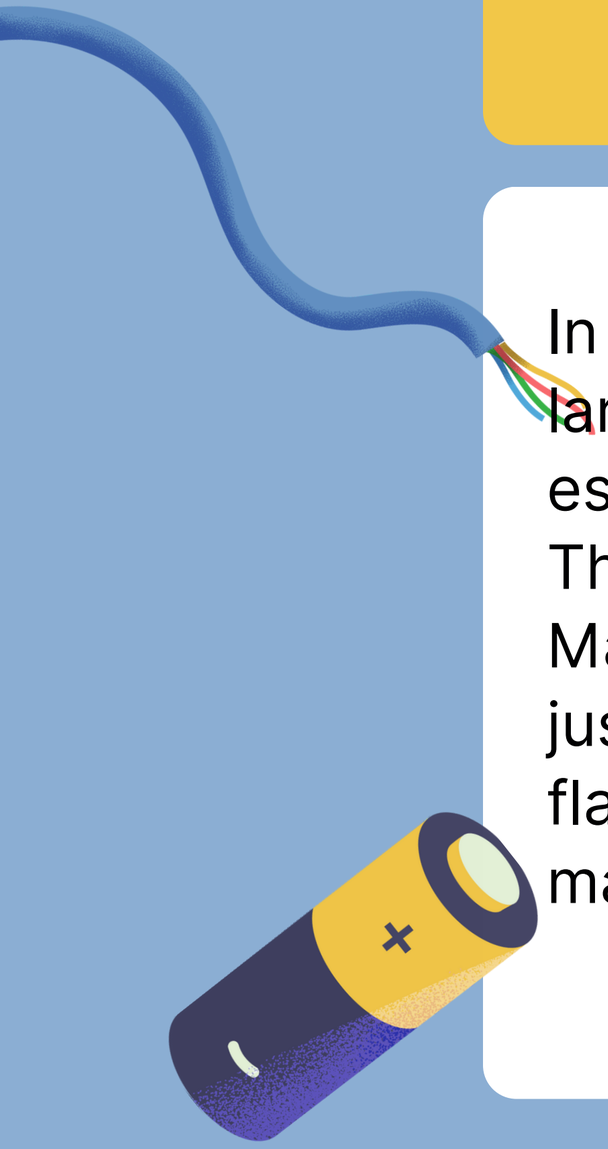
Juice Maker Machine

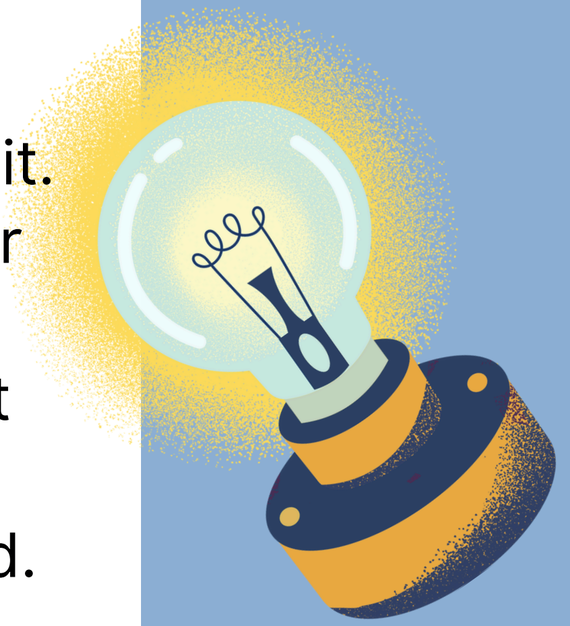
IN 1901
Group no: 54(IT)

Contents

Introduction

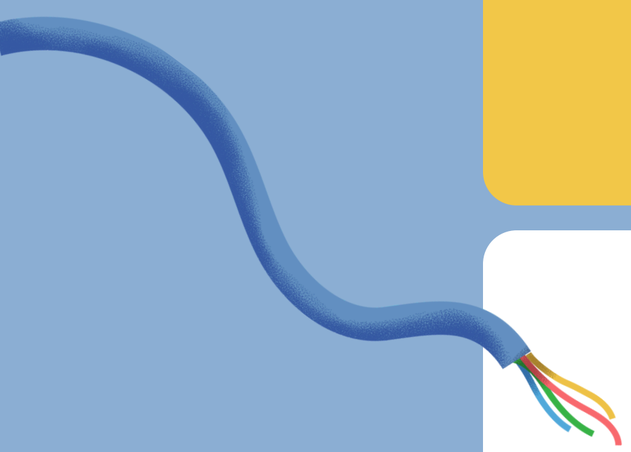
In the world of event planning, it's tough to meet large number of people’s juice preferences, especially when it comes to how sweet they like it. That's where our new invention, the “Juice Maker Machine”, comes in. It's designed to make juices just the way each guest likes them, with the right flavour and sweetness level. This machine is for making sure everyone leaves happy and satisfied.





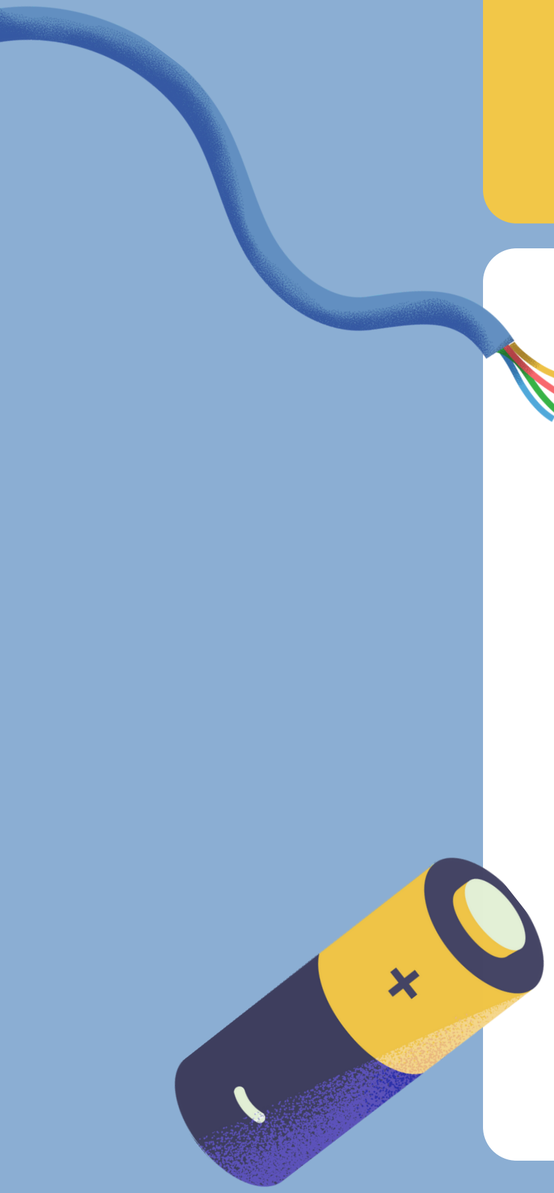
Problem in Brief

Giving everyone their favourite juice with the preferred flavour and sweetness level at a big event is really hard for organisers. They have to be super careful to make sure each person gets exactly what they like.



Aim

The primary aim of this project is to develop a “Juice maker machine” using Arduino technology, offering a smart and automated solution to the challenges posed by manual juice distribution methods.



Objectives

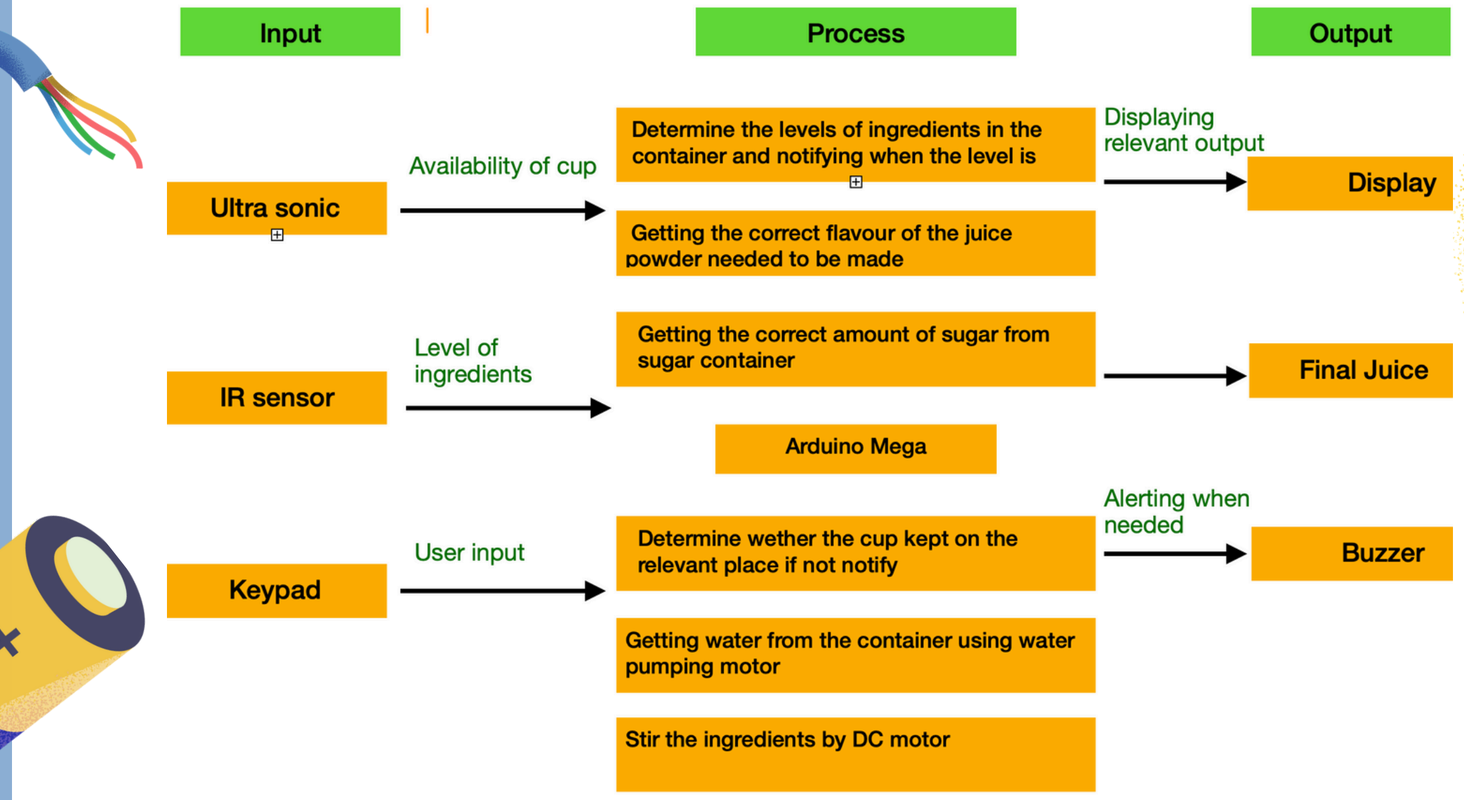
Design and implement a juice powder and sugar distribution system with selectable quantity.

Design and implement a water supplying system to distribute needed amount of water

Design and implement a juice mixing system with a self cleaning mechanism to mix alll ingredients of the juice and wash the juice container

Design and implement a juice distribution system to serve the prepared juice.

System Block Diagram

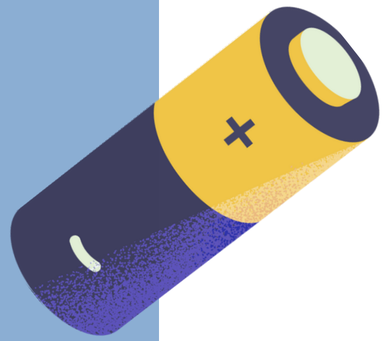


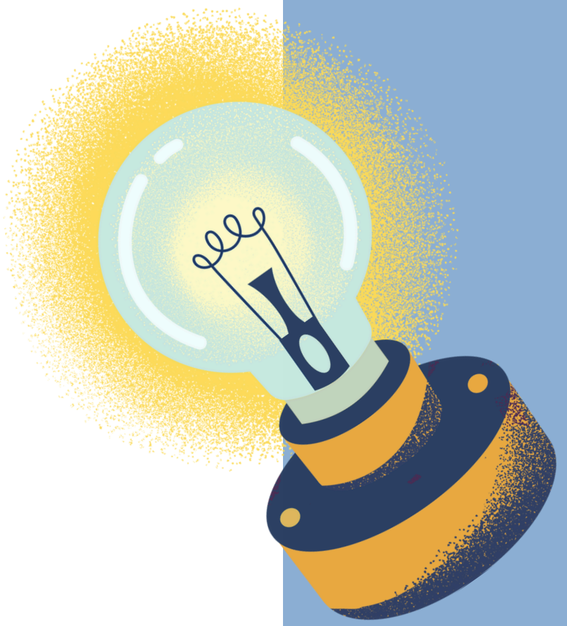
Individual Contributions

Member :
Kovinhtharajan K. - 224109V (Leader)

Responsibilities:

- Designing PCB for system
- Software integration
- Studying about display module and programming it to Arduino Mega
- Studying Ultra-sonic sensor and programming it to the Arduino Mega

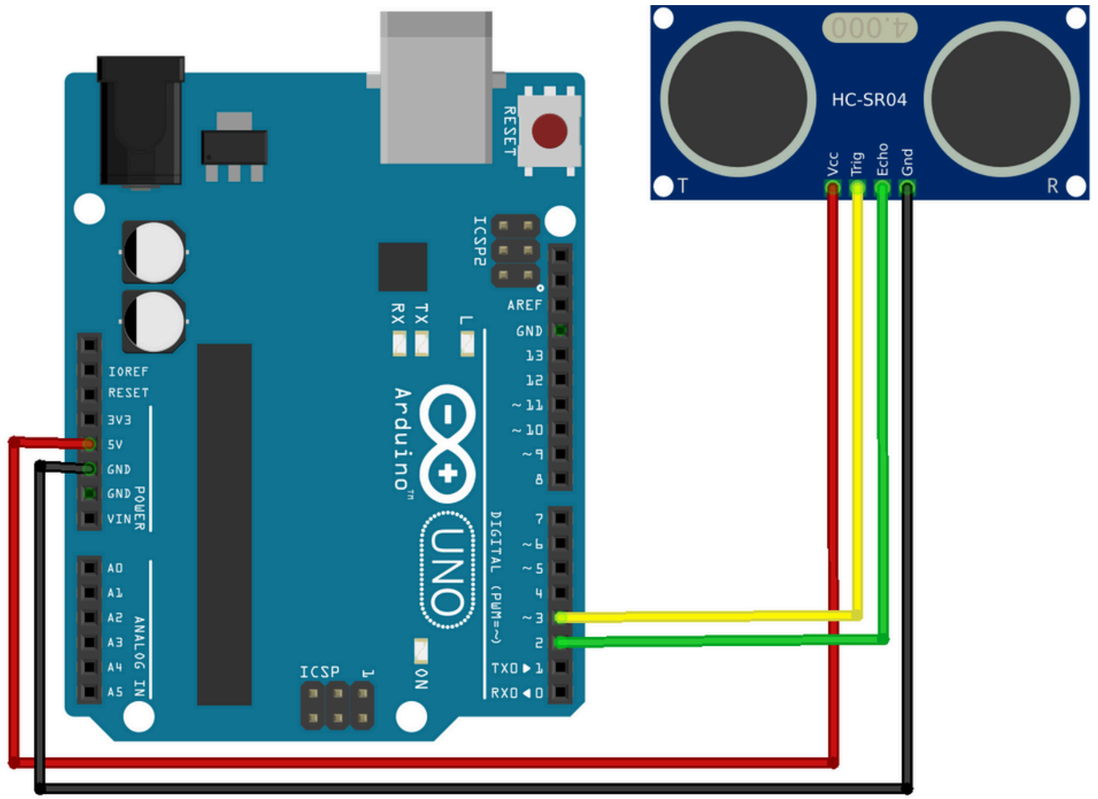




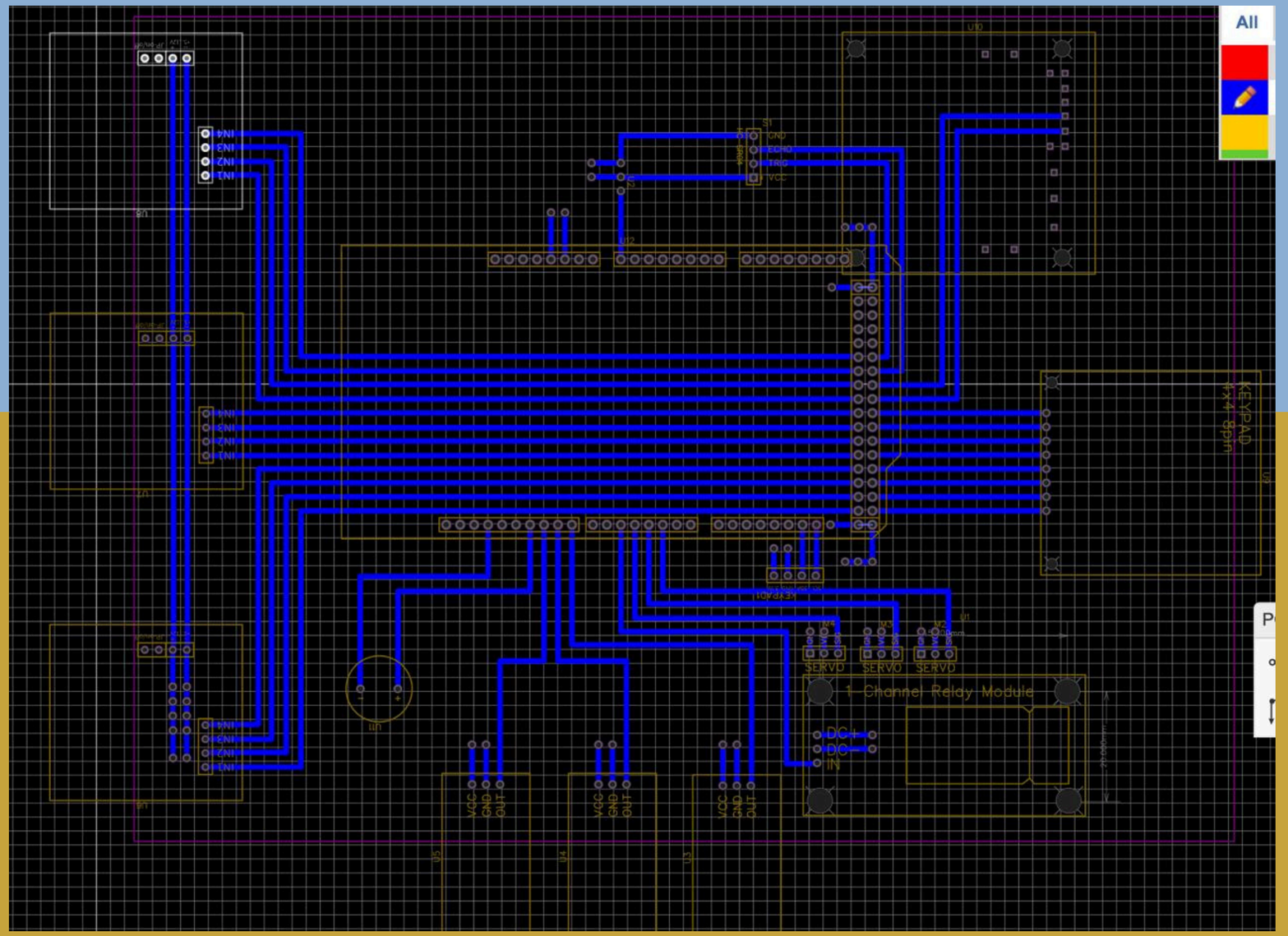
Ultra-sonic sensor

- To determine the cup is kept on the relevant place.

Circuit Diagram



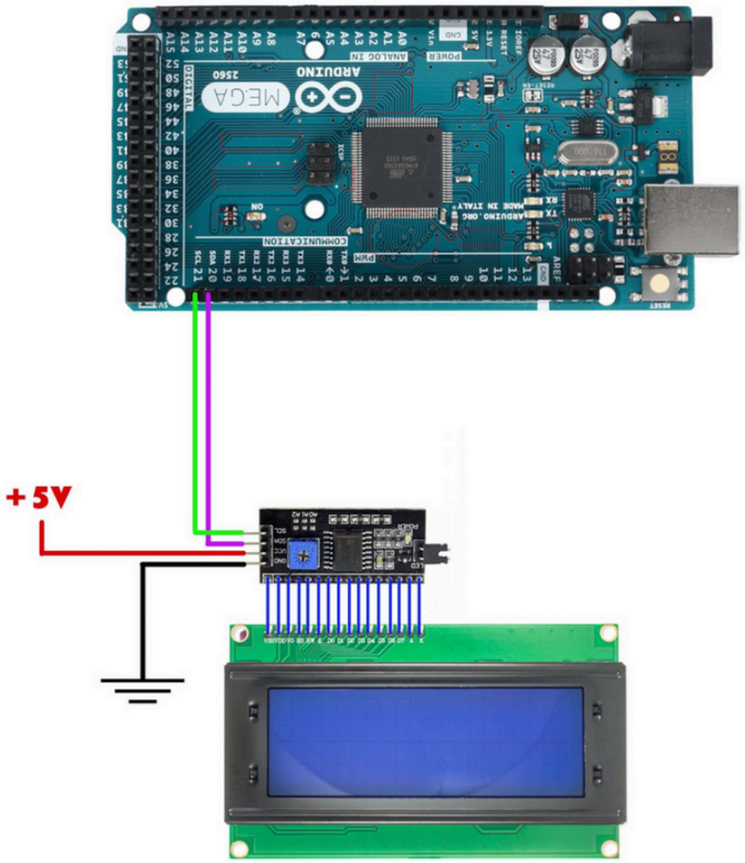
PCB Diagram


All
KEYPAD
4X4 6Pin
SERVO
SERVO
SERVO
1 Channel Relay Module
DC+
DC-
IN
VCC
GND
OUT
VCC
GND
OUT
VCC
GND
OUT

Display module

- 20x4 display module is used
- I2C module used to reduce number of pins

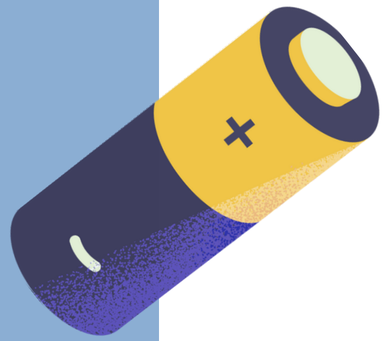
Circuit Diagram

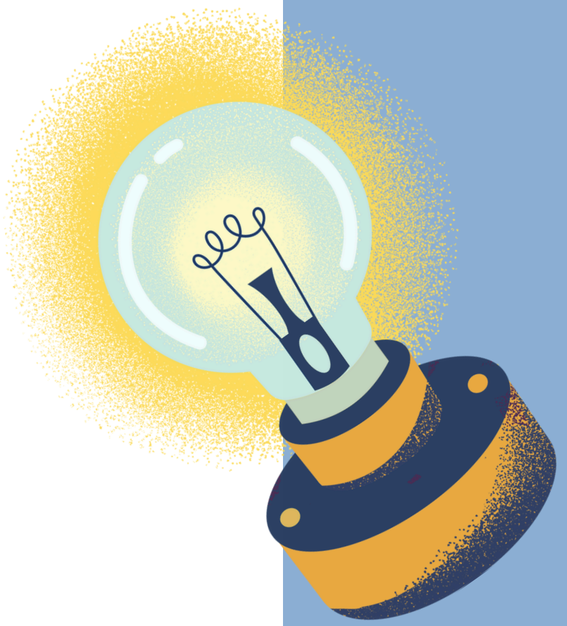


Member :
Vethishan R. - 224249A

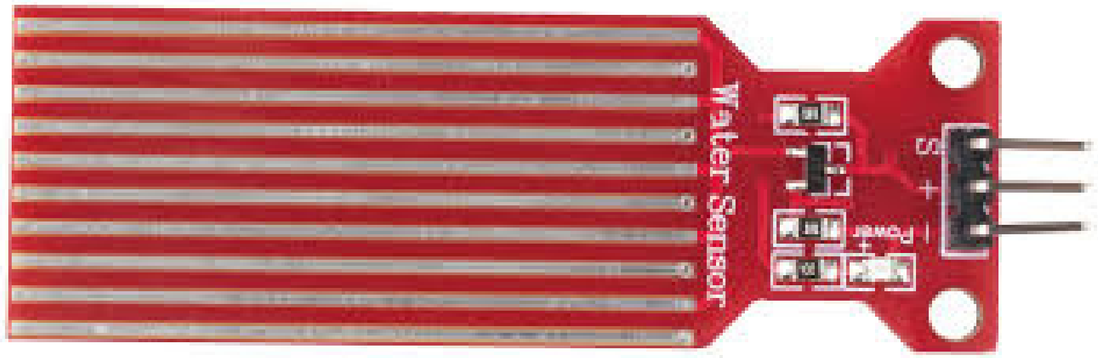
Responsibilities :

- Studying water-level sensor and programming it to Arduino Mega
- Setting buzzer alert
- Designing the stirring mechanism using DC motor



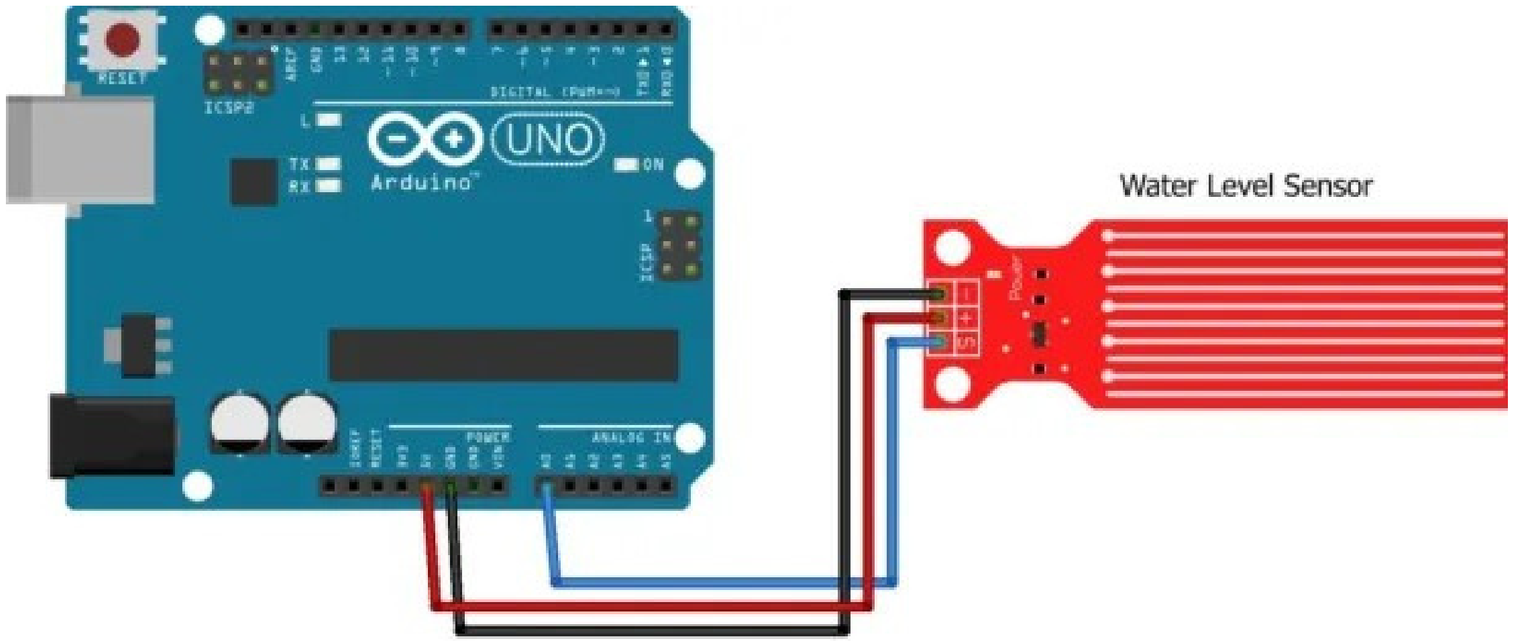


Water level sensor



- Indicating the water level of the water container

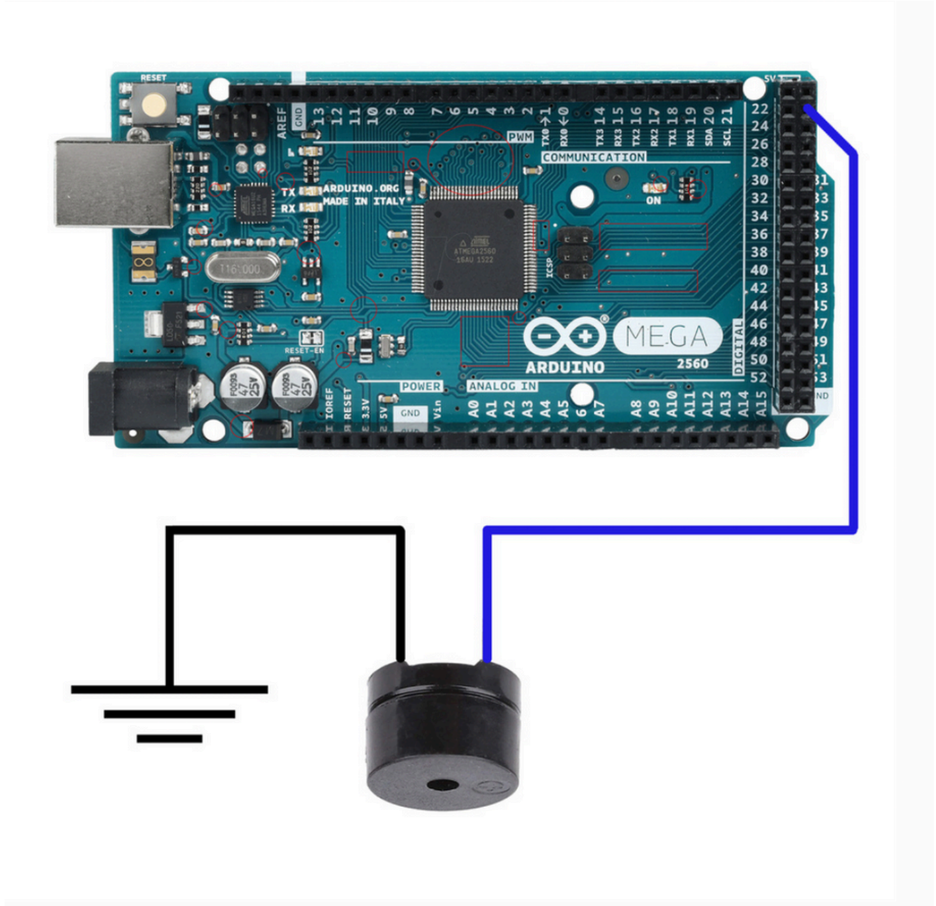
Circuit Diagram



Buzzer

- Alerting when ingredients’ level gets low

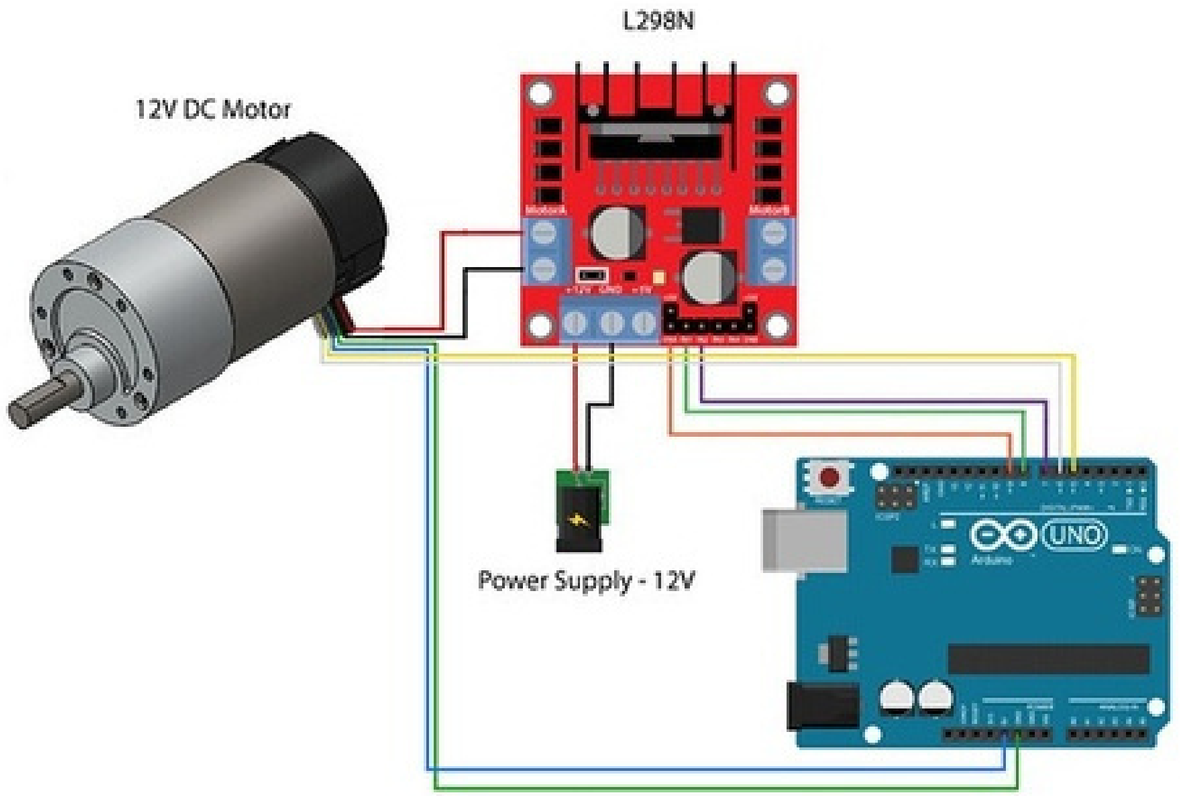
Circuit Diagram



DC motor

- Used to mix all the ingredients
- L298N Motor Driver is used to control the motor

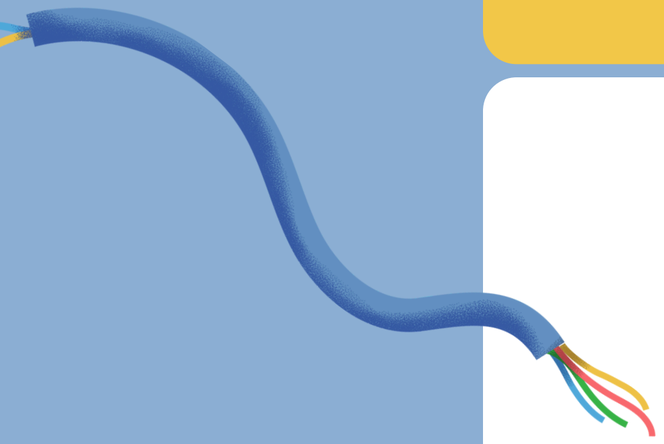
Circuit Diagram



Member :
Thajeevan V. - 224252C

Responsibilities:

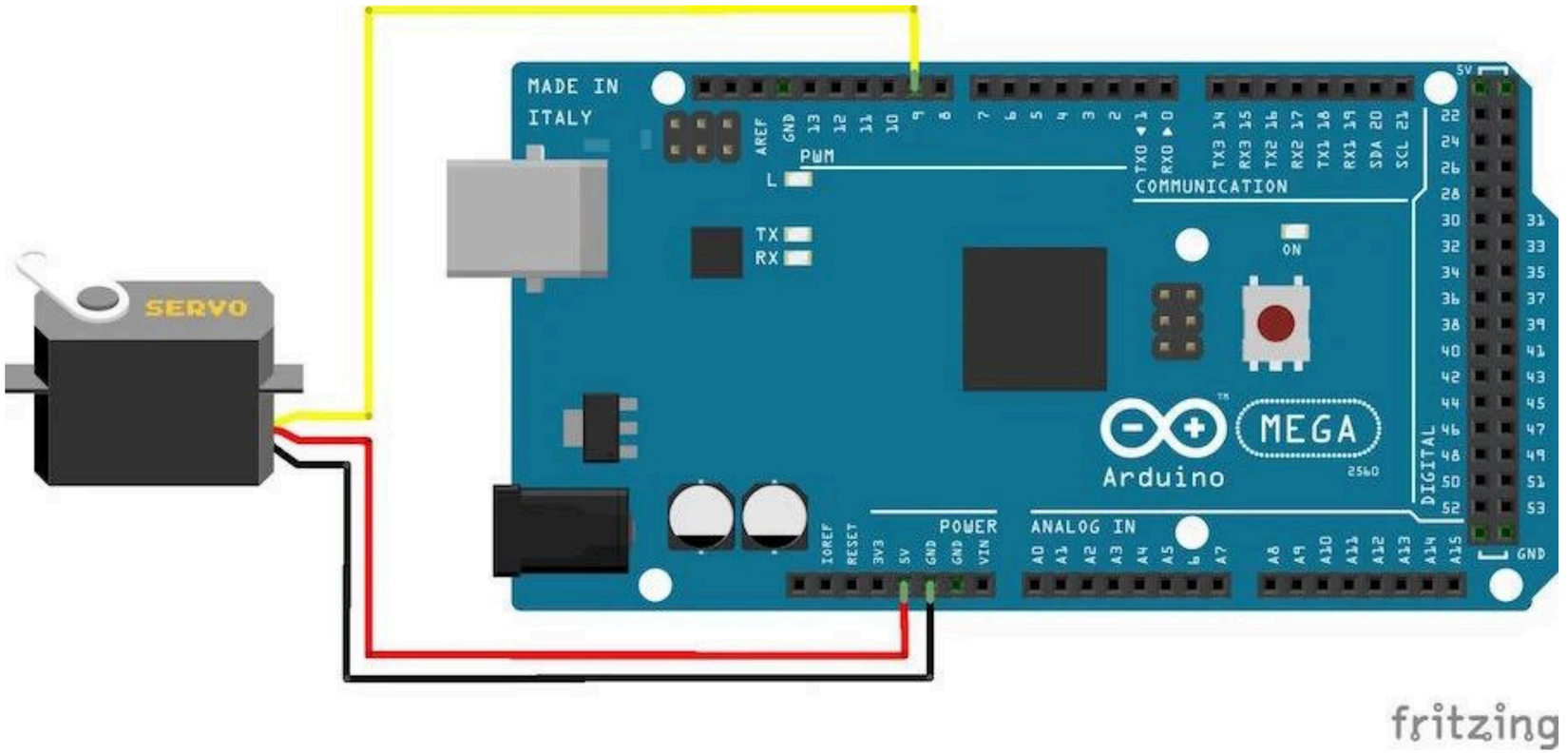
- Designing juice distributing and drainage mechanism using servo motor
- Studying about keypad module and programming it to Arduino Mega
- Designing and building the structure of the machine



Srovo motor

- Used to distribute the juice and drainage mechanism

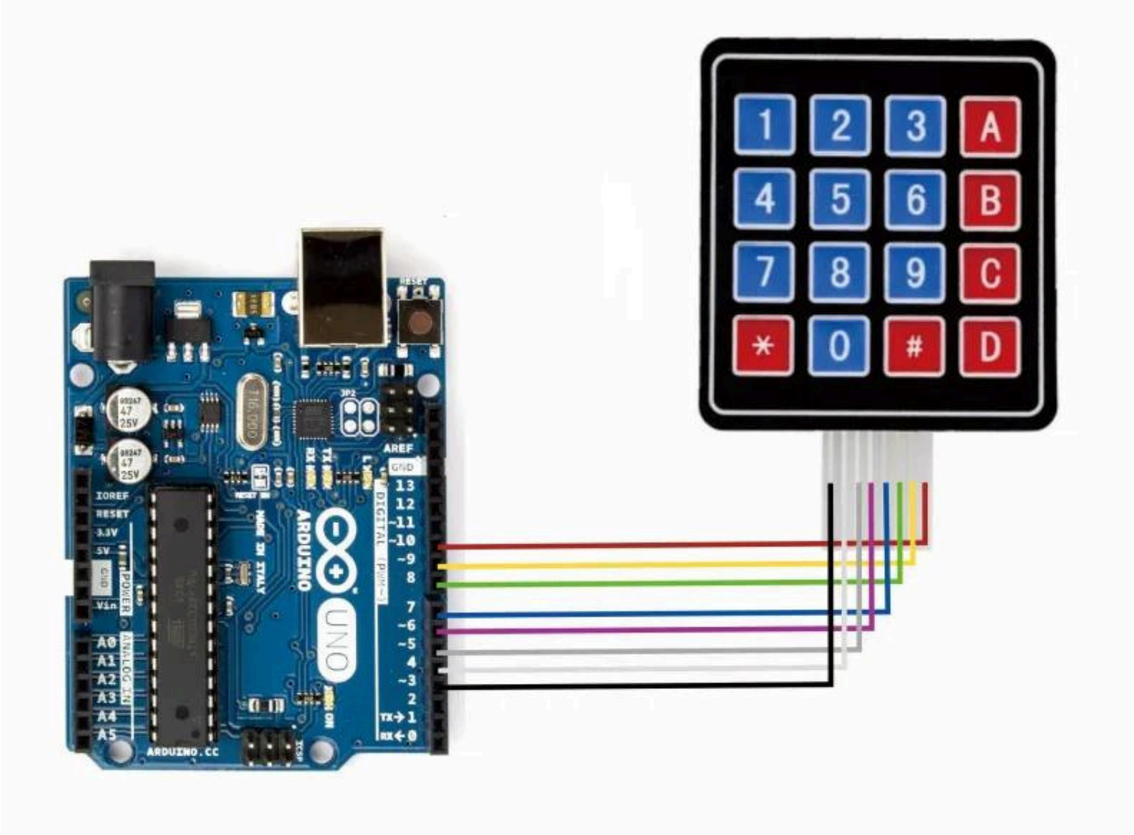
Circuit Diagram



Keypad

- Keypad is used to get user inputs

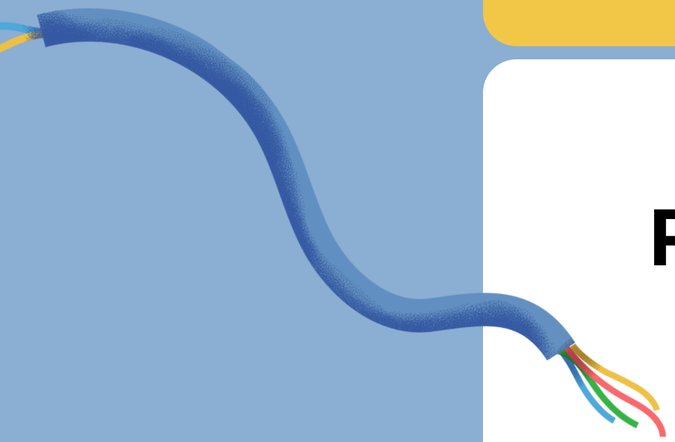
Circuit Diagram



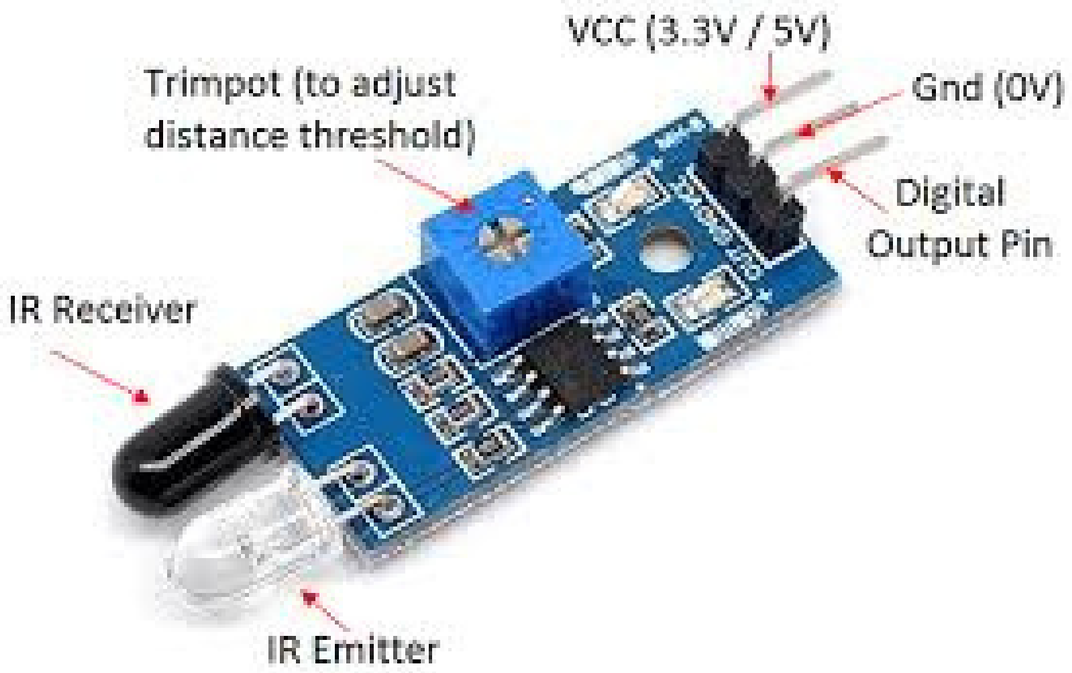
Member :
Lingaraj U. - 224116N

Responsibilities:

- Studying about IR sensors and programming it to Arduino Mega
- Power management of entire system
- Bug converter

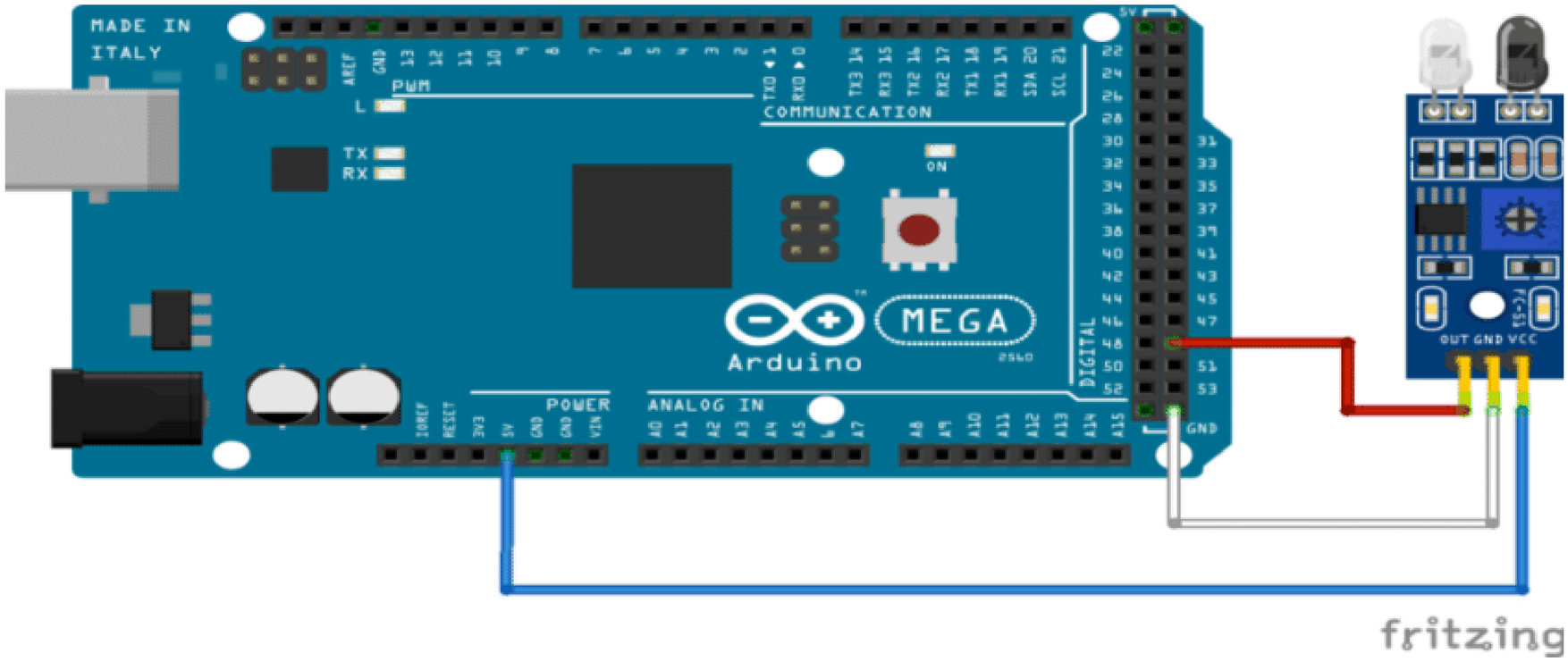


IR sensor



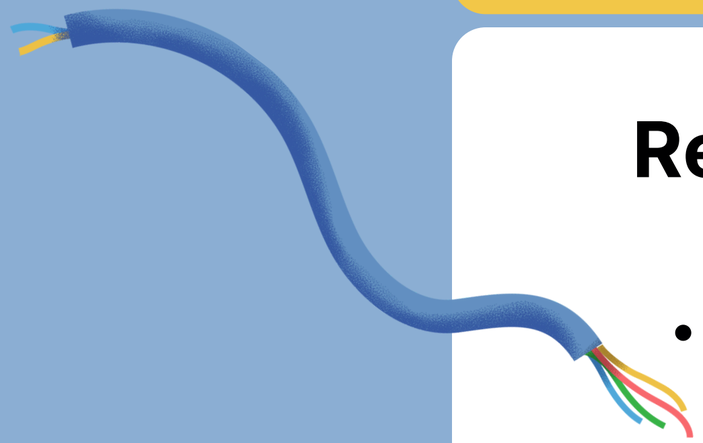
- Used to determine juice powder and sugar levels

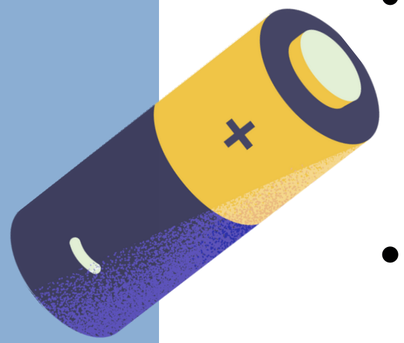
Circuit Diagram



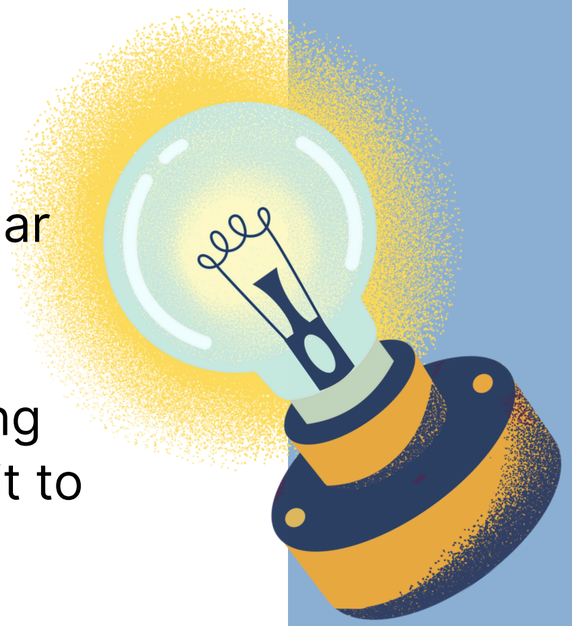
Member :
Vithushan K. - 224206P

Responsibility:

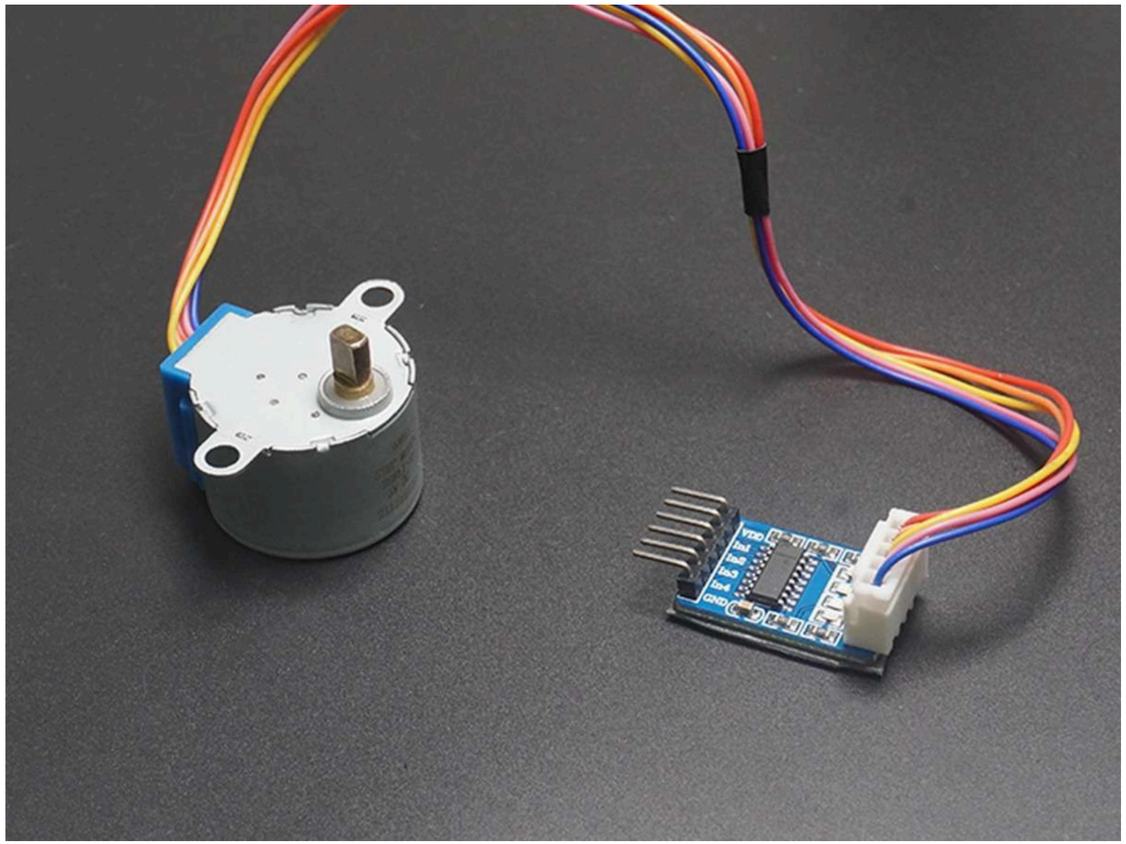




- Designing and building juice powder and sugar dispensing mechanism using Stepper motor
- Designing pumping mechanism using pumping motors with relay module and programming it to Arduino Mega
- Designing and building the structure of the machine

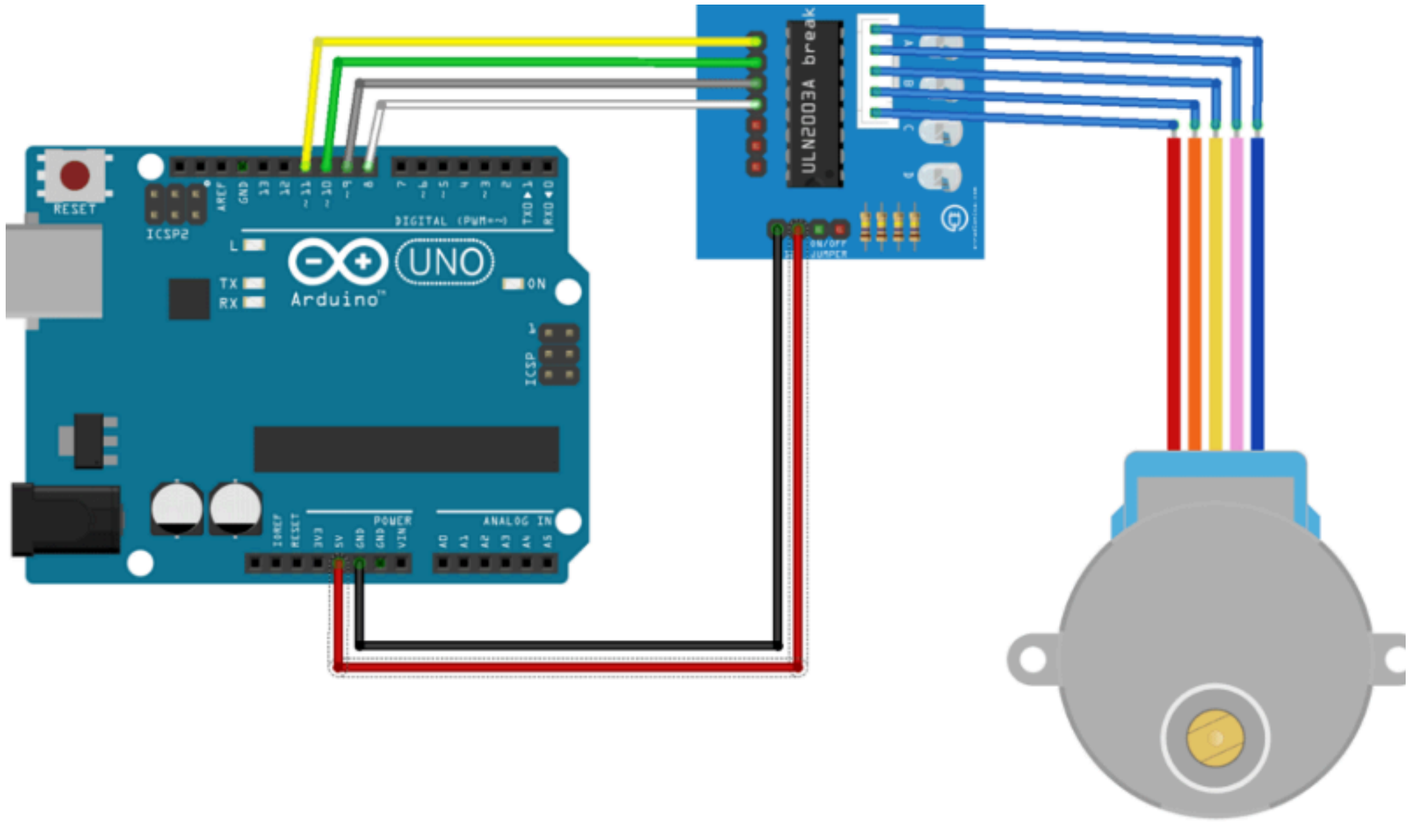


Stepper motor



- Used in dispenser mechanism
- UNL2003 motor driver used to control the stepper motor

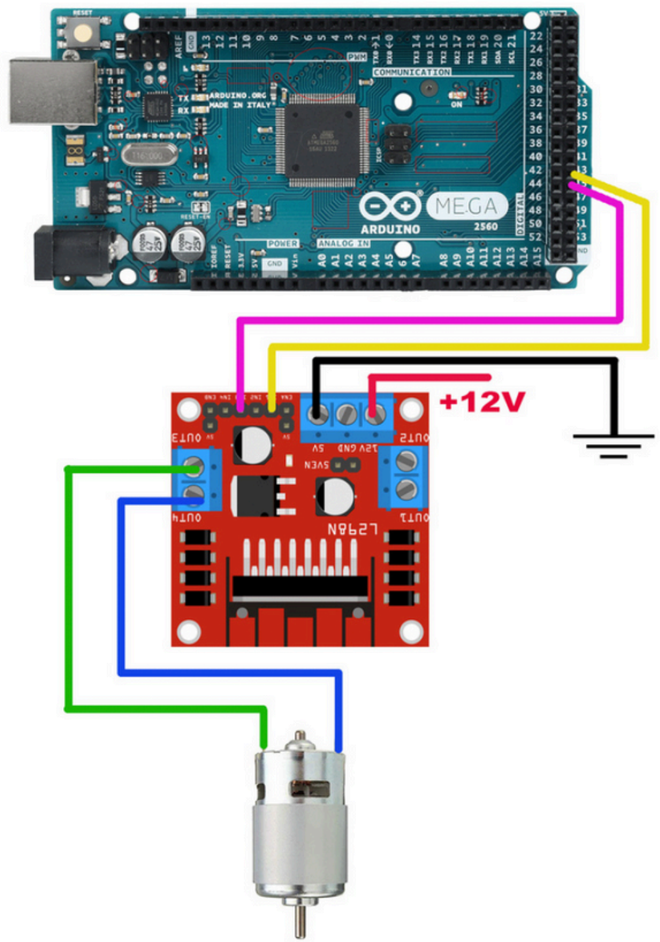
Circuit Diagram



Pumping motor

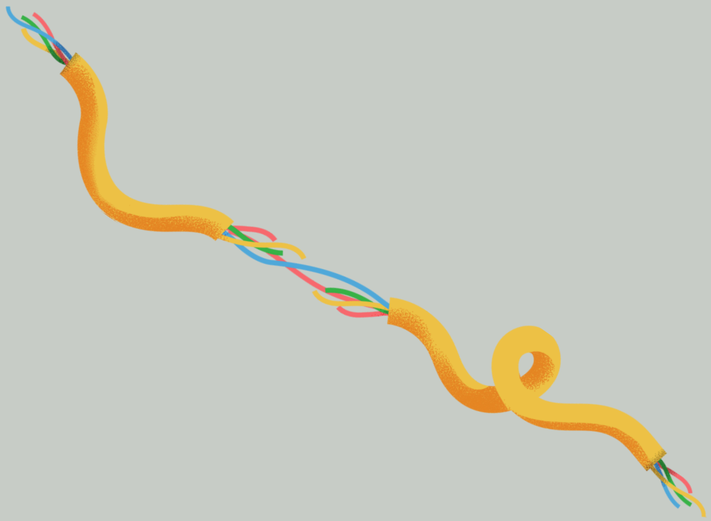
- Used to pump water
- L298N motor driver used to control the motor

Circuit Diagram



Total cost

Q & A ?



Thank you