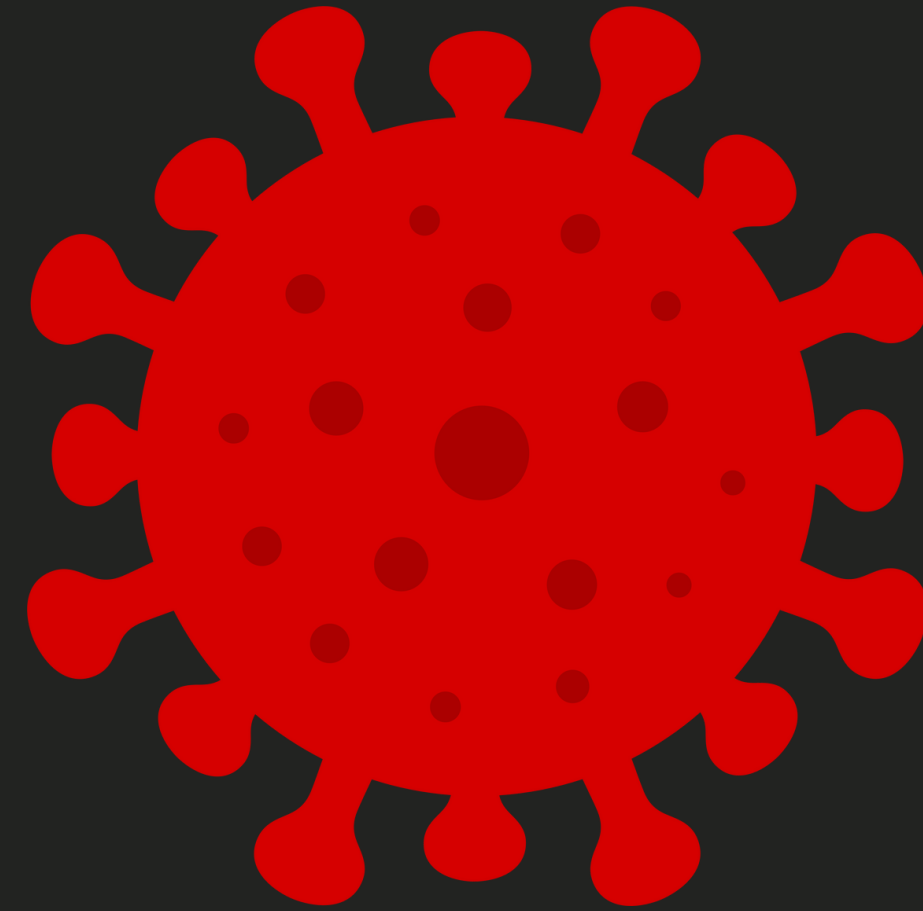


Corona Warrier



BY STUDENTS OF IIT GUWAHATI

Our Team

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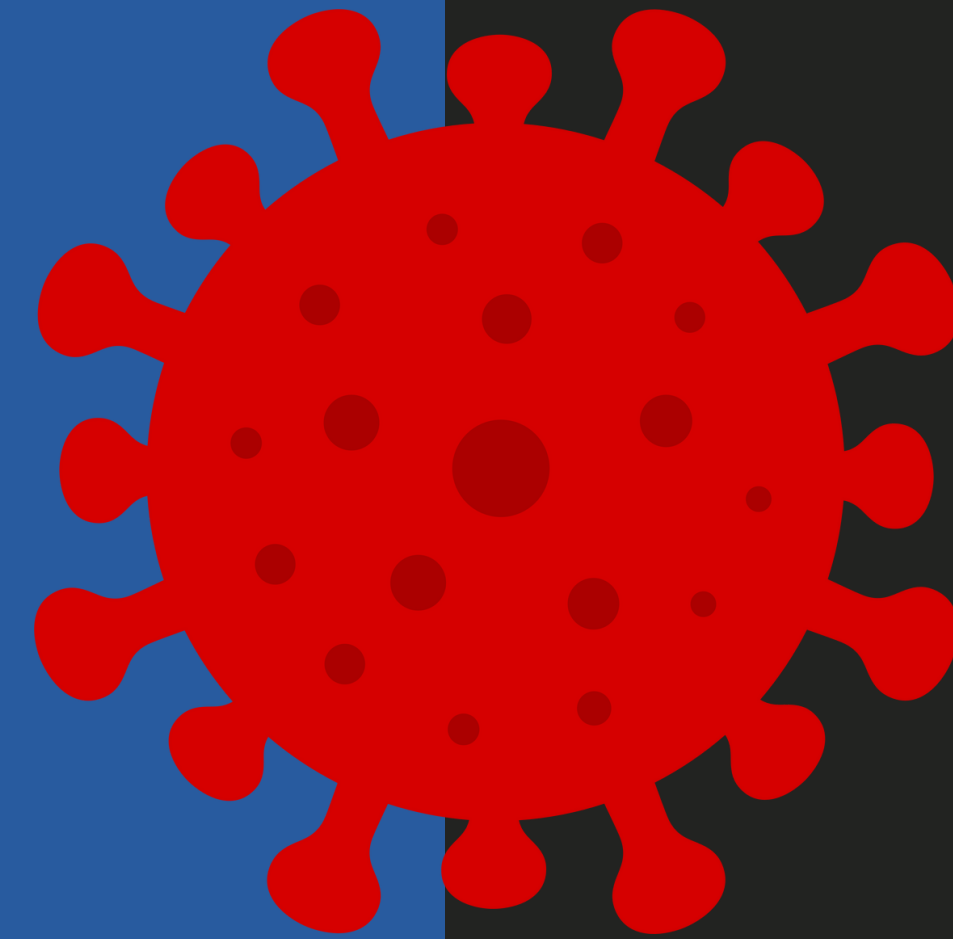
Lakshya Mittal

Tarang Kamble

Rohit V. Sagvekar

Problem Statement:

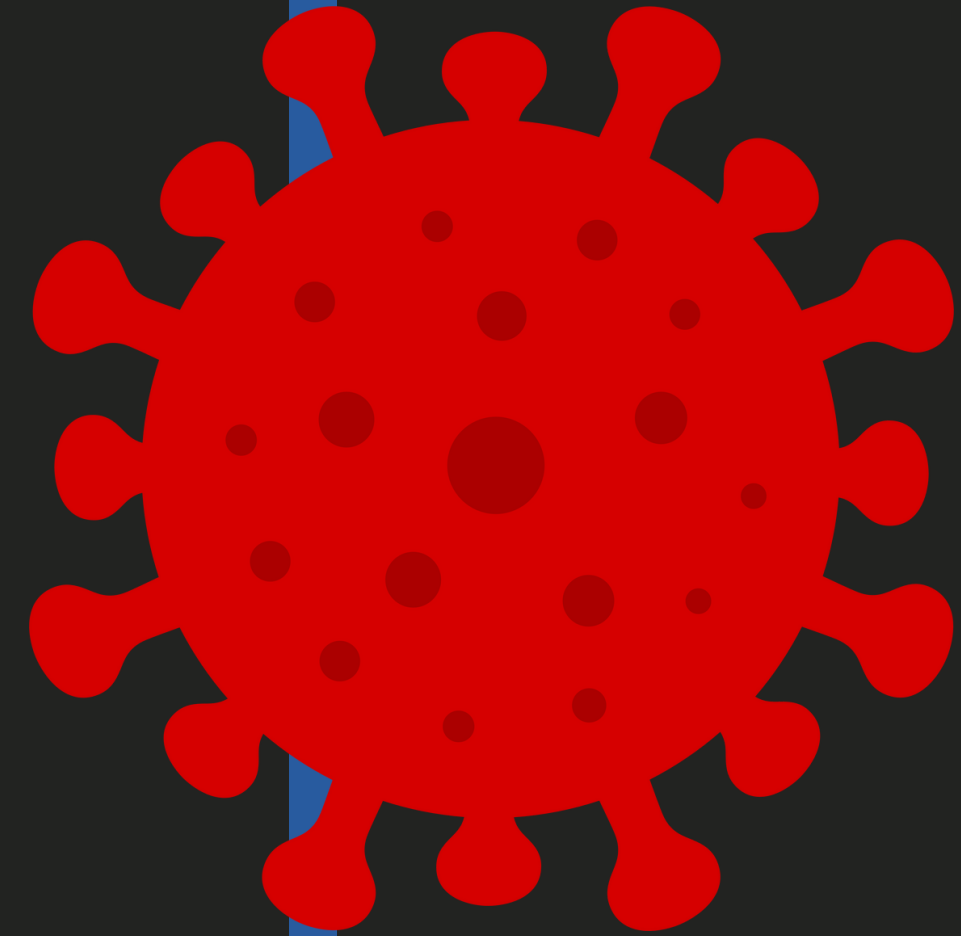
Covid19 has made a huge impact on our lives and has made us realize how important it has become to reduce contact to ensure the safety of us and our loved ones. We have come a long way since covid has impacted our lives and developed various technologies to combat the impact of the virus. There is a clear need to devise more and more technologies to reduce the spread of the virus.



Solution:



- An innovative solution to go contactless in hospitals and do not require any human intervention.
- Effective option to reduce manpower and at the same time ensures protection from covid19.
- Our unique bot is made to deliver medicines by making a note of the status of the patient's health and by taking vitals like temperature of the body.



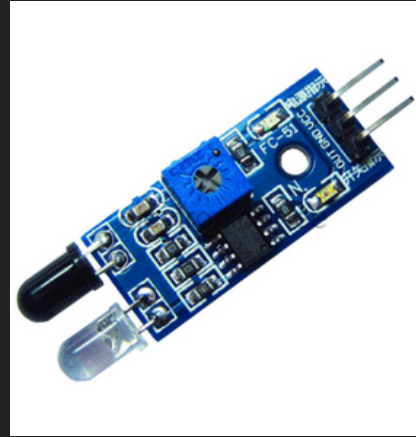


Description Of the Bot

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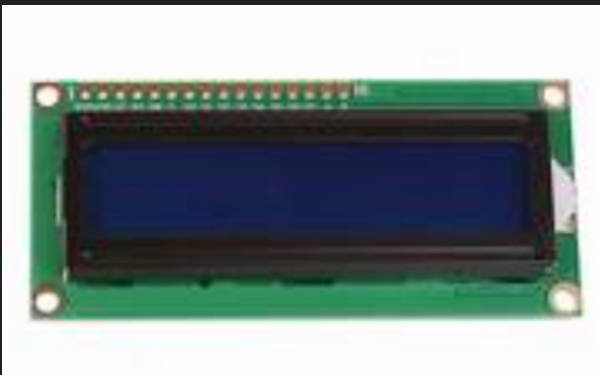
- This is a mobile autonomous bot which caters to the needs of covid-19 medical patients with minimal human contact.
- It can distribute medicines, take vitals like temperature of the body, collect queries from patients etc..
- It can also sanitize hands and deliver water to the patients at regular intervals.
- This will help in creating a safe environment for frontline workers.
- Bot can be used for other services too where there is a queue system, example in restaurants.

Sensors and Modules:



MLX90614 - we can use this sensor to detect contactless temp of a person.

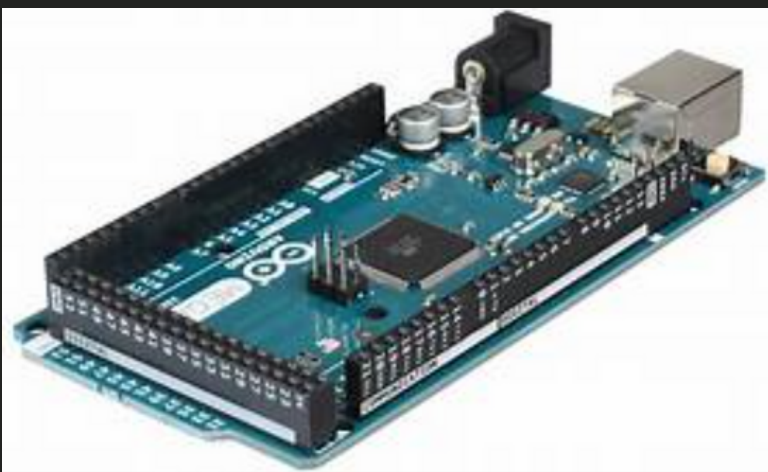
IR sensors - It will help identify the paths.



Lcd display: For displaying the instructions

Ultrasonic sensor- For detecting the obstacle

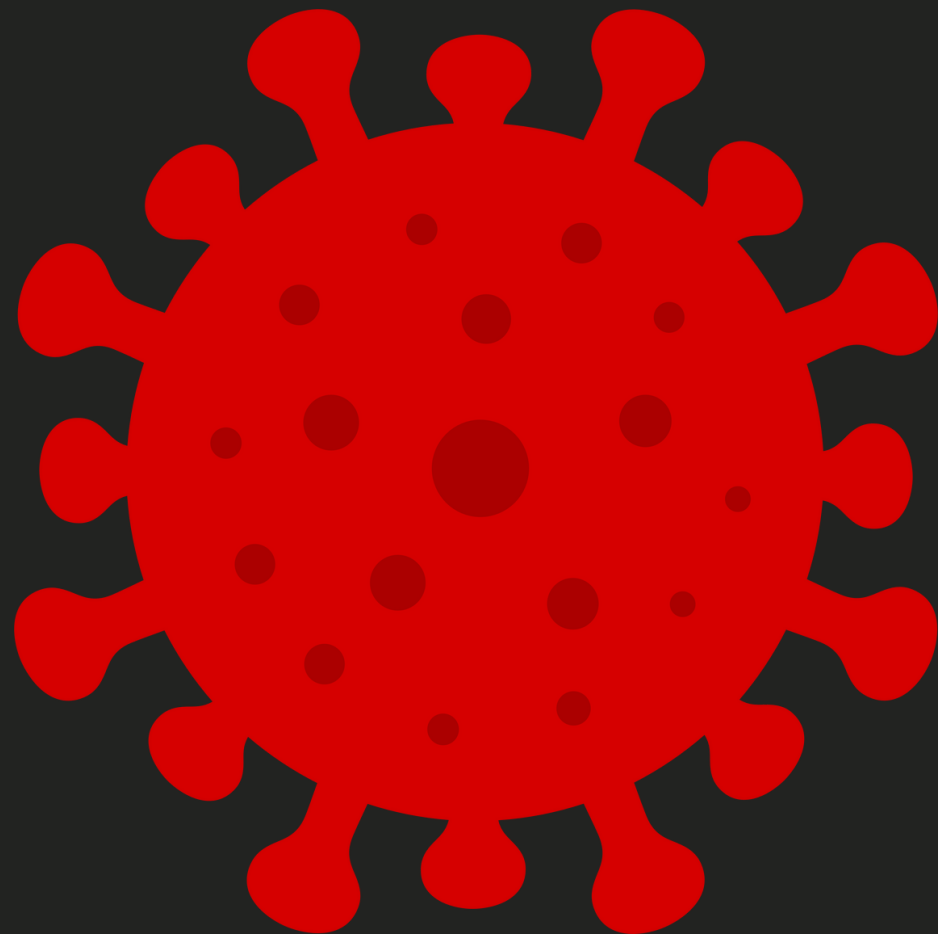
Arduino-Mega- It will be used as a microcontroller



Motor- Rotating the wheels of the bot and for opening and closing the doors using a lead screw mechanism.

Motor Driver- It will control the motors

Outer Structure of the Bot



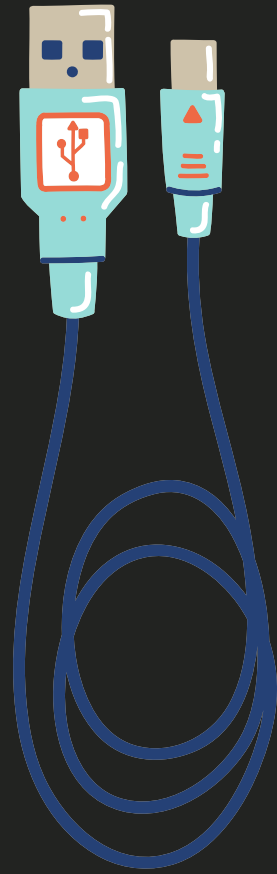
- It is basically a shelf which can traverse from one bed to other.
- The multi compartment functionality will help in segregating the medicines for different beds.
- The particular compartment will light up as soon as the bed reaches that bed.
- It is having a lcd display which will instruct the patients.
- The bot consists of contactless temperature sensors.
- It will also have sanitizer and other equipments as well.

End Users:

- Can be used in multi-bedded hospitals where we want to minimize the contact and hence prevent infection.
- Used in restaurants to ensure contactless delivery of food.
- Can also be implemented in shopping complexes so that the shopped items can be kept at one place.

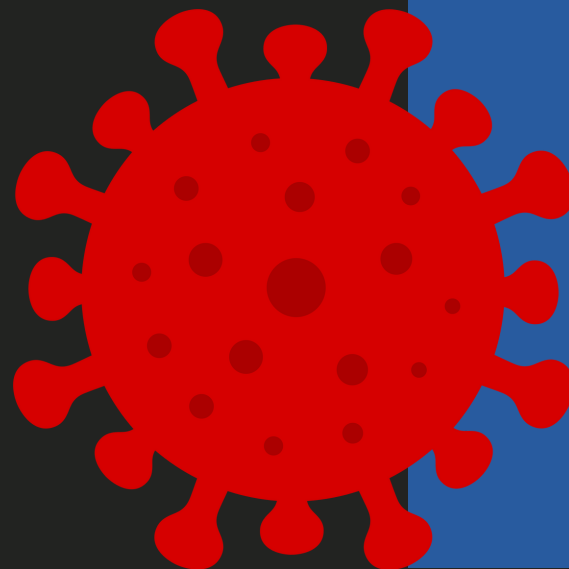


Charging of the bot:



The dock will be charged at the dock station.

It will automatically detect if it is running low on power.



Future Enhancements

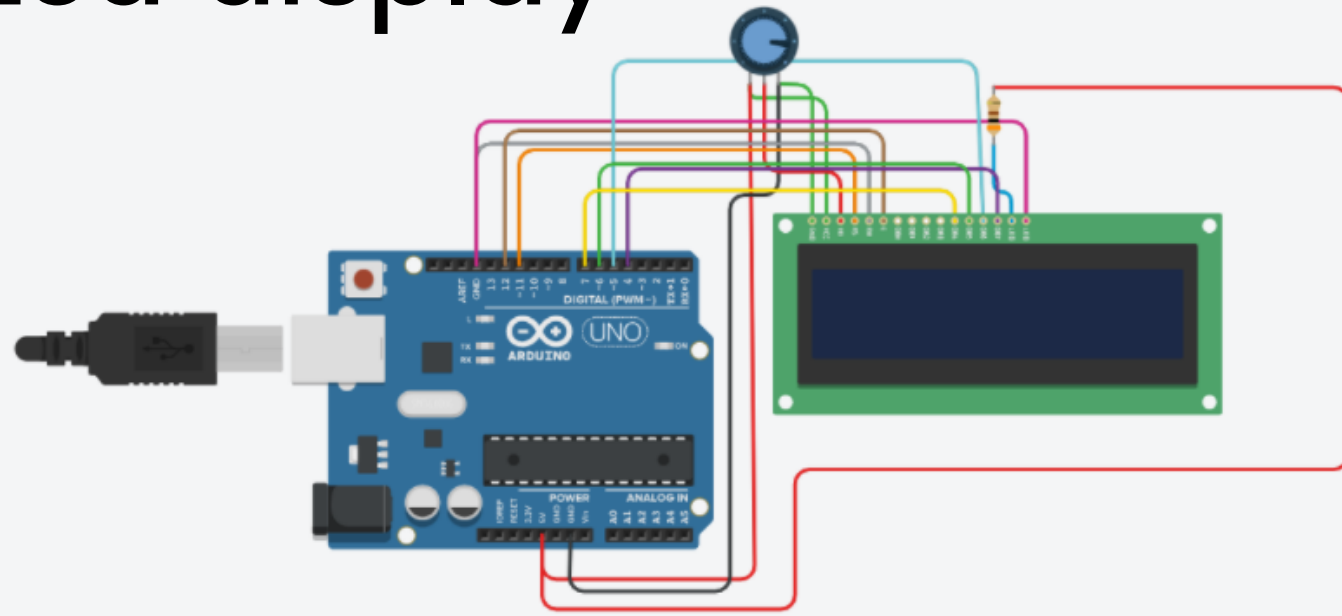


- We can give inputs to the bot through nodeMcu which can send messages in the form of a proper schedule with dates and timings.
- The schedule is set for particular beds so that it can do the needful at pre-defined intervals of time.
- We can add more testing features to it
ex- make a taking bot

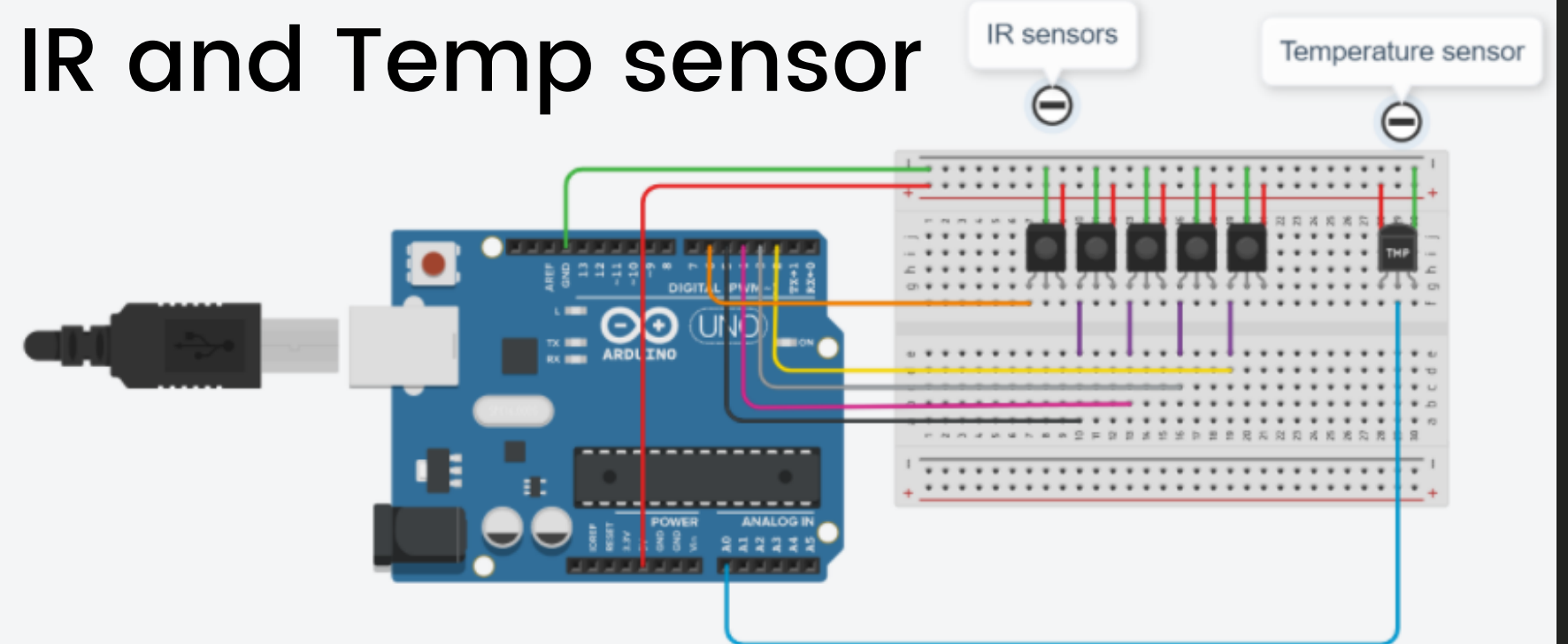


Circuit Diagram

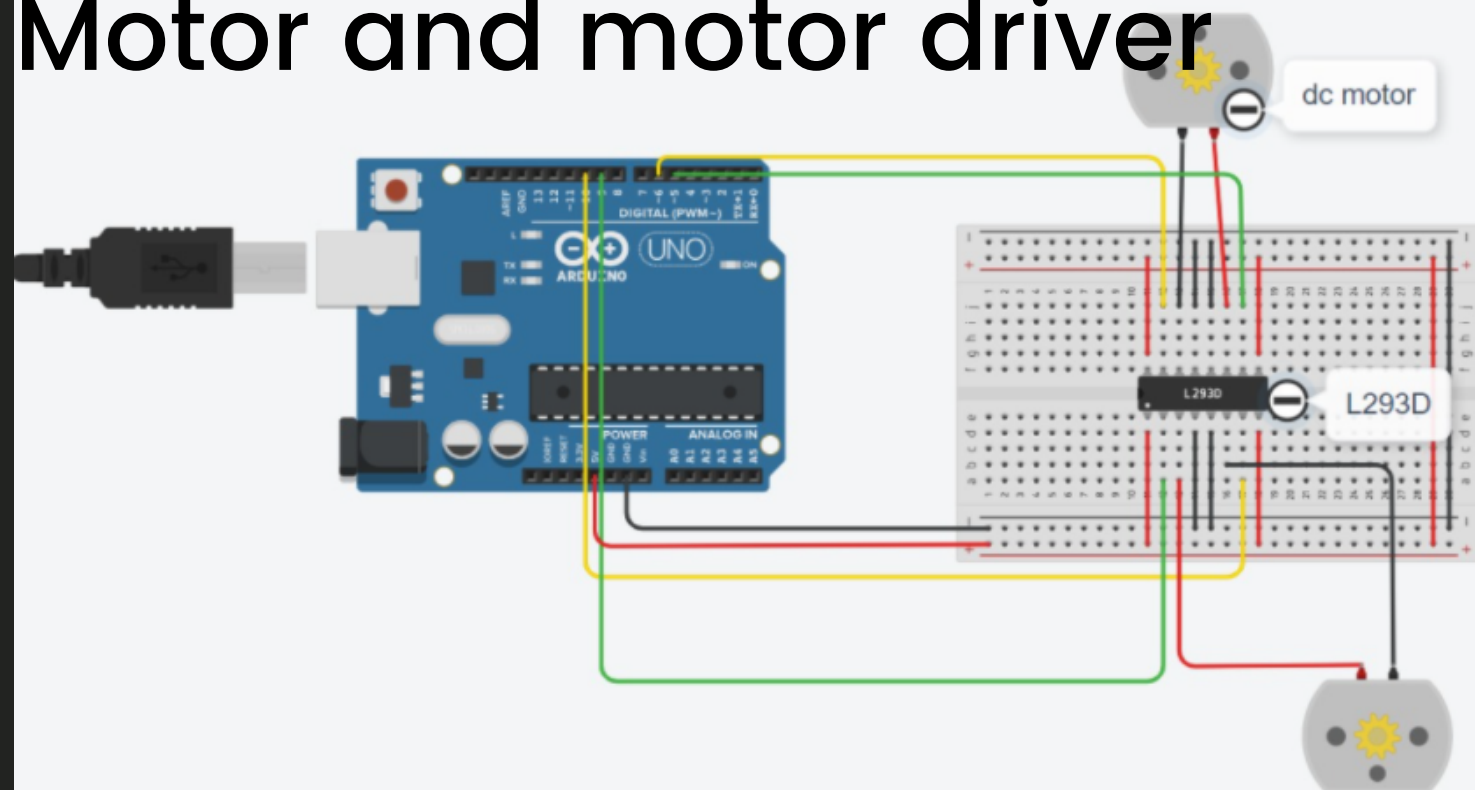
Lcd display



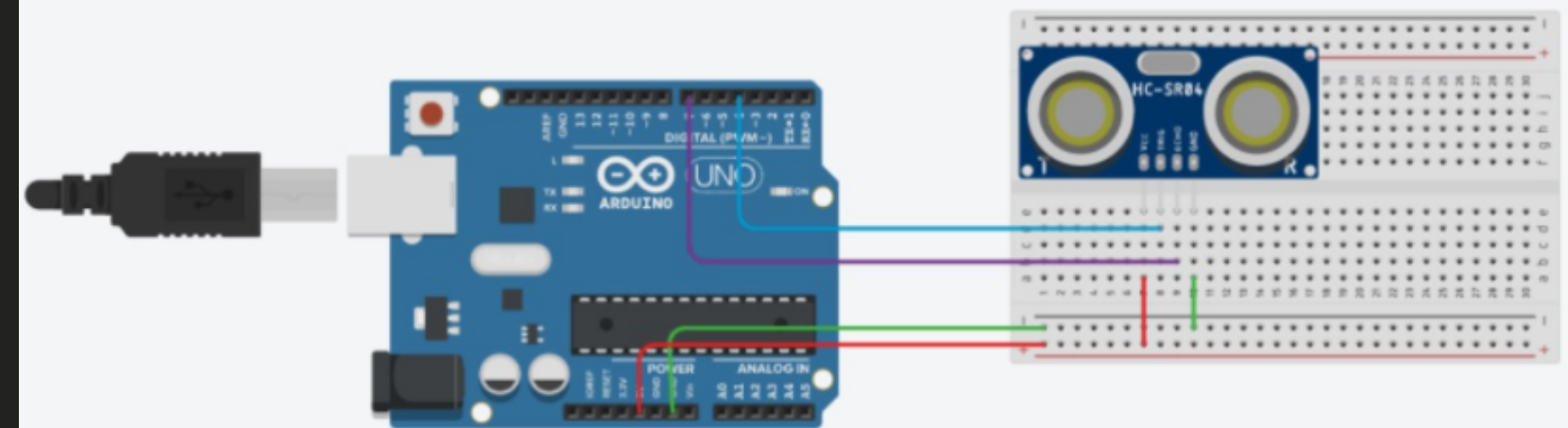
IR and Temp sensor

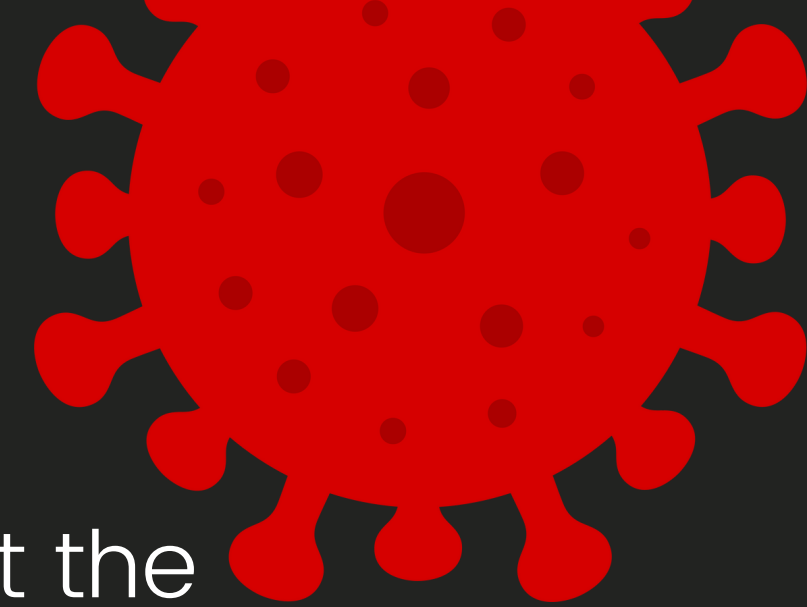


Motor and motor driver



Ultrasonic sensors





Technicalities of the Bot:

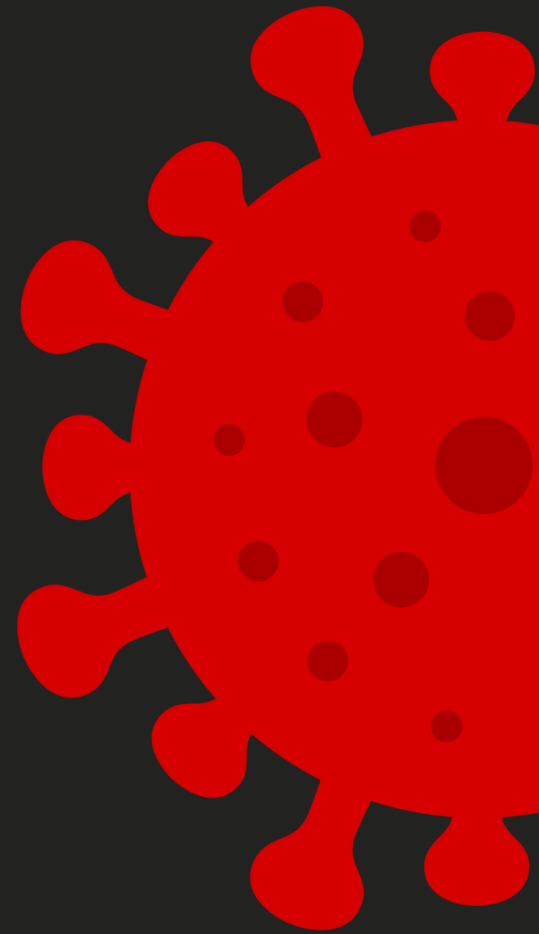
- It follows the Lsrb algorithm in order to automatically detect the nodes or the junctions along the path which it has to follow.
- It follows the path in order to reach the designated place to deliver the needful.
- It is incorporated with an obstacle detection mechanism which is integrated with an interrupt service routine.
- The infrared sensors play a very important role for the bot to figure out the junctions and move according to a given set of instructions.

- We will be using a keypad to give instructions to our bot from base station.

After the bot reaches its desired location, It will perform the following tasks:

- Delivering the medicines and lighting up that compartment.
- Showing a lcd display to give instructions
- Sensing the temperature.
- Sanitising the hands, delivering water.

The drawers will open automatically and will close as soon as the medicines are collected.



Thank You