AN APPLICATION FOR MINIMIZING DEPRESSION AND SUICIDAL ATTACKS AMONG THE PEOPLE OF BANGLADESH

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project/internship titled **"AN APPLICATION FOR MINIMIZING DEPRESSION AND SUICIDAL ATTACKS AMONG THE PEOPLE OF BANGLADESH"**, submitted by MD. Shakil Khan Rifat, ID No: 191-15-2665 and Tuzammal Hossain Masum, ID No: 191-15-2352 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfilment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 05/02/2023.

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DECLARATION

We hereby declare that, this study was completed under the direction of **Dr. S. M. Aminul Haque, Associate Professor,** Department of Computer Science and Engineering, Daffodil International University. We further declare that neither the entire project nor any portion of it has been submitted elsewhere for a degree or certificate.

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Abstract

Depression can cause feelings of sadness, hopelessness, and a lack of energy, and can make it difficult for people to perform daily activities or enjoy life. Depression is a common and debilitating mental health condition that affects millions of people around the world. While traditional forms of therapy and medication can be effective for treating depression, they are not always accessible or affordable for everyone. To address this need, mobile depression management apps have been developed to provide a low-cost and convenient alternative for people who are seeking help for their mental health. The depression management app Min-Doc is designed to provide users with a comprehensive toolkit for managing their depression. The app features mood tracking, goal setting, exposure to positive stimuli, and access to mental health professionals for counseling and support. The app is user-friendly and can be easily customized to meet the individual needs of each user. Overall, the depression management app provides a valuable resource for individuals who are struggling with depression and seeking help. By offering a convenient and accessible way to manage depression, the app has the potential to make a significant difference in the lives of people who use it.

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CHAPTER 1
INTODUCTION

1.1 Introduction

The more we solidify ourselves as diverse and imaginative the more we face new challenges to overcome which is known as "Depression". The globalization of mankind has left us in awe and technology and science have been part of our daily lives for a while now. They have created issues like loneliness by making humans interact less and less with each other. But they have created lots of opportunities in other fields to balance it out. Our app will balance out the loneliness problem by letting people interact with each other and share their problems to find possible ways to overcome it. We will keep on creating barriers towards their decision of taking their life. We will provide any kind of solution possible for their problems and help them get through their tough time. We will show them the person they adore the most, we will provide details of the most renowned therapists that our country has to offer, we will listen to them and the problems they are facing in life as well. In short, we will work as a complete helpline to help a person get rid of tough and depressed time.

1.2 Motivation

A country such as ours is very high on population with very limited resources. Because of that we have really limited number of doctors and the number of therapists are even lower. People do not really care about one's mental health and it is often ignored. However the number of people that commits suicide every month is 45 and the suicide rate is increasing day by day. From January to August of 2022, a total of 364 students killed themselves. Dhaka, the capital, ranks first in terms of suicide, In the last eight months, 25.27% of students committed suicide here. Suicide rates among primary and high school students are the highest. A total of 194 students, which amounts to 53.3% of school-goers, committed suicide. On the other hand, 76 college students died, registering the second place. As many as 50 university students and 44 madrasa students decided to end their lives. Female students continue to outnumber the males in suicides, accounting for 60.71% of all

suicides, or 221 people. According to the results obtained from the survey, the tendency of suicide is the most noticeable among 13 to 20-year-olds, which is 78.6%. These shocking reports are actually a sign that Bangladeshi teenagers are screaming for help and this scream was our motivation to develop Mind Doc app.

1.3 Objectives

The main objectives of the paper can be summarized as follows:

a) Our objective was to develop an application to help the people suffering from depression, loneliness and Anxiety

b) To help our young stars get through their tough time by getting help from professional therapists

c) Developing an app where there will be a community of lonely people who will come around together and get rid of loneliness. To help people with depression and remind them how valuable their life really is. Lowering the suicide rate as much as possible.

1.4 Expected outcome

a) By this application users (People with Depression) will have the opportunity to select their desired therapist and get help from them.

b) Users can get rid of their loneliness by chatting or sharing their thoughts. They can also calm their mind by listening to music.

c) Users can read motivational stories or scroll memes to divert their mind from the thoughts that are disturbing them.

1.5 Project Management and Finance

This project doesn't received any funding from any sources.

1.6 Report Layout

Chapter 1: We first describe the project's goals, objectives, traits, description of the problem, and societal impact.

Chapter 2: discusses the context, scope, and issues surrounding the issues.

Chapter 3: we'll cover use case modeling, descriptions, data flow diagrams, requirements analysis, design requirements, and descriptions of advanced features.

Chapter 4: We assess the front-end, back-end, and implementation needs.

Chapter 5: We'll discuss database configuration, front-end design configuration, interaction design configuration, testing setup, test results configuration, and reporting configuration. Finally, a summary of the findings and their implications for the future are provided.

Chapter 6: In this chapter, we'll talk about the user feedback results and the survey data that we gathered.

Chapter 7: We'll recap the application conversation. We'll explore how it has evolved throughout the paper's main body, briefly review the most important points made therein to illustrate how each contributes, and go through the application's future ambitions.

CHAPTER 2

BACKGROUND

2.1 Existing System

The majority of users won't be familiar with this type of system because no one has successfully advertised or presented the use of an online depression dealing system. Some of the related app for depression management are:

Talkspace - provides online therapy and counseling services through a secure platform

Moodfit - offers mood tracking, mindfulness exercises, and positive thinking exercises to manage depression and anxiety.

Pacifica - features daily mood tracking, cognitive behavioral therapy (CBT) techniques, and relaxation exercises to help manage depression and anxiety.

Woebot - uses cognitive behavioral therapy (CBT) techniques and chatbot technology to help users manage their mental health.

Happy Not Perfect - provides mindfulness exercises and activities to help users manage stress and improve their mental wellbeing.

Depression CBT Self-Help Guide - an educational app that teaches users about depression and the cognitive behavioral therapy (CBT) techniques used to treat it.

7 Cups - provides online support and counseling services, including a directory of licensed therapists.

However, the issue is getting worse and will represent a sizable future market. Additionally, user-friendly UI in mobile apps will undoubtedly draw more users into our system.

2.2 Scope of the Problem

There are several reasons why a depression handling app may be necessary:

Lack of access to traditional resources: Many individuals who experience depression may not have access to traditional resources such as therapy or support groups. An app can provide a convenient and accessible alternative for these individuals.

Stigma: There may be stigma attached to seeking help for mental health issues, and some individuals may feel more comfortable seeking help through an app rather than in person.

Ease of use: An app can be used anytime and anywhere, making it a convenient and easy-to-use resource for individuals who may be struggling with depression.

Personalization: An app can provide personalized support and resources based on an individual's specific symptoms and needs.

Overall, a depression handling app can provide a necessary and convenient resource for individuals who are struggling with depression and may not have access to traditional resources or support**.**

2.3 Challenges

There are several challenges that may arise in the development of a depression handling app:

Data privacy and security: Ensuring the privacy and security of user data is a critical concern when developing a mental health app. It is important to implement strong security measures to protect user data from unauthorized access.

Regulation: Mental health apps are subject to various regulations, and it is important to ensure that the app complies with all relevant laws and regulations.

Evidence-based content: It is important to ensure that the content and resources provided by the app are based on evidence-based practices and are supported by research.

User engagement: Ensuring user engagement with the app over the long term can be a challenge. It may be necessary to regularly update the app and provide new content to keep users engaged.

User trust: Building trust with users is important for the success of a mental health app. It is important to be transparent about how user data is collected and used, and to clearly communicate the limitations of the app.

Overall, developing a depression handling app requires careful planning and attention to a range of challenges to ensure that the app is effective and user-friendly.

CHAPTER 3

REQUIREMENT SPECIFICATIONS

3.1 Business Process Model

Here is a potential business process model for developing a depression handling app:

Research: Research the market to understand the needs and preferences of potential users, and gather information about existing products and competitors.

Planning: Develop a detailed plan for the app, including the features and resources it will offer, the target audience, and the business model.

Design: Design the user interface and user experience of the app.

Development: Develop the app using software development tools and technologies.

Testing: Test the app to ensure that it is functional and user-friendly.

Launch: Launch the app and make it available to users.

Marketing: Promote the app to potential users through marketing campaigns and partnerships.

Maintenance: Regularly update and maintain the app to fix bugs, add new features, and keep users engaged.

Evaluation: Regularly evaluate the performance and effectiveness of the app, and make improvements as needed.

This business process model outlines the steps involved in developing a depression handling app from research and planning to launch and ongoing maintenance.

3.2 Requirement Collection and Analysis

Requirement collection and analysis is an important step in the process of developing a depression handling app. It involves gathering and analyzing information about the needs and preferences of potential users, as well as the business goals of the app.

Here are some steps that can be taken to collect and analyze requirements for a depression handling app:

Identify the target audience: Determine who the app is intended for, such as individuals with depression, family members of individuals with depression, or mental health professionals.

Gather user requirements: Collect information about the needs and preferences of the target audience through methods such as user interviews, focus groups, and surveys.

Analyze user requirements: Analyze the collected data to identify common themes and patterns, and prioritize the most important requirements.

Define the app's business goals: Determine the business goals of the app, such as revenue generation or cost savings.

Identify functional and non-functional requirements: Identify the specific features and resources that the app should provide, as well as any non-functional requirements such as security and performance.

Create a requirements document: Document the collected and analyzed requirements in a clear and concise manner, including the target audience, business goals, and functional and non-functional requirements.

By following these steps, it is possible to collect and analyze the requirements for a depression handling app and use this information to guide the development process.

3.3 Use Case Modelling and Design

Use case modeling and design is a process for defining and organizing the functional requirements of a depression handling app. It involves identifying the specific tasks and actions that the app should be able to perform, and organizing these tasks into a logical structure.

Here are some steps that can be taken to model and design the use cases for a depression handling app:

Identify the actors: Determine who will be interacting with the app, such as users, mental health professionals, or administrators.

Define the use cases: Identify the specific tasks and actions that the app should be able to perform, such as self-assessment, tracking mood, or accessing support resources.

Create a use case diagram: Use a use case diagram to visually represent the relationships between the actors and the use cases.

Detail the use cases: For each use case, define the steps involved in performing the task, including any alternatives or exception flows.

Validate the use cases: Review the use cases with subject matter experts and user representatives to ensure that they are accurate and complete.

Refine the use cases: Make any necessary revisions to the use cases based on feedback and further analysis.
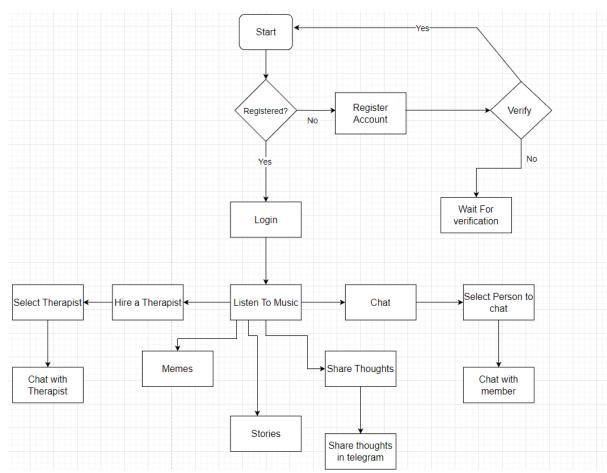
Use case modeling and design helps to ensure that the functional requirements of the depression handling app are well-defined and organized, and can serve as a guide for the development process.

CHAPTER 4

REQUIREMENT SPECIFICATIONS
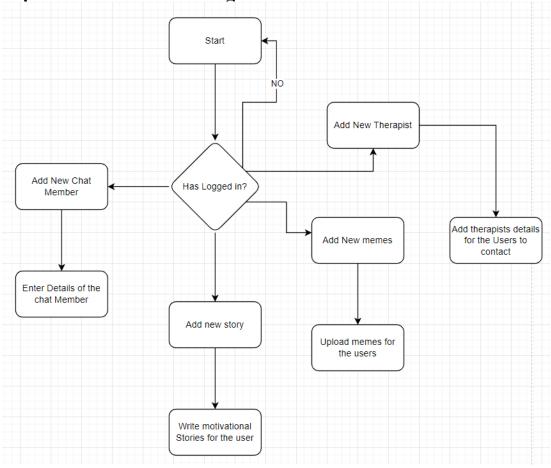
4.1 Design Specifications

MindDoc is an android-based nonprofit organization that provides services to treat depression; the services are largely online, although hybrid systems may be developed in the future. The modules that we included into the database are listed below.

4.2 User flow chart diagram

Fig 4.1 User flow Chart Diagram

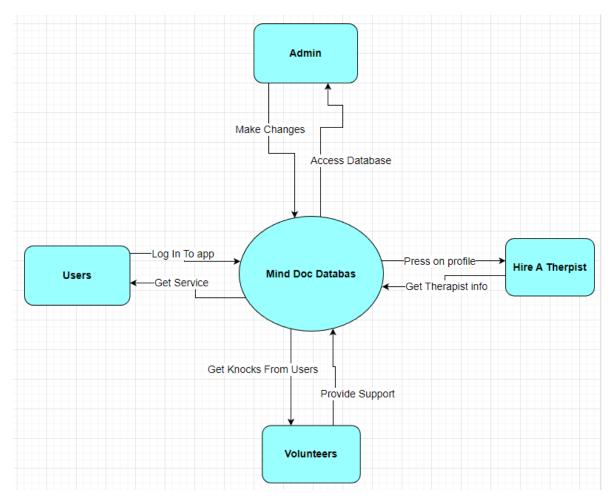## 4.3 Super-Admin flow chart diagram

Fig 4.2 Admin Flow Chart Diagram

4.4 Data-Flow Diagram

Fig 4.3: Context (Level-0 DFD) Diagram

4.5 Implementation Requirements

a) **Software Requirements**

- java
- Android Virtual Devices (AVD)
- Android Studio
- Firebase
- Adobe Illustrator

b) Software Requirements

- Windows Operating System

c) Requirements for User
- Smartphone (Android 5.0+)
- Internet Connection
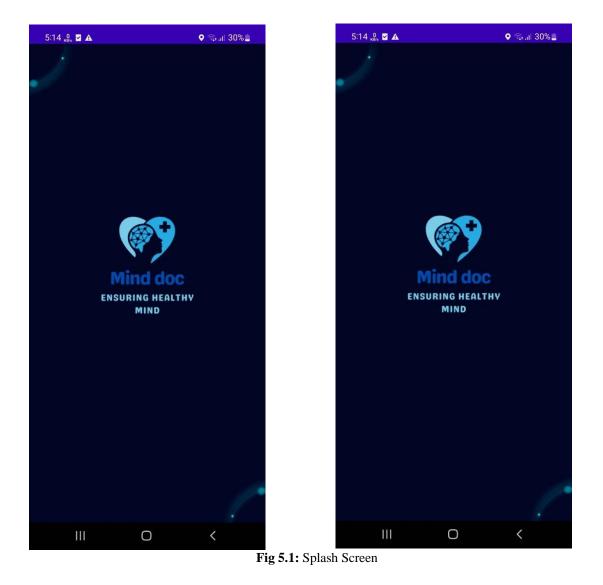
IMPLEMENTATION AND TESTING

5.1 Implementation

We provided a few examples of our project to demonstrate testing and implementation.

a) **Splash Screen:** First screen that the users will see after launching our app will be a beautifully designed Splash screen with our apps logo. Every great app in the app has a good splash screen and splash screens will hold the branding of the app.

Fig 5.1: Splash Screen

b) **Sign in/Sign Up:** To access the app you have to **login** with ID and password, for the first time users, you have to **Sign up** giving the necessary credentials.

Fig 5.2: Sign In / Sign Up

c) **General Information:** After logging in for the first time you have to give some information about yourself. You would have to provide your Name, a photo of someone very close to you, add a music playlist, add a motivational story about yourself, add email to someone close to you, and a motivational nickname of yours. This will be save in our database and will help us to help you when you chat with us or seek help in your most low and dark time. You would have to press save after that to go to the next screen.

Fig 5.3: General Information

d) Closest Person Screen with Motivational Story : This screen is to remind you how important you are to some people. We will show you the image of that person that you entered in the previous screen and display the motivational story about yourself as well. This will be to cheer you up in times when you are lacking confidence. Then you would have to press next.
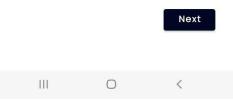

Fig 5.4: Closest Person Screen with Motivational Story

e) **Dashboard Screen:** Once you have completed the initial journey now is the time for you to explore all our features. You will find 6 options to choose from. If you think you need a experts help and you want to expend a little, then you should go for "Hire a therapist", If you Think you just need to calm your mind through your playlist then "Listen to music" would be the perfect choice. If you think you need support from someone not that expert but can relate to you then go for "Chat" where we will chat with you so that you don't feel sad anymore. We have the database with us so we will guide our users and show them pictures or email their close persons. Now if you just want to check out some memes or stories then "Memes" and "Stories" are perfect option.

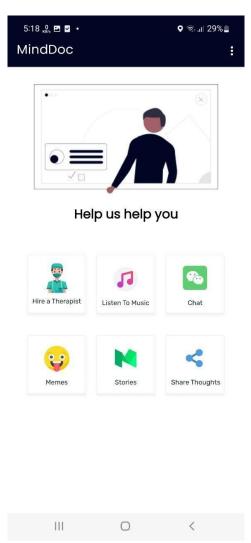Lastly there will be a community of depressed people where you can "Share your thoughts".

Fig 5.5: Dashboard Screen

f) **Hire a Therapist:** Now if users choose hire a therapist option they will see a number of therapists include in our app. They can read the description about the therapists and seek consultation fromthem through our app. We will have all the details of the therapist in our app.
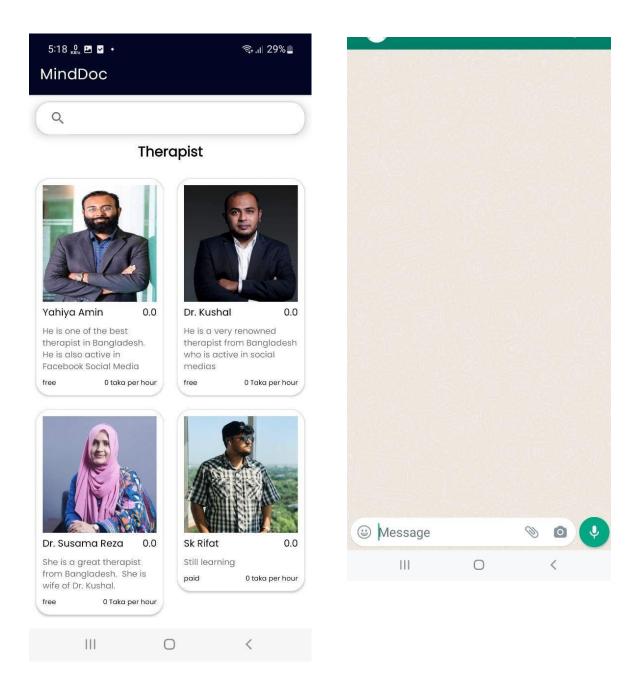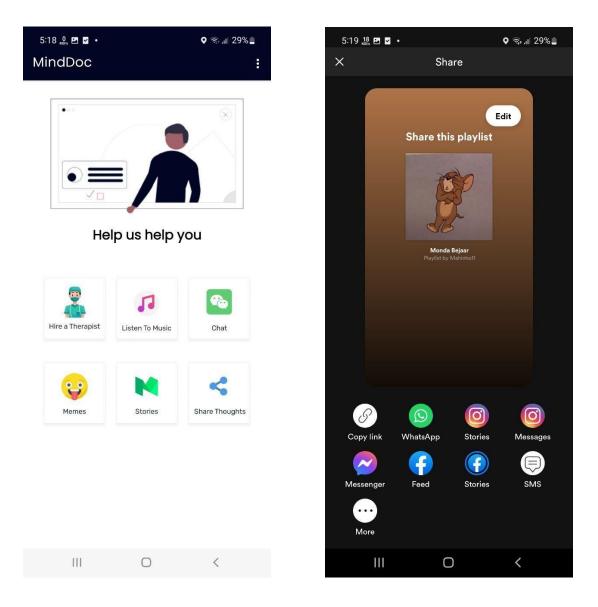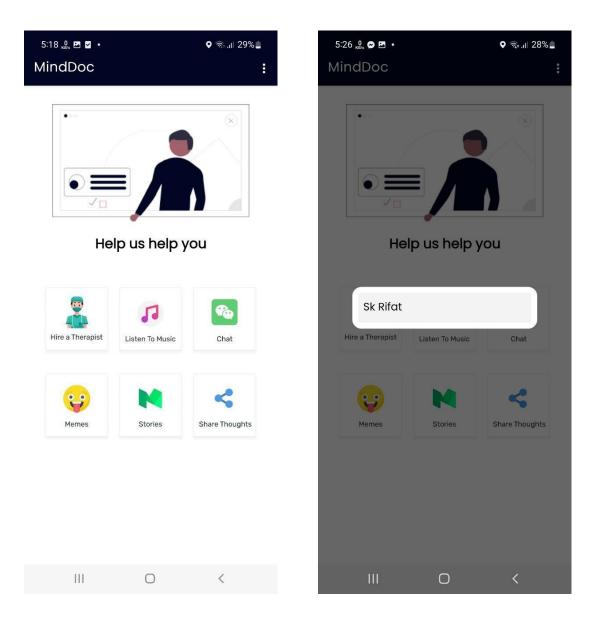

Fig 5.6: Hire a therapist

g) **Listen To Music:** When the users press "listen to music" they will be redirected to the playlist they previously entered and they can listen to that to calm mind. Our app supports playlist from Spotify, Youtube, and any other source where link can be provided.
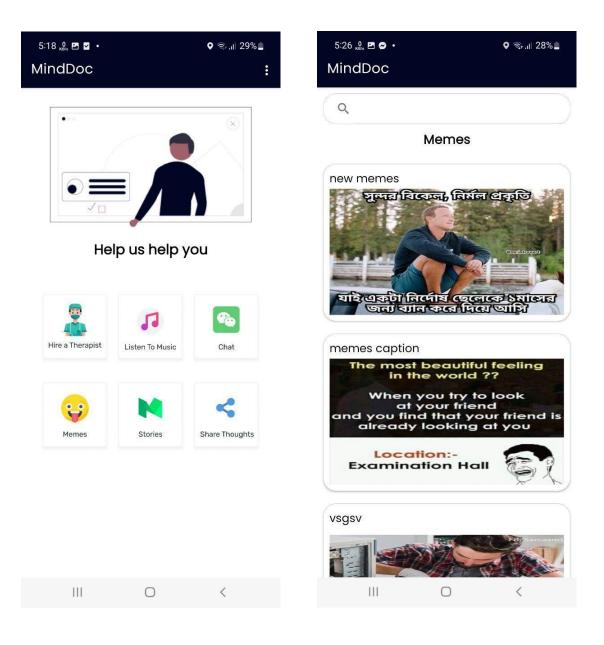

. **Fig 5.7:** Listen to music

h) **Chat:** A User can chat with our volunteer where they can share what is disturbing their mind and what are they thinking at the moment. In that time as our volunteers will have database access they can help them by showing them their closest person's picture or send email to their closest relatives. They would just have to press on chat and select the person they want to chat with.

. Fig 5.8: Chat Screen

i) **Memes:** Memes are the best way to cheer up someone's mind and divert it initially from any disturbance in mind. Memes can be funny, creative or provide knowledge at times as well. Through our app, users can scroll memes and have a good time.

. **Fig 5.9:** Memes

j) Stories: Similar to memes, Motivational stories can also help a man to boost up morals and get through tough time. We will be updating our app everyday with new motivational stories form our users.

Fig 5.10: Motivational Stories

k) **Share Thoughts:** Share thoughts will be a complete community of all the app users where they will be able to help each other during hard times. All the depressed and lonely people sharing their problems and helping each other to recover. This is what our apps goal is to be. Once they press on Share thoughts, they will be redirected to a telegram group.
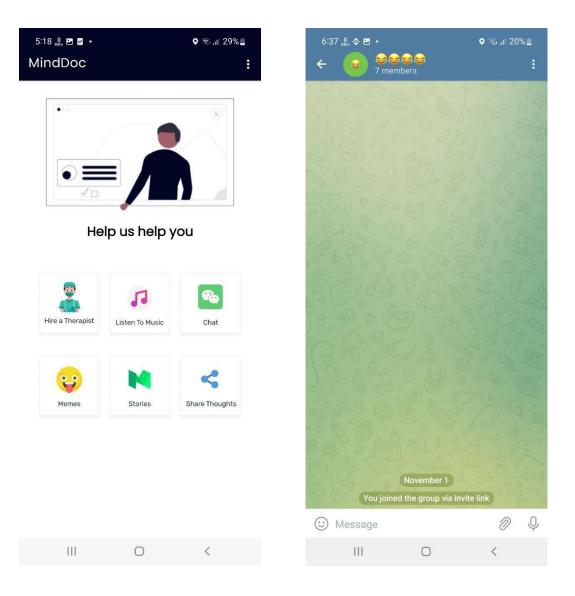
Fig 5.11: Share Thoughts

l) ADMIN: Admins will be able to add new chat members, add new therapists, add new memes or add new stories. The stories and memes that the admins upload will automatically go to the users and the chat members they add will work as volunteers. Admins would have to login with their credentials.
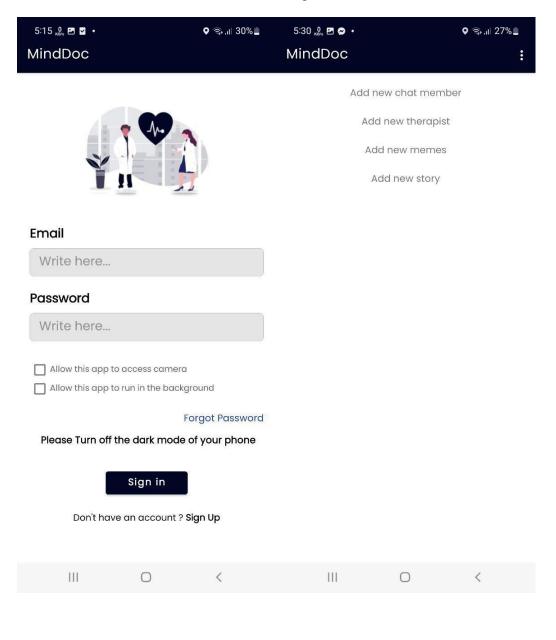
Fig 5.12: Admin

m) Add New Chat Members: Admins can add new chat member through this options. All they have to do is provide the persons Facebook Id number and Facebook Id link alongside their name.
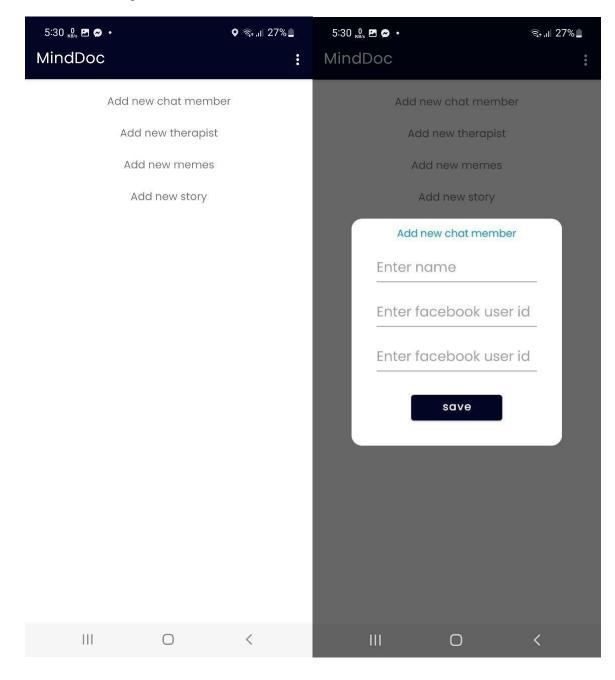
Fig 5.12: Add new Chat Members

n) Add New Therapist: Admins can add therapists by providing therapists name, Details of the therapist, Enter their phone number, Enter their expertise add picture of therapist and how much they are charging per hour.

Fig 5.13: Add new Therapist

o) **Add New Memes:** Admins can add memes using this option, they can add a caption for the meme and upload the meme as picture.

Fig 5.14: Add new Memes

p) Add New Stories: Admins can add motivational Stories Using this option. Simply they have to give the caption and write the story and then press save.

Fig 5.15: Add new Stories

q) Log Out: Admins and Users both can easily log out by using the three dot on top right corner.

Fig 5.16: Log Out

CHAPTER 6

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

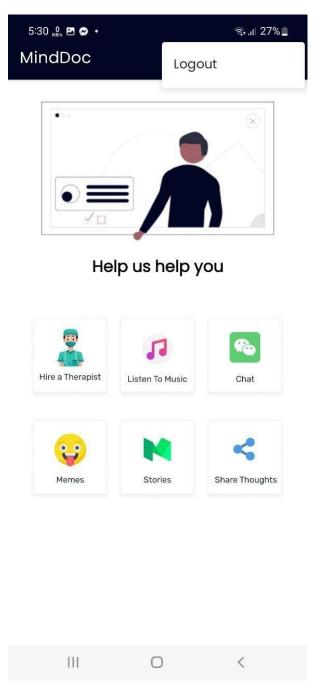## 6.1 Impact on Society

A depression handling app has the potential to have a positive impact on society by providing support and resources to individuals who are experiencing depression. Some potential benefits include:

Increased access to mental health resources: The app can provide convenient and accessible support to individuals who may not have access to traditional mental health resources such as therapy or support groups.

Improved mental health outcomes: By providing tools and resources to help individuals manage their depression, the app can potentially improve their mental health outcomes.

Reduction in stigma: The app can help to reduce the stigma surrounding mental health issues by providing a discreet and convenient way for individuals to seek help.

Increased awareness: By providing information and resources about depression, the app can help to increase awareness about the condition and promote understanding and empathy.

Overall, a depression handling app has the potential to make a positive impact on society by providing support and resources to individuals who are struggling with depression and improving mental health outcomes.

6.2 Impact on Environment

A depression handling app may have a minimal impact on the environment, as it is typically delivered digitally and does not require the production or distribution of physical goods. However, it is still important to consider the environmental impact of the app's development and operation.

Here are some ways in which a depression handling app could potentially impact the environment:

Energy use: The app's servers and other infrastructure may use energy, which can contribute to greenhouse gas emissions.

Data center energy use: The app's data may be stored in a data center, which can also use energy and contribute to greenhouse gas emissions.

Device energy use: If the app is used on devices such as smartphones or tablets, these devices may use energy, which can contribute to greenhouse gas emissions.

To minimize the environmental impact of a depression handling app, it is important to consider these factors and take steps to minimize energy use, such as using energy-efficient servers and data centers, and encouraging users to use energy-efficient devices.

6.3 Ethical Aspects

There are several ethical aspects to consider when developing and using a depression handling app:

Data privacy and security: It is important to ensure that user data is protected from unauthorized access and is used in an ethical and transparent manner.

Informed consent: Users should be fully informed about how their data will be collected and used, and should provide their consent before their data is collected.

Confidentiality: User data should be kept confidential, and only shared with third parties if necessary and with the user's consent.

Fairness: The app should be designed and used in a fair and unbiased manner, without discrimination based on factors such as race, gender, or age.

Professional standards: If the app provides access to mental health professionals, these professionals should adhere to professional standards and ethical guidelines.

Responsibility: The developers and operators of the app should be transparent and accountable for the app's performance and impact.

Overall, it is important to consider these ethical aspects in order to ensure that the depression handling app is used responsibly and in a manner that respects the rights and interests of users.

6.4 Sustainability Plan

Here is a potential sustainability plan for a depression handling app:

Continuous evaluation: The app should be continuously evaluated for its performance and impact, and any issues should be promptly addressed.

Regular updates: The app should be regularly updated with new content and features to improve its effectiveness and keep users engaged.

User feedback: The app should solicit and incorporate user feedback to improve its performance and usability.

Data privacy and security: The app should implement strong data privacy and security measures to protect user data from unauthorized access.

Professional support: If the app provides access to mental health professionals, these professionals should adhere to professional standards and ethical guidelines.

Collaboration with experts: The app should work closely with mental health experts and other relevant stakeholders to ensure that it is aligned with best practices and industry standards.

By following these steps, the depression handling app can be sustainably maintained and improved over time to provide the best possible support to its users.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

This document expresses our ambitions and dreams for our project. We are endeavoring to implement it. Our youngster faces serious mental health issues. Every step we take ahead is accompanied by obstacles. This generation is filled with ambition and aspiration. This generation does not wish to regress and fall behind. We believe this represents a positive development. Simply demonstrate the significance of their lives to them and their loved ones. It is impossible to eradicate suicide completely, but we hope that our initiative will reduce the number as much as feasible. Even if our project only saves one life, it will be worthwhile. Moreover, using our software, users will be able to form a society in which interactions between lonely individuals would erase loneliness.

Our application will also educate users on the significance of life and mental wellness. Our project will continue to erect hurdles for individuals who are contemplating suicide and are on the verge of ending their lives. We will keep offering them new hope for life new answers and help them live through their challenging circumstances.

Hopefully we will be able to save more and more lives through our initiative and aid those folks who are only looking for a small beam of light.

7.2 Scope for Further Developments

The app could be enhanced in a number of ways. Below are a few examples:

- Create a hybrid system that will allow users to access both online and offline services.
- Create an ISO variant.
- Desire to develop for commercial use.
- Create a Bangla-language version of the app.

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Mind Doc App Report

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