

# **Medication Reminder and Compliance System**

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**An Object Oriented Programming Project**

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## I. Background of the Study

The **Medication Reminder and Compliance System** is a simple and practical tool designed to help people stay on top of their medication schedules. This Java-based application makes life easier by sending automated reminders and keeping track of medicine schedules, ensuring users don't miss a dose and maintain a healthy routine.

The system has several key features such as a log in, homepage where users can see their scheduled medicines, a section to manage medications, tools for logging and tracking adherence, and profile. These features aim to make it easier for users to manage their health and stay consistent with their treatment plans. Eventually, it will connect to a database to securely store and retrieve user information.

The team initially struggled with the complexity of JavaFX but switched to Java Swing to create a more user-friendly design. We've built core features like sign-up, login, and an intuitive interface with handy navigation tools. The team is steadily focused on this app for Effective health partner.

## II. Objectives

- **Enhance Medication Adherence**
- **Simplify Medication Management**
- **Promote Healthy Habits**
- **Provide Comprehensive Tracking Tool**
- **Improve User Experience**

### III. Scope and Delimitation of the Study

The **Medication Reminder and Compliance System** is a Java-based application focused on assisting users in managing their medication schedules effectively. The study primarily encompasses:

#### 1. **Key Features:**

- Automated reminders to notify users about scheduled medications.
- Medication tracking to monitor adherence and ensure no doses are missed.
- Interfaces such as Home Page, Medication Management, Medical Logging, Adherence Tracking, and Profile for comprehensive health management.

#### 2. **Target Users:**

- Individuals who need assistance managing their medication schedules.
- Patients with chronic illnesses or those undergoing complex treatment plans.

#### 3. **Technology Used:**

- Developed using Java Swing for the user interface, ensuring a simple and user-friendly experience.
- Database integration to securely store user data, such as medication schedules, adherence logs, and profile information.

#### 4. **Development and Testing:**

- The study focuses on the design, implementation, and testing of the system, ensuring it meets functional and usability standards.

### Delimitation of the Study

The study is limited to the following:

#### 1. **Functionality:**

- The system is designed for managing medication schedules and adherence tracking only. It does not provide advanced medical advice or diagnosis.
- Features such as real-time syncing with wearable devices or integration with external healthcare systems are beyond the current scope.

## 2. **Target Audience:**

- The system caters to individual users rather than large-scale healthcare institutions.
- It assumes users are familiar with basic mobile or desktop application usage.

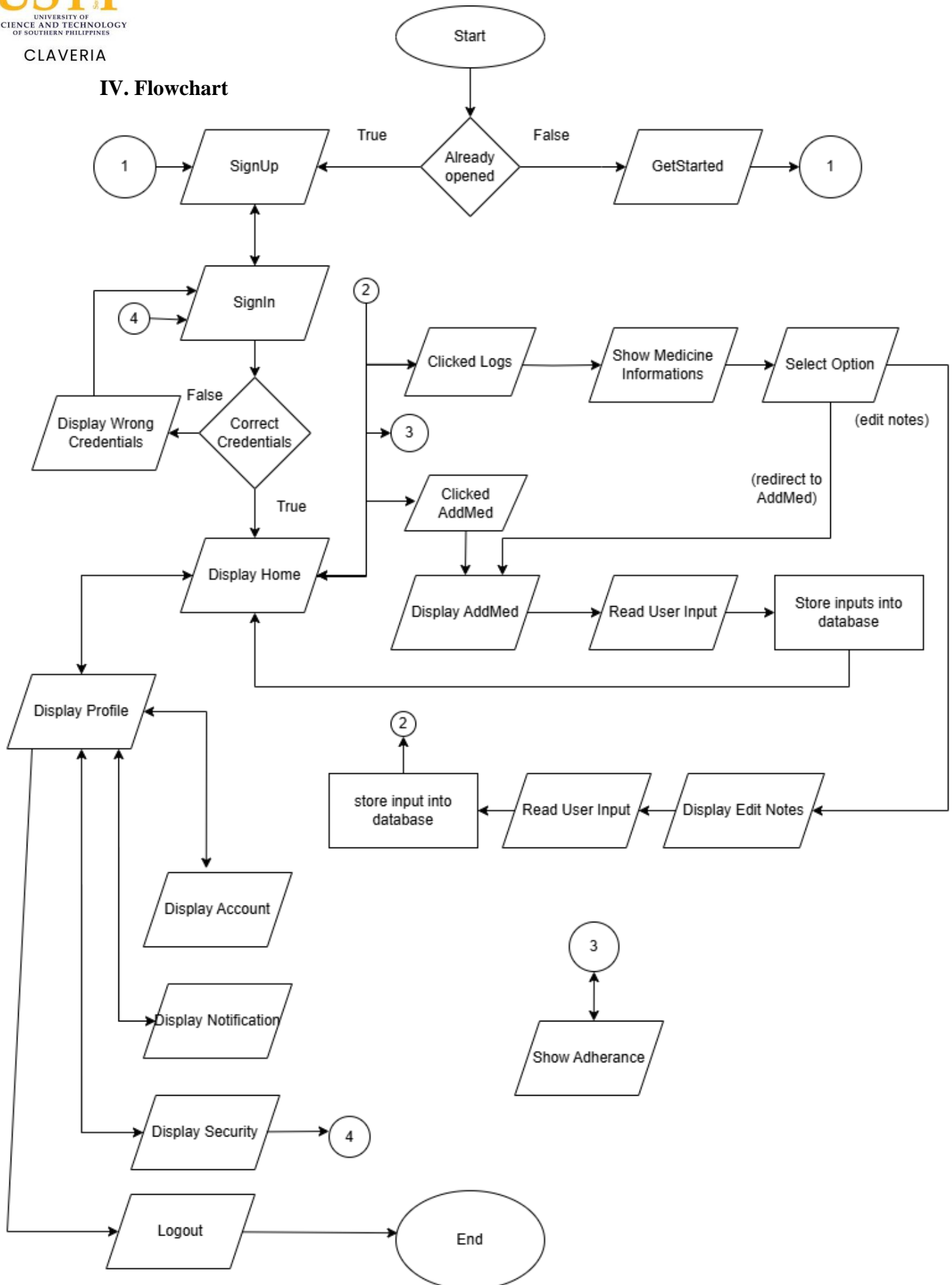
## 3. **Technical Constraints:**

- The project is developed using Java Swing, limiting some advanced graphical interface capabilities compared to modern frameworks.
- The database integration focuses on local or basic cloud storage rather than enterprise-grade solutions.

## 4. **Geographic and Resource Limitations:**

- Testing and feedback are based on a limited sample size, primarily within the university or community of the development team.
- Access to healthcare professionals for validation of the system's functionality is minimal

#### IV. Flowchart



## Description:

### Start and Initialization:

The process starts with the system checking if the app is already opened:

- **If True**, the user is redirected to the **SignUp page**.
- **If False**, the user selects **GetStarted**, which leads to the SignUp process.

### Sign Up and Sign In:

- After SignUp, the user proceeds to the SignIn flow:
  - If the user enters the **wrong credentials**, a **Display Wrong Credentials page** is shown.
  - If **correct credentials**, the user is redirected to the **Display Home screen**.

### Main Application Option (Home):

From the Display Home page, the user can access various features:

- **Clicked Logs:**
  - Leads to a page displaying Medicine Information.
  - Provides options to edit notes or redirect to the AddMed feature.
- **Clicked AddMed:**
  - Opens the Display AddMed page, where the user can input medicine information.
  - User input is stored in the database.
- **Show Adherence:**
  - Displays the adherence tracking progress.

### Profile and Account Navigation:

From the Display Home page, the user can navigate to:

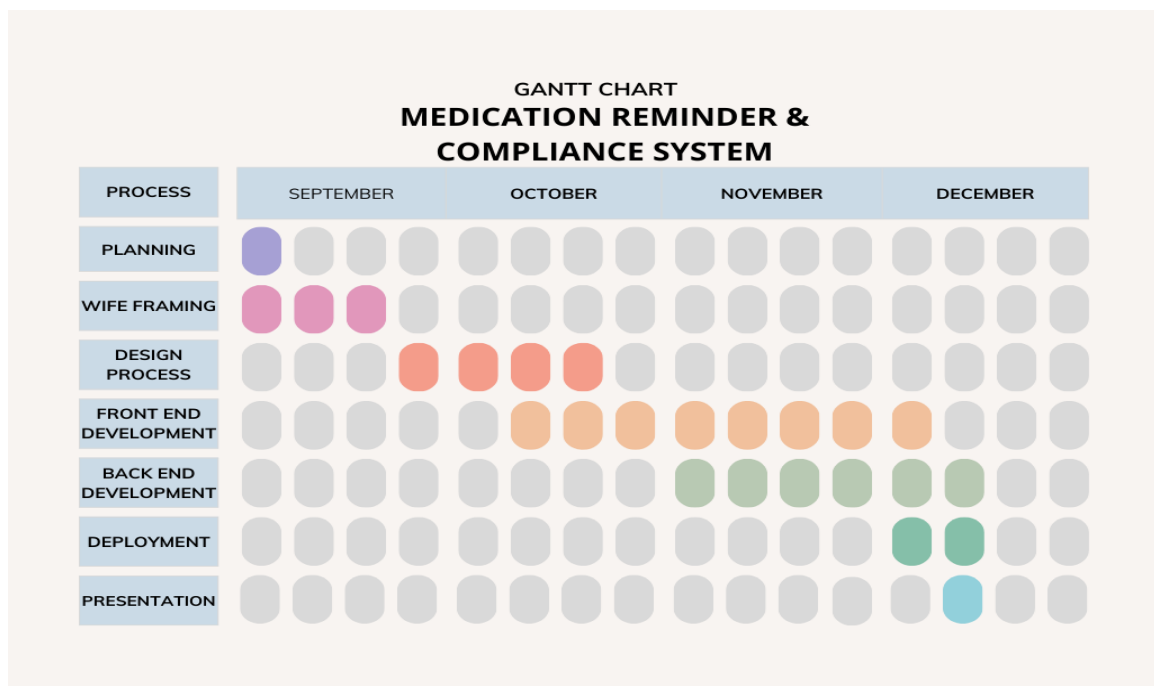
- **Display Profile, which links to:**

- **Display Account:** Allows viewing or modifying account details.
- **Display Notification:** review alerts or reminders.
- **Display Security:** Manage security settings like change new password from the user.

## Logout:

- Users can log out at any point, which ends the session.

## V. Gantt Chart



Outlining the timeline and phases of the project from September to December.

### Planning (Purple):

- Focused on the initial groundwork and strategy, completed in September.

### Wire Framing (Pink):

- Conducted alongside planning, focusing on the structural design of the system, also completed in September.

## **Design Process (Orange):**

- The visual and functional design development phase, carried out throughout October.

## **Front-End Development (Light Orange):**

- Implementing the user interface, initiated in October up to the 1 week of December.

## **Back-End Development (Green):**

- Setting up the system's core functionality, conducted from November to mid-December.

## **Deployment (Teal):**

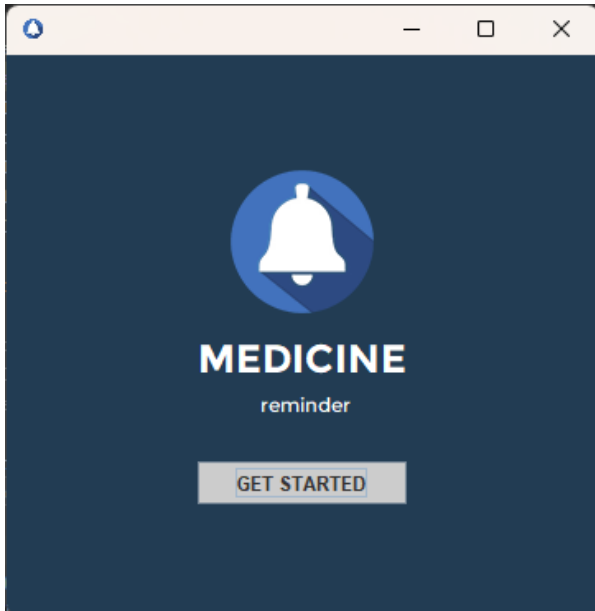
- Launching the system, scheduled for completion towards the 2<sup>nd</sup> week of December.

## **Presentation (Light Blue):**

- Final presentation or demonstration of the system, planned for the last phase in December.



## VI. System Design

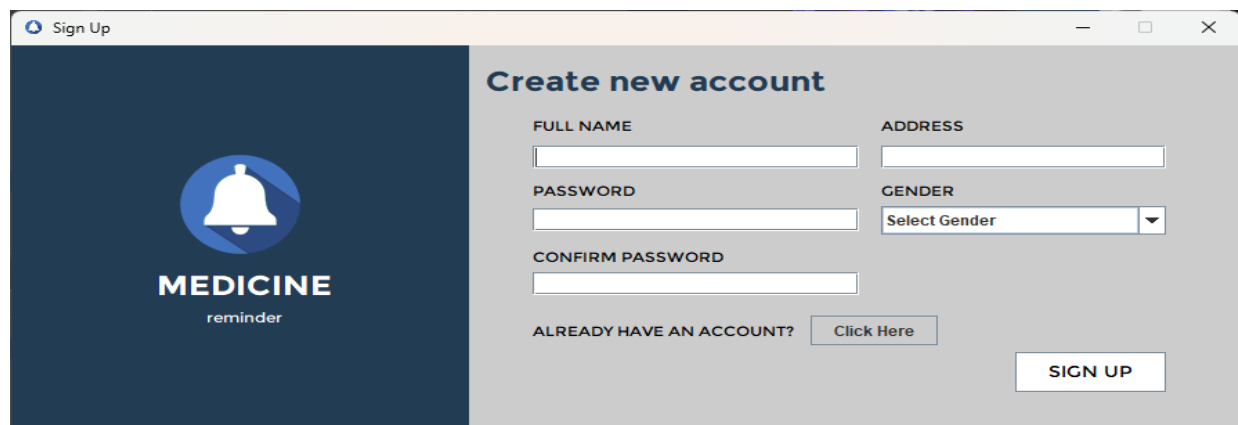


### WELCOME INTERFACE

#### Description

The welcome interface of the Medication Reminder and Compliance System features a modern and user-friendly design. It prominently displays a bell icon, symbolizing reminders, alongside the title "Medicine" and the subtitle "reminder." The calming dark blue background enhances readability and conveys professionalism. A clear "GET STARTED" button invites users to begin their journey with the app, ensuring an intuitive and accessible experience for all users. This interface sets a welcoming tone, emphasizing the system's focus on supporting medication adherence.

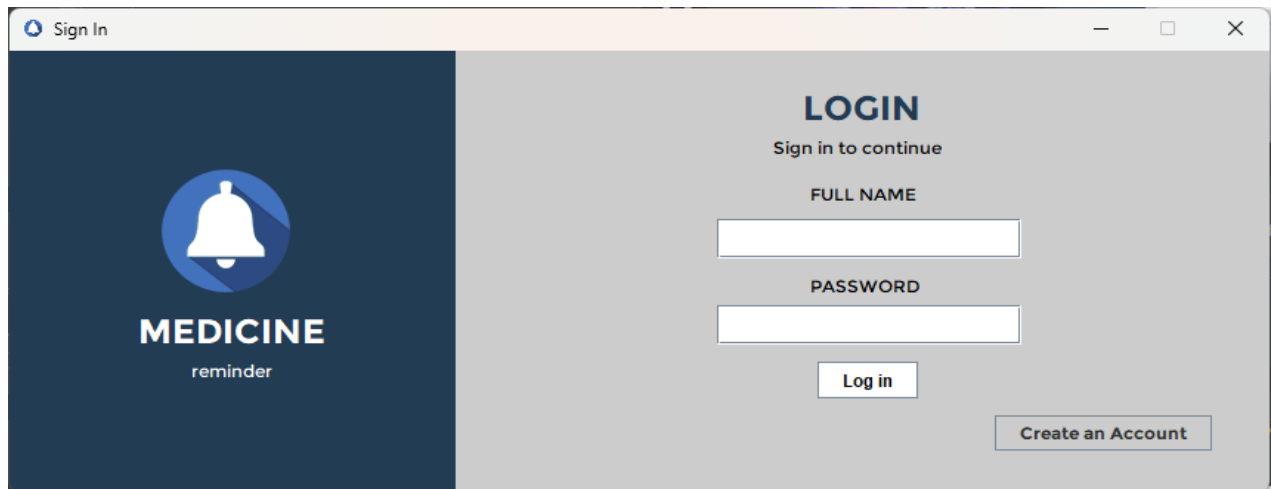
button invites users to begin their journey with the app, ensuring an intuitive and accessible experience for all users. This interface sets a welcoming tone, emphasizing the system's focus on supporting medication adherence.



### SIGN UP INTERFACE

#### Description

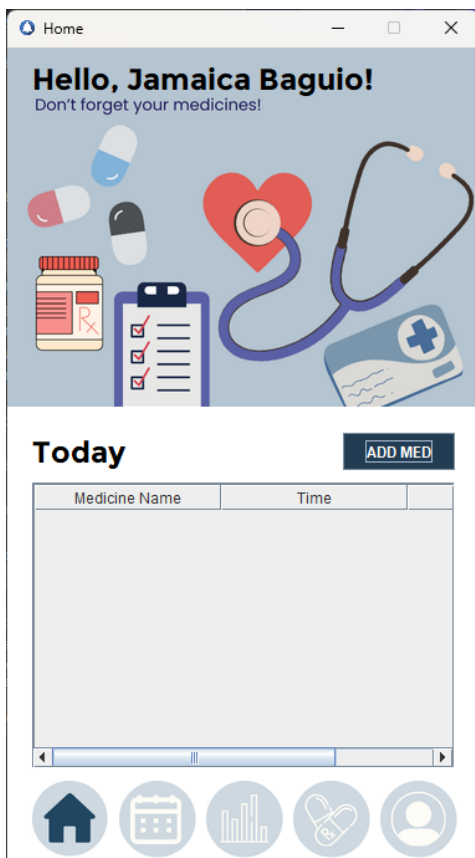
This interface is designed to onboard new users to the application by collecting their required essential details, such as their full name, password, and confirmed password. Address and gender are optional to respect the user's privacy. The interface provides an intuitive and user-friendly experience, ensuring easy navigation with clear labels and straightforward calls to action.



## LOG IN INTERFACE

### Description

The screen allows existing users to sign in to their account by entering their credentials. This interface is designed to authenticate existing users in a simple and intuitive manner. The minimal design ensures users can quickly identify their actions—whether signing in or creating a new account if they don't already have one.



## HOME PAGE INTERFACE

### Description:

This interface makes it easy for users to stay on top of their daily medications. You can add your meds, set reminders for when to take them. There's a handy section that shows your schedule for the day, so you know exactly what's coming up. Plus, with a home button to quickly return to the main screen, everything is designed to be straightforward and simple to use.



**Set Reminder**

Today December 09, 2024

**Input Your Medicine**

Medicine Name  Dosage

Frequency  Strength

Select Duration

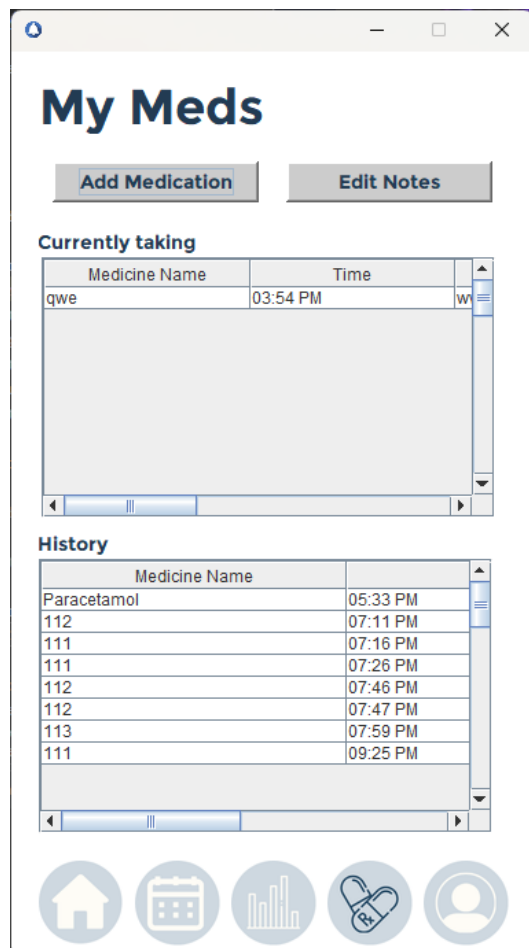
Set Date

**Write Instruction**

## MEDICATION MANAGEMENT INTERFACE

### Description:

The interface is designed to help users keep track of their medicine schedule. It allows users to add medicines, and set reminders.



**My Meds**

**Currently taking**

Medicine Name	Time
qwe	03:54 PM

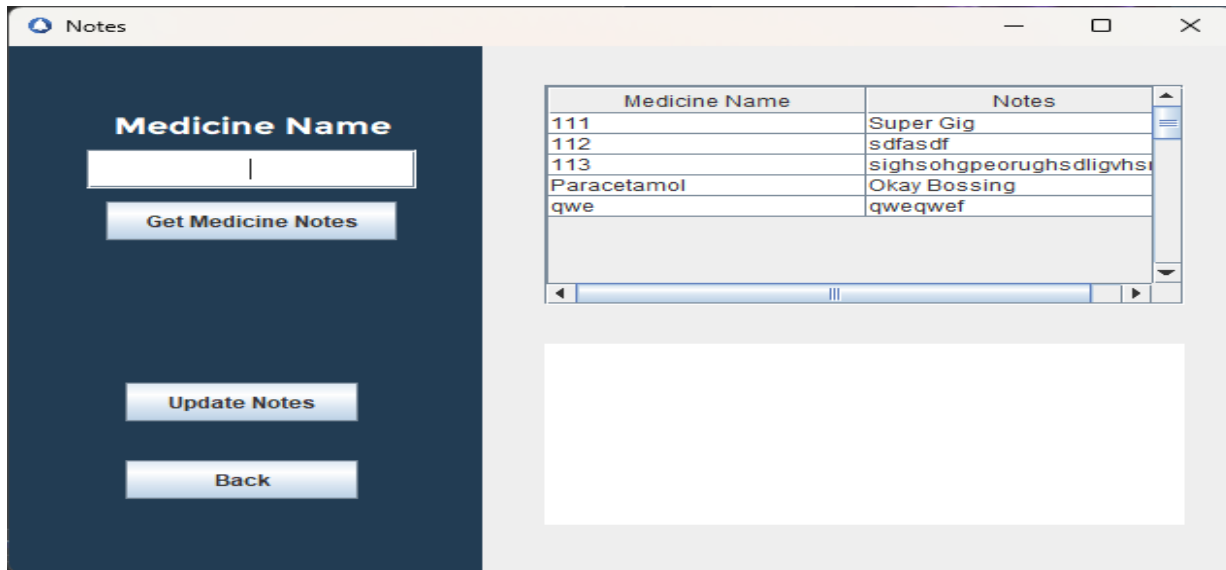
**History**

Medicine Name	Time
Paracetamol	05:33 PM
112	07:11 PM
111	07:16 PM
111	07:26 PM
112	07:46 PM
112	07:47 PM
113	07:59 PM
111	09:25 PM

## MEDICAL LOGGING INTERFACE

### Description:

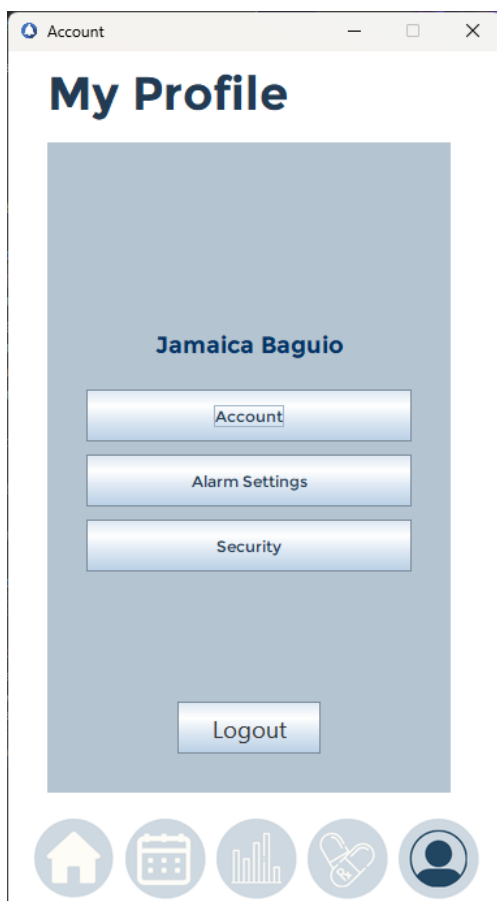
This section plays a vital role in ensuring users can stay organized, track their medications in real time, and reflect on their history for better adherence and health outcomes.



## Medicine Notes Management Interface

### Description:

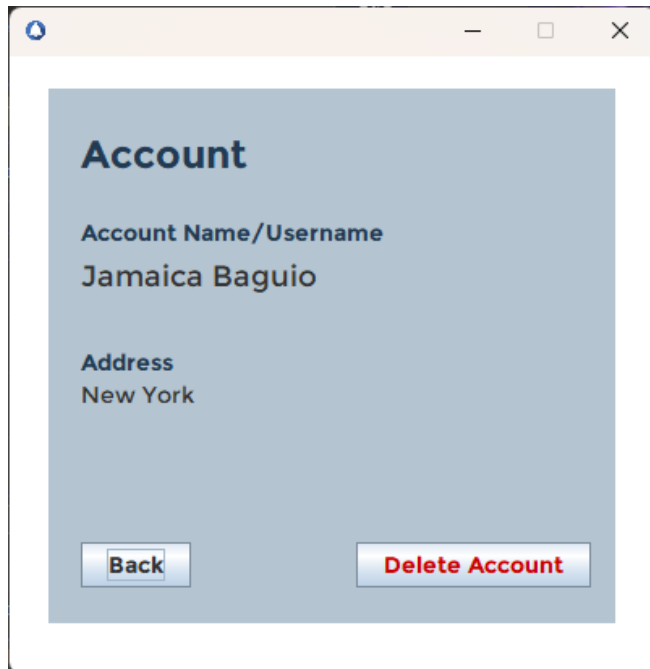
The Medicine Notes Management Module is a critical component of the medication reminder system. It provides users with an interface to search, view, and update notes related to medicines, ensuring streamlined information access and medication adherence.



## MY PROFILE INTERFACE

### Description:

This profile section of the app allows users to easily manage their personal information. It includes options to update their name, alarm setting, and change password from the security button. This user-friendly design helps users keep their profile up to date with just a few taps. There's also a navigation bar at the bottom for quick access to other sections like the home page, set reminder, adherence tracker, and viewing medication details.



**Account**

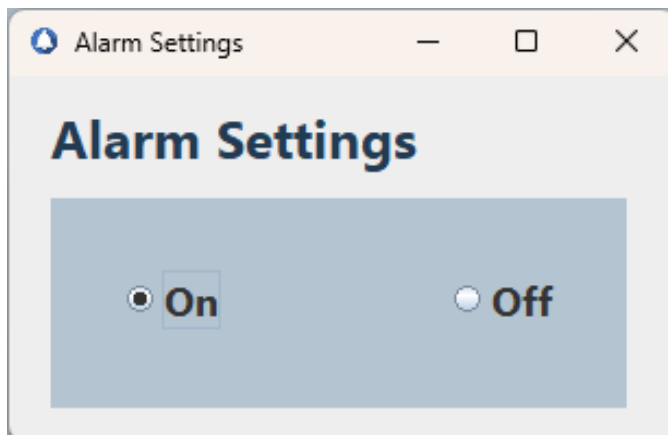
Account Name/Username  
Jamaica Baguio

Address  
New York

## ACCOUNT MANAGEMENT INTERFACE

### Description

This interface is designed to display account information and provide users with options to navigate or manage their account. It ensures that users have access to essential account details and can perform critical actions like account deletion.



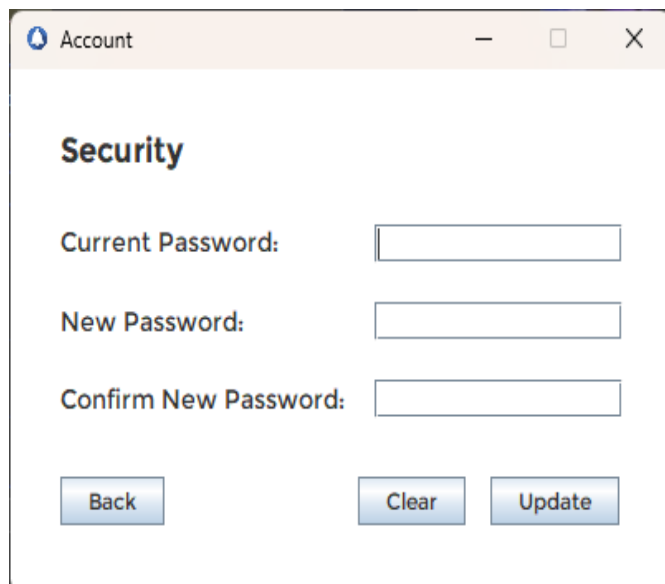
**Alarm Settings**

☒ On ☐ Off

## ALARM INTERFACE

### Description:

This interface is to allow the user to control the state of an alarm system.



**Security**

Current Password:

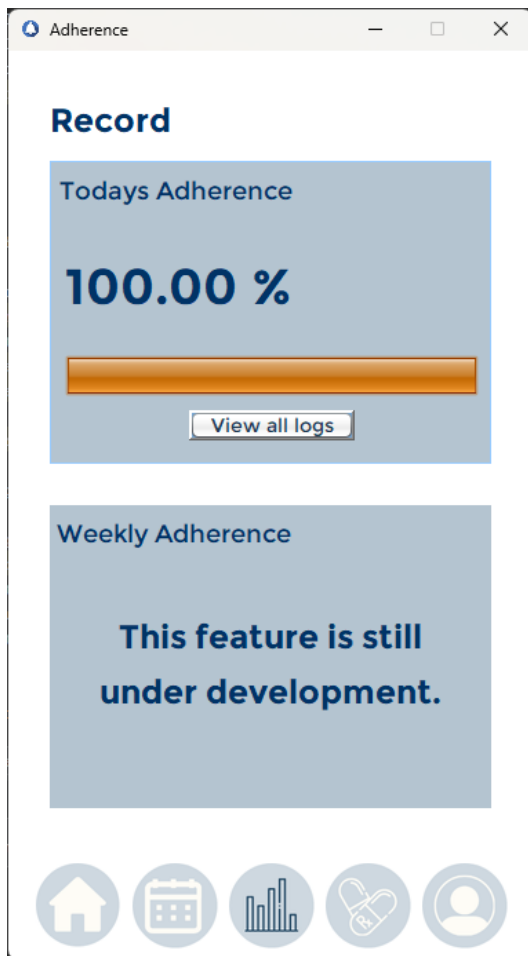
New Password:

Confirm New Password:

## PASSWORD MANAGEMENT INTERFACE

### Description:

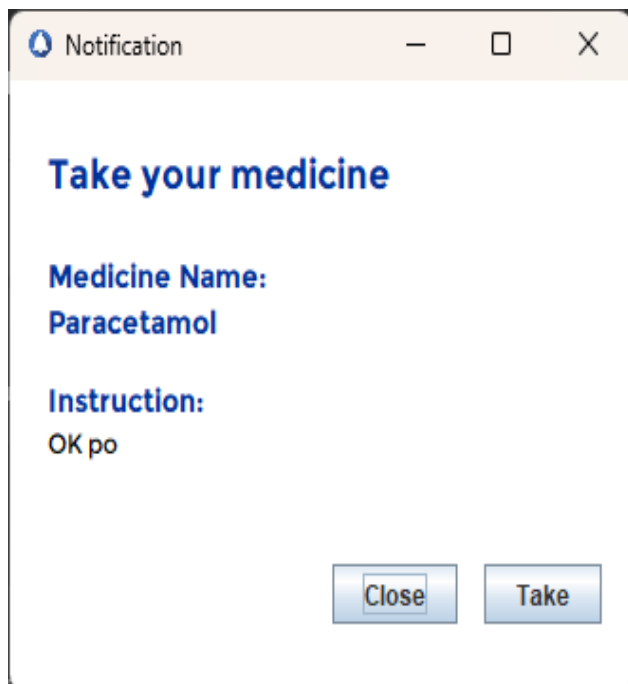
This interface is designed to enhance account security by allowing users to update their passwords. It ensures that password changes are done securely and intuitively while minimizing the risk of errors.



## ADHERENCE TRACKING INTERFACE

### Description:

This section is crucial for promoting accountability and building user habits for regular medication intake. While still under development, the features presented lay the groundwork for a robust adherence-tracking module that can integrate daily and weekly progress for enhanced user engagement.



## MEDICINE REMINDER NOTIFICATION INTERFACE

### Description:

A medicine reminder notification interface is a user-friendly system designed to improve medication adherence. Users input their medication details (name, dosage, frequency, strength) to receive timely reminders via customizable notification pop-ups. This is a simple medication reminder notification. It displays the medicine name, instructions, and provides "Close" and "Take" buttons for user interaction.

## VII. Conclusion

The **Medication Reminder and Compliance System** is a Java-based application designed to help users manage their medication effectively. It has successfully implemented core features like login, sign-up, and a user-friendly interface with home, set reminder, adherence tracker, medication logs, and the account button. The application delivers a comprehensive solution for personal health management. The use of Java Swing for the interface ensures a smooth and intuitive user experience, while the database integration guarantees secure and efficient storage of user information.

The **Medication Reminder and Compliance System** successfully achieves its goal of helping users manage their medication schedules efficiently and consistently. By providing automated reminders, a user-friendly interface, and robust medication tracking tools, the system significantly reduces the likelihood of missed doses and promotes better adherence to prescribed treatments.

Overall, the system has proven to be an effective tool for individuals managing their medication routines. It addresses the common challenges of medication adherence by simplifying processes and providing consistent support, thereby contributing to healthier lifestyles for its users.

## VIII. Recommendation

To further improve the **Medication Reminder and Compliance System**, it is recommended to enhance its functionality by integrating advanced features such as customizable notifications, medication refill alerts, and weekly and monthly adherence tracker. Expanding to mobile platforms and adding multilingual and accessibility options can significantly improve user experience and reach a wider audience. Security measures like data encryption, cloud backup, and compliance with privacy regulations should be prioritized to ensure user trust. Additionally, collaborating with healthcare providers and incorporating user feedback will help refine the system, making it a more reliable and impactful tool for medication management.