

Voice Based Medicine Remainder Alert Application for Elder People



M. Mehala, J. Viji Gripsy

Abstract: The main objective of this work is developing android smart phone application to assists elderly people for independent living with their wishes. It reduces the burden of allotting health care professionals in homes to monitor elder persons. Smartphone application gives services and assists the elderly person to complete their daily life activities as others. This application Patients need not remember their medicine dosage timings as they can set their dosage timings. Voice based Remainder notification alert can be set for multiple medicines and timings including date, time and medicine description, this application will remind their user about the medicine in-take schedule. This mobile application integrates with multiple color button option. Whenever elder people need some service they can click on the emergency color button. Based on color pattern action will be performed. For example if user click red button "Mobile going to switch off "this message automatically send to register members mobile number .By pressing the color button based on color this mobile application automatically send the location information, location image ,service message to particular register mobile number and mail id. It is quite possible you can communicate effectively to explain your position to family members. This helps us to identify the protect and call on resources to help the one out of dangerous situations. This application is having both safety and security.

Keywords:Reminder System, Medicine Scheduler, Automatic Alarm, Healthcare, location Share.

I. INTRODUCTION

With the most recent research in the fields of medication and pharmaceutical sciences, an expanding number of medications are being concocted to fix numerous lethal ailments and this has empowered individuals to live more advantageous and more. Thus, the pace of medicine use is expanding, especially among the older. It is significant that the medicine recommended by specialists is taken at the right occasions of the day and in the right doses. This is by all accounts a critical issue experienced by more seasoned individuals with handicaps. Because of distraction or different issues, numerous more established patients either don't take the right medications or the right dose at the proper occasions and this decreases the advantages of medicines and increments both human services costs and the death rates.

So as to discover an answer for this issue, a cell phone and Cloud-based shrewd application has been created to improve persistent adherence, especially for more established individuals with incapacities. The oddity of the created application is the utilization of a Cloud administration to give two-path correspondence as criticism between the more seasoned patients with incapacities and the specialists so the medicine adherence of the patients can be checked.

Versatile application designers should locate the created cell phone based drug update application for more seasoned individuals with inabilities a valuable model application and it should help them in creating other portable applications for more seasoned individuals with incapacities. Smart medicine reminder system is designed for, but not restricted to, helping old people in taking care of themselves in taking their medications at the correct time and in the correct amount. It has been observed that people in general neglect their health and give preference to other things than taking their medicines. This is also the reason they forget to take their prescriptions on time. Many health maintenance organizations, health practitioners and medical researchers have realized that increased use of patient reminders can significantly increase the treatment of chronic illness and delivery of medical services to the patients who need it. Several organizations have themselves started implementing the patient medicine reminder system in the health care field and it is currently being implemented in several hospitals in the western countries to see if the method reaps any benefits.

However, many patients and especially old people do not take their medicines in the correct quantity. They either take overdose of medicines thinking it will help them heal faster, or they fear the doctor has prescribed a larger quantity than required and take under dosage of medicines. The former leads to several disastrous health implications while the latter delays the treatment of the patient and in worm cases, allows the illness to spread further requiring further treatment. Furthermore, some patients are so occupied with their day-to-day activities that they just forget to take their medications. This is particularly true for old patients who have to take more than one medicine at more than one time in a day. Setting alarm clocks is a tedious task which patients are too lazy to set again and again. If asked about what time people have to take their medicines, many forget to answer the correct times or remember whether they have already taken the medicine in the day already. Elderly people specially face this problem because of their degrading memory and in severe cases, forget that they have already taken their prescription and retake the same medicine two or three times in the same duration. This may not be harmful for lighter medicines, but for some strong and concentrated medicines, it can have further harmful effects to the body. This is actually where our drug update framework can help.

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Our framework takes up the remedy subtleties from the client, for example, the term of the solution, the names of the drugs, the occasions they are to be taken and the measure of each prescription which is to be taken. After this information has been entered, our framework will remind the client at the endorsed time of which prescription is to be taken in type of a versatile warning and a physical update.

The patients can leave taking medicines to just our app. whenever the time for the medicine is up, they will be notified and they only have to take their prescriptions during that time, and no other time. If implemented properly, this will drastically decrease overdose of medicines due to forgetfulness and the patients will also be reminded to take their medicines.

The Medicine update framework will have one obligation and that is reminding the client that he is expected for taking the prescription. We are attempting to ensure that the client always remembers to take the prescription and thus we do the update in three different ways. One is that we have visual marker which would be the light. We additionally felt that if an individual isn't sitting near pill box he may not see the lights henceforth we have likewise included a ringer which will give a sound-related sign that the drug should be taken. For the situation that patient is outside, we have a versatile update application which will remind utilizing portable notices for that time. The versatile application can be introduced in the android gadgets. It will add repeating occasions to the portable's schedule and will caution the client when he needs to take the drug with the rundown of meds and its endorsed measurement.

II. LITERATURE REVIEW

In this paper [1] the creator portrays Geriatrics depends on care and prescription with the goal that they can be solid, yet once in a while the mind boggling drug may prompt slip-ups like taking inaccurate measures of medication, or missing dosages or taking meds at inappropriate occasions. Such errors may prompt superfluous visits to specialist and in medical clinics, or can prompt ailment and passing. Consequently it is required to structure a Medication Dispensing Device that can assist Geriatrics with taking prescription on plan. Raspberry pi utilizing picture handling is structured explicitly for clients who take prescriptions without close supervision. The programming language utilized for picture preparing is python. The framework additionally thinks about physical handicaps of visually impaired and hard of hearing individuals. Subsequently it incorporates visual just as perceptible sign for them. The administering unit is only a framework which will control apportioning of meds at endorsed time. Being financially savvy and conservative this framework maintains a strategic distance from costly in-home medicinal consideration.

In this paper [2] the creator portrays Medication adherence is an issue plaguing multiple populations such as the elderly or hard to reach populations such as those with HIV. Medication reminders are often employed to improve medication observance. Literature demonstrates that generic reminders are ineffective and often ignored. This study illustrates how to build a custom medication reminder system to determine the effect and impact of customized medication message reminders over generic reminder messages. Results show customized messages are statistically favored over generic messages. This work

serves as an important step toward customized medication reminders to improve medication compliance.

In this paper [3] the creator portrays the fields of medication and pharmaceutical sciences, an expanding number of medications are being developed to fix numerous lethal maladies and this has empowered individuals to live more beneficial and more. Thusly, the pace of medicine use is expanding, especially among the older. It is significant that the prescription endorsed by specialists is taken at the right occasions of the day and in the right measurements. The oddity of the created application is the utilization of a Cloud administration to give two-path correspondence as criticism between the more seasoned patients with incapacities and the specialists so the prescription adherence of the patients can be observed. Versatile application engineers should locate the created cell phone based drug update application for more established individuals with incapacities a valuable model application, and it should help them in creating other portable applications for more established individuals with handicaps.

In this paper [4] the creator portrays advanced mobile phones have arrived at each hand and each home. Accordingly, individuals are utilizing the valuable portable applications to make their regular daily existence simpler. This paper centers on the advancement of a portable application to give a powerful medicinal services framework. This is an android based application in which caution is utilized which might be shut by tapping the nearby alert catch, under the picture of the drug which is to be taken at that specific time. It might even have the contact quantities of the specialists for a crisis. This application will help hand for the individuals who are occupied in their everyday life or mature age individuals who overlook which drug is to be taken and when. Numerous such prescription update frameworks have been created where equipment is required yet in our work, we have made an endeavor to build up a framework which is liberated from cost, efficient and bolsters medicine adherence with no additional equipment.

In this paper [5] the creator portrays an incessant perception that individuals give more inclination to their work and other material things than dealing with their wellbeing. In the event that shrewd, working grown-ups can overlook taking appropriate meds, the circumstance must be more awful for our folks and grandparents. Regularly they neglect to take their drugs or take overdose of it, bringing about further wellbeing disintegration. Our framework means to decrease this issue by reminding patients about their meds and indicating them the right measure of prescription to take. It is a blend of physical and computerized update that will be useful for individuals of all ages, yet is particularly useful to elderly folk's individuals who overlook taking their drugs. In this paper [6] the creator portrays the most mistake inclined technique in present day social insurance has been discovered to be the out-tolerant medicine organization. The greater part of the prescription organization blunders happened when patients gained over-the-counter and endorsed meds from a few drug stores and use them at their homes without appropriate direction.



This paper shows a crisis alert and human services the board framework, which is conveyed on android telephones which are advantageously utilized and conveyed by the greater part of the individuals. The alert is refreshed and plan is altered naturally over the web utilizing GCM bringing about no need of manual contribution to the application.

In this paper [7] the creator portrays Android-based application in which a programmed alert ringing framework is actualized. It centers on specialist and patient collaboration. Patients need not recollect their prescription measurements timings as they can set a caution on their dose timings. The alert can be set for various medications and timings including date, time and drug depiction. A notice will be sent to them through email or message inside the framework ideally picked by the patients. They can look through specialist illness insightful. The patients will get the contact subtleties of specialists according to their accessibility. Additionally the clients can see various articles identified with restorative fields and human services tips. The framework centers on simple route and great UI. Numerous such Medical Reminder Systems have been created where equipment is required however in our work we have made an endeavor to build up a framework which is conservative, efficient and bolsters medicine adherence.

In this paper [8] the creator portrays Tolerant drug and medicine adherence has been a broadly perceived issue in the social insurance industry since specialists started recommending meds to patients. In the past 50 years, a few examinations have been directed regarding the matter, and numerous noteworthy steps have been made in expanding tolerant consistence. With the approach of versatile innovation comes a chance to additionally build up the strategies used to go up against the continuous issue of therapeutic consistence in patients and to upset the manner in which specialists can connect with and monitor their patients. Endeavors have just been made to use portable innovation for this reason; be that as it may, there exists a distinction where the client is awkward with utilizing a cell phone. The point of this undertaking is to close that hole by structuring a prescription consistence application that is instinctive and simple to utilize, in any event, for those people who discover the idea of a PDA amazing and overwhelming, and is prepared to do inactively collecting information on quiet medicinal consistence. As versatile innovation turns out to be progressively predominant, the expanded accessibility of data turns into an advantage that can be utilized by restorative analysts.

In this paper [9] the creator presents an easy to understand portable application that naturally creates caution sign to remind a client to take drug. This application can consequently process a remedy of numerous meds and give a visual update, just as a sound update in the client's picked language/tongue. This application can advance drug adherence among older patients.

III. METHODOLOGY

A large portion of times patients may neglect to take the meds at legitimate time according to the predetermined in the solution which may cause in late recuperation from the ailment/disease. So it is important to take legitimate prescriptions in appropriate amount at legitimate time. Existing system is more time consuming process some persons should be there in the house to monitor the elder

people. Elder persons cannot able to move outside or them always as in patient in home. Monitoring facilities for the elder people is expensive for middle class families.

There is no facility of reminding alert intake medicine details. The patients may not remember to take the medicines at correct time as per the specified in the prescription.

Present IOT enabled system will generate an alert so that the patient can take required medicine at proper time but this system too much costly.

A. Proposed system

This section completely discusses regarding the proposed system. Methodology and the process involved in this proposed system. The drawbacks, which are faced during existing system, can be eradicated by using the mobile application. The main objective of the proposed system is to provide a user-friendly android mobile application. The proposed system is based on Android Operating system which will remind the users to take medicines on time through voice based notification and automatic alarm ringing system. It facilitates the care giver assistant by tracking the elderly person locations and avoids certain accidents. In addition, it also helps the family members to track the actions, when they are outside from homes. The elderly persons can send emergency alerts with their current location to their care takers by pressing one button. Also this application helps the patients for the intake of medicines voice based reminder alert at the right time.

Advantages

This is a free application that can be installed on the mobiles. Elder persons can move anywhere without any fear. Smartphone application gives services and assists the elderly person to complete their daily life activities as others. This application will voice based remind alert their user about the medicine in-take schedule. It reduces the burden of allotting health care professionals in homes to monitor elder persons.

IV. PROCESS FRAMEWORK

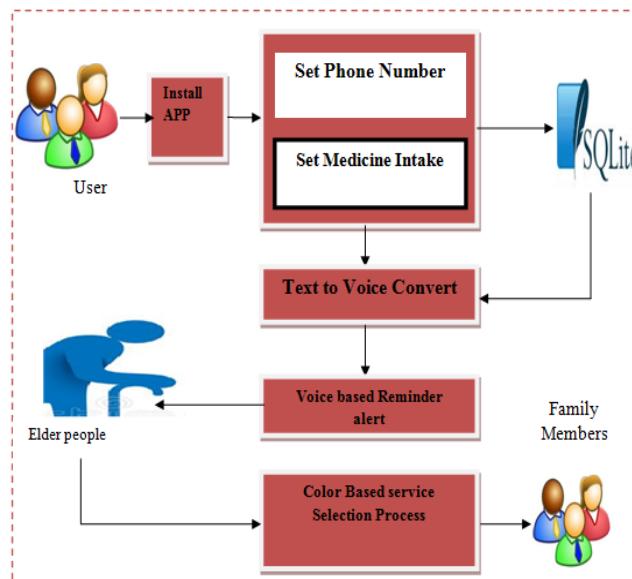


Fig.1. Architecture Diagram of Proposed system



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A. User Register/Authentication

This module is mainly based on mobile user. Using this module user can register in the registration form he has to fill with personal details such as name, address, mobile number mail id and username, password etc. This will maintain in a separate table. Using this password user can log on this mobile application. After the successful login they can use app feature effective manner.

B. Contact number entry process

This module is mainly based on user. This is an important module this involves the tasks like adding contact Numbers details. So that this mobile application shares location information and service message information to register phone number. The application should facilitate the user to edit contact number details. These all the information stored in contact number info table.

C. Medicine Intake Entry

User can enter complete medicine intake details such as medicine name, Timing details, Dosage, Intake count these all the detail stored in Medicine table. All works are done under user control. Using this module user can set their complete medicine remainder details.

D. Text to Voice Convert

Text to Voice Convert is a form of speech synthesis that converts text into spoken voice output. Be able to take terms on a computer or other digital device and change them into audio. This module collects the data from the database for initial analysis. . The collected data's contains the different types of structures such as medicine name, Dosage, intake information. These details will be extracted and convert into voice using Text to Voice Convert Technique.

E. Voice based Reminder Alert

A regulator is a particular type of clock used for calculating specific time intervals. This timer dynamically monitors the time details. This timer event will activate when ever Time will match with user Set Time interval. Once Timer event call this application produce voice based Medicine remainder alert to elder people effectively.

F. Color Based service Selection Process

This module helps to send service message related information Whenever the user click on the emergency color button such as "Mobile going to switch off", out of service", Need a Assist this urgent situation message automatically send to register family members phone number .By pressing the color button based on color this services message automatically send the register family member's mobile number so they can easily come to know out present situation

V. EXPERIMENT RESULT

This section describes the performance result and statement process. The realization of an application, or execution of plan, idea, model, design of a research,it is developments.This section explains the software, database which is used to develop the research. The proposed system has been successfully implemented which can effectively helps the elder people and improve the service. This application provides a realizable and efficient. It Very helpful in critical conditions

A. Software Specifications:

The system has used android studio tool, with xml as the front-end and sqlite as the back-end. The reason for using Beautiful UI, Multi-tasking and Resizable widgets. For the experiment, An Intel Core i3 GHz processor with 4 GB RAM was used for develop and test this application.

Table 5.1 Software Specification

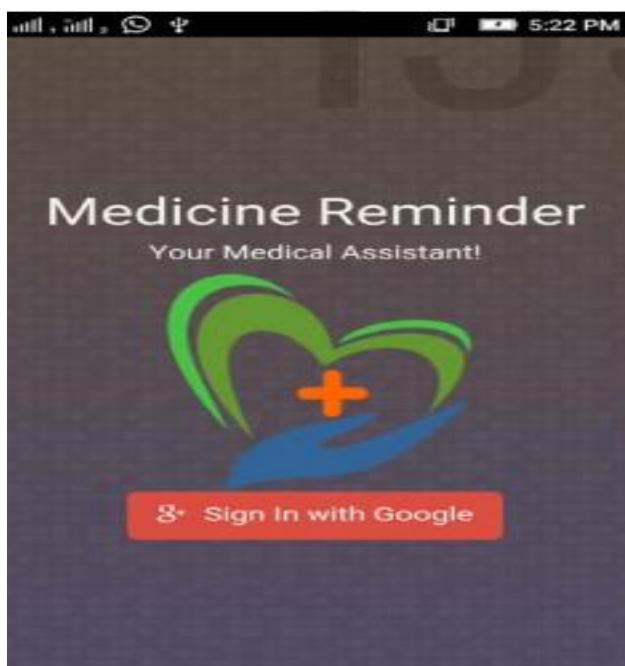
Operating System	Windows 10
Front End	Xml , JAVA
Back End	SQLLite
IDE	Android Studio 2.3

The table 5.1 shows the proposed software specification of the proposed android mobile application development. The main reason of using Android Studio is, it's a complete GUI and have many unique features to deploy a high featured Mobile application development.

B. Screen Shot

Home Page:

It is the initial form to operate this mobile application. In this form called as home page form. User can click they can register and login.



C. User Register/Authentication:

In this form user can register/Login by submit basic information. After submit this information will be maintaining separate table.



PERSONAL DETAILS
Fill in your personal details

Name
Age(in years)

Gender: Male Female

Next

Drug Name	LIPITOR >
Drug Type	Tablet >
Amount per Dose	1 >
Strength	20 MG >
Route	Oral >
Doses Taken	On a schedule
Frequency	Daily
Starting	>
Ending	Never
Time of Day	10:30 AM
Directions	e.g. take with food >
Notes	

D. Contact number entry process

This form is mainly based on user. This is an important form this involves the tasks like adding contact Numbers details. User also can delete this phone number anytime based on their wish.

Welcome

ADD PHONE NUMBERS

DELETE PHONE NUMBERS

VIEW PHONE NUMBERS

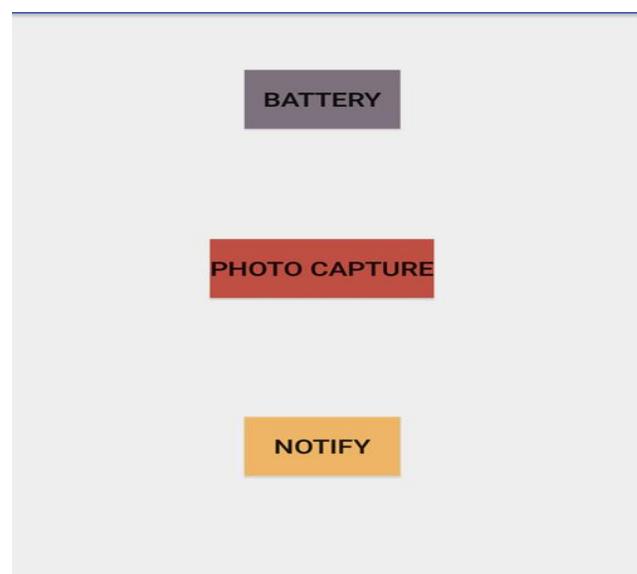
Select phone 8870553479 ▾

Name Rahul

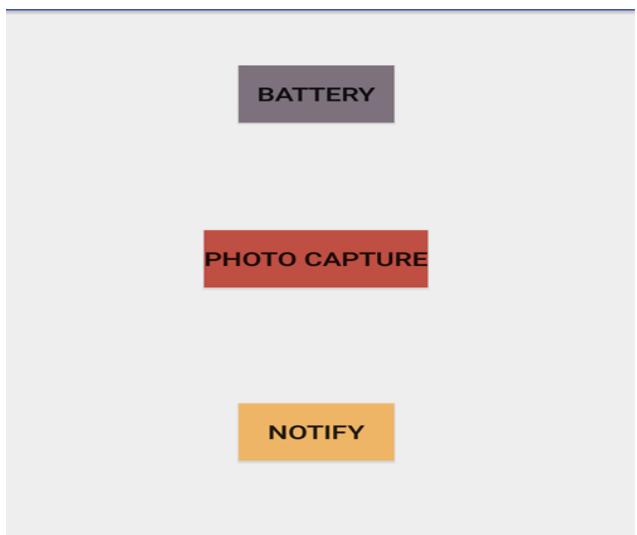
DELETE

Medicine Intake Entry:

After clicking the login button this form will shows. In this form user have to enter medicine details. If the user click the done link automatically this information store in database. After successful data store then Timer will be activated.



E. Color Based service Selection



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This form completely helps to elder people send service related information to family members. Whenever elder people need some service they can click on the emergency color button. Based on color pattern action will be performed. For example if user click red button "Mobile going to switch off "this message automatically send to register members mobile number effectively.

2015. She has 13+ Years of experience in teaching & research. She has published more than 30 papers in peer-reviewed conferences, international journals and 5 books. She also acted as reviewer in various international journals and conferences. Currently, she is guiding 4 Ph.D research Scholars. Her field of interest includes cryptography, network security, and ad-hoc networks. She is currently executing a research project sponsored by Indian Council of Social Science Research. She is currently serving as a member in Universal Association of Computer and Electronics Engineers (UACEE) and International Association of Engineers (IAENG).

VI. CONCLUSION

In conclusion, proposed system successfully provide an Android Application development for the elder people and this app can be color pattern action will be performed. It is a smart and organized system that is designed with helping the elderly people in our home. By pressing the color button based on color this mobile application automatically send successful service message to particular register mobile number and also this integrate with voice based Medicine Reminder Alert service. Here almost all work is user friendly. So the accuracy is maintained.

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