ANJUMAN INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Department of Electronics and Communication Engineering

Project Seminar on

Smart Medicine Box

Presented by

Amir Muallim - 2AB20EC003

Naseef -2AB20EC004

Under the guidance of

Prof. Tasmiya Shaikh

Assistant Professor, ECE, AITM

CONTENTS

ABSTRACT

ABSTRACT

Health related problems are becoming the major issue in today's world.

Every other person seems to be undergoing more than one problem irrespective of the age, either that problem be related to heart or brain.

Such carelessness seen in the case of taking medicines might lead to results which are catastrophic and has direct impact onto the health of an individual.

This paper describes how with the help of smart box will an individual be able to take his medicines without any external human assistance.

INTRODUCTION

INTRODUCTION

- Medication adherence is a growing concern throughout the healthcare industry with doctors, healthcare systems, and other stakeholders since the elderly or senior patients' medication has a big issue of drugs misuse.
- It is very likely for them to forget to take their pills on time. Especially, those who take multiple medications at the same time.
- Also, they might take wrong dosage accidentally which may lead to unfortunate consequences such as death.
- This is a clear proof that it is a widespread problem and clearly related to adverse patient outcomes and higher healthcare costs.
- The main purpose of smart medicine dispenser system is to help the patients, primarily seniors, take their medications on time in an easy way without the possibility of missing pills.
- It can also reduce the risk of over or under dosing accidentally.
- The smart medicine box could solve such problems by informing and alerting the patients to take the appropriate dose at the right time.

LITERATURE REVIEW

LITERATURE REVIEW

Sanjay Bhati, Harshid Soni in 2017, in their paper "Smart Medicine Reminder Box" proposed that,

- To make a Smart medicine box for those users who regularly take medicines and the prescription of their medicine is very long as it is hard to remember to patients and also for their care giver

- Old age patients suffer from problems of forget to take pills on proper time which causes certain health issues for patients having Permanent diseases like diabetes, blood pressure, breathing problem, heart problems, cancer diseases etc.
- These problems in hospitals & people around us who have such kind of diseases and thus based on these two problems we made smart medicine box which solve these problems by Setting up timetable of prescribed medicines through push buttons as given in prescription

LITERATURE REVIEW

D.S. Abdul Minaam, M. Abd-Elfattah in his paper "Smart drugs: Improving healthcare using Smart Pill Box for Medicine Reminder and Monitoring System" proposed that ,

- Many medical errors are due to the fact that people in charge of patient or elder's medication have to deal with sorting huge amounts of pills each day.
- This medication pill box is focused on patients who frequently take medications or vitamin supplements, or attendants who deal with the more seasoned or patients
- The warning of pills should be taken will be shown by an android application which is held by the patient.

PROBLEM STATEMENT

PROBLEM STATEMENT

- Many patients take medicines at different times of the day.
- In a large setting , it would be difficult for the doctors and nurses to properly track the progress.
- By integrating internet technology, we can keep track of the progress of all the patients on a single device.

OBJECTIVES

OBJECTIVES

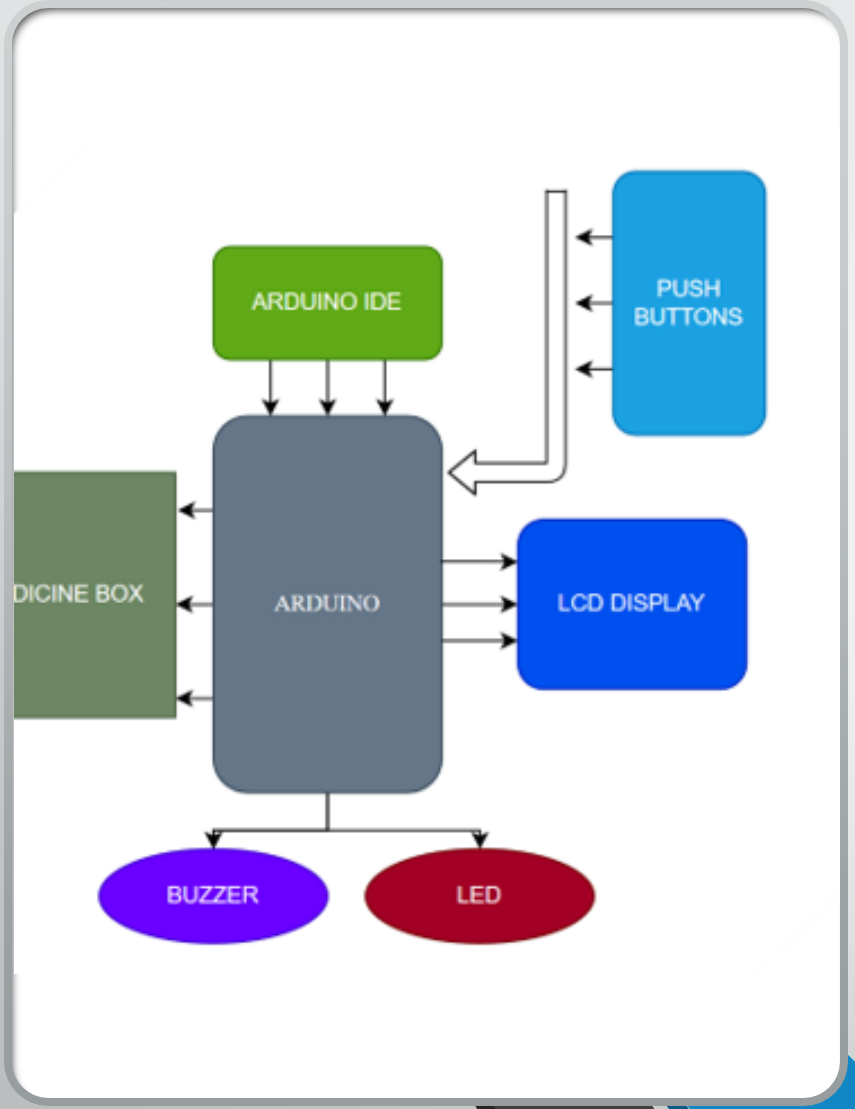
The project is expected to fulfil features as listed below:

- To design and create a prototype which will enable the owner to track every pill to ingest in an easy and simple way requiring no training or complex learning from their side in order to operate the device
- To remind the elder patients to take their pills at the specified times.
- Designed to prevent errors in hospitals and retirement homes where many pills must be given daily to each one of the patients.

METHODOLOGY

IMPLEMENTATION

- The Arduino is programmed to turn on the specified LED on the box and to buzz at the required time.
- The nurse/family member sets the timer with the help of the push buttons and specifies the compartment and the time it needs to be taken at.
- The buzzer buzzes so the patient can take the specific medication at the required time.



BLOCK DIAGRAM

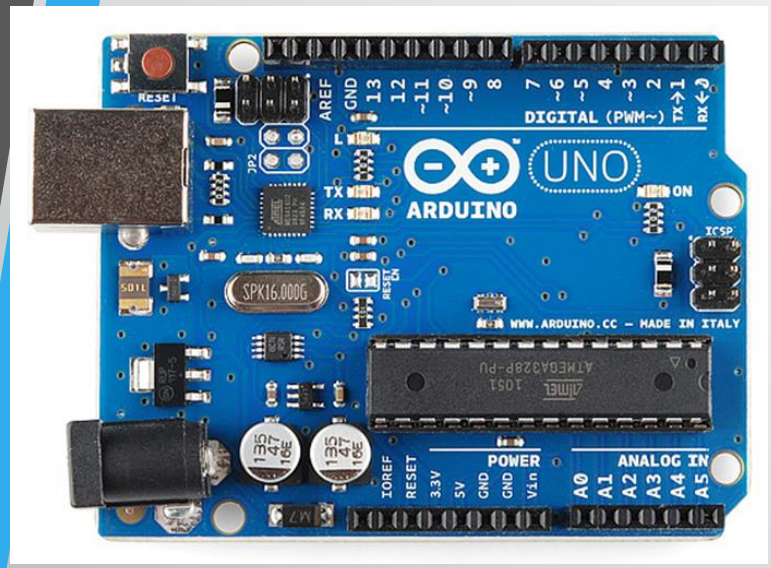
Components Details

HARDWARE

- Arduino Uno
- LCD
- Buzzer
- RTC

COMPONENTS

ARDUINO UNO



- The Arduino UNO is a standard board of Arduino. Arduino UNO is based on an ATmega328P microcontroller. It is easy to use compared to other boards, such as the Arduino Mega board, etc.
- The Arduino UNO includes 6 analog pin inputs, 14 digital pins, a USB connector, a power jack, and an ICSP (In-Circuit Serial Programming) header.
- This board can be interfaced with other Arduino boards, Arduino shields, Raspberry Pi boards and can control relays, LEDs, servos, and motors as an output.

LIQUID CRYSTAL DISPLAY

An electronic device that is used to display data and the message is known as LCD 16×2. As the name suggests, it includes 16 Columns & 2 Rows so it can display 32 characters (16×2=32) in total & every character will be made with 5×8 (40) Pixel Dots. So the total pixels within this LCD can be calculated as 32 x 40 otherwise 1280 pixels.

BUZZER

- An Active Buzzer Alarm Module for Arduino is an audio signaling device, which may be mechanical, electromechanical, or piezoelectric.
- An active buzzer rings out as long as it is electrified. Compared with a passive buzzer, it is a bit expensive but easier to control
- Typical uses of buzzers include alarm devices, timers, and confirmation of user input such as a mouse click or keystroke.

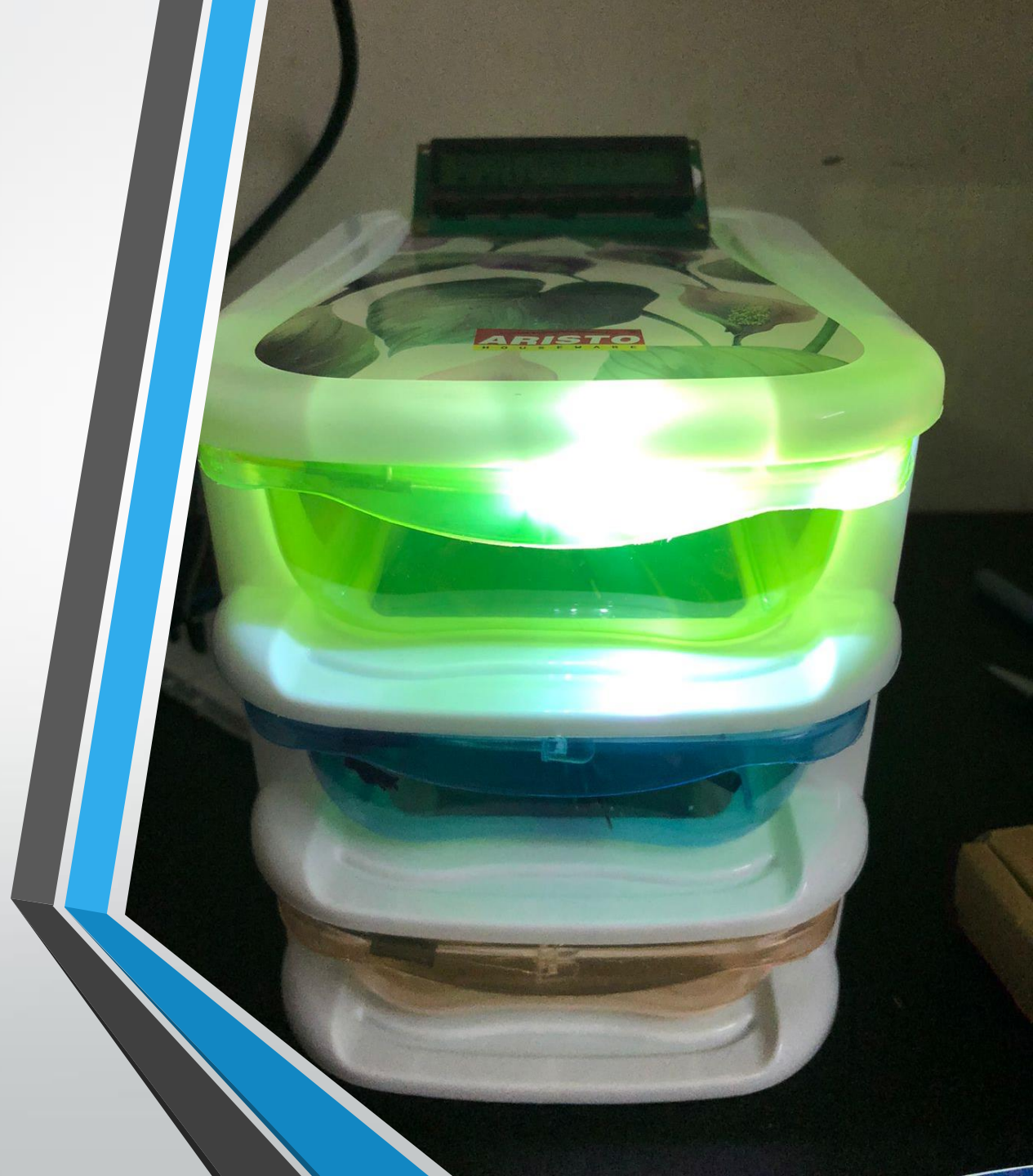
RTC

- RTC is an electronic device in the form of an Integrated Chip (IC).
- The purpose of an RTC or a real-time clock is to provide precise time and date which can be used for various applications.
- The RTC module is ideal in any time-critical applications like attendance systems, digital cameras, automated sprinkler systems, or a time and calendar display.

RESULTS

RESULTS

- A functional Box with storage for medicine storage.
- Automatic alarm system at the time of medication.
- LCD to display the number of pills to be taken.
- Medicine storage containers ar e illuminated according to the prescription.



FUTURE SCOPE

FUTURE SCOPE

- The box would be portable and battery operated.
- Connectivity with mobile for programming the prescription.
- Authentication feature to avoid child misuse.
- Mobile Application for moniotoring the statistics of the medicines.

REFERENCES

REFERENCES

[1] Bhati, Sanjay, et al. "Smart medicine reminder box." IJSTE-International Journal of Science Technology & Engineering 3.10 (2017): 172-177.

[2] D.S. Abdul Minaam, M. Abd-ELfattah. "Smart drugs: Improving healthcare using Smart Pill Box for Medicine Reminder and Monitoring System". Future Computing and Informatics Journal 3 (2018) 443-456

THANK YOU