

WEvolve-MENTAL HEALTH DEVELOPMENT APPLICATION

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Abstract- Mental health has always been a focus of attention of researchers in India. Depression is estimated to afflict 350 million people worldwide today. According to the findings of the World Mental Health Survey, which was done in 17 countries, on average about 1 in 20 people reported having an episode of depression in the previous year. They reduce people's functioning and often are recurring. For these reasons, depression is the leading cause of disability worldwide in terms of the overall number of years lost as a result of handicap. This project aims to develop an application that will make the users feel that they always have someone who will listen to their problems and help to talk them out of depression and strive towards reducing the percentage of suicide in the country. Socialization is a process that introduces people to social norms and customs. This process helps individuals function well in society, and, in turn, helps society run smoothly.

1. Introduction

Suicide is an extreme but common outcome for people with untreated mental disorders, particularly depression and substance abuse, which is associated with up to 90% of all cases of suicide in some countries. Mental health has gone for far too long, we've been concealed behind a veil of stigma and discrimination. It's time to let it all hang out in the open. The scale, suffering, and expense of disability and costs to people, families, and nations is enormous.

Mental health application with face recognition login is to create a user friendly interface for people suffering due to mental health disorders and depression, help them to overcome the phase through advanced features such as live chat, Mood swing management, Intensive games, Interactive platform.

The application is Robust, easy to use, and user friendly. The system should respond in the least amount of time possible. One of the significant motives of the system is to produce accurate results, every time it is run. The system aims at accuracy of 70% and above.

2. Literature Survey

Andrian B R Shatte [1] in their paper "Machine learning in mental health: a scoping review of methods and applications" To effectively map the domain of machine learning in mental health, experts used a scoping review process. Papers covering this domain were found in eight health and information technology research databases. Two reviewers reviewed the articles, and data on the article's mental health application, machine learning technique, data type, and study findings were extracted. After that, a narrative review has been used to synthesise

the articles. As a result, the application of machine learning to mental health has delivered various benefits in the areas of diagnosis, medication, and support.

Thomas G McGuire and Kenneth B Wells [2] in their paper "Implementing the institute of medicine definition of disparities" Generalized linear models with a log link for quantity and a probit model for any application are used to calculate expenditures. By modifying the whole distribution of health status for minority populations to match the white distribution, we account for group differences in health status. We compare the IOM definition of disparities to several widely used strategies for analyzing disparities. As a result, an accurate result of disparities is needed to monitor progress and compare the scale of disparities between investigations. With this criteria, disparities can be calculated by modifying models for expenditures and access to mental health care to account for group differences.

Rafael A Calcvo and David N Milne [3] in their paper "Natural Language Processing in mental health application using non-clinical texts " In the period between August 2014 and May 2015, The authors use Google Scholar to conduct multiple searches. During the evaluation process, relevant research published after this time frame was added. Because it indexes journals, conferences, and patent documents, Google Scholar was chosen. Conference papers and patents are particularly useful in providing information. Because a huge chunk of NLP and computer science research is not published in journals, which is the established norm in the mental health field. As a result, message therapeutic approaches are expected to be the most popular type of Internet intervention. Online therapy and peer support groups promote genuine interaction, with both the advantage of computer mediation

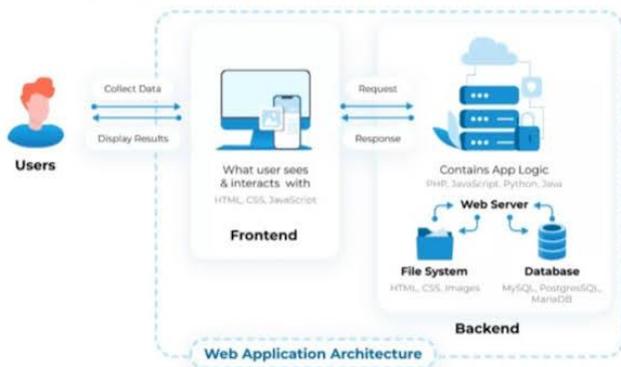
Andrien Liem and Jimmy [4] in their paper "Digital Health application in mental Health care for immigrants and refugees " a hasty review methodology was adopted From January 1, 2005, to February 28, 2019, available literature was searched in three online databases. Studies were included if they (1) applied digital health technologies, (2) focused on immigrants, refugees, or asylum seekers without age and country limitation, (3) reported nonclinical and/or clinical outcomes, and (4) were published in English or Indonesian. A narrative synthesis was developed based on the data extraction and quality assessment. As a result, These digital health applications' ethical standards were poorly implemented and reported. The biggest hurdles in scaling up digital health applications for immigrants and refugees were stigma around mental disorders and a lack of technology literacy.

Ed-Edily Mohd. Azhari, Muhd. Mudzakkir Mohd. Hatta and Zaw Zaw Htike [5] in their paper "Mental Health care application for Primary health care workers "by developing a mental health screening mobile application tool to be used in PHC settings in South Africa and Zambia, the MEGA project aims to provide youth with better access to mental health services and appropriate care. A mixed-methods inter study design would be used in this study. In first phase, we'll check at PHC practitioners' mental health literacy to see what individuals know. As a result, In PHC settings, common psychiatric disorders go largely undetected and untreated. We aim to improve the depression care provided to youth in Southern by developing and implementing a locally relevant m-health application by identifying the gaps in PHC workers' knowledge on youth mental health.

3. Architecture overview

3.1 Web Application

The Proposed system is a Web-Based Application which is used to relieve users from depression by facilitating them to connect with others who are in happy and good mood and who can reduce the stress of mentally depressed person. Depressed person can also view Motivational stories, Inspirational Quotes and images to get rid of sadness.



To design the User Interface using which the user enters the details, HTML, CSS and JavaScript is used. The user interface is the set of tools that people use to interact with a machine, device, computer simulation, or even other complex tool. The user interface makes use of two operations: input or control of the system. The output by which the user can receive information from the system.

Software graphical user interface is the one in which the client or administrator connects or interacts with the system with the help of text box, radio buttons, check box, buttons, etc. The user interface for this project will be implemented by developing the two wireframes for the different screens such as login screen and home screen. The login screen and home screen includes text boxes, checkboxes, buttons to accept the user details and inputs.

In developing any application, the programming language plays an important role. The programming language has to be chosen based on the requirements of the application at hand. In this application, we have used Python

programming as it is very convenient to develop machine learning applications with it, owing to its wide variety of available toolkits and libraries.

The Web-server is based on the django framework which enables the server to send, receive, and handle the Rest-API calls efficiently. It uses the MySQL as the database which is used to store the user details and data which is to be displayed on the home screen.

3.2 Working

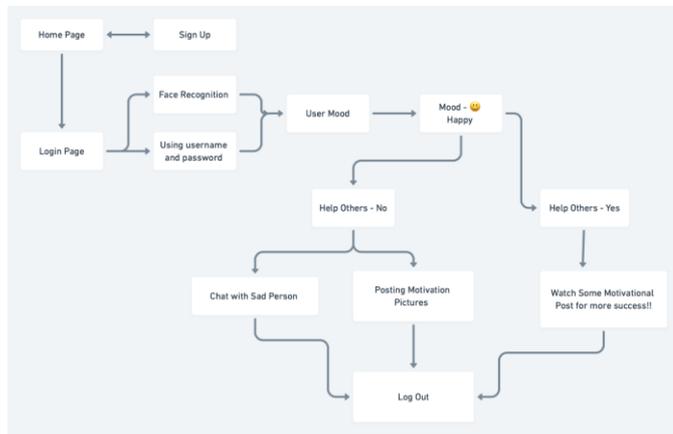
The user is prompted to login by either entering the username and password or by the button which says login by using the email or there is another option by which the user can login using the face recognition feature.

As soon the user is logged in, user is prompted to input the current mood, if he/she is happy, they can enter happy by clicking the emoji present on the screen which directs them to other screen which prompts the user if he/she wants to watch motivational videos, images, wants to play games or chat with mentally depressed person to relive or console other person. The next screen depends on the user input.



Home screen wireframe

If the user enters sad, he/she will be redirected to home screen in which user is prompted to enter if he wants to watch motivational posts, images, videos or text with happy mood person. If the user wants to chat with other person, a nickname will be given to both the users so that the real identity of users are not shared. Both the users get to interact and chat with each other wherein no personal details will be shared. After the user is relieved of depression both of them are asked if they wish to watch some stories or videos again, if they reply yes, they will be redirected again. If the reply is no, They are asked to rate the application and if they wish to exit, they can log off.



Data flow diagram

4. Result

The application allows users to record their current mood and also any potential cause or remedy and the information related to them can be shared with other users. The goal is to fight the issues associated with mental health by getting people to talk to each other. Some of the features would be recording the mood and maintaining a log, creating a personalized activity feed, being able to chat with other contrasting users, having TED talk video sections, motivational posts, and also support links. API is used to collect and store the data in the server database. Machine learning algorithm used for a hassle-free login with face recognition with responsive, interactive, and user-friendly interface created for best user experience.

5. Conclusions

The goal of this project is to develop a Mental Health application using Face Recognition for login with a good performance rate. The aim is to normalize people talking about mental health and keep their bodies and their minds as a priority in this fast-paced world. All concepts are implemented on the selected tech stack using our written codes, with only a minimalistic use of in-built functions. A GUI is also developed which enables the above application to have a user-friendly interface.

Web apps have a huge potential for ensuring greater mental health interventions. Due to the global shortage of psychiatrists and a lack of mental healthcare access in rural regions, have emerged as a visible tool to bridge the mental health treatment gap. Technology has the potential to transform how mental health treatment is delivered and accessed, but it will take time.

6. References

[1] Andrian B R Shatte "Machine learning in mental health: a scoping review of methods and applications"

[2] Thomas G McGuire and Kenneth B Wells "Implementing the institute of medicine definition of disparities"

[3] Rafael A Calcvo and David N Milne "Natural Language

Processing in mental health application using non-clinical texts"

[4] Andrien Liem and Jimmy "Digital Health application in mental Health care for immigrants and refugees"

[5] Ed-Edily Mohd. Azhari, Muhd. Mudzakkir Mohd. Hatta and Zaw Zaw Htike "Mental Health care application for Primary health care workers"