e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:05/May-2023 Impact Factor- 7.868 www.irjmets.com

COMPANION APP: A MENTAL HEALTH TRACKER

Mayureshwar Jadhav[*1], Rohit Kulkarni[*2], Bhagyashri Nage[*3], Amit Dixit[*4], Vishal Walunj[*5]

[*1,2,3,4]Dr. D. Y. Patil School of Engineering Academy, Computer Engineering, Maharashtra, India),

[*5]Professor Head of Department, Department of Computer Engineering, Dr. D. Y. Patil School of Engineering Academy, Pune, Maharashtra, India

DOI : https://www.doi.org/10.56726/IRJMETS39646

ABSTRACT

Mental health is a growing concern worldwide, with an increasing number of individuals experiencing mental health issues. Technology has the potential to bridge the gap in mental health care, providing convenient and accessible solutions for those in need. In recent years, there has been a surge in the development of mental health apps, with many focused on providing support and resources for those struggling with mental health issues.

An Android app focused on mental health can provide a platform for individuals to access a range of mental health services, including self-help tools, peer support, and professional guidance. The app can be designed to address specific mental health issues such as anxiety, depression, and stress, and can be customized to cater to the unique needs of each user. The app can offer a range of features such as a symptom checker, mental health assessments, and personalized treatment plans. It can also include resources such as articles, videos, and podcasts on mental health topics, as well as daily mindfulness exercises and guided meditations. Additionally, the app can provide access to licensed mental health professionals through video conferencing, messaging, or phone calls, allowing users to receive personalized support and guidance from the comfort of their own homes.

To ensure user engagement and motivation, the app can incorporate gamification elements such as rewards, challenges, and progress tracking. It can also include social features such as a community forum, allowing users to connect with others who may be experiencing similar challenges and providing a supportive network for individuals on their mental health journey.

Overall, a mental health Android app can be an effective tool in promoting mental well-being and providing accessible and convenient support for individuals experiencing mental health issues.

I. INTRODUCTION

Mental health is a crucial aspect of overall well-being, but unfortunately, it is often overlooked or stigmatized in many societies around the world. According to the World Health Organization (WHO), one in four individuals globally will be affected by mental or neurological disorders at some point in their lives. Mental health issues can significantly impact an individual's quality of life, making it difficult to carry out day-to-day activities and relationships. It can lead to physical health problems, affect work, or school performance, and lead to social isolation. Android-based mental health apps can provide an effective solution for individuals who may not have access to traditional mental health services due to financial, logistical, or other reasons. These apps can provide a range of services, including self-help tools, mental health assessments, and access to licensed mental health professionals. Additionally, they can offer a range of features such as gamification elements, mindfulness exercises, and community forums, creating a more engaging and supportive user experience. The development of Android mental health apps has been gaining momentum, with several options available on the Google Play Store. However, there is still a need for further research and development to ensure that these apps are evidence-based, reliable, and effective in addressing mental health concerns. Overall, the increasing use of technology in mental health care provides a promising avenue for improving mental health outcomes and addressing the global burden of mental health disorders.

II. METHODOLOGY

The companion app is developed to help its users deal with their mental health issues and problems anonymously, and to improve their overall wellbeing. The development of Android mental health apps has been gaining momentum, with several options available on the Google Play Store. However, there is still a need for further research and development to ensure that these apps are evidence-based, reliable, and effective in addressing mental health concerns.

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:05/May-2023 Impact Factor- 7.868 www.irjmets.com

Problem Statement

Mental health is a significant global health challenge, with one in four individuals experiencing mental or neurological disorders at some point in their lives, according to the World Health Organization (WHO). Despite this prevalence, there is still a significant gap in mental health care access, especially for individuals in low-income countries or remote areas with limited access to traditional mental health services. Android-based mental health apps have emerged as a promising solution to address these challenges. However, not all mental health apps are created equally, and there is a need for more evidence-based, reliable, and effective mental health apps on the market. Therefore, there is a pressing need to develop evidence-based and effective mental health Android apps that can be personalized, affordable, and accessible to all individuals. Such apps can help bridge the gap in mental health care, reduce stigma, and promote mental well-being, especially for individuals who are unable to access traditional mental health services.

Overall Description

The mental health chatbot AI Android app is an innovative and user-friendly mobile application that utilizes artificial intelligence to provide personalized and evidence-based mental health care services to individuals. The app leverages natural language processing (NLP) algorithms to interpret the user's input and respond appropriately, creating a conversational and engaging experience. Upon registration, the app guides users through a series of mental health assessments that help identify their symptoms and the severity of their condition. Based on the results of these assessments, the app provides a personalized treatment plan that addresses the user's specific mental health needs and goals. The treatment plan may include self-help tools, mindfulness exercises, and access to licensed mental health professionals who can review the user's mental health history and provide additional support and guidance.

The app is designed to ensure the privacy and security of user data, including their mental health information and personal details. Robust security protocols and encryption are used to protect the user's information, and users can be assured that their data is kept confidential.

Overall, the mental health chatbot AI Android app is an innovative and user-friendly solution that provides accessible and personalized mental health care services to individuals. It aims to improve mental well-being, reduce the burden of mental health disorders, and provide support to those who need it.

Need of the System

The need for a mental health chatbot AI Android app stem from the growing need for accessible and affordable mental health support. Mental health conditions such as anxiety, depression, and stress are prevalent worldwide, affecting millions of individuals. However, many individuals do not receive adequate mental health care due to factors such as financial constraints, stigma, and limited access to mental health care services.

The mental health chatbot AI Android app can help address these challenges by providing individuals with a convenient, affordable, and accessible way to receive mental health support. The app can be accessed from anywhere, at any time, and can provide personalized mental health support tailored to the individual's needs and preferences. In summary, the mental health chatbot AI Android app is needed to provide individuals with a convenient, affordable, and accessible way to receive evidence-based mental health support. The app can help individuals manage their mental health and well-being and improve their quality of life.

III. MODELING AND ANALYSIS

System Analysis

Android Studio and Firebase are used for developing our projects which are available everywhere. It provides the technical guarantee of accuracy, reliability and security. The current system development is technically feasible with all the resources need for development of the apps as well as the maintenance of the same is easy.

Java Language- Java is the name of a programming language created by Sun Microsystems in 1995. This company was bought out by Oracle Corporation, which continues to keep it up to date. The latest version is Java SE 9, which came out in 2017. Java, which was called Oak when it was still being developed, is object oriented, meaning it is based on objects that work together to make programs do their jobs. Java code looks like C, C++, or C#, but code written in those languages will not work in Java in most cases without being changed. Firebase- Firebase frees developers to focus fantastic crafting user experiences. You don't need to manage servers. You don't need to write

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:05/May-2023 Impact Factor- 7.868 www.irjmets.com

APIs. Firebase is your server, your API, and your data store, all written so generically that you can modify it to suit most needs. Most databases require you to make HTTP calls to get and sync your data. Most databases give you data only when you ask for it. Firebase Storage provides a simple way to save binary files—most often images, but it could be anything—to Google Cloud Storage directly from the client.

Requirement Analysis

Hardware Requirements:

1. Android smartphone or tablet with a minimum of 2GB RAM
2. Minimum of 16GB internal storage
3. A high-resolution camera for video calls
4. Internet connectivity (Wi-Fi or mobile data)

Software Requirements:

1. Android operating system version 5.0 (Lollipop) or higher
2. Programming language: Java or Kotlin
3. Integrated Development Environment (IDE): Android Studio
4. Chatbot AI platform: Dialog flow, IBM Watson, or similar
5. Database: SQLite or similar for storing user data
6. User interface design: Material Design or similar
7. Encryption: SSL for secure data transmission

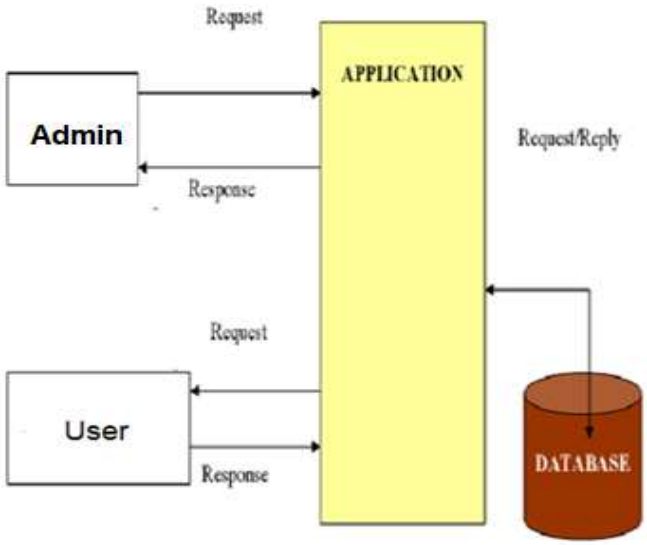

Figure 1: System Architecture

IV. RESULTS AND DISCUSSION

The objective of a mental health Android app is to provide accessible, personalized, and evidence-based mental health care services to individuals who are struggling with mental health issues. The app aims to address the challenges of limited access to traditional mental health services, high costs, long wait times, lack of personalization, and stigma. The app should provide a range of mental health services, including self-help tools, mental health assessments, personalized treatment plans, access to licensed mental health professionals, mindfulness exercises, and social support through community forums.

System Design: -

Front End -

Android Studio is the official Integrated Development Environment (IDE) for Android app development, based on IntelliJ IDEA. On top of IntelliJ's powerful code editor and developer tools, Android Studio offers even more features that enhance your productivity when building Android apps, such as:

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:05/May-2023 Impact Factor- 7.868 www.irjmets.com

- A flexible Gradle-based build system
- A fast and feature-rich emulator
- A unified environment where you can develop for all Android devices
- Apply Changes to push code and resource changes to your running app without restarting your app
- Code templates and GitHub integration to help you build common app features and import sample code
- Extensive testing tools and frameworks
- Lint tools to catch performance, usability, version compatibility, and other problems
- C++ and NDK support
- Built-in support for Google Cloud Platform, making it easy to integrate Google Cloud
- Messaging and App Engine

Back End -

SQLite Database is an open-source database provided in Android which is used to store data inside the user's device in the form of a Text file. We can perform so many operations on this data such as adding new data, updating, reading, and deleting this data.

SQLite is an offline database that is locally stored in the user's device, and we do not have to create any connection to connect to this database.

SQLite is an open-source SQL database that stores data to a text file on a device. Android comes in with built in SQLite database implementation. SQLite supports all the relational database features. To access this database, you don't need to establish any kind of connections for it like JDBC, ODBC etc. The main package is an android. database.sqlite that contains the classes to manage your own databases.

To create a database, you just need to call this method openOrCreateDatabase with your database name and mode as a parameter.

It returns an instance of SQLite database which you must receive in your own object.

Data is stored in the SQLite database in the form of tables. When we stored this data in our SQLite database it is arranged in the form of tables that are like that of an excel sheet. Below is the representation of our SQLite database which we are storing in our SQLite database.

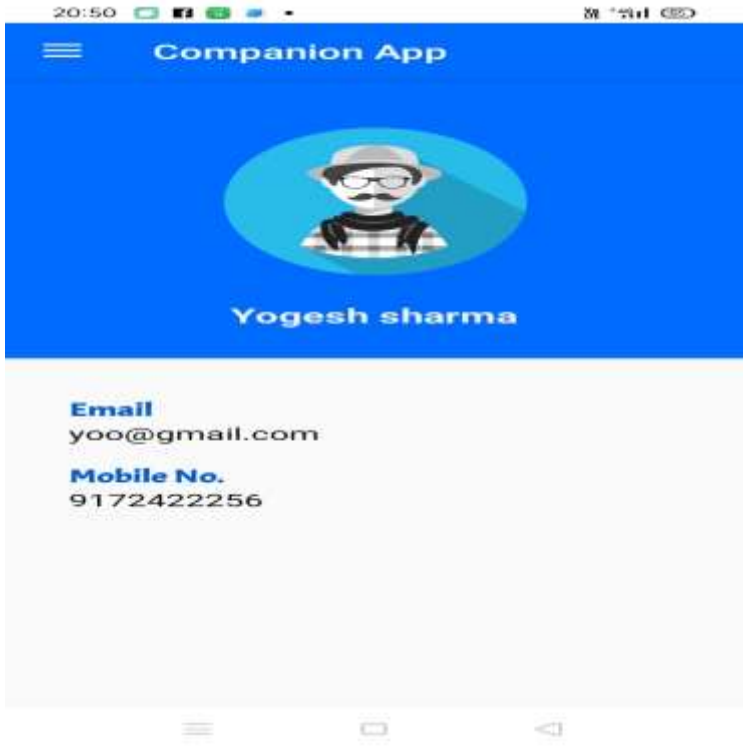

Figure 2: User Profile

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:05/Issue:05/May-2023 Impact Factor- 7.868 www.irjmets.com

Figure 3: Account Creation Tab

V. CONCLUSION

In conclusion, the mental health chatbot AI Android app is a critical tool that can help individuals manage their mental health effectively. The app can provide individuals with convenient, affordable, and accessible access to mental health support, which is essential, given the growing prevalence of mental health conditions worldwide. Overall, the mental health chatbot AI Android app is a necessary and valuable tool that can help individuals manage their mental health effectively, improve their quality of life, and reduce the stigma associated with mental health conditions. It has the potential to revolutionize mental health care, making it more accessible, affordable, and personalized for individuals worldwide.

VI. REFERENCES

[1] Bucci, S., Schwannauer, M., Berry, N., & Reay, R. (2019). Smartphone applications for mental health: A rapid review. Psychological services, 16(2), 345-355. doi: 10.1037/ser0000304

[2] Wang, Y., Min, J., Khuri, J., Xue, H., & Xie, B. (2019). Mobile health interventions in mental health: A systematic review. Healthcare, 7(3), 89. doi: 10.3390/healthcare7030089

[3] Lee, M., Kim, J. Y., Lim, H., & Kang, D. (2021). The effects of artificial intelligence conversational agents on mental health: A systematic review and meta-analysis. International Journal of Environmental Research and Public Health, 18(2), 572. doi: 10.3390/ijerph18020572

[4] Palanica, A., Flaschner, P., Thommandram, A., Li, M., Fossat, Y., & Physicians, T. (2019). Physicians' perceptions of chatbots in health care: Cross-sectional web-based survey. Journal of Medical Internet Research, 21(4), e12887. doi: 10.2196/12887

[5] Kocaballi, A. B., Laranjo, L., Quiroz, J. C. Z., Tudor Car, L., & Liaw, S. T. (2019). Chatbots in healthcare: A systematic review of the literature. Journal of the American Medical Informatics Association, 26(9), 1248-1259. doi: 10.1093/jamia/ocz059

[6] Vaidyam, A., Wisniewski, H., Halamka, J., Kashavan, M., & Torous, J. (2019). Chatbots and conversational agents in mental health: A review of the psychiatric landscape. Canadian Journal of Psychiatry, 64(7), 456-464. doi: 10.1177/0706743719839384

[7] Holtz, B. E., & Murray, K. M. (2017). A mobile app for self-management of mental health among college students: Rationale, development, and beta testing. JMIR Mental Health, 4(2), e17. doi: 10.2196/mental.7514

[8] Torous, J., & Roberts, L. W. (2017). Needed innovation in digital health and smartphone applications for mental health: Transparency and trust. JAMA Psychiatry, 74(5), 437-438. doi: 10.1001/jamapsychiatry.2017.0261

[9] Ly, K. H., Ly, A. M., Andersson, G., & Carlbring, P. (2014). Behavioral activation-based guided self-help for depression: A randomized controlled trial. PloS one, 9(6), e100318. doi: 10.1371/journal.pone.0100318

[10] Hilti, D. M., Chan, S., Torous, J., Luo, J., & Boland, R. J. (2019). Mobile health, smartphone/Smartwatch apps, and self-management of mental health: A journey into the future. Current Psychiatry Reports, 21(8), 83. doi: 10.1007/s11920-019