storage and the functioning of the application. Additionally, a high-speed broadband internet connection is essential for testing and updating the application. As the application also includes a mobile component, testing on different platforms necessitates a mobile device for comprehensive analysis and functionality checks.

4.2 Software Requirements:

The development of the application necessitates the utilization of specific development tools such as the latest stable version of the Flutter SDK. Moreover, either Android Studio or Visual Studio Code is recommended as the integrated development environment (IDE) for efficient coding and development.

The Flutter and Dart plugins for the chosen IDE facilitate seamless integration and implementation of the application's

components. Git is required for effective version control during the development process, ensuring smooth collaboration and tracking of changes. For the database management system, the application utilizes SQL Server Management Studio for Windows and MYSQL database server for efficient data storage and retrieval.

4.3 Programming Languages:

The application is primarily developed using Dart for the Flutter app, enabling the seamless integration of various components and ensuring a cohesive user experience.

SQL is employed for the management of the application's database, allowing efficient data storage, retrieval, and management. Python is utilized for the AI components, facilitating the integration of machine learning models, natural language processing (NLP) libraries, and sentiment analysis tools.

4.4 Additional Requirements for AI:

The application leverages advanced AI technologies to provide users with comprehensive mental health support. For this purpose, specific frameworks and libraries have been integrated into the system. Dialog flow serves as the chatbot framework, enabling effective communication and interaction with users.

TensorFlow is employed as the primary machine learning framework, facilitating the integration of various AI models and enhancing the application's overall intelligence.

The NLTK library is utilized for natural language processing tasks, enabling the application to interpret and process user input effectively. Additionally, the VADER sentiment analysis tool is utilized for comprehensive sentiment analysis, enabling the application to gauge the emotional state of the user accurately. The application also utilizes a supervised model for emotion detection, allowing it to offer personalized and effective support based on the user's emotional state.

Abbreviations and Acronyms

IDE	Integrated Development Environment
SDK	Software Development Kit
NLTK	Natural Language Toolkit

SQL Structured Query Language

V. Flow of application :

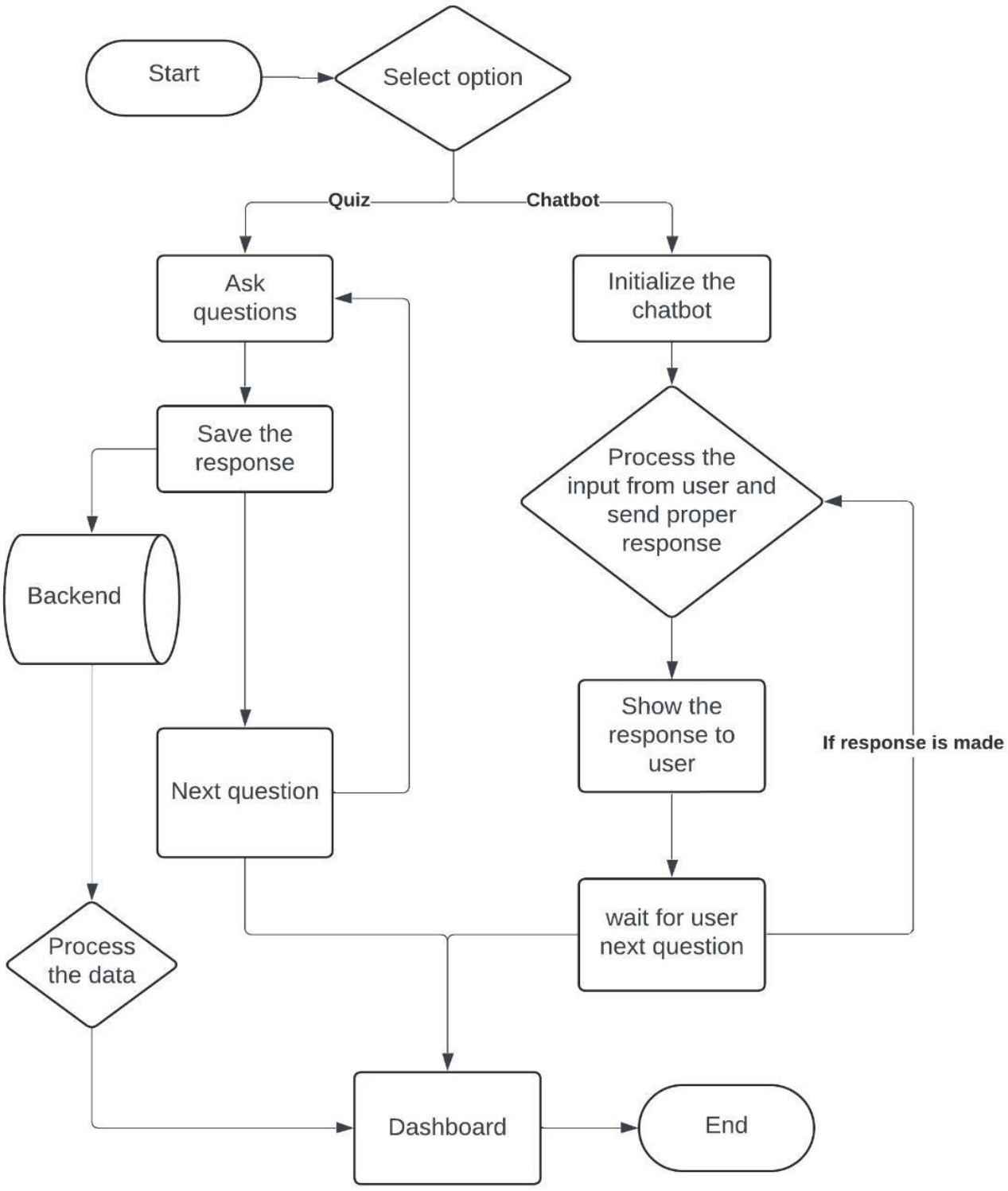

Figure 1 : Algorithm

5.1 ALGORITHM

Step 1 - Start

Step 2 - Select "Quiz" or "Chatbot" Step 3 - If "Quiz" selected:

Step 3a - Ask questions, save responses

Step 3b - Backend processing, move to next question Step 3c - Process data, display results

Step 3d - End

Step 4 - If "Chatbot" selected:

Step 4a - Initialize chatbot

Step 4b - Process user input, send response Step 4c - Show response, wait for next question

Step 4d - Repeat steps 4b-4c until conversation ends Step 4e – End

The algorithm begins with a "Start" node, which serves as the entry point. It then proceeds to a decision point labeled "Select option," where the user is prompted to choose between two options: "Quiz" or "Chatbot."

If the user selects the "Quiz" option, the following steps are executed:

1. "Ask questions": The system presents a set of questions to the user.
2. "Save the response": The user's answers to the questions are recorded and saved in a "Backend" system or database.
3. "Next question": After saving the response, the system moves to the next question in the quiz.
4. "Process the data": Once all questions have been answered, the collected data is processed, possibly for analysis or reporting purposes.
5. "Dashboard": The processed data is then made available through a "Dashboard" interface, likely for visualization or further analysis.

Alternatively, if the user selects the "Chatbot" option, the following steps are executed:

1. "Initialize the chatbot": The chatbot functionality is initialized and prepared to receive user input.
2. "Process the input from user and send proper response": The system processes the user's input (e.g., text, voice, or other forms of input) and generates an appropriate response based on the chatbot's logic or underlying model.
3. "Show the response to user": The generated response is then displayed or presented to the user through the appropriate interface or modality.
4. "Wait for user next question": The system waits for the user to provide additional input or ask another question, at which point the process repeats from the "Process the input from user and send proper response" step.

The algorithm also includes an "End" node, which represents the termination point of the process, likely after the user has completed the quiz or finished interacting with the chatbot.

VI. RESULTS

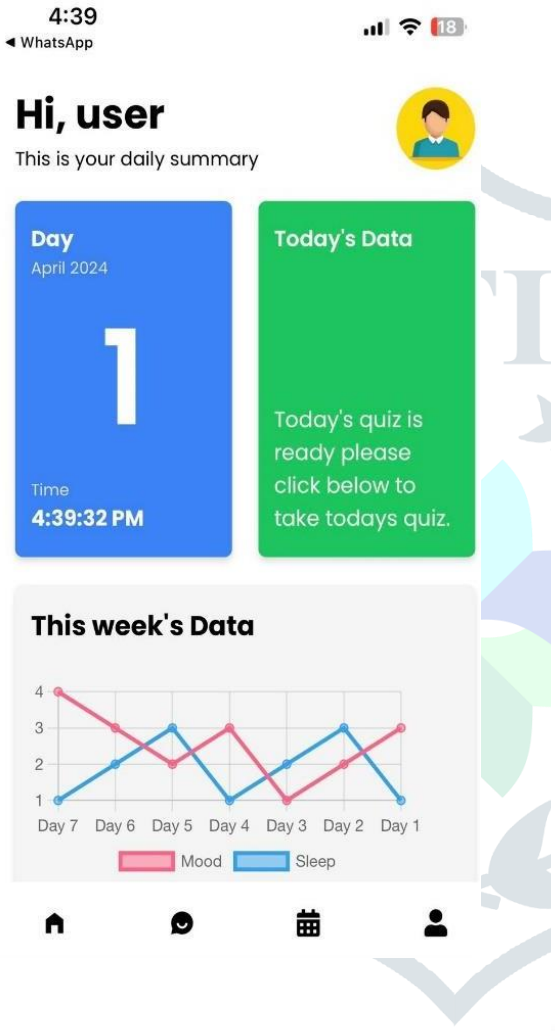

figure 1 : homepage

figure 2 : homepage 2

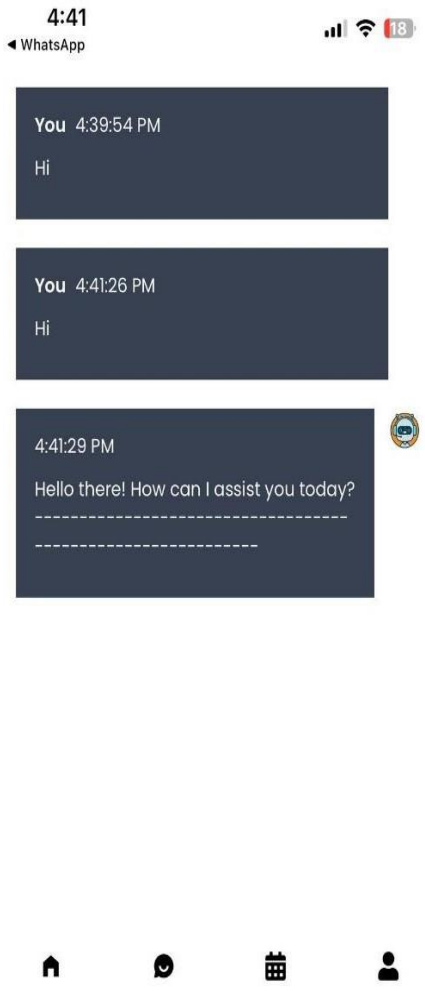

figure 3 : chatbot interface

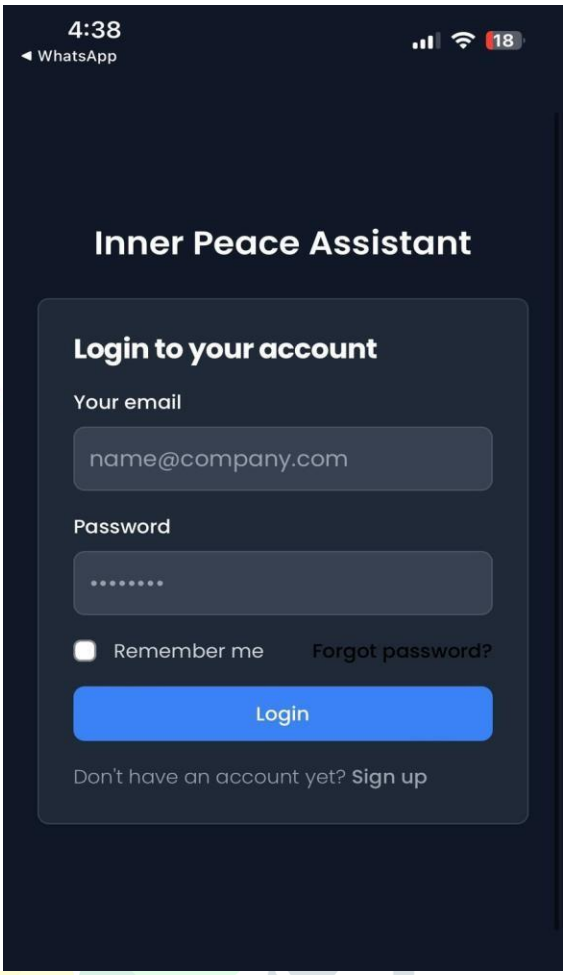

figure 4 : login page

figure 5 : profile page

figure 6 : calender and reminder

VII. CONCLUSION

Our proposed solution "Inner Peace Assistant" not only fills this gap but also offers a better approach to mental health management. It combines mood tracking, sleep tracking, and a compassionate AI assistant, all aimed at supporting users during their emotional challenges. We firmly believe in the positive outcomes our app can bring. It's not just about reducing stress or improving mood; it's about providing a sense of connection, empathy, and care to those who need it most. We are committed to measuring our success through user engagement, feedback, and the tangible improvements we see in the lives of our users. In conclusion, We Believe that "Inner Peace Assistant" is more than just an app. where we strive to make a meaningful impact on the lives of individuals facing emotional challenges. Thank you for your attention, and we are now open to any questions or discussions you may have. The Inner Peace Assistant is more than just an app; it's a lifeline. We are on a mission to make a meaningful impact on the lives of individuals facing emotional challenges. Our solution is built on the foundation of empathy, understanding, and support. We invite you to join us in this journey toward better mental health and well-being\

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