

## **MentAllay: Islamic Mediation Application**

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DOI: <https://doi.org/10.30880/mari.2022.03.04.008>

Received 06 August 2022; Accepted 01 October 2022; Available online 20 December 2022

**Abstract:** During the COVID-19 pandemic in Malaysia, adults in poor general health, which may reflect both physical and mental health, continue to report higher rates of depression than adults in good general health. The suicidal ideation that reached 468 in just the first 5 months of 2021, which is nearly equal to the annual number of suicides in 2020 and 2019. Thus, this project, MentAllay a mobile application aims to provide a secured virtual community where users can share their feelings and thoughts on handling their mental health. Besides that, it provides a various way to alleviate their stress and relax via Islamic guidance from various trusted sources. The application would help users to find the best verse that suits users' current mood. This project has been carried out by using System Development Life Cycle (SDLC). For the data collection, interviews and surveys have been conducted from the people who has experience with mental health issues. The system has been developed by using Firebase. For the future enhancement, this application is expected can be implemented to not only IIUM community, but also can be generalised to any type of users.

**Keywords:** : Mental health, Depression, Mobile application, Islamic application , Islamic mediation

### **1. Introduction**

Mental health is generally defined based on how an individual interacts based on earlier life situations that change an individual behavior's standards in which our emotional, psychological, and social well-being determine how we handle stress, relate to others, and make healthy choices. Looking after mental health can preserve a person's ability to enjoy life. Doing this involves reaching a balance between life activities, responsibilities, and efforts. Conditions such as depression have no physical test or scan that reliably indicates whether a person has this illness, but it affects mental health and disrupts a person's routine in many ways. When we talk about health, we mainly focus on Mental health specifically on depression. The proposed project aims to alleviate the problem faced by individuals by using several relaxation techniques. For instance, meditation is an ancient way to connect to the inner self which benefits mental health by lowering heart rate, blood pressure, and breathing rate and it reduces stress, which is the main factor that causes depression [1], one of our main interests is Islamic meditation with a search option that using artificial intelligence (AI).

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Nelson and Kaminsky (2020) report that after months of social distancing, job losses, and business and school closures amid COVID-19, mental health experts are warning of another massive crisis. Psychologists and psychiatrists see multiple waves of anxiety, depression, and post-traumatic stress disorder (PTSD) [2]. In this Era, there is undeniable that there is peer pressure through social media, where people can get bullied, stalked, and feel down because of financial issues that may lead to depression. That alone is a big problem, but things went to a different level because of the pandemic. During the COVID-19 pandemic in Malaysia, adults in poor general health (which may reflect both physical and mental health) continue to report higher rates of depression than adults in good general health. Concerns about mental health and substance use have grown, including concerns about suicidal ideation that reached 468 in just the first 5 months of 2021, which is nearly equal to the annual number of suicides in 2020 and 2019. In 2016 statistics showed that large percentages of respondents reported that meditation helped to reduce stress or to aid relaxation (89.4%), to feel better emotionally (86.9%), to improve overall health and make them feel better (79.0%) and/or to sleep better (69.3%) [3].

Hence, it is concluded that the rate of suicide has risen considerably, owing to poor mental health and depression induced by various factors, only two stood out. The impact of lockdown and death announcements during the recent epidemic, which resulted in a significant increase in cases of depression. The lack of virtual platforms, such as web and mobile applications, that aid to narrow Mental illness employing relaxing techniques.

The primary goal of this study is to reduce depression rates by focusing on two key points. First, research current mental health issues and existing mental health applications around the world. Second, create a mobile application system to assist individuals suffering from depression. To achieve the desired result, a good plan and solution deployment are required. As a result, the mobile application "MentAllay" was created using a variety of frameworks. "Logging page (main page)," "Dashboard, calendar, checklist," "Forum, where people can express and share," "Relaxation techniques," and "Messaging" are the main functionalities.

The project has targeted users from the age of 18 and above, who are suffering from mental health issues and willing to manage and self-monitor their stress and depression. Therefore MentAllay's significance emerges primarily through the provision of a proper platform where people suffering from depression can relax in a peaceful environment in a community that was built to share the same interest and problem (depression). Furthermore, incorporating an Islamic perspective on how to deal with depression by integrating an enhanced search experience using AI.

## 2. Materials and Methods

### 2.1 System Development Life Cycle (SDLC)

**Figure 1** shows the System Development Life Cycle, SDLC is a methodical approach to creating high quality system that meets expectations, reaches completion within time and cost evaluations, and works effectively and efficiently in the current and planned Information Technology infrastructure. SDLC includes planning, system analysis, system design, development, implementation, integration and testing, and operations and maintenance. The SDLC accelerates development while lowering project risks and costs associated with alternative production processes.

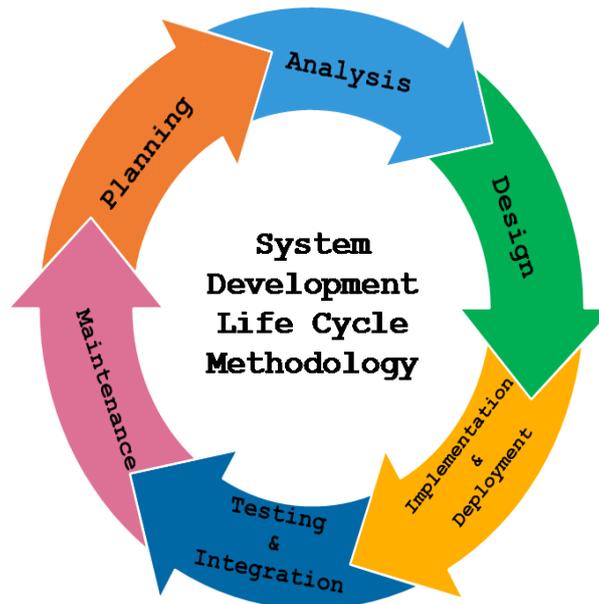


Figure 1: System Development Life Cycle (SDLC)

## 2.2 Requirement Specification:

Functional requirements for MentAllay:

- Relaxation techniques such as Quran / Dhikr Meditation
- A forum where patients can post and comment on other posts, messaging features.
- A way to strengthen the connection between members of the application by providing messaging features by allowing users to create new chat rooms or chat within the available rooms.

Non-functional requirements for MentAllay:

- Security
- Data Integrity
- Usability

Our target users are IIUM students and some Facebook groups, to get a variety of answers from different ages within the range our application is aiming for. There are two types of Target users who we want to get answers from:

- patient/ex patient
- relative/friends of the patient

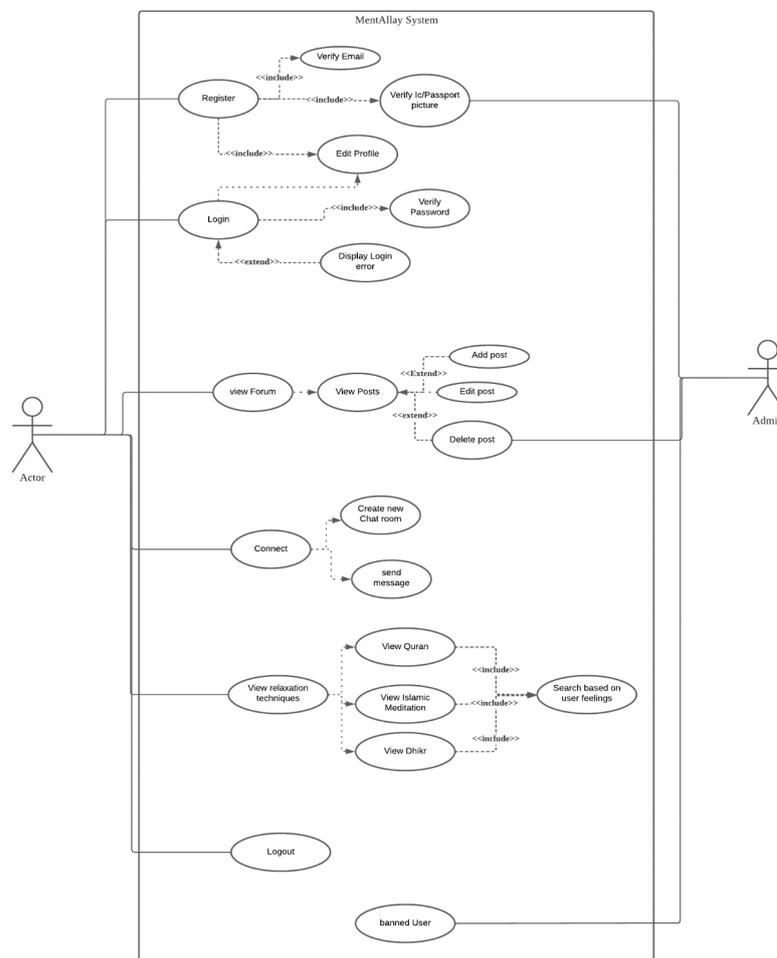
## 2.3 Physical Design:

We established our physical design based on the literature review and the data collection result. An actor specifies a role played by a user or any other system that interacts with the subject, **Table 2** shows the list of actors we have in our system. The first primary actor is the depressed patient or the patient's relative of underage patients. The second actor is the administrator and is the developer who updates the required functionality and maintains the system.

**Table 2: List of actors**

No	Actor	Details	Description
1	Patient	Patient/ Patient relative	Individual who is suffering from Depression, OR patient relative for underage patients
2	Administrator	admin	The developer who updates the required functions and maintains the system

A use case is a methodology used in system analysis to identify, clarify, and organize system requirements[4], **Figure 2** shows the use case diagram for MentAlly Mobile Application. From the use case, there are two actors who are the patients and admin user. Total use case in the figure are 22 use cases.



**Figure 2: Use Case Diagram for MentAlly**

Class diagrams are used to model the structure of classes and the relations connecting classes (and sometimes instances of classes) from a static viewpoint[5]. **Figure 3** shows the class diagram for MentAlly system. The class diagram contains 9 classes that have their own attributes and methods and connected with the relationships.

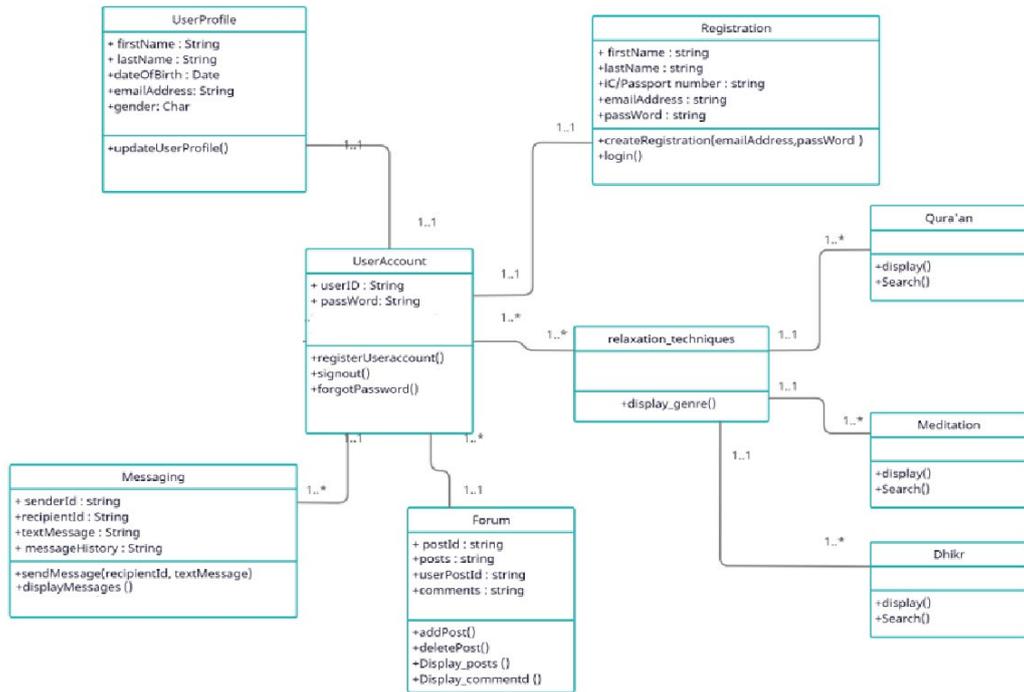


Figure 3: Class Diagram for MentAlly

### 2.4 Database Physical Design

An Entity Relationship (ER) data model is a high level conceptual model that describes information as entities, attributes, and relationships. Entity relationship modeling designed to facilitate database design[6]. **Figure 4** shows Entity Relational Diagram for MentAlly system.

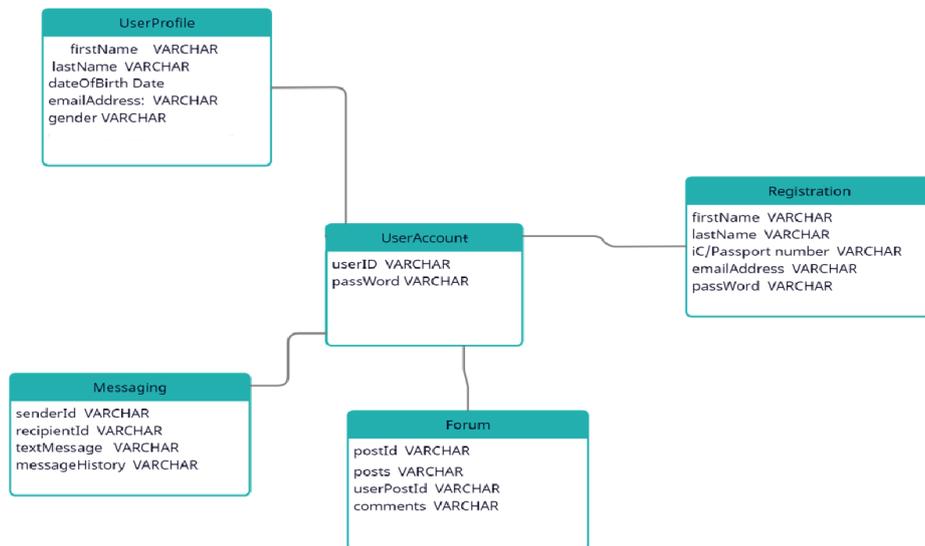


Figure 4: Entity Relational Diagram for MentAlly

## 3. Results and Discussion

### 3.1 Relaxation Techniques

To train the data for the relaxation techniques, developers used Google Natural Language API and Multi-label Classification. The system sends user input to the API, and fetches predicted label based on

user input. Then it plays the audio that corresponds to the user's mood. In addition, developers provide another option to choose from an existing categories. And for the audios, developers used a few resources [9] كتاب علاج نفسك بالقرآن [7] كتاب مفاتيح الفرج [8] موسوعة التفسير الموضوعي للقرآن الكريم. The total number of verses is 40 Ayah for Sadness, 33 Ayah for Fear, 25 Ayah for Anger, and 25 Ayah for Worries.

### 3.2 Forum and Connect

The developers used Firebase Database for both features. User can create new posts, and by doing that, he builds a new collection inside the Firebase database, and within that collection, the system creates a new collection for comments. The same applies to connect feature.

### 3.4 Project Requirement

After completing the MentAllay requirements, the user must upload his/her IC/Passport for registration. In terms of relaxation techniques, the user can search by entering his feelings and, using artificial intelligence, the system will provide him with audio that matches his feelings. This is done using Google Natural Language API, and Twitter-emotions dataset to train the data, and the user can also choose from existing categories. The creators have also set up a forum where people may share, comment on, delete, and amend their posts. In addition, the developers have devised a connect feature that will allow users to build new chat rooms or chat within current ones. The developers have also provided an admin portal where the administrator may view the users' IC/Passports and delete them.

### 3.4 Future Enhancement

In the future, the app should have the ability to report posts, comments, and messages. Additionally, the forum's style should be updated, and a function allowing users to upload or select avatars should be introduced. In terms of relaxing techniques, the app will have more categories and material, thus developers intend to construct their own dataset. Furthermore, the creators expect that the application might be implemented and used by IIUM students.

### 3.5 System Output

The project used React native as the programming language. **Figure 5** to **Figure 12** show the system output for patient user and **Figure 13** shows the system output for Admin.

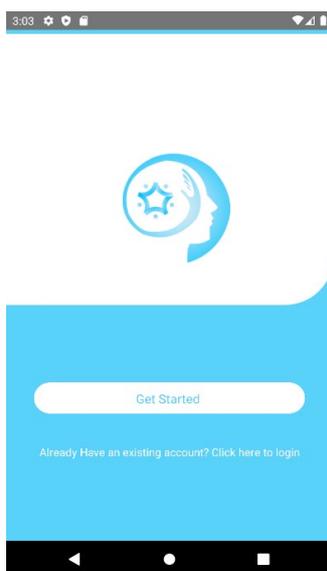
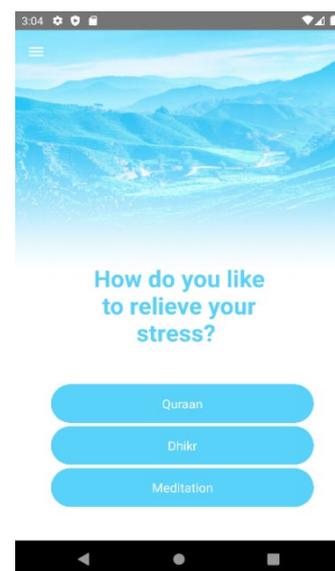


Figure 5: Get Started



Figure 6 : Home page



Page7: Relaxation page



Figure 8 : Quran page

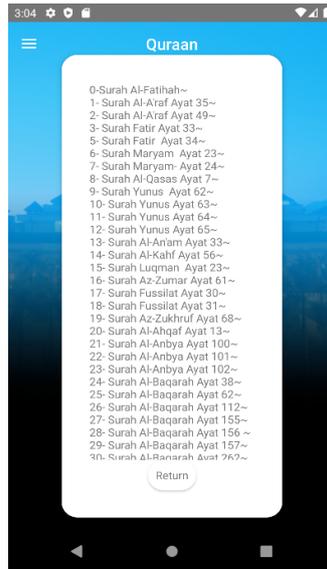


Figure 9: Verses list

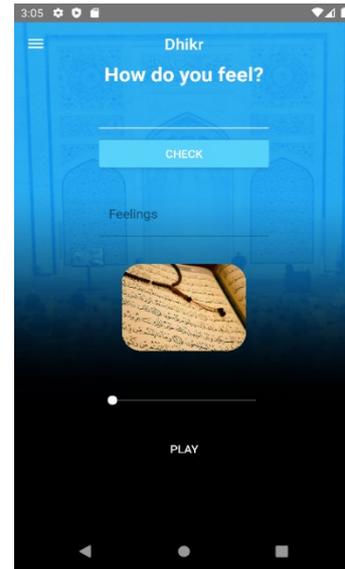


Figure 10: Dhikr page

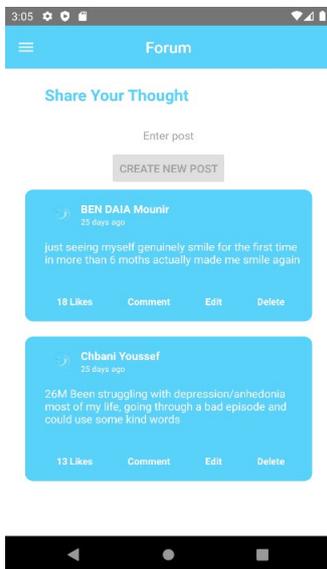


Figure 11: Forum page

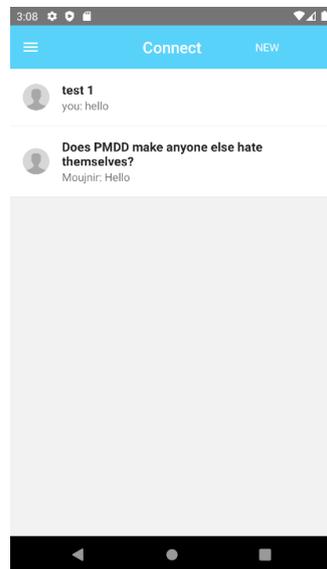


Figure 12: Connect page



Figure 13: Admin page

#### 4. Conclusion

Finally, the MentAllay system's goal of building a mobile application system that assists those suffering from depression has been met. The key feature that will assist users cure their depression is relaxation techniques, in which users can enter their feelings or select from other categories, and the system will offer them with audio that matches their feelings. Audios are collected based on few books ( كتاب عالج نفسك بالقرآن [7] كتاب مفاتيح الفرج [8] موسوعة التفسير الموضوعي للقرآن الكريم [9] ) We also have a forum where users can submit comments, like them, and edit or delete them, as well as a connected feature where users can establish new chat rooms or chat in existing ones, and all of these features operate properly. Furthermore, the admin feature for checking new user IDs and deleting users is operational. As a result, the system is completed in accordance with the requirements received by the developer throughout the system's development. The developers are specifically targeting folks who are depressed. As a result, the color utilized in the application is light blue, which gives feelings of peace and joy and is connected with trust and reliability. The design may be improved in later stages and hopefully this project will be built based on the UI design.

## Acknowledgement

The authors would also like to thank the Department of Information Systems, International Islamic University Malaysia for its support.

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