

IOT BASED SMART REMAINDER MEDICINE PILL BOX

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ABSTRACT:

There are lots of challenges for blind people and elderly people who required constant help – may it be our family members, the ones who have special needs. The busy family need the kind of care apparently it cannot provide by the people. Some people may fail to recall for taking the medicines at the correct time and can forget the medicines which they have to take. Due to these reasons we have proposed the project for help the indeed people. The people are provided a smart med box on which there will be a alarm with voice output which inform the people about the medicine. Along with this we can attentive them with an alarm and light indications. It mainly uses when the persons forget by sleeping or else doing another work. To confirm that the person has taken that medicine or not we can placed a sensor at the opening end of the pill box. so when the person attempt to open the box the signal is sensed and the alarm will be off only if the sensor is pressed. By this data we can inform that the person has taken the medicine. We can notify the doctor and the other one is used to notify family members about the medicine taken using IOT.

Key words: Node of MCU, box pill, Buzzer, Applications, Reset button

INTRODUCTION:

Presently, worldwide aging and regularity of persistent diseases are flattering a broad concern. Many peoples in a country are undergoing hospital restructuring & have been getting busy for taking and tablets. Which is envisioned to perk up health care quality, has fascinated wide-ranging attention. In order to follow the physical status of the elderly and, in the meanwhile, to keep them healthy, the proposed idea will be helpful.IOT expands the Internet into our everyday lives by wirelessly connecting several smart objects , and will bring significant hangs in the way we live and interact with smart devices. The new wave in there of computing will be outside the sphere of the standard desktop.

Internet of Things (IOT) is a network there where many of the objects in our surrounding will be networked in one form or another. By using this technology the health statistics of medication are observed. In this process of encryption the schedule data or doctor's prescription are send to pill box through indication and mobile app. The placing of LED for buzzer for alarm alerts and reset button is used to count for medicine in cloud platform. The techniques to market for the reminder add a pill box. Here this is not help for medicine check. This proposed idea is valuable solution to the medical non- compliance problem. The alteration scheme to help patient keep trail of their medicine consumption through a series LED alarm indicator signal and audio alarm indicator signals.

The main objectives of the project are:

- Dispense of medicines from pill box at scheduled time.
- Medical alert to care take ran retailer
- Online report generation of medicine
- Real-time health statistics monitoring of medicines
- Configuration data is send through iot website

BLOCK DIAGRAM

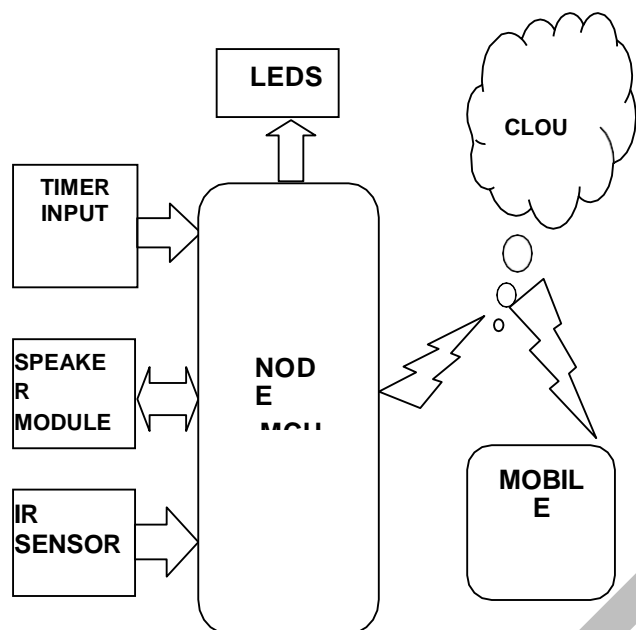


Fig 1: Working Principle of Smart pill box

INTERNET OF THINGS

The Internet of Things (IOT) is an major topic in technology industry, policy, and engineering circles and has become caption new sin both the special press and the popular media. This innovation is embodied in a wide spectrum of networked products, systems, and sensors, which take advantage of advancements in computing power, electronics miniaturization, and network interconnections to offer new capabilities not previously possible. An abundance of conferences ,reports, and news articles argument and debate the prospective impact of the “IOT revolution”— from new market opportunities and business models to concerns about security, privacy, and technical interoperability.IOT systems like networked vehicles, intelligent traffic systems, and sensors embedded in roads and bridges move us adjacent to the idea of “smart cities”, which help minimize congestion and energy consumption. IOT technology offers the possibility to transform agriculture, industry, and energy production and distribution by increasing the availability of information along the value chain of production using networked sensors. However, IOT raises several issues and challenges that need to be considered and addressed in order for potential benefits to be realized.

PROPOSED METHOD

To ensure the people consume medicines as per schedule time table, here we developed a smart pill box. The schedule data/configuration data is mail to the pill box through Mobile app. The smart pill box contains Node MCU, SPEAKER MODULE, LEDs, IR SENSOR, buttons.

The timer input is to set proportional time to draw pills. When the time is arrived the led will blink indicative the box opened to withdraw medicine. Moreover the voice module will give out the pill name which helps the user not to use vision to poni out the pill. The corresponding box will be opened to take out the pill. Node MCU is integral with Wi-Fi module. The Wi-Fi module is construct as PILL BOXAP, such that the IP address is generated in local network. by pairing the IP address generated by PILLBOXAP to the Mobile website. The configuration data is mail to the smart pillbox when the configuration is in ON mode. The concerned LED glow with buzzer at schedule time and to ensure the pill is taken The sensor mechanism is done once the pill is taken out it will mail a notify message to doctor or other person. And the door can be closed consequently after it.



HARDWARE MODULES

- Pillbox
- Node MCU
- IC2134 SPEAKER MODULE
 - buttons
 - LEDs
 - IR SENSOR

Node MCU (ESP8266-12E)

ESP8266 is an impressive, low cost WiFi module acceptable for adding Wi-Fi functionality to an existing microcontroller project via a UART serial connection. The module can even be reprogrammed to act as a standalone Wi-Fi attached device—just add power! The feature list is impressive and includes: 802.11 b/g/n protocol Wi-Fi Direct (P2P), soft-AP Integrated TCP/IP protocol stack.



ESP8266-12E board Description

RTC MODULE

A real-time clock (RTC) is an electronic device (most often in the form of an integrated circuit) that calculate the passage of time. Although the term often refers to the devices in personal computers, servers and embedded systems, RTCs are present in almost any electronic device which required to keep accurate time. This is the Spark Fun Real Time Clock (RTC) Module, this small-scale breakout that uses the DS1307 to keep track of the current year, month, day as well as the current time .SOFTWARE MODULES

SPEAKER IC2134

This module authorize to record voice and send out the recorded voice incase of signal enabled. The double frequency conversion technique and audio amplifier is linked to process the audio signal

IR SENSOR

An infrared (IR) sensor is an electronic device that calculates and detects infrared radiation in its surrounding environment. ... When an object comes close to the sensor, the infrared light from the LED reflects off of the object and is diagnosis by the receiver. The emitter is an IR LED and the detector is IR photodiode. The IR photodiode is sensitive to the IR light emitted by an IR LED. The photo-diode's resistance and output voltage change in proportion to the IR light received. This is the underlying working principle of the IR sensor.

SERVER MOTOR

This brings the effectual closing and open g of door mechanism. The ideal control of relay signal gives the timely effect. A servo motor is a variety of motor that can rotate with great precision. Normally this type of motor consists of a control circuit that provides feedback on the present position of the motor shaft, this feedback allows the servo motors to rotate with great precision.

SOFTWARE

- ARDUINOIDE
- Android Studio(MobileApp)

ARDUINOIDE

ARDUINO is an open-source prototyping platform based on easy-to-use hardware and software. (IDE) - contains a text editor for writing code, a message area, a text console, a toolbar with buttons for common functions and a series of menus. It connects to the ARDUINO and GENUINO hardware to upload programs and communicate with them.

AndroidStudio

Android is a software programme and operating system for mobile devices, based on the Linux kernel, and developed by Google and later the Open Handset Alliance. It allows developers to write managed code in the Java language, managing the device via Google-developed Java libraries. The unveiling of the Android platform on 5 November 2007 was announced with the founding of the Open Handset Alliance, an association of 48 hardware, Software, and telecom companies devoted to advancing open standards for mobile devices.

RESULTS

ADVANTAGES

- Monitoring of health statistics Medicine, alarms and medication non-compliance control.
- Emergency and medical management services.
- Wireless identifiable Embedded health care systems.

CONCLUSION

Integrating of Hardware modules Node MCU,speaker, Buzzer, push Button and Mobile application to PILL Box and every module has been placed delicately to give reasonable output, thus contributing to the best working of the unit. These systems assures the safety of the people and also avert the wrong dosages. It minimizes the effort in remembering medicine and people will get the schedule of the medicine containing medicine name timing.

REFERENCES

- [1] AlokKulkarni, SampadaSathe "Healthcare applications of the Internet of Things:A Review" ,Department of Electronics and Telecommunication, Computer Engineering Pune University, Maharashtra, India, AlokKulkar et al, / (IJCSIT) International Journal of Computer Science and Information Technologies,Vol.5, 2014,6229-6232

[2] Ronald Sekura, Gwen Gampel Paulson, "Using A Patient-Based Information Technology Approach For Solving Prescription Medication Non-Compliance", Presentation at Information Technology Association of America

[3] David Niewolny, "How the Internet of Things Is Revolutionizing Healthcare", Healthcare Segment Manager, Freescale Semiconductor.

[4] Z. Pang, "Technologies and architectures of the Internet-of- Things (IoT) for health and well-being," Ph.D. dissertation, Dept. Electron. Syst., School Inf. Commun. Technol., Royal Inst. Technology (KTH), Stockholm, Sweden, 2013.