IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 1, September 2023

Medicine Reminder System Using JAVA

K. Shekar[1], R Madhu[2], Lokesh Naik[3], T. Vinod[4]
Assistant Professor, Dept. of Computer Science and Engineering[1,2,3,4,]
MLR Institute of Technology, Dundigal, India

Abstract: *Health is an essential part of our lives. It influences our lives to the highest degree. Being healthy and active is always an advantage for us. But in today's fast-moving world, we often forget to take the prescribed medicine to us on time due to which we have to face a lot of issues in the future if not soon. A report suggests that over 75 percent of people do not take their medicines at proper time. This simple mistake can sometimes be fatal and can cost their lives. We aim to build an application that reminds people to take the medication according to their prescription. In this, the user has to enter the medication and the time at which it has to be taken. Based on the given input the application analyzes and gives timely reminders to the user*

Keywords: Health

I. INTRODUCTION

Doctors often prescribe medications that must be taken at specific times throughout the day. Taking medications on time as prescribed is important to ensure that our bodies have an effective amount of the medication at all times. If this is not the case, the disease may develop a resistance to the medication or it may simply take longer to get better. It is estimated that not taking medicine on time accounts for up to 50 percent of disease treatment failure which is a major issue for many people around the world and can cause severe problems for the patients.

But in our busy lives, we often tend to forget the intake of medicine and thereby causing several issues. Our project aims to build an application that helps in acting as a timely reminder for the medicine intake through an alarm.

Having enough medicine in your body at all times is crucial in the recovery process, and this application helps in this process by reminding us of the intake of our medications at the correct times every day

II. LITERATURE REVIEW

[1] Design and Implementation of an Automated Reminder Medicine Box for Old People and Hospital

The primary goal of this research is to create a smart medicine box that will remind hospital patients or elderly patients to take the right dosage of their medications at the right time, per the doctor's instructions. The attendant has two options for setting the time to take medication: directly or by loading a text file on an SD card. The gadget can guarantee medication safety, proper medication dosage, and the avoidance of elderly drug abuse.

[2] Medicine Reminder and Monitoring System for Secure Health Using IOT

In today's society, people often neglect important daily details due to their busy schedules. Dementia, which causes forgetfulness in everyday activities, affects the elderly and those with chronic illnesses who must take their medications on time without skipping any. Taking into account the situation research that has been conducted.

[3] Automatic Pill Reminder for Easy Supervision

In this paper, we present a working model of an automated pill reminder and dispensing station that can reduce irregularities in taking the correct dosage of medication prescribed by a physician at the correct time, and move from approaches that depend predominantly on human memory to automation with negligible monitoring, relieving individuals of the error-prone task of administering the wrong medication at the wrong time in the wrong quantity

[4] Health Alert and Medicine Remainder using Internet of Things

Humans struggle to remember the medications they need to take in today's world. This essay suggests a design for an automated pharmacy and medication notification system. Medicine cases come in a variety of shapes and sizes. The suggested prescription box would make it easier for those taking medication, particularly elderly individuals, to

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 1, September 2023

remember to take their pills on time. Through the tensors kept at home, it also continuously monitors people's health conditions like blood pressure and ECG and alerts them to take required action.

[5] Smart Medicine Reminder Device For The Elderly

Designing an IoT-Based Smart Medicine Reminder Device is the primary goal. In order to create a superior system, the current one also examines the advantages and disadvantages of earlier devices.

[6] Smart Home Medication Reminder System

This paper offers a practical approach for using a smart home to assist individuals who experience medication-related side effects. The proposed flow begins when a patient obtains a fresh prescription for medication from their doctor. A QR code created by an eHealth system is given along with a prescription and contains information about the medication prescribed, its duration, the next appointment, and other details. The expert system that manages all of the notifications produced by prescription uses this collection of data.

III. EXISTING SYSTEM

[1] The major problem of the existing technologies is that they are heavily dependent on hardware.

[2] Due to the requirement of more hardware resources the existing systems are not cost effective and require heavy maintenance.

[3] Most of the existing systems are developed with the focus on Home based automation of reminders.

[4] Defects in the hardware-based system may result in false alarms and can even put the patient's life in danger.

IV. PROPOSED SYSTEM

[1] In today's world, every necessity is just a touch away from us. Everything is digitized from patient reports to doctor consultation.

[2] With this thought in mind, we came out into a hypothesis that developing a mobile application that can provide timely reminders for patients might be the best solution and can overcome problems faced in many existing systems.

[3] The proposed system Collects the user's details and stores it in a centralized realm database, which can later be used for verification and authentication of users.

[4] Here we take medicine details and time of intake of medicines in order to provide user reminders and renewal notifications.

[4] The technologies used here for development include Kotlin for front end and Java for back-end processing.

A. Functional Requirements

[1] Authentication of user whenever he/she logs into the system.

[2] A Verification email/OTP to registered mobile number is sent to user whenever he/she registers for the first time on the application.

[3] A personal information page storing user data and past medical records.

[4] Self declaration form for the user.

[5] A timer page to collect medicine details and set alarms based on user time specifications.

[6] Authorization from user for change in medicines.

[7] Alarm System should provide alarms at specified time.

[8] Renewal reminders must be given to the user after the dosage is completed.

B. Non-Functional Requirements

[1] Response time - Login page must load within 2-5 seconds. The site should load in 10 seconds when the number of simultaneous users is > 5000.

[2] OTP and Email verification codes must last for only 10 min.

[3] User Logs: Invalid authentication for multiple times must result in locking of account.

[4] Fetching of user data should be done with precision and accuracy.

[5] Security - Users medical data should be secured and protected by all means. Database Security should be there to provide privacy and secrecy to the medical data.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 1, September 2023

[6] Flexibility - There should be an ease of adding and removing medicines for the user.
[7] A backup for user data must be there in order to avoid loss of data.
[8] Alarm system working must be monitored on daily bases to generate reports.
[9] Medicine renewal must be done based on users request or shortage of medicines.

C. Dataset Description

Our project dataset has 500 rows of data(currently). The main fields of the dataset are Name, Gender, Age, Disease, Medicines, and Time of intake. A user may have to be reminded of multiple medicines, so we have made sure that our dataset contains multiple medicines and their corresponding intake time.

The time of medicine intake is divided into six-time slots namely, Pre-Breakfast, Post Breakfast, Pre-Lunch, Post Lunch, Pre Dinner, and Post Dinner. The time associated with these slots is calculated with the help of General averages of these particular times. Let us consider that the average time for Breakfast is 8:30 am then Pre-Breakfast reminder is set at 8:15 am and Post Breakfast at 8:45 am. Dataset is an important part of the application and is essential for timely reminders

D. Architecture

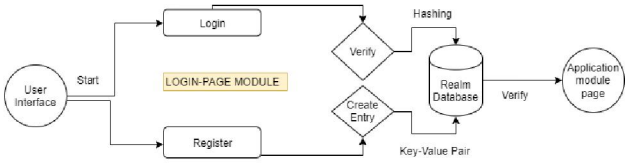

Fig-1.1

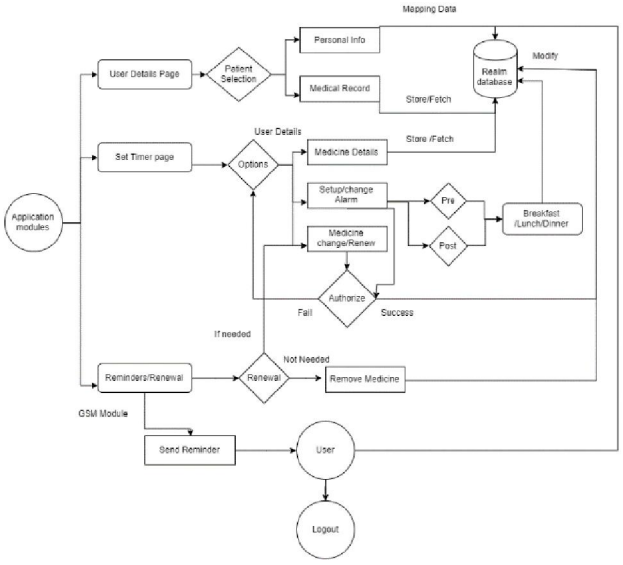

Fig-1.2

E. UML Diagrams

The following UML diagrams are used to represent the proposed system.

- Use Case Diagram
- Sequence Diagram

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 1, September 2023

Use Case Diagram

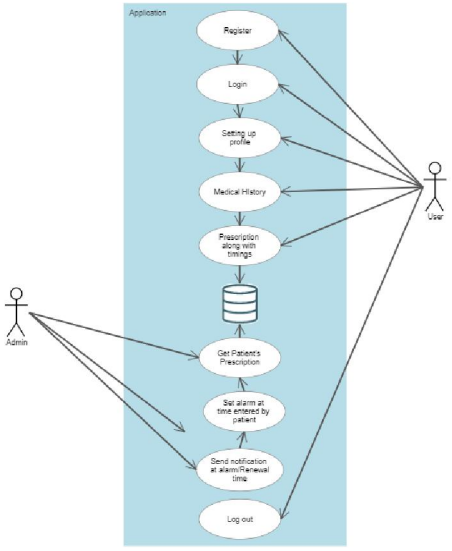

Fig-2.1

The above use case diagram describes the function and scope of the system and the system requirements. There are two major actors in our use case diagram, they are: 1. Admin 2. End User

Admin:

- Admin is a main part of our system. Admin has the right to access the user's database.
- Admin has to send a notification to the user stating that the user has to take the medicine.

End User:

- The user has to login/ register using his respective credentials.
- The user has to enter his personal details and their medical history if any.
- The user has to enter the prescribed medicine along with the intake time.

Sequence Diagram

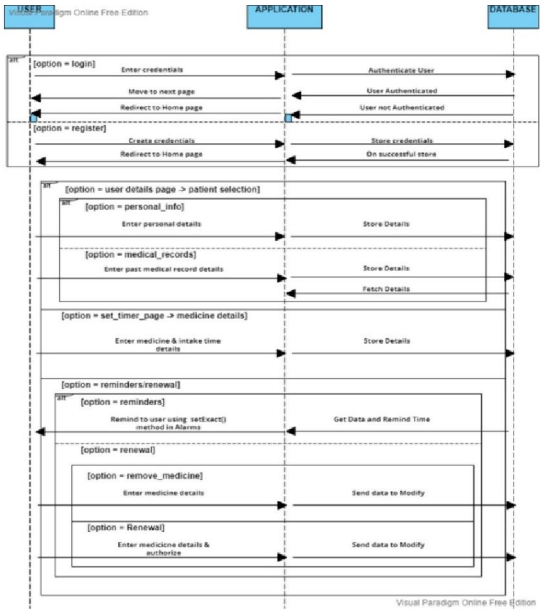

Fig-2.2

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 1, September 2023

We have three main entities in our sequence diagram, they are User, Application and Database. On the Homepage of the application, we have two options they are Login and Register. In Login option the user has to enter his correct credentials which are then checked with the database for authentication, invalid credentials will not allow user to go to next page.

Whereas in Register option, new users can create their credentials and the application adds them to the database and is stored as Key-value Pair.

After successful login, we are then moved onto the next page where we have three options namely, User details page, Set timer page and

Reminder/Renewal page. In user details page the user has to select a particular patient and he has the option of either of entering personal information or to store or fetch his medical record. In Set timer page we have option such as entering the medicine details and also setting up the alarm by choosing particular time interval such as Pre-Lunch, Post-Breakfast etc.

In Reminders/ Renewal page we can send reminders to user using the setExact() method in Alarms and in Renewal option we have the choice of either renewing a medicine or to remove a medicine. In order to renew a medicine, the user has to again enter his credentials and upon successful authentication modification is done in database and for Removal of medicine, entering the medicine name is enough as the application makes sure that the entered medicine name has the removed from the database.

REFERENCES

[1] Mohammed Abdul Kader, Mohammad Nayim Uddin, Asif Mohammad Arfi, Naeemul Islam, Md. Anisuzzaman. 2018 International Conference on Innovations in Science, Engineering and Technology (ICISET)

[2] Samir V. Zanjal and Girish. R. Talmale, International Conference on Information Security & Privacy (ICISP2015)

[3] A. Jabeena., Rohit Roy, Animesh Kumar Sahu, N.Sardar Basha, Proceedings of the International Conference on Intelligent Sustainable Systems (ICISS 2017)

[4]P. Ranjana, Elizabeth Alexander, 2018 IEEE International Conference on Computational Intelligence and Computing Research

[5] Shawn Benedict Kumar, Wei Wei Goh, Sumathi Balakrishnan, 2018 Fourth International Conference on Advances in Computing, Communication & Automation (ICACCA)

[6] Milan Ramljak FESB, University of Split Split, Croatia