A Smart Pill Dispenser System Powered by IoT for Medication Adherence

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ABSTRACT

The natural decline in physical function with aging ends up in a rise in incidences of varied chronic diseases in elderly individuals; most patients with chronic diseases have to be compelled to take medications over a protracted amount of time so as to stabilize their conditions. ensuring that the patients consume the correct medication at the appropriate time becomes crucial. we have developed an instrumented pillbox, that permits observation of medication adherence on endless basis. This device improves on existing systems by providing quality, frequent and automatic information assortment, additional careful data regarding nonadherence and medicine errors.

Keywords— Internet of Things (IOT), Pill Box system, Medification safety, Live monitoring, IR sensing.

INTRODUCTION

Our medicine box is targeted on users United Nations agency often take medicine or nutriment supplements United Nations agency watch out of the older or patients. The drugs box is programmable that permits users to specify the pill amount to require and therefore the serve time for every day. Our electronic physical pillbox is suitable for aged people United Nations agency don't seem to be conversant in technology-based product as a result of they'll be interacting with the Pillbox. With improved convenience and lower prices, the new choices created through this work will assist the aged in developing the habit of taking their medications often. The members of the family or patients got to fill the drugs within the pill box manually, this is often an extra responsibility for members of the family of the aged, or maybe the patients. User register medication and details into good pill box for often take medicine. Good pill box

linear unit positive the drugs will for proper treatment of patient send emergency notification to user. Whenever user forget the dosage system send notification to user or whenever user take wrong medication pill send warning message to user . In our system bed down is completed warning message send to the user moreover as medical store for brand new bed down demand. Our pillbox differs from existing solutions because it will give medical bag checks and make sure medications, all at an occasional price. What is more, our electronic physical pillbox is appropriate for aged people United Nations agency don't seem to be in technology-based product as a result of they'll be interacting with the pillbox.

Existing System

Reminders cannot be set automatically.

They don't facilitate storing the original prescription.

There is a need for manual work in setting the reminder.

A) Proposed System

In our system user will register to system and add his medicine timing in the system. The system have camera and IR sensors the sensor will sense the if medicine is taking out of box. The camera will use to live monitoring of the patient. If patient scans the wrong medicine the system will makes an alarm. Apart of that the system will notify the user before 5 minutes before his timing so that if user is going out somewhere so he can carry them.

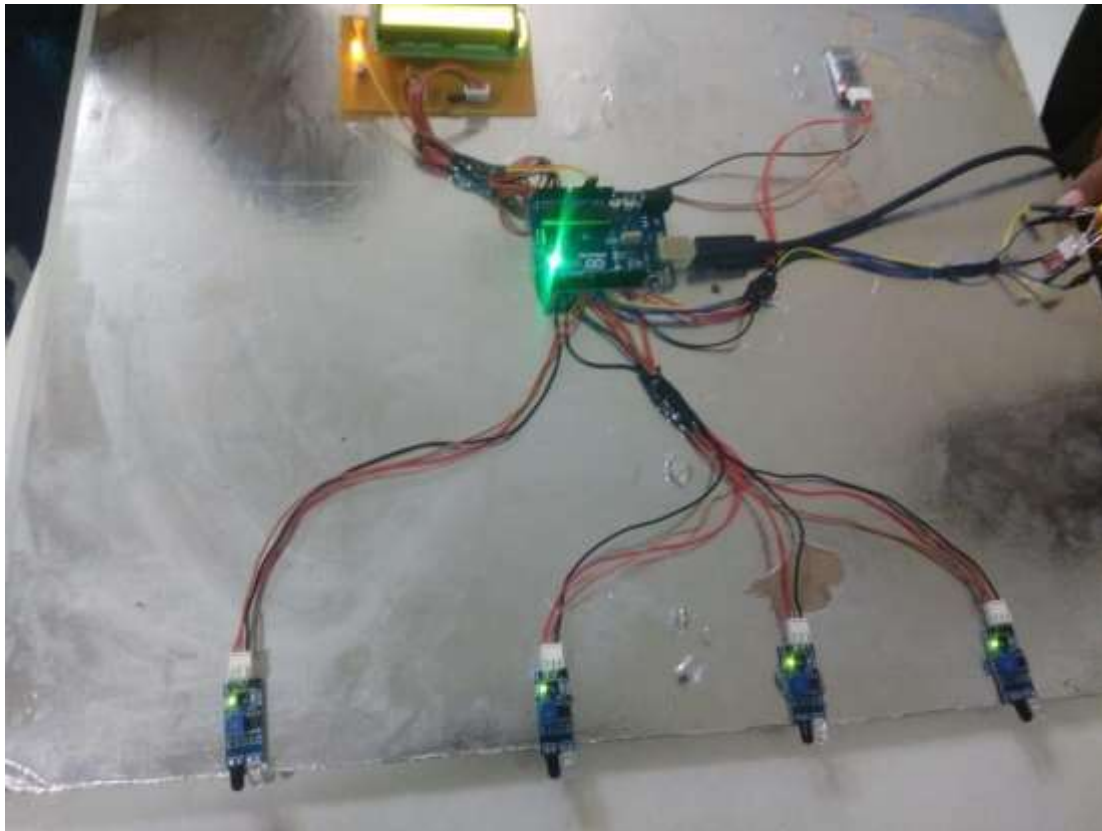PROPOSED AND IMPLEMENTED SYSTEM ARCHITECTURE

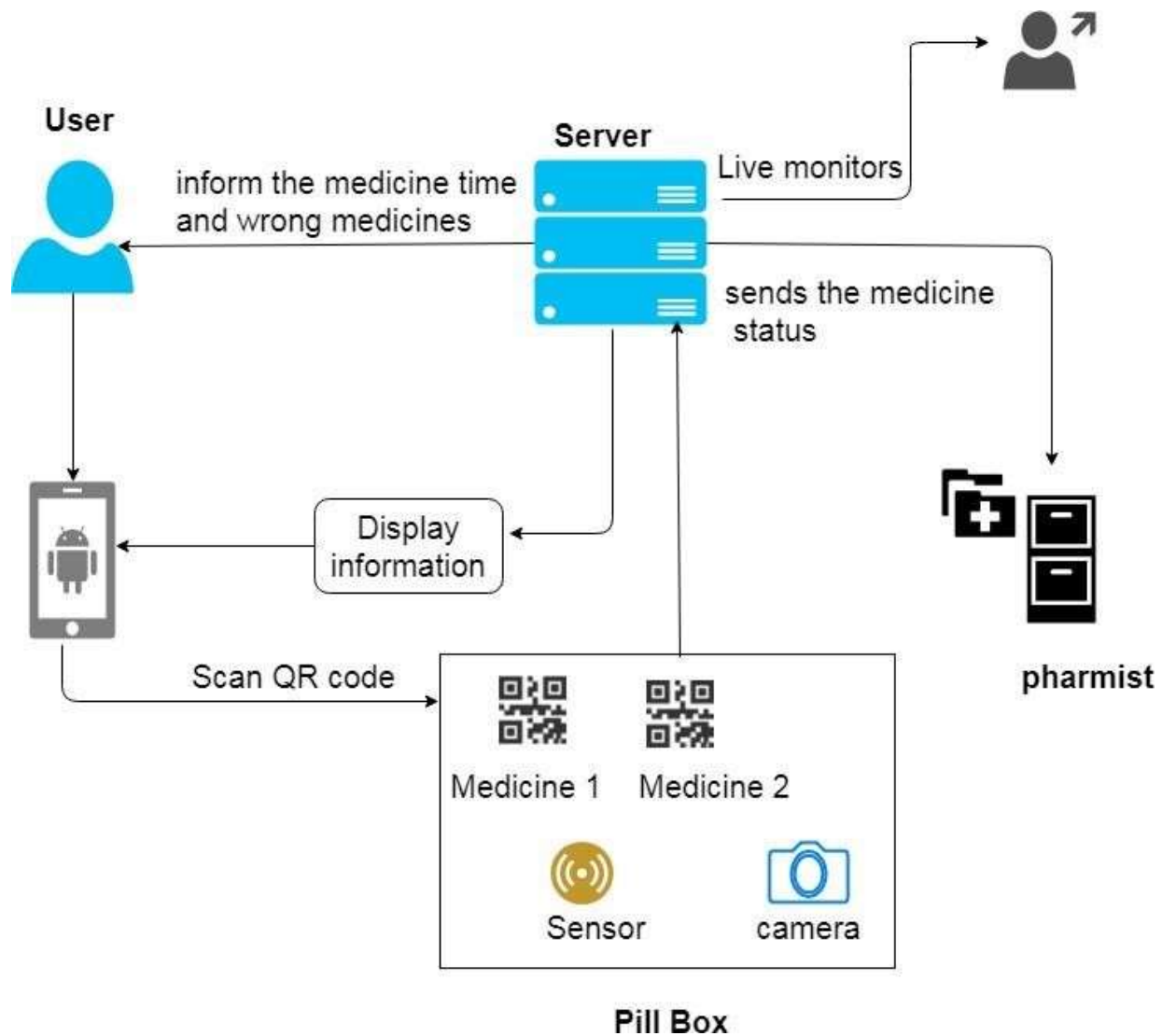Figure 1- External Components of the system

Figure 2- system architecture

CONFIGURATION WITH HARDWARE

EMBEDDED C

Step 1: Start

Step 2: Initialize serial port, & software port.

Step 3: Initialize wifi connection with network.

Step 4: Connect device to wifi network.

Step 5: Get IP address of ESP (Node MCU) & display serially.

Step 6: If no connection then go to step 4.

Step 7: Check serial A data available if yes, then read data & transmit id TCP/IP to server.

Step 8: if no then go to step 9.

Step 9: Check serial B data available.

Step 10: Check serial C data.

Step 11: go to 7.

PYTHON

Step 1: Import required library (Socket)

Step 2: Establish TCP/IP connection with hardware node.

Step 3: Check TCP/IP port if data present then read and display.

Step 4: Differentiate data with respect to class & IP.

Step 5: Check respective IP with class and time table.

Step 6: If any wrong then send E-mail to the parents.

Step 7: Upload all data in server.

Step 8: Goto step 3.

LITERATURE SURVEY

No.	Year	Paper name	Limitations	Future making
1	2017	IoT Platform Based Intelligent Medicine box	There is no option for prescribe new medicine by online.	Security of the highest order for the medical data on cloud storage
2	2015	A Smart Pill Box with Remind and Consumption Confirmation Functions	It works well only if an internet connection is available.	A complex user interface setup is not required.

3	2016	ArduMed - Smart Medicine Reminder for Old People	They are not following up on alarms so if the user skips the alarm, The system dont remind them again.	This will drastically decrease overdose of medicines due to forgetfulness and the patients will also be reminded to take their medicines.

CONCLUSION

To improve medication safety among the older, during this paper, we tend to propose a wise pill box that takes all recommendation and alert of drugs dose of patient. facilitate to patient and patient family to recollect the doss time to require doss time to time as per the schedule. Whenever patient and patient family take doss first scan the QR code thus smart pill box suggested the proper drugs or not. The projected pill box will reduce family member's responsibility towards making certain the proper and timely consumption of medicines.

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