

Mental Health Tracker

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Abstract: *Mental health and well-being have become prominent issues in the realm of public health. Globally, the prevalence of mental health disorders is on the rise, contributing significantly to the burden of disease worldwide. However, resources and services allocated to address these disorders remain disproportionately inadequate compared to the magnitude of the issue. A substantial majority—ranging from 75% to 85%—of individuals diagnosed with mental health conditions in low and middle-income countries (LMICs) are deprived of treatment due to factors such as limited awareness, shortage of mental health professionals, and pervasive stigma surrounding seeking help.*

In the context of India, this treatment gap is further exacerbated in rural areas by factors including low literacy rates, inadequate understanding of mental health, insufficient mental health services, and a shortage of trained professionals. Socioeconomic disparities and a lack of accessible transportation further hinder access to primary healthcare facilities.

To address these disparities in mental health treatment, the imperative lies in developing innovative healthcare delivery models that can be seamlessly integrated into the existing public health infrastructure. A foundational step in this direction involves the identification and categorization of symptoms and emotional states. This is where mood tracking emerges as a crucial instrument. By enabling individuals to monitor their emotional fluctuations, mood tracking provides a valuable mechanism for better understanding one's mental well-being.

The MHT project represents a comprehensive initiative aimed at tracking and assessing an individual's mental well-being through mood analysis. Moreover, it offers a range of preventive measures and coping strategies to assist individuals who may find themselves slightly below the threshold of optimal mental health. By leveraging mood tracking and implementing actionable interventions, the MHT project endeavors to narrow the treatment gaps prevalent in mental health care, thus contributing to a healthier and more resilient society.

Keywords: Mental health tracker

I. INTRODUCTION

In the current context, the issue of emotional well-being is a significant concern. The state of emotional well-being has been compromised due to a large number of individuals working remotely and being socially isolated. Consequently, it is crucial to proactively address and resolve any concerns before they become overly severe. Therefore, this project aims to achieve these objectives for the user.

Mental health tracking involves the systematic monitoring and assessment of one's emotional and cognitive experiences over time. Similar to how we track physical health through various metrics like heart rate, steps taken, and sleep patterns, mental health tracking offers a structured approach to understanding the nuances of our emotional well-being. By logging and analysing emotional states, stress levels, mood fluctuations, and triggers, individuals can gain valuable insights into their mental health patterns and make informed decisions to foster resilience and mental wellness.

This application guides users towards a state of calmness and wellness. Users will learn effective strategies to manage daily stress and enhance their emotional well-being. It is important to acknowledge that certain users might be dealing with mental health challenges and may not feel as comfortable engaging with the app as others. Consequently, the application will prioritize simplicity and approachability.

To develop the application, I will utilize Java and Firebase. These programming languages will be employed to create a user-friendly interface with a straightforward design. Initially, the application will facilitate user authentication, followed by the presentation of various sets of questions that the user needs to answer. Based on the provided responses, the app will indicate the user's mental well-being status and offer appropriate guidance. In more severe cases, the application will recommend suitable interventions and connect the user with relevant professionals, assisting them in overcoming their current situation.

There are mainly 4 modules in this web application:

- Users
- Admin
- Therapist
- ML Model

In this project there are logins for each modules and with each unique functionalities.

II. METHODOLOGY

After analysing the requirements of the task to be performed, the next step is to analyse the problem and understand its context. The first activity in the phase is studying the existing system and other is to understand the requirements and domain of the new system. Both the activities are equally important, but the first activity serves as a basis of giving the functional specifications and then successful design of the proposed system. Understanding the properties and requirements of a new system is more difficult and requires creative thinking and understanding of existing running system is also difficult, improper understanding of present system can lead diversion from solution.

III. EXISTING AND PROPOSED SYSTEM

The proposed system is a centralized platform which serves as a comprehensive tool to track and improve user's mental health. It includes the following features:

- Includes user module for self-assessment
- Admin module for management
- A Therapist module for access to licensed mental health professionals
- An emotion prediction ML model for personalized recommendations

The existing system is physical system comprising of manual self-assessment methods such as journals or completing surveys.

In this system, access to mental health professionals and psychiatrists are limited. And the process of tracking mental health is often fragmented and disorganized.

IV. BACKGROUND

Technologies used in this project:

Python has become one of the most dominant programming languages today. As per stats by major survey sites, Python has ranked among the top coding languages for the past few years now. There are tons of reasons for choosing Python as the primary language if compared with others such as Java, C++, or PHP. Since we're here to talk about web development, surprisingly even in web development, Python has reached its peak with tons of features, and improvements, and over the period it is becoming popular every day.

The most crucial point from a developer's point of view is to pick the right language that can deliver the desired results with ease, especially when we talk about web development. There are certain factors to consider that include management of database, security, data retrieval and so on. Now, how these factors fit in with Python is still clueless for most programmers because they've been using Java, PHP, etc. for web development but today, even big tech giants like Netflix, Google, and NASA have been actively using Python for web development. So, in this article, we will see why Python can be considered for web development and became famous among the top programming languages over these years.

[1] **ReactJS** tutorial provides basic and advanced concepts of ReactJS. Currently, ReactJS is one of the most popular JavaScript front-end libraries which has a strong foundation and a large community.

ReactJS is a declarative, efficient, and flexible JavaScript library for building reusable UI components. It is an open-source, component-based front end library which is responsible only for the view layer of the application. It was initially developed and maintained by Facebook and later used in its products like WhatsApp & Instagram.

Our ReactJS tutorial includes all the topics which help to learn ReactJS. These are ReactJS Introduction, ReactJS Features, ReactJS Installation, Pros and Cons of ReactJS, ReactJS JSX, ReactJS Components, ReactJS State, ReactJS Props, ReactJS Forms, ReactJS Events, ReactJS Animation and many more.

ReactJS tutorial provides basic and advanced concepts of ReactJS. Currently, ReactJS is one of the most popular JavaScript front-end libraries which has a strong foundation and a large community.

React provides a few built-in hooks like `useState`, `useContext`, `useReducer`, `useMemo` and `useEffect`. Others are documented in the Hooks API Reference. `useState` and `useEffect`, which are the most commonly used, are for controlling state and side effects respectively.

[2] **Node.js** is a cross-platform runtime environment and library for running JavaScript applications outside the browser. It is used for creating server-side and networking web applications. It is open source and free to use.

Many of the basic modules of Node.js are written in JavaScript. Node.js is mostly used to run real-time server applications.

The definition given by its official documentation is as follows:

Node.js is a platform built on Chrome's JavaScript runtime for easily building fast and scalable network applications.

[3] **Django** is used extensively in web development due to its scalability, security, and ease of use. It is used for building web applications of all sizes, from small to large-scale enterprise applications. Django is also highly customizable, with many third-party packages and extensions available to extend its functionality.

[5] **SQLite** is a popular lightweight relational database management system that is used to store and manage data in web applications. SQLite is known for its simplicity, reliability, and ease of use, making it an excellent choice for small to medium-sized web applications.

SQLite is used extensively in web development due to its small size, fast performance, and low memory footprint. It is used in applications that require a lightweight database solution, such as mobile applications, embedded systems, and small web applications.

SQLite was designed to allow the program to be operated without installing a database management system or requiring a database administrator. Unlike client-server database management systems, the SQLite engine has no standalone processes with which the application program communicates. Instead, a linker integrates the SQLite library — statically or dynamically — into an application program which uses SQLite's functionality through simple function calls, reducing latency in database operations; for simple queries with little concurrency, SQLite performance profits from avoiding the overhead of interprocess communication.

[4] **Machine learning** is a subfield of artificial intelligence that involves building systems that can learn from data and improve their performance over time. Machine learning is used in various domains, including computer vision, natural language processing, speech recognition, and recommendation systems.

Python is widely used in machine learning due to its vast number of libraries and tools available for this task. Some of the popular libraries for machine learning include Scikit-learn, TensorFlow, PyTorch, and Keras. These libraries provide tools for data preprocessing, feature extraction, model training, and evaluation.

V. RESULTS AND DISCUSSIONS

Track Your **Mental Health**

Stay in tune with your emotions

Get Started



Fig1: Home Page



Sign in here [User](#) [Therapist](#) [Admin](#)

Or

Enter a valid email address
Email address

Enter password
Password

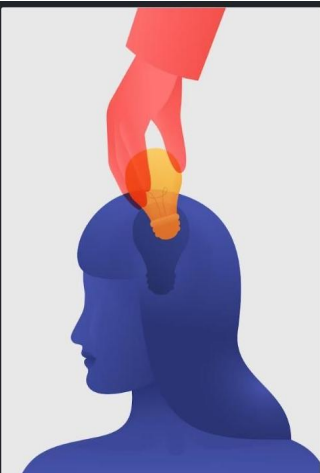
Remember me

[Login](#)

Don't have an account? [Register](#)



Fig 2: Login Page



REGISTER USER

Name

Email

Mobile

Gender

Date of Birth
dd-mm-yyyy

Password

Confirm Password

Select Therapist

[Create User](#)

Fig 3 register

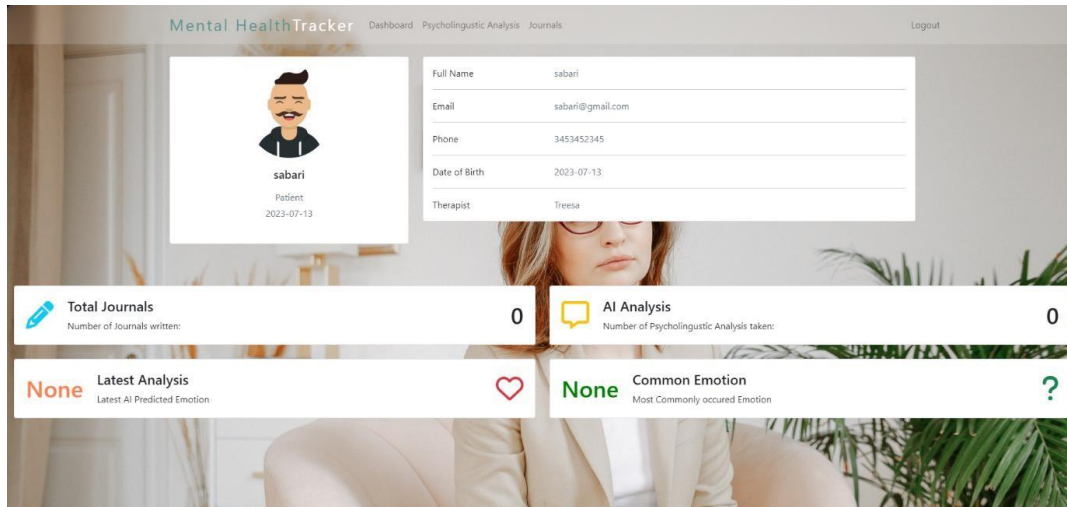


Fig 4: dashboard

VI. CONCLUSION

In conclusion, the development and implementation of a mental health tracker web application represent a significant stride towards fostering individual well-being and enhancing our collective understanding of mental health. This innovative tool has the potential to revolutionize the way we approach and manage our emotional and psychological states, offering a user-friendly platform for users to track, assess, and improve their mental well-being.

However, it's important to acknowledge that a mental health tracker web application is not a substitute for professional mental health care. While the application can provide guidance and support, it's essential for users to recognize when to seek assistance from qualified healthcare providers.

In a world where mental health challenges are increasingly recognized, the mental health tracker web application serves as a beacon of hope and progress. It empowers users to prioritize their emotional well-being, break down barriers to seeking help, and contribute to a more compassionate and informed society. As we move forward, the continuous development and refinement of such tools stand to reshape our relationship with mental health, leading to healthier, happier, and more resilient individuals and communities.

REFERENCES

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