Automatic Medicine Reminder Using Arduino

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Abstract - We always want to stay them healthy and fit. But what will happen if they get ill and forget to take medicine on time. We would be worried, At hospitals, there are many patients and it is difficult to remind every patient to take medicine on time. The traditional ways require human efforts to remind them to take medicines on time. The digital era doesn't follow that and we can use machines to do that. The application of Smart Medicine Reminder System is very wide and can be used by patients at home, doctors at hospitals, and at many other places. When it comes to reminding, there can be many ways to remind it.

Index Terms —: Medicine alarm System, Notification sound, Sensing capability, Arduino, Patient Health, Medicine.

I. INTRODUCTION

In recent times, the rate of consumption of medicines has highly increased due to the wide spreading of different diseases and illnesses across the globe. While some diseases are temporary, many diseases have a toll on human health for a lifetime. In the pursuit of maintaining a healthy lifestyle, we often find ourselves to be sick. This could be threatening if not properly treated. A visit to the doctor and consumption of the medical prescription becomes a necessity. Nevertheless failing to consume the medicine regularly could cause a lot of problems. Keeping in mind this problem, the idea of creating a smart device that alerts the patient to take medicines right on time, so that they would recover soon and stay healthy without any issues in the body.

II. LITERATURE SURVEY

Arduino is open-source gadgets prototyping stage dependent on adaptable, simple to utilize equipment and programming. Today we will assist you with beginning by giving you a portion of the alternatives accessible and that it is so natural to begin. Arduino equipment is an open-source circuit board with a chip and info/yield (I/O) pins for correspondence and controlling physical articles (LED, servos, catches, and so on.). The board will regularly be fueled through USB or an outer power supply which thus enables it to control other equipment and sensors. Arduino likewise has an open-source programming part which is like C++. The Arduino coordinated advancement condition (IDE) enables you to compose code, accumulate it, and afterward transfer it to your Arduino for independent use in prototyping and ventures. The entirety of this was intended to be anything but difficult to use to let craftsmen and producers uninhibitedly form their thoughts into genuine items. In the event that you are keen on building something yourself, view see the equipment choices, and programming accessible to kick your off.

- Android based Medication Reminder

Any living being can be a patient which may incorporate people, creatures, pets, and so on. The patients under individual class may incorporate specialist, social labourers, government officials, educators, understudies, and so on. These individuals may occupy in their every day schedule life plan. On the off chance that they are experiencing any sort of legitimate amount at appropriate time. On the off chance that the patient is at home, at that point the relatives may recollect and reminds patient to take the prescriptions. However, it isn't feasible for the relatives to give update by calling them when the patient individual is out of home/city. For this reason, there ought to be some office for the patients which will remind them about their prescription required some investment. Now days there are large number of mobile phone/smart phone users in the world. The bulky number of variety of applications available in the mobile phone made the luxurious life. Mobile phone companies are providing such a wonderful application for their users then question arises in mind that why not to use those applications when company is providing them? Out of those applications, Reminder facility in the mobile phone is the most commonly used application which is used for preventing to remember each and every small thing. Most out-patient medication errors were made when patients bought prescribed medicines from different drug stores and use them at home without guidance. Common causes of these errors include: a) irregular medicine in-takes due to the patient's busy schedule, b) complicated in-take schedules due to the large number of medicines taken by the patient, c) adverse drug reactions caused by un-reconciled prescriptions obtained from different sources, d) lack of knowledge about proper use of medicines[20] An Android based application for the patients to remind them to take legitimate medications in appropriate amount at appropriate time via naturally setting the updates in the portable was presented in (citation). The authors claimed that this application is quite useful to adhere to the medicine plan prescribed by the doctor.

III. METHODOLOGY

We can combine ways depending upon the need. To keep things simple here we made a Medicine Reminder using Arduino which reminds us to take medicines 1 or 2 or 3 times a day. The time slot can be selected using push buttons. Also, it shows the current Date and Time.

Fig. 1. Block diagram of the system

3.1 Explanation of Project

1)Arduino UNO: We are using Arduino UNO because it use 8 bit microcontroller ATmega328P and it has 32KB flash memory. These features are beneficial in our project and that's why we used Arduino UNO. Arduino UNO board is connected with all other modules also it controls all other modules & made the interfacing easier. It also has internal EEPROM which stores real time data in it. Our project is based on embedded system we are using Arduino Uno for interfacing all things. In that Arduino is an open-source which is easy-to-use hardware and connected software. So Arduino is path between hardware and software. Arduino boards read inputs from a press a button-and turn it into an output, turning on an LED and buzzer, you can tell your board what to do by sending a set of instructions to the microcontroller of Arduino. To do so you use the Arduino programming language and the Arduino Software (IDE), based on Processing. The programming platform is Arduino IDE and programming language is standard C. we made program for all different module that we are using in our project. Like RTC module, LCD module 16*2 so firstly we have to add library in Arduino IDE software and after that we made programming.

2)LCD interfacing: We used 16*2 LCD module in our project which is connected to Arduino UNO through a LCD interface IC or directly to its address and data bus and few control pins. LCD shows the current time and date which RTC sends the data to LCD module.

3)RTC module: We used Tiny RTC I2C module which uses I2C protocol and it is useful in our project. RTC module has internal CMOS cell so it does not needs external power supply to update time and date.

4)Buzzer: Buzzer will ring at proper time when pills have to be taken.

5)LED: We have 7 boxes having an LED in each box which blinks to show us the specific box from which the pills need to be taken at given time.

6)Pushbuttons: Four Pushbuttons are used where each has distinct select feature. The first push button is used for reminding to take medicine once per day. The second push button is used to remind twice per day and the third push button is used to remind thrice per day. The fourth push button is used to stop the buzzer when user has heard the alert

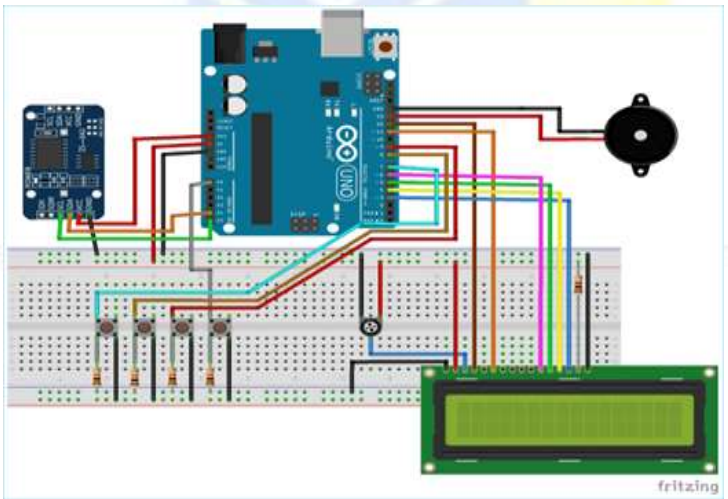

Fig **2 Circuit Diagram**

IV. CONCLUSION

The medicine reminder will be very helpful to many patients. It helps to take proper medicine at right time. The cost of production is low as compared to other problem solutions. Numerous medication reminder systems have been created on various stages. A considerable lot of these frameworks require unique equipment gadgets to remind the patients about the drug in-take timings. Acquiring new equipment gadgets turns out to be expensive and additional time and cash devouring. So, in the given work, an endeavour has been made to actualize a framework which will be prudent, effectively available and improves drug adherence. Persistent Medication update framework will decrease the viability of a treatment and forces a money related trouble on medicinal services frameworks. The patients will get the calendar of medication in-require some investment with medication portrayal, beginning and completion date of medication,

warning through fluid precious stone presentation (LCD), programmed alert ringing framework. The booked update will propose the sort of medication the patient will take at the specific time of the caution.

V.RESULT

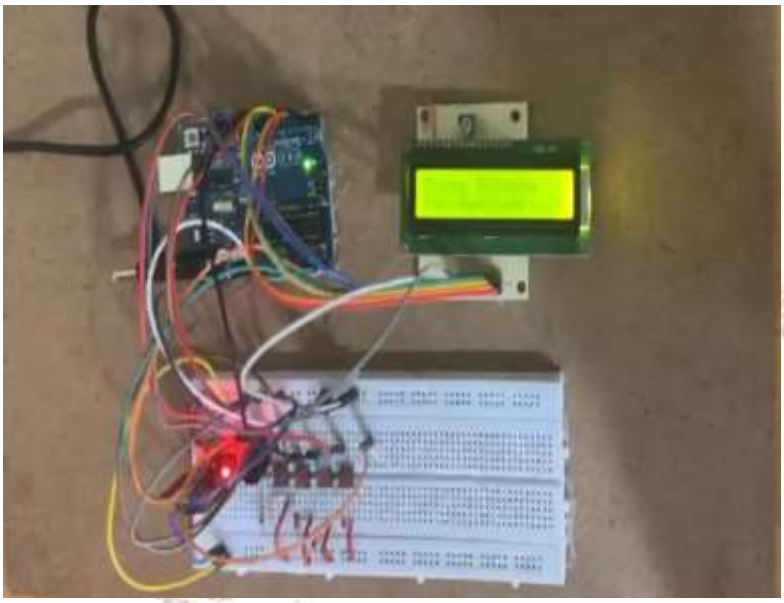

Fig 3. Press buttons for reminder

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