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Title **ALERT MESSAGE USING DOCTOR'S PRESCRIPTION**

Paper Authors

Rajesh.Y, Sai Venkata Meghana.R, Aparna Sri. M, Zehra Banu. SD

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Alert Message Using Doctor's Prescription

Rajesh.Y[1], Assistant Professor, Department of Computer Science and Engineering, Andhra Loyola Institute of Engineering and Technology, Vijayawada.
rajeshrajiv1324@gmail.com
Sai Venkata Meghana.R[2], IV B.Tech Department of Computer Science and Engineering, Andhra Loyola Institute of Engineering and Technology, Vijayawada.
Aparna Sri. M[3], IV B.Tech Department of Computer Science and Engineering, Andhra Loyola Institute of Engineering and Technology, Vijayawada.
Zehra Banu. SD[4], IV B.Tech Department of Computer Science and Engineering, Andhra Loyola Institute of Engineering and Technology, Vijayawada.

Abstract

This paper presents the development of Alert Message using Doctor's Prescription- "MEDMINDER", an android application designed to help patients manage their medication schedules and track their symptoms. The app allows users to take picture of their prescription, and using optical character recognition (OCR) technology, the app extracts relevant tablet details and sets medication reminders. Additionally, the app allows users to receive SMS or Email reminders based on their preferences. The app's front end was implemented using Android studio and java, and the back-end was developed using Firebase and SQLite DB Browser. The app runs on android devices such as smartphones and tablet. In addition to medication reminders and symptom checking, the app allows users to find hospitals and doctors based on their location and updates their personal profile.

Keywords*:* OCR, Android, Reminder System, Notification system, symptoms checker.

Introduction

Health and patients are two important topics that are closely related. Health refers to the overall well-being of an individual, including their physical, mental, and emotional state. Patients are individuals who are receiving medical treatment for an illness or health condition.

When it comes to patient care, health is a critical factor to consider. Patients who are in good health generally have a better prognosis and may respond more positively to treatment. On the other hand, patients who are in poor health may have a more challenging recovery process and may be at higher risk of complications.

Health and patients are also linked in terms of prevention. Maintaining good health can help to prevent the development of many illnesses and health conditions, which can ultimately reduce the need for medical treatment. For example, individuals who eat a healthy diet, exercise regularly, and avoid smoking and excessive alcohol consumption may be less likely to develop chronic conditions such as heart disease, diabetes, and certain types of cancer.

In terms of patient care, prevention is also important. Health care providers may work with patients to develop strategies for maintaining good health and preventing the development of future health problems. This may include lifestyle changes, such as dietary modifications and exercise, as well as regular check-ups and screenings to identify potential health concerns early on.

Overall, health and patients are two interconnected concepts that are essential to the provision of high-quality medical care. By focusing on both health promotion and patient-centered care, health care providers can help patients to achieve better health outcomes and improve their overall quality of life.

Literature Review

[1] PAPER: Development of an Android Based Medication Reminder and Adherence System
AUTHORS: Adeyemi, T.O.
ANALYSIS: The proposed system is useful to patients to set a customized alarm tone

in their local language or select from a list of default tones and allows specialists to automatically see the list of patients connected to them and their chat messages. And assist patients with chronic illness like Cancer, Diabetes, Asthma and HIV/AIDS, to get notifications from medical personnel about the availability of drugs and also served as a reminder system.

[2] PAPER: Medication Reminder and HealthCare Application

AUTHORS: Deepti Ameta, Kalpana Mudaliar and Palak Patel

ANALYSIS: The proposed system is based on Android Operating system which will remind the users to take medicines on time through notification and automatic alarm ringing system. The users will get the schedule of medicine in-take time with medicine description, starting and ending date of medicine, notification through message or email, automatic alarm ringing system and navigation system.

[3] PAPER: Medical Handwritten Prescription Recognition Using CRNN

AUTHORS: Rayan Haidar, Roger Achkar

ANALYSIS: The proposed system established a Convolutional Recurrent Neural Network (CRNN) technology using Python that can interpret handwritten English prescriptions and translate them into digital text. For this, datasets with 66 different classes, including alphanumeric characters, punctuation, and spaces, were used. Since prescriptions generally contain two or three words, the training was carried out using short texts. Normal handwriting and prescriptions from doctors were used to train the model. The system got a 98% accuracy rate after taking training time and data input into account.

Proposed System

People most of them facing difficulty in taking on time and unable to understand medicines. So, we want to propose an android application which can be used for setting the alarm from prescriptions itself and give the notifications by various ways such as Sound, Messages via through email or normal message.

By combining the android with OCR (Optical Character Recognition). we going to develop an app which gives alert for the patients with medicine prescription and we can also include another module like predicting the disease by using symptoms from the patient.

Technology Description
Android:

Android is a mobile operating system that was developed by Google in 2008. It is based on the Linux kernel and is designed to run on touchscreen mobile devices such as smartphones and tablets. Android has become one of the most popular operating systems for mobile devices worldwide, with over 2 billion active users as of 2021.

One of the key features of Android is its open-source nature. This means that the source code is freely available to anyone who wants to use, modify, or distribute it. This has led to a vibrant community of developers and enthusiasts who have created numerous innovative and useful applications for android devices.

Android also includes several built-in features and applications that make it a powerful and versatile platform. These include Google Maps, Google Assistant, and Google Play Services, which provide users with access to a wide range of services and tools.

One of the benefits of using Android is its integration with other Google services such as Gmail, Google Drive, and Google Calendar. This makes it easy for users to access their data and files from anywhere, and to keep their devices in sync with their other devices and accounts.

Firebase:

Firebase is a mobile and web application development platform that was developed by Google. It provides a wide range of tools and services to help developers build, test, and deploy mobile and web applications quickly and easily. Firebase includes features such as real-time database, authentication, cloud messaging, and analytics, among others.

Firebase also provides a range of authentication options, including email and password, phone number, and social media logins. This makes it easy for developers to add secure user authentication to their applications

without having to build the functionality from scratch.

SQLite Database:

SQLite is a popular open-source relational database management system that is used in a variety of applications, including mobile devices, web browsers, and desktop software. It is lightweight, fast, and highly reliable, making it an ideal choice for developers who need a simple and efficient way to store and manage data. One of the key benefits of SQLite is its ease of use. Unlike other database management systems that require a separate server process to be running, SQLite is a self-contained library that can be embedded directly into an application. This means that developers can easily create and manage SQLite databases without the need for additional setup or configuration.

SQLite databases can be created using a variety of programming languages, including C, C++, Java, Python, and others. The SQLite library provides a simple set of APIs that can be used to create tables, insert data, query data, and perform other operations on the database.

Implementation
Image Uploading:

The Image Uploading feature is implemented using the Android Camera and Gallery. When the user clicks on the Alert Reminder button, the app opens the

Fig 1: Main Page of App

camera or gallery to allow the user to select an image. Once the user selects an

image, the app processes the image to extract medicine details.

Medicine Details Extraction:

The Medicine Details Extraction feature is implemented using the Google Vision API. The API is used to extract the text from the prescription image and parse it to extract medicine details. The medicine name, medicine conditions, and time are extracted and stored in the app database.

Fig 2 Alert Reminder Page of App

Alarm Setting:

The Alarm Setting feature is implemented using the Android Alarm Manager class. When the user uploads a prescription image, the app sets an alarm for the specific time that the medicine needs to be taken. The alarm is set to repeat daily, so the user will receive a reminder every day at the same time. When the alarm triggers, the app displays a notification reminding the user to take their medicine.

Alarm View Activity:

The Alarm View Activity displays a list of all the alarms set by the user. The list is displayed in a Recycler View, and each item in the list displays the medicine name, time, and conditions. The user can also edit or delete the alarm from this view.

Symptom Checker:

The Symptom Checker feature is implemented using a Recycler View that displays a list of symptoms. When the user clicks on a symptom, the app displays information about the diseases associated with that symptom. The information is retrieved from a local database that contains information about various diseases and their symptoms.

Fig 3 Symptom Checking Page of App

Emergency Message:

The Emergency Message feature is implemented using the Android SMS Manager class. When the user clicks on the Alert button, the app sends an SMS message to all the contacts in the user added contacts. The message contains a URL that, when clicked, opens a map showing the user's current location
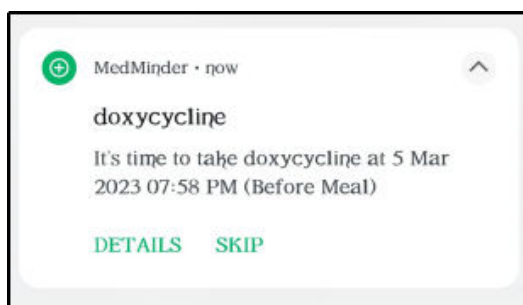

Fig 4 Notification to remind Medicine

The alarm is set to ring without any ringtone music to avoid any distraction.

SMS and Email Notification:

The SMS and Email Notification feature is implemented using the Android SMS Manager and Java Mail APIs.
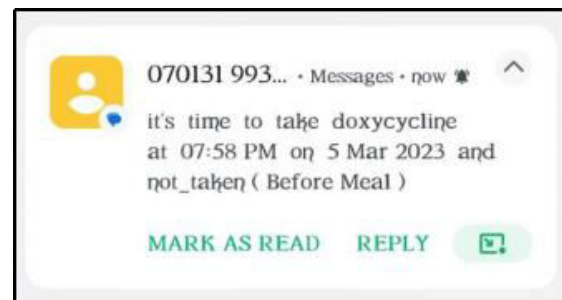

Fig 5 SMS for remind Medicine

When the alarm rings, the app sends an SMS and email notification to the user's emergency contacts. The SMS and email notification include the medicine name, medicine conditions, and time when it should be taken.

Fig 6 Email notification for remind Medicine

Future Implements
In near future, we can add a potential voice recognition where it would allow users to speak the name of their medication, and the app would automatically set the alarm for them. And use natural language processing which enable app to understand user text input and set alarm accordingly.

Conclusion

MedMinder is an Android app designed to help users manage their medications and monitor their symptoms. The app features include medication reminders, symptom tracking, hospital and doctor finders, and emergency messaging. MedMinder is simple and user-friendly interface makes it easy for users to manage their medications based on their doctor's prescription. The app ability to send notifications to emergency contacts ensures that users receive prompt assistance in case of an emergency.

References

[1] T O Adeyemi & Elizabeth Amusan (2020, September). Development of an Android Based Medication Reminder and Adherence System.

[2] Chua, J. Y., Koh, D., Lim, H. Y., & Tan, J.Y. (2019, December). An Android application for medication reminder and management.

[3] Roger Achkar; Khodor Ghayad; Rayan Haidar; Sawsan Saleh; Rana Al Hajj (2019, October). Medical Handwritten Prescription Recognition Using CRNN.