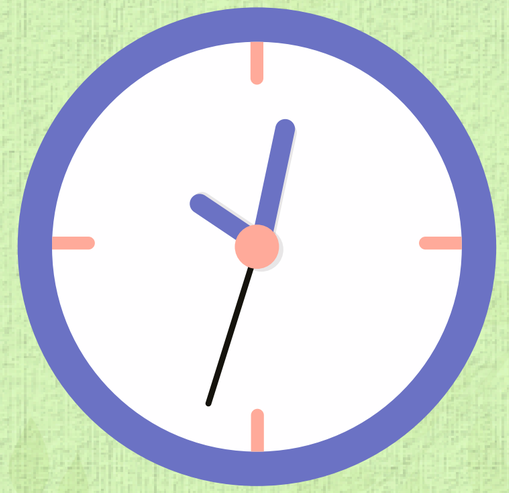
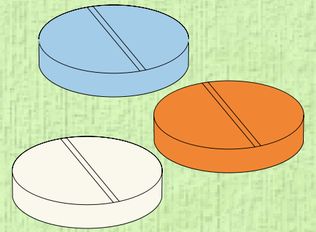
MEDREM

MEDICINE REMINDER MACHINE



PRESENTED BY:

AHMAD SHAER



SUPERVISED BY:

DR. ALADDIN MASRI

OUTLINE

- MOTIVATION
- WHAT IS MEDREM
- METHODOLGY
- COMPONENTS
- FEATURES
- CONSTRAINS
- FUTURE WORK

MOTIVATION

- IN 2022 A STUDY WAS DONE TO FIND THE PERCENTAGE OF THE PEOPLE WHO WERE 65+ OF AGE IN THE WORLD AND THEY FOUND OUT THAT ALMOST 10% OF WORLD POPULATION ARE 65+ OF AGE. AND MOST OF THOSE PEOPLE TAKE MULTIPLE TYPES OF MEDICINE IN A DAILY BASIS.

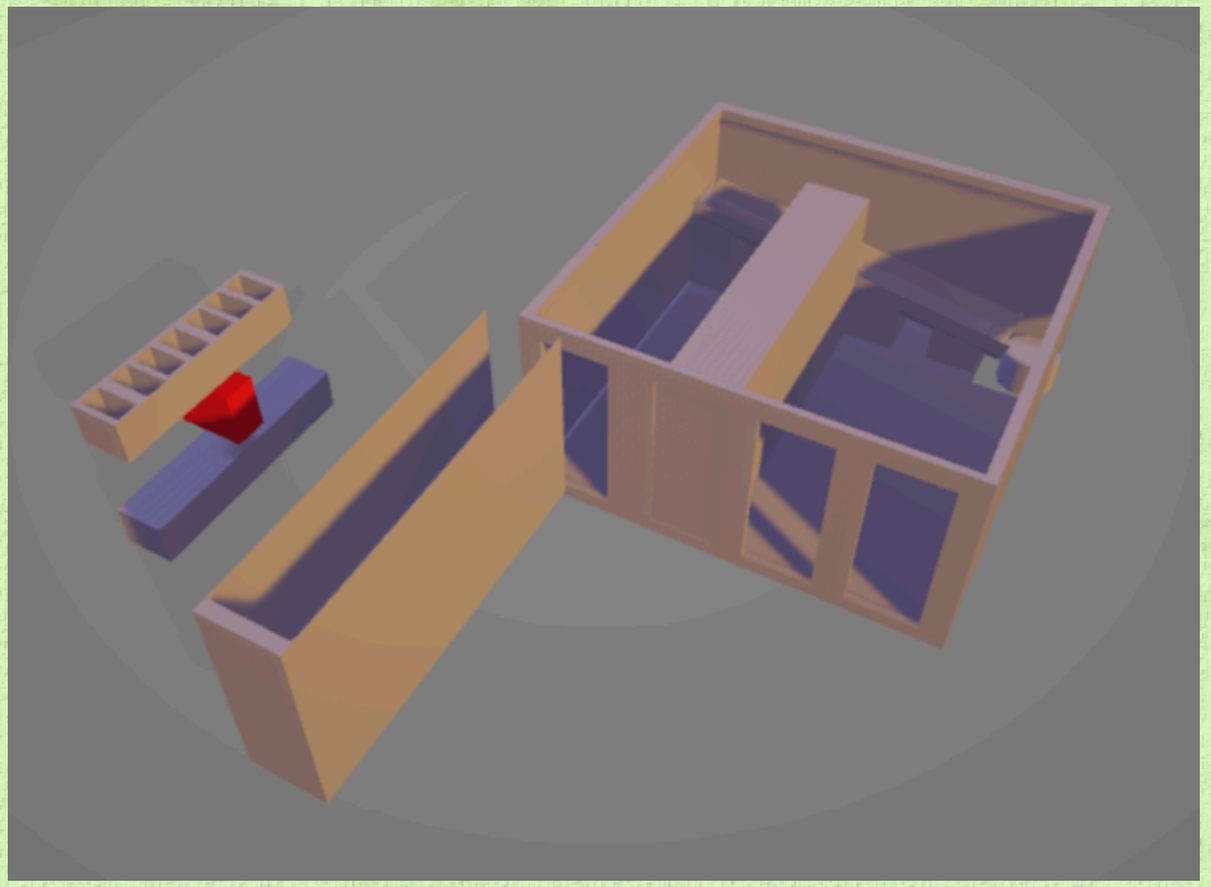
CONT.

- THERE ARE A LOT OF THESE PEOPLE WHO TAKE THE WRONG MEDICATIONS AND ALSO THOSE WHO TAKE IT IN THE WRONG TIMES AND THOSE WHO FORGOT IN THE FIRST PLACE TO TAKE THEIR MEDICATIONS

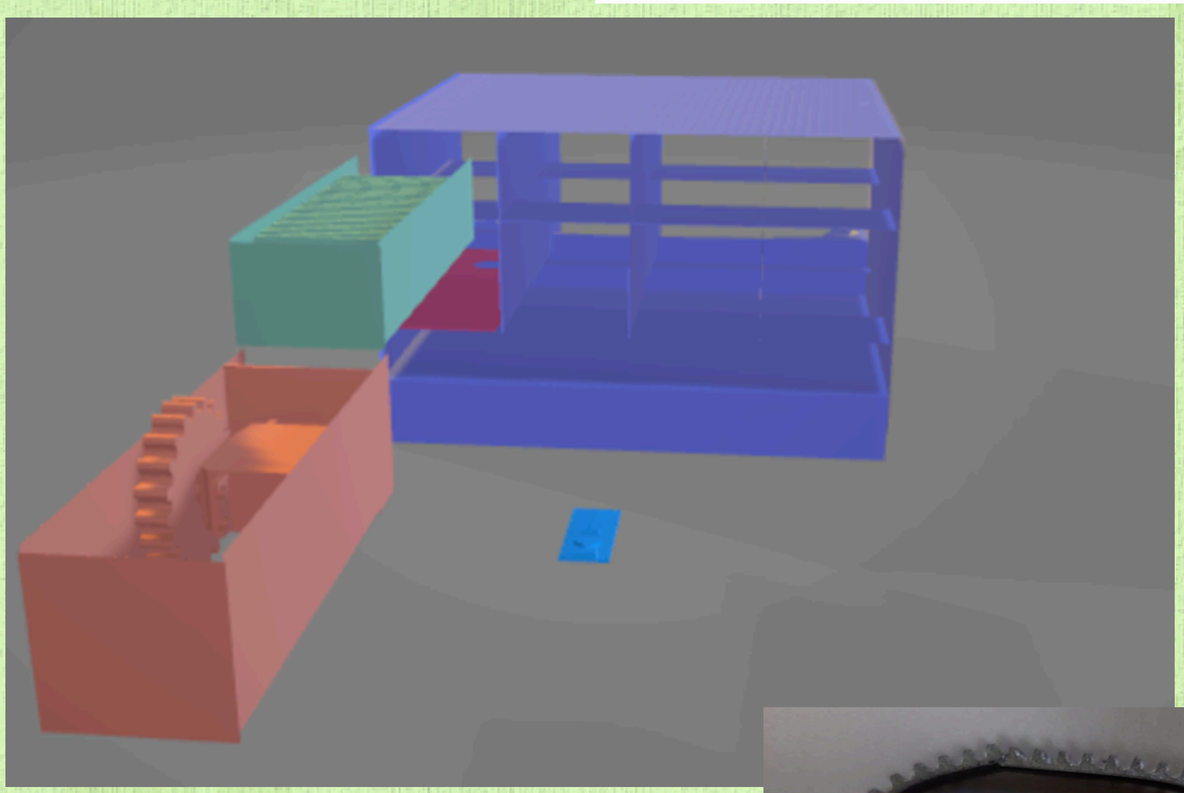
MEDREM

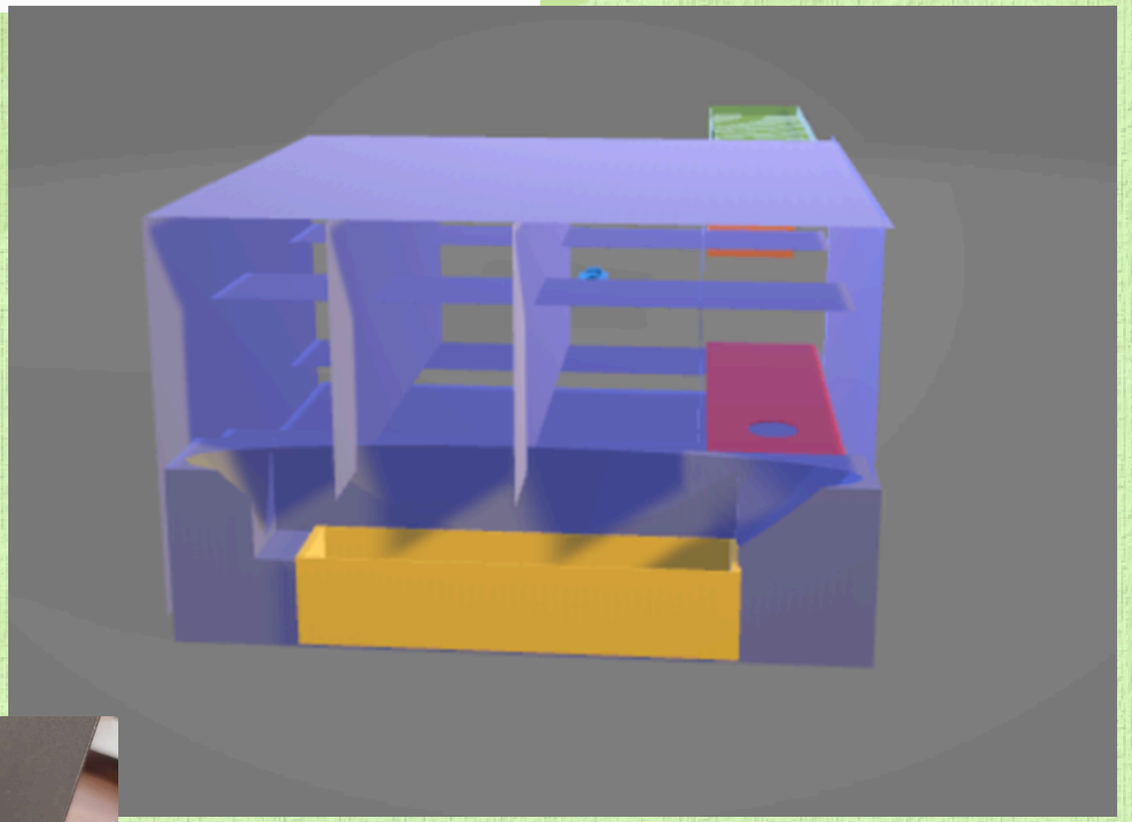
IT IS A MEDICINE REMINDER MACHINE WHERE THE PATIENT CAN STORE HIS MEDICINES AND ALSO SET THE NUMBER OF TIMES TO TAKE EACH MEDICINE

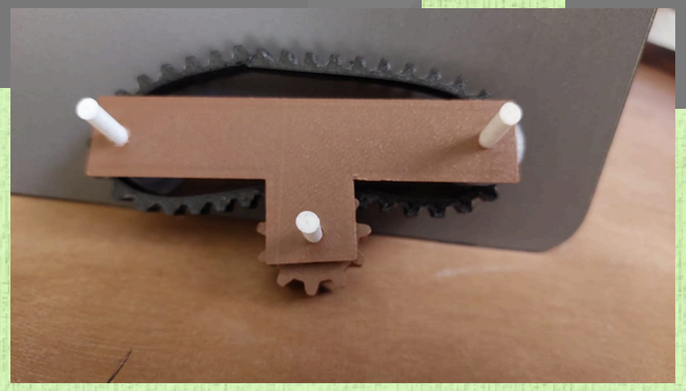
METHODOLOGY



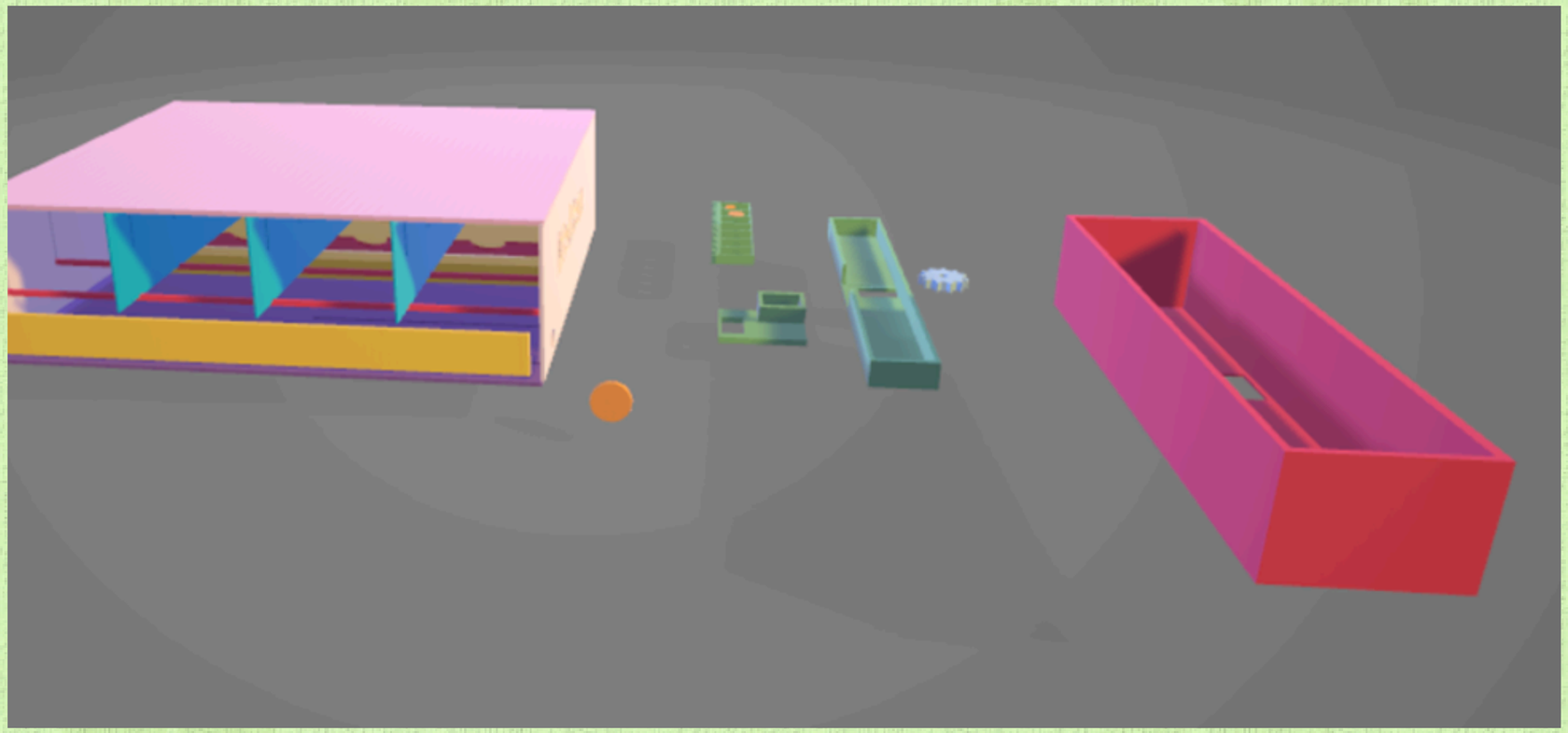
CONT.

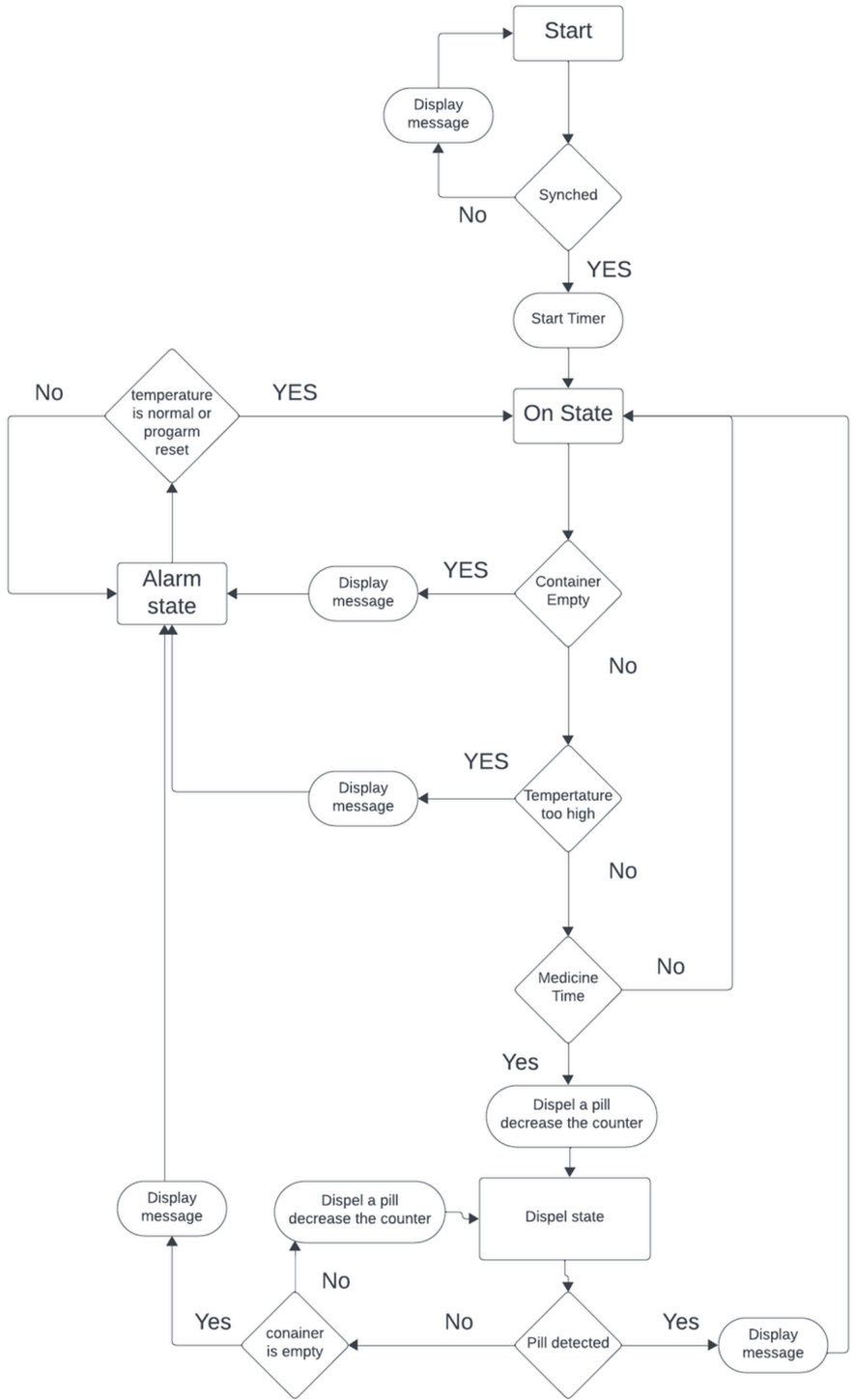






CONT.

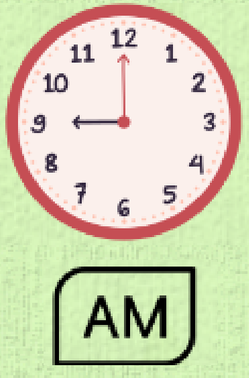




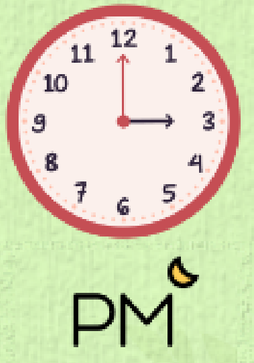
STATES

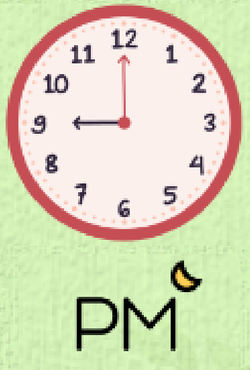
Timer 1

Timer 2



Timer 3





COMPONENTS

ARDUINO MEGA 2560

MAIN CONTROLLER

GET FEEDBACK FROM SENSORS AND MAKE DECISIONS

PROVIDE POWER FOR SENSORS

ANALOG PINS
DIGITAL PINS

COMPONENTS

ESP32

CONNECT TO WIFI

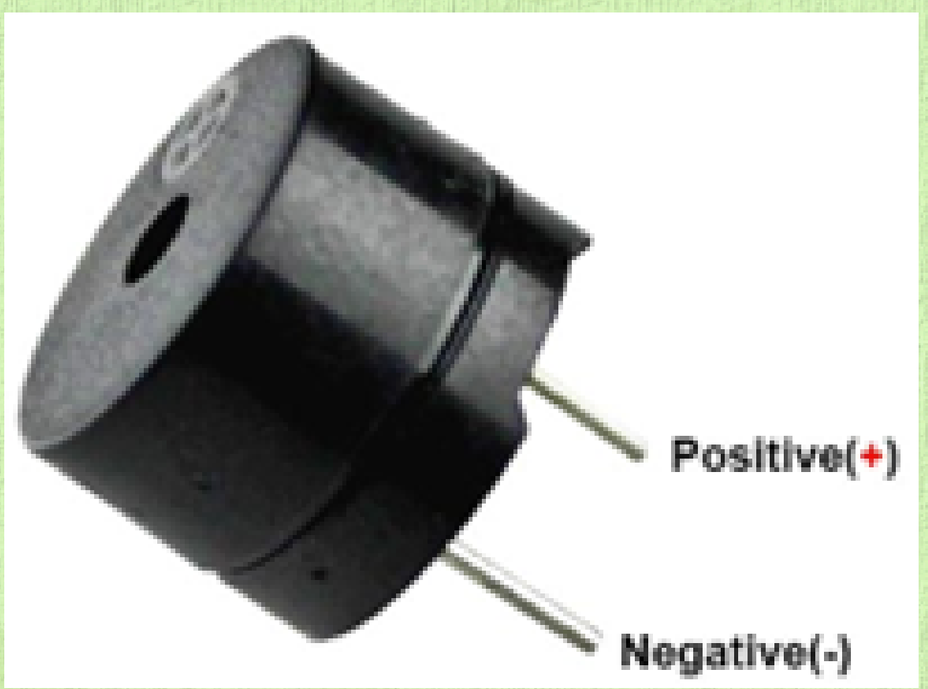
ACT AS A SERVER
ACCEPT CLIENTS(MOBILE APP)

DNS SERVICE
REST API

SERIAL COMMUNICATION
TO SEND AND RECEIVE INFO

COMPONENTS

BUZZER



ALARM THE PATIENT

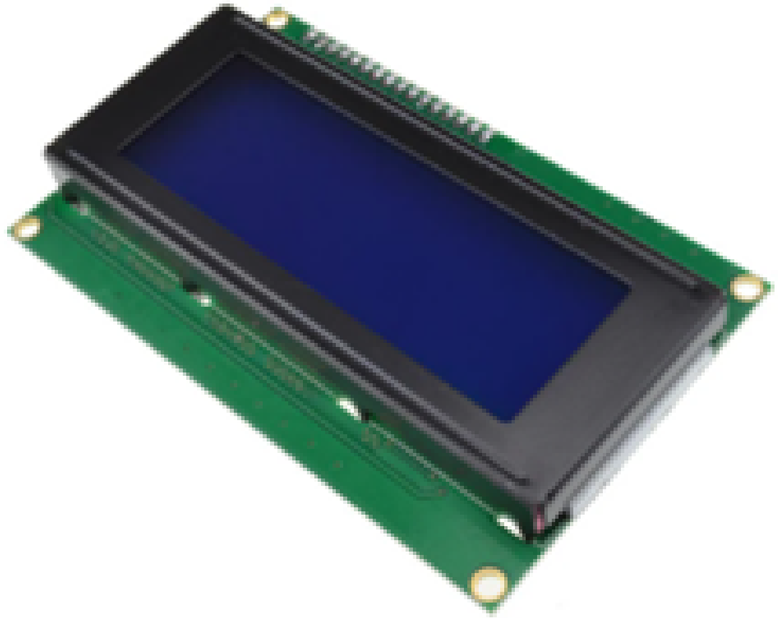
TAKE HIS MEDICINE

TEMPRETURE IS TOO HIGH

CONTAINER IS EMPTY

COMPONENTS

LCD



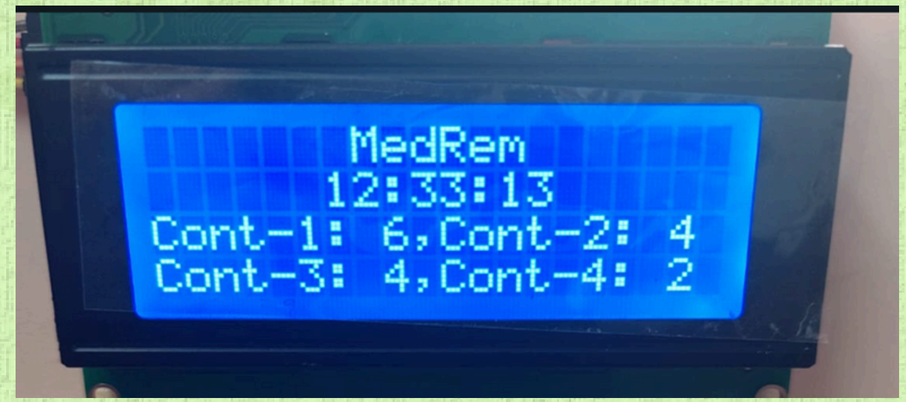
DISPLAY INFORMATION ABOUT THE STATE OF THE DEVICE

DISPLAY ALARM IF TEMPERATURE IS TOO HIGH

DISPLAY ALARM IF ONE OF THE CONTAINER IS EMPYT

CONT.


Alarm:
sync Time with the
mobile app


MedRem
12:33:13
Cont-1: 6,Cont-2: 4
Cont-3: 4,Cont-4: 2


Alarm:
Cont-1 is empty


Alarm:
Tempreture is
too high

COMPONENTS

SERVO MOTOR

TRANSFERS TORQUE TO THE SECTORS TO MOVE ONLY ONE AT A TIME

BUILD A NEW ATTACHMENT USING 3D PRINTING TO CONVERT THE TORQUE TO THE SECTORS

MOVE FOR A CERTAIN ANGLE TO MOVE ONLY ONE SECTOR AT A TIME

CONT.

COMPONENTS

SENSORS

LM35

MEASURES THE TEMPERATURE INSIDE THE DEVICE

HIGHER THAN A THRESHOLD VALUE, TRIGGER AN ALARM

COMPONENTS

IR SENSOR

SENSORS

INFRARED LIGHT
EMIT AND REFLECTION

OBJECT DETECTION
FOR AROUND 8CM (DISTANCE)

CONFINED SPACE
LOW ACCURACY FOR
SMALL OBJECTS

COMPONENTS

ULTRASONIC

SENSORS

ULTRASONIC SOUND WAVES TRANSMIT AND RECEIVE CALCULATE DISTANCE

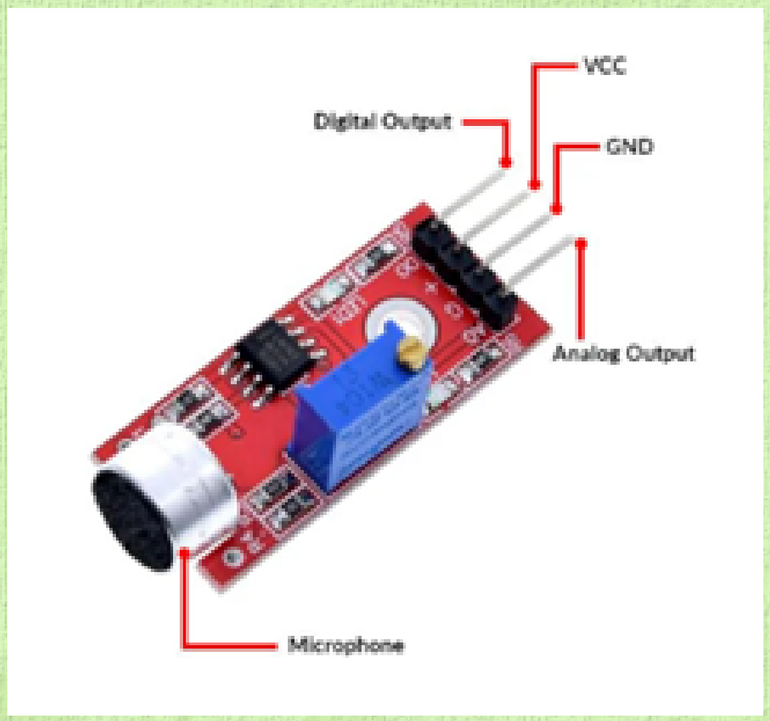
BY SETTING A THRESHOLD VALUE IF THE DISTANCE IS LESS THAN IT (DETECTED)

RELATELVLY LARGE LOW ACCURACY FOR SMALL OBJECTS

COMPONENTS

SOUND SENSOR

SENSORS



MICROPHONE DETECT AND MEASURE SOUND WAVES

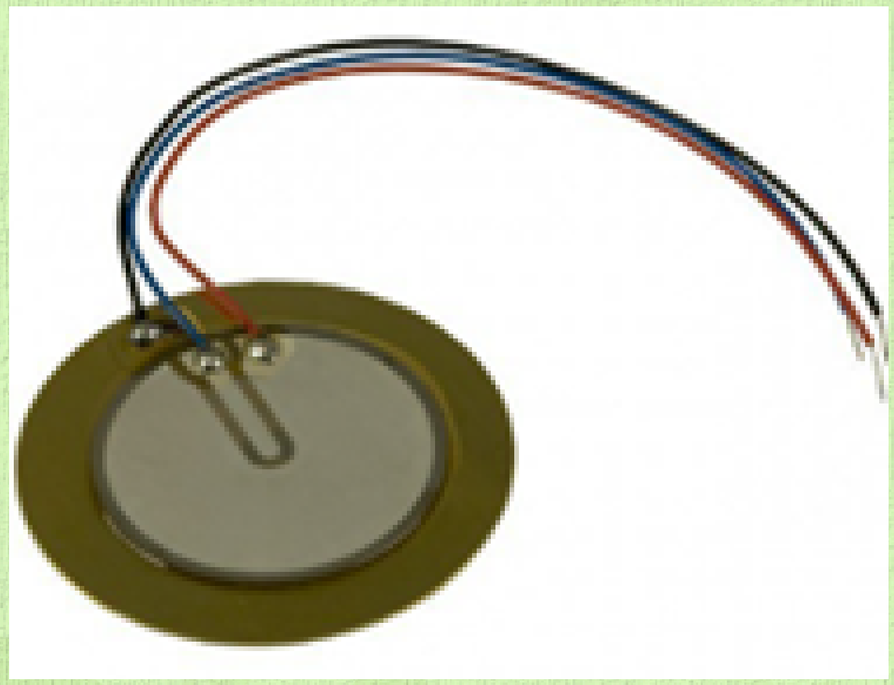
BY SETTING A THRESHOLD VALUE IF SOUND LEVELS ARE HIGHER (DETECTED)

SURROUNDING NOISE
LOW ACCURACY

COMPONENTS

PIEZO SENSOR

SENSORS

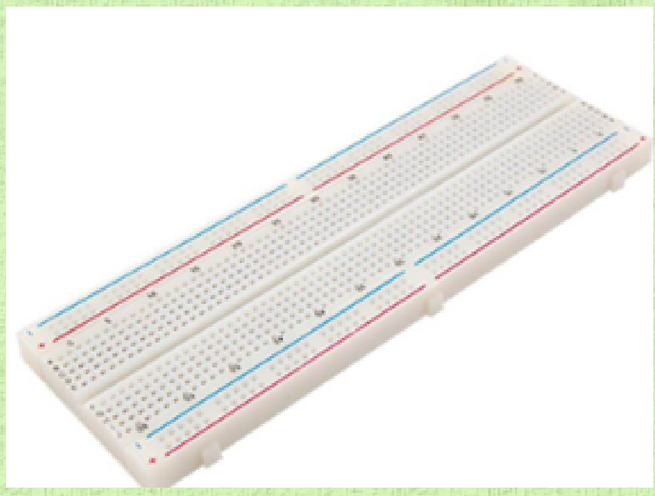


BETTER KNOW AS PRESSURE SENSOR

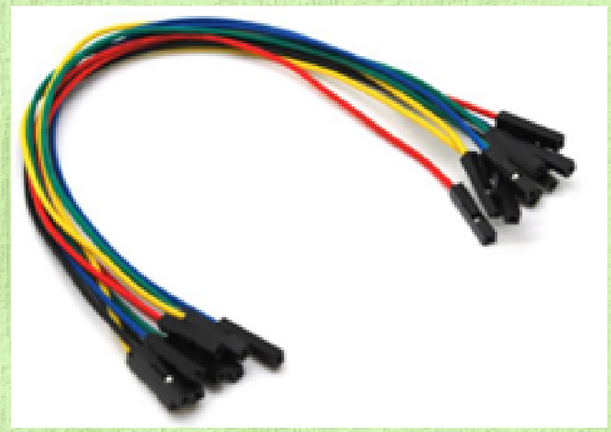
MEASURE CHANGES IN PRESSURE (PILL DISPNESED)

HIGHER ACCURACY
RELATIVELY SMALL
CHEAP

COMPONENTS



ADAPT TO DIFFERENT COMPONENTS



UNIFY THE POWER AND THE GROUND FOR ALL COMPONENTS

FEATURES

MEDICINE REMINDER FOR DIFFERENT PILLS AND DIFFERENT TIMERS

MOBILE APP TO INTERACT WITH

FOR EACH MEDICINE STORE UP TO 7 PILLS

ALARM SYSTEM FOR DIFFERENT SITUATIONS

STORAGE SPACE FOR UP TO 4 DIFFERENT MEDICINES

DETECTION SYSTEM FOR PILL DISPENSING

CONSTARINS

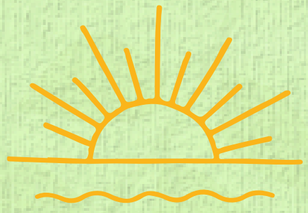
DESIGINING A SYSTEM USING 3D APPS TO CONTAIN ALL FEATURES

WORKING ALONE MEANT DOUBLING THE AMOUNT OF WORK AND EXPENSES

WORKING WITH NEW COMPONENTS SUCH AS ESP32

TIME

FUTURE WORK



ADD MORE SECTORS FOR EACH MEDICINE TO STORE MORE PILLS

ADD A CAMERA TO DETECT PILLS (EXPENSIVE)

MAKE THE SYSTEM FULL INDEPENDENT (POWER)

DEMO

Thank you!