

# The MindMate Anonymous Counseling Application

Makeke Thapelo, Thela Bongani, Dimakatso Matlaila, Potlako Ledwaba

June 9, 2023

## Step-by-Step Description of Making MindMate Anonymous Counselling Android Application

Defining the Application Scope and Requirements of MindMate :

- The main objective of the MindMate is to offer a safe space where users can share their concerns, seek guidance, and receive emotional support without revealing their identities.
- The application aims to cater to individuals who may prefer anonymity due to personal or societal reasons and who require accessible and discreet counseling options.
- The scope of the MindMate anonymous counseling application includes various aspects, such as the target audience, counseling services, and features. The application is designed to cater to individuals dealing with mental health issues, relationship problems, stress, anxiety, or any other emotional challenge
- It may also serve a specific demographic, such as teenagers, young adults, or a particular community. The application can offer various types of counseling services, including individual counseling, couples counseling, family counseling, career counseling,
- Determine the features and functionalities required, such as user registration, chat interface, session scheduling, etc.
- MindMate has a level of anonymity and privacy that it provides such as Users can create anonymous accounts and log in securely to access the counseling services.

Designing the User Interface (UI) and User Experience (UX)

- We will Create wireframes or mockups of the application's screens and navigation flow.

- The MindMate interface will be user-friendly and will align with the purpose of this application.
- It will use colors like blue and white as primary colors for the sake of creating a visually appealing experience

#### Setting Up the Development Environment

- We will use software development tools such as Android Studio, Java Development Kit (JDK), Lamp server (including MySQL) for developing MindMate apk.
- Project structure and configuration files will be set in android studio.
- MindMate development environment will be connected to any required external services such as MySQL lamp server

#### Implementing User Registration and Authentication

- We will develop the user registration process, allowing users to create accounts.
- Authentication mechanisms to ensure secure access to the application such as login verification will be implemented.
- In case that a user or a counsellor forget his/her login details, necessary mechanism for password and account details retrieval will be implemented

#### Building the Database

- We will work with MySQL database management system because MySQL seamlessly integrates with various programming languages and frameworks, including Java, Python, PHP, and more. It provides connectors and libraries that simplify the process of interacting with the database, making it easier to develop the backend of an Android application.
- We will also design the database schema, including tables for users, sessions, messages, and any other necessary entities.
- Create the necessary scripts to set up and manage the database in view of the fact that creating setup and management scripts for the database ensures consistency, reproducibility, and easier deployment of the application. It also streamlines the process of setting up and maintaining the database and helps in managing changes and updates effectively

#### Developing the Chat Functionality

- We will Implement the real-time chat functionality using MySQL databases including manoeuvring of PHP files
- Chat rooms or channels for users and counsellors to communicate securely will be created.

- Will also ensure message encryption and data security to maintain confidentiality.

#### Enhance Privacy and Anonymity

- Measures to protect user privacy, such as anonymizing user data within the database will be instrumented.
- We will use secure communication protocols of PHP files within MySQL database for data transmission.

#### Test and Debug

- We will conduct thorough testing of the application, including functional testing, usability testing, and security testing.
- If we identify any bugs or issues that may arise during the testing phase, we will fix them.

# 1 Formulation of business rules

## **Business Rule 1:**

The MindMate application is divided into two categories: User and Counsellor. Each counselor can counsel many users but each user can only be assigned to one counselor at the time.

- Entities: Counselor ,User
- User, Counsellor
- A user can be assigned to one counsellor, but a counsellor can be assigned to many users.
- A 1:M relationship exists between the counselor and a user
- counselor(0:M);User(0:M)

**Business Rule 2:** Each user can send several messages at the time. The cardinality of messages is (0,M). The smallest number of messages a user can send is one, and the largest number of messages each user can send is indeterminate (N). Several messages can belong to one user

**Business Rule 3:** Each counselor may send a forget password request multiple times. An indeterminate number of forget password requests may be received from one counselor. A cardinality of the relationships is counselor(1:M); forgotPassword(1:M).

## **Business Rule 4:**

Each user may send a forget password request multiple times. An indeterminate number of forget password requests may be received from one user. A cardinality of the relationships is user(1:M); forgotPassword(1:M).

## **Business Rule 5:**

Each counselor can send several messages at the time. The cardinality of messages is (0,M). The smallest number of messages a counselor can send is one, and the largest number of messages each counselor can send is indeterminate (N). Several messages can belong to one counselor.

## **Business Rule 6:**

Each counselor may login multiple times. The largest number of times a counselor can login is indeterminate (N). Multiple login requests can be received.

## **Business Rule 7:**

Each user may login multiple times. The largest number of times a user can login is indeterminate (N). Multiple login requests can be received.

## 2 Development of initial ERD.

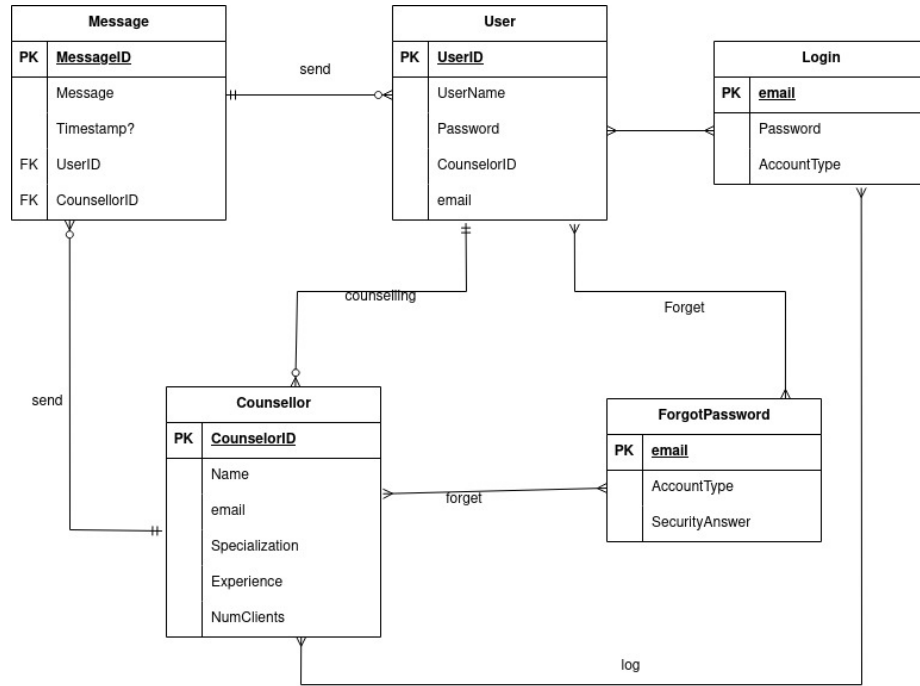


Figure 1: Representation of the initial ER diagram.

An M:N (many-to-many) relationship arises when multiple counselors forget their password, or when multiple counselors try logging in. A M:N relationship also arises when multiple users forget their password or when multiple users try logging in. To solve this we introduced two junction tables namely "User\_counselor\_forget" and "User\_counselor\_login". Now a 1:M relationship exists between the entities. Meaning there is going to be a 1:M relationship between counselor and login, user and login, counselor and forgot password, user and forgot password.

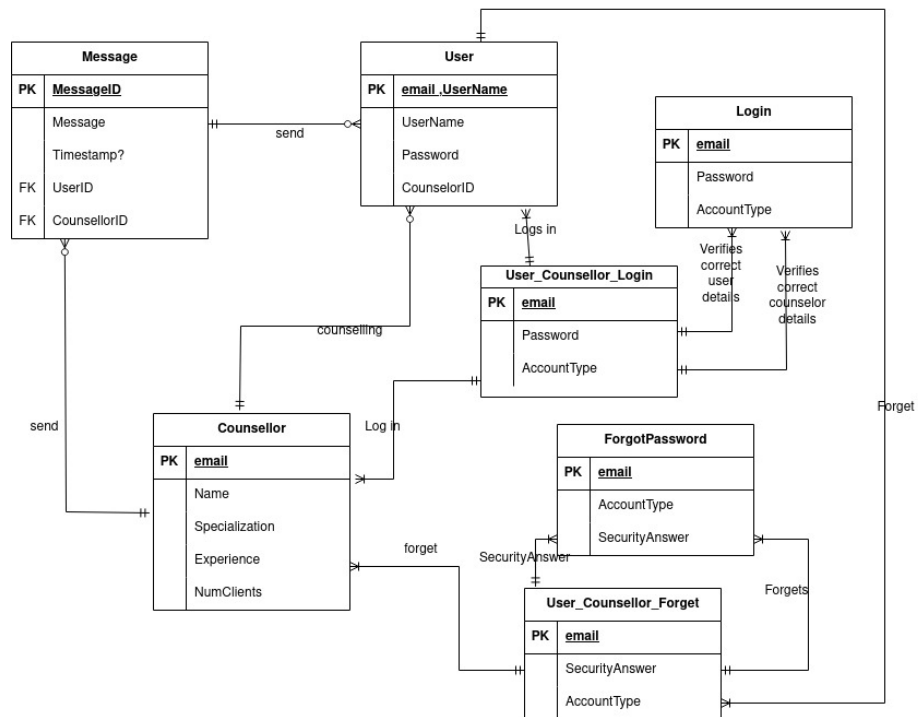


Figure 2: Components of the MindMate ERD

### **Components of the ERM**

<b>Entity</b>	<b>Relationship</b>	<b>Connectivity</b>	<b>Entity</b>
Message	1:M	Send	User
User	1:M	Counseling	Counselor
Counselor	1:M	Send	Message
User_counselor_login	1:M	Logs in	User
User_counselor_login	1:M	Log in	Counselor
User_counselor_login	1:M	Verifies correct user details	Log in
User_counselor_login	1:M	Verifies correct counselor details	Log in
User	1:M	Forget	User_counselor_forget
User_counselor_forget	1:M	Forgets	ForgetPassword
User_counselor_forget	1:M	Account details	ForgetPassword
User_counselor_forget	1:M	forget	Counselor

Figure 3: Components of the MindMate ERD