

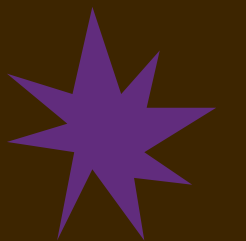


COFFEE MACHINE



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INTRODUCTION

The Coffee Machine project is an innovative hardware system designed to automate the process of preparing coffee in a hygienic and efficient way. It consists of four main stages, each responsible for a specific task in the process



CONSTRAINTS

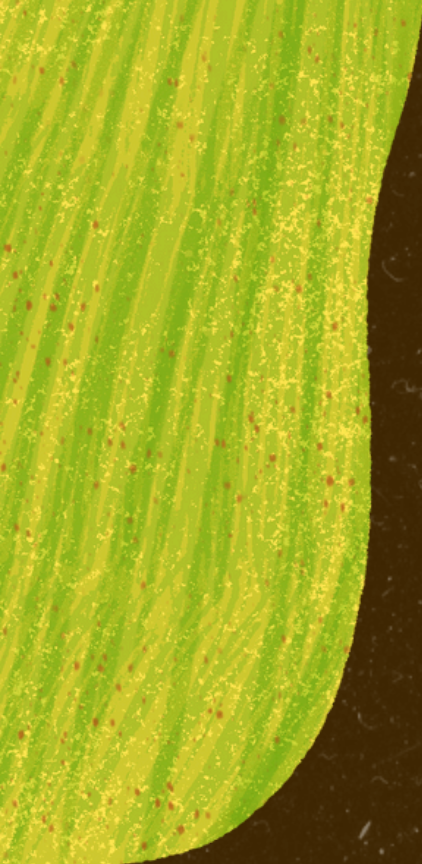
- Lack of time and difficulty in transportation to obtain certain parts.
- Difficulty in handling some electronic components .
- Finding an appropriate mechanism for all stages of the project with the simplest components.



FEATURES

- Four-Stage Automation
- Mobile App Control using bluetooth
- Hygienic & Efficient Design
- User-Friendly Interface





COFFEE FILTER



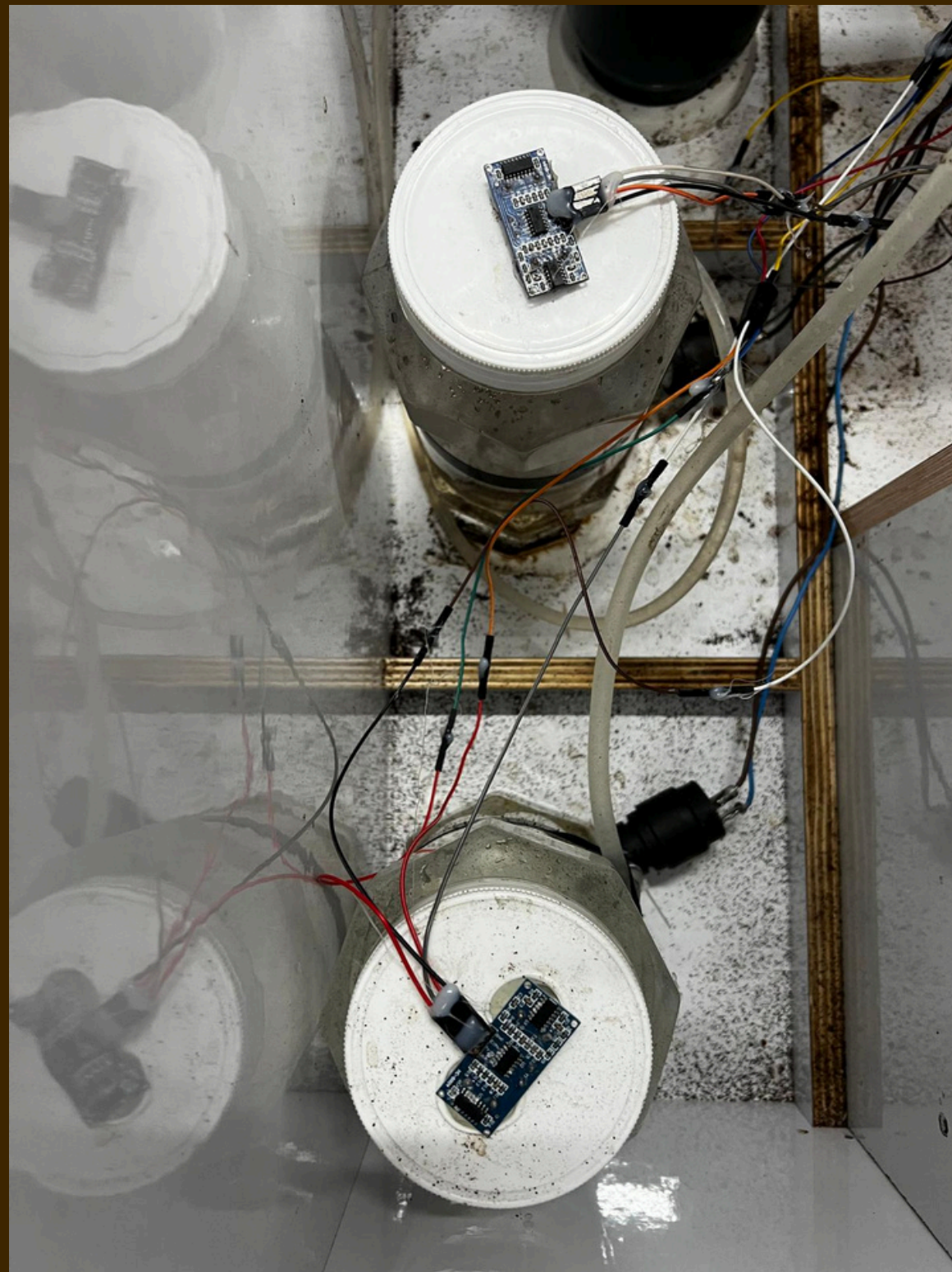
COFFEE DISPENSER



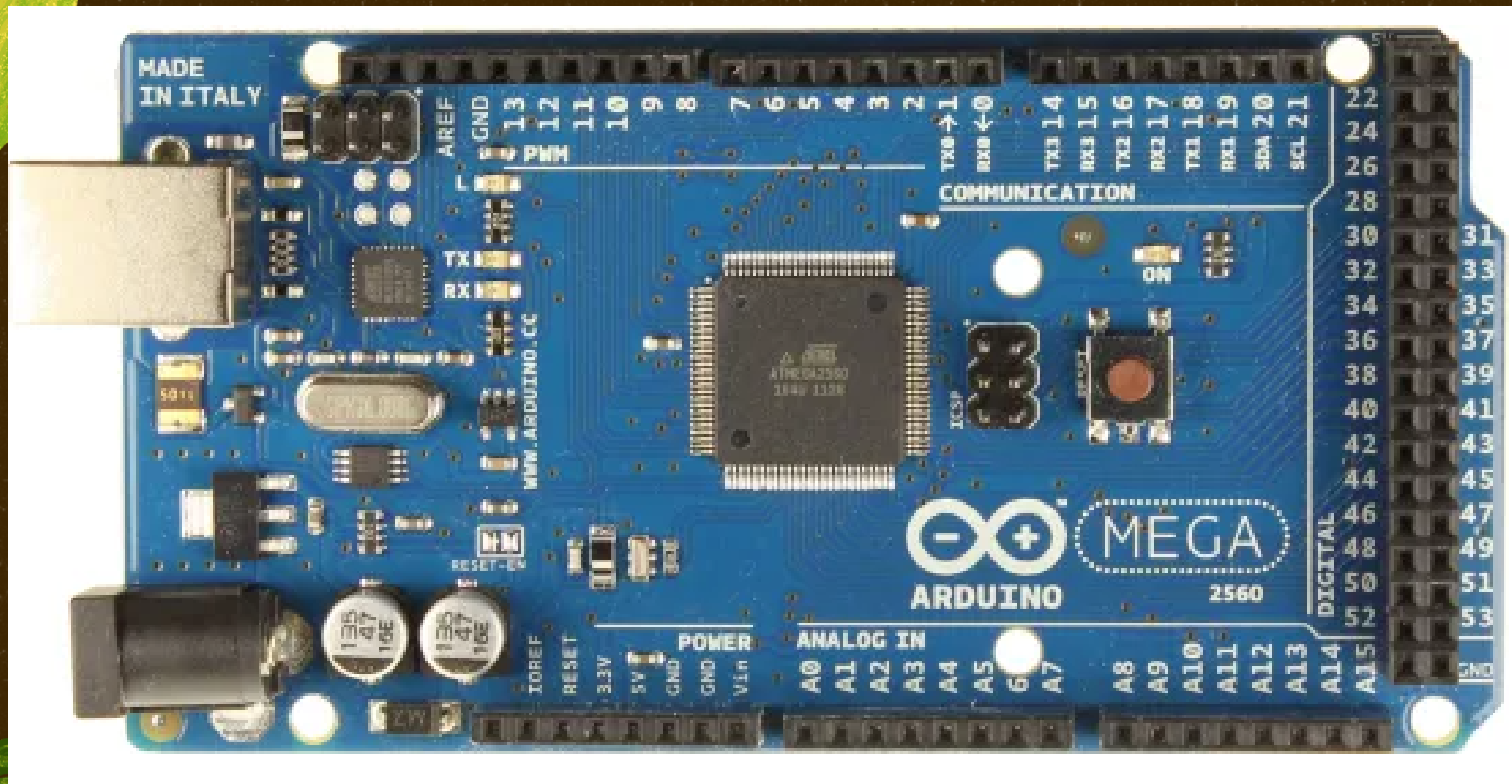
WASHING AREA



WATER TANKS

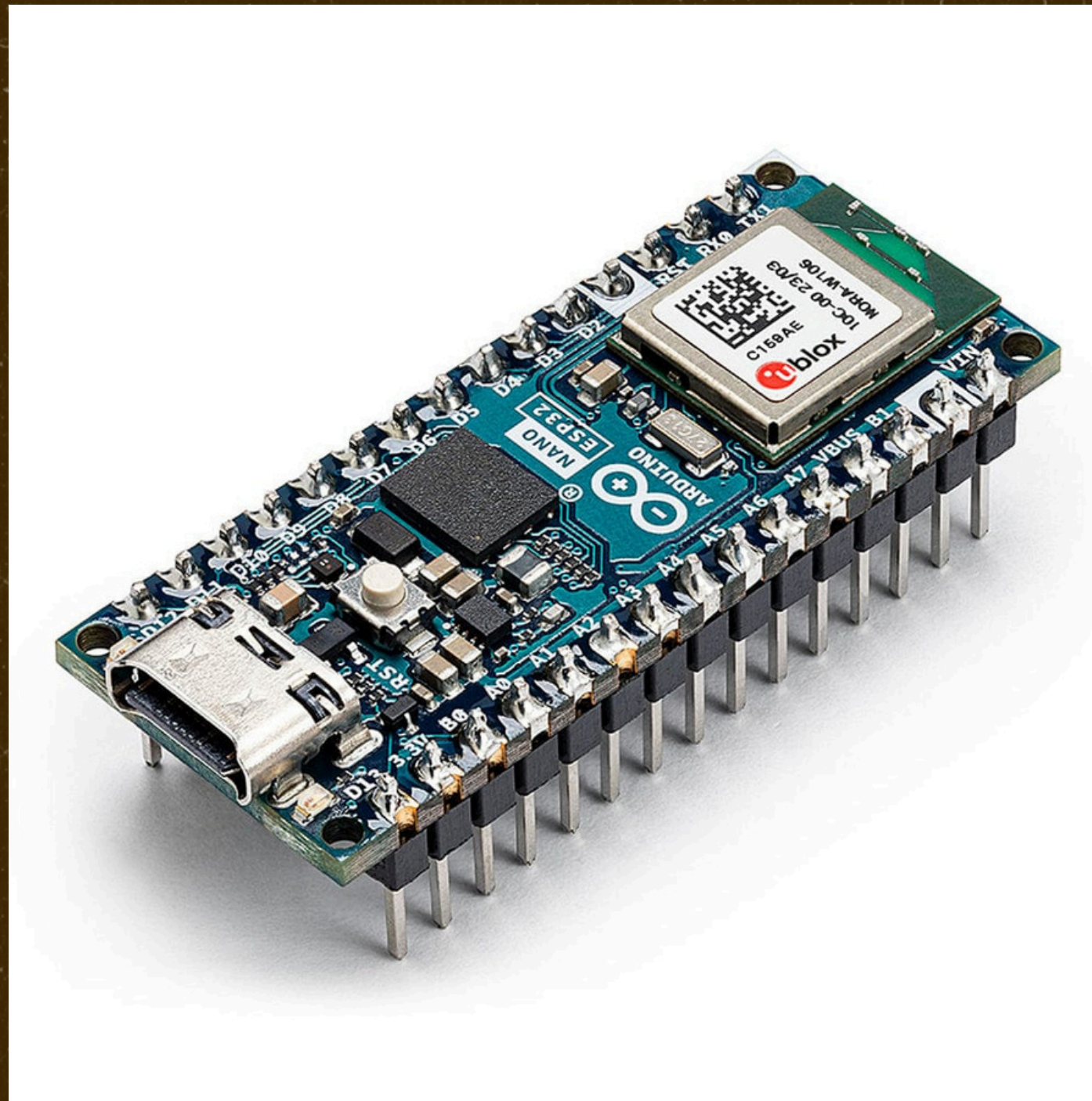


HARDWARE PART



Arduino Mega 2560
Control: Centralized
control using an Arduino
Mega 2560 ensures
coordination of all motors,
sensors, and pumps,
allowing for efficient
operation and easy
programmability.

HARDWARE PART



ESP32 Control: The ESP32 microcontroller provides advanced connectivity and processing capabilities, enabling seamless integration with mobile applications for real-time event handling and remote control. Additionally, the ESP32 manages LCD display operations, ensuring dynamic user feedback and smooth

HARDWARE PART



Power Suppliers:
Power Supply
provide 12 volt &
5 volt for all
project
components

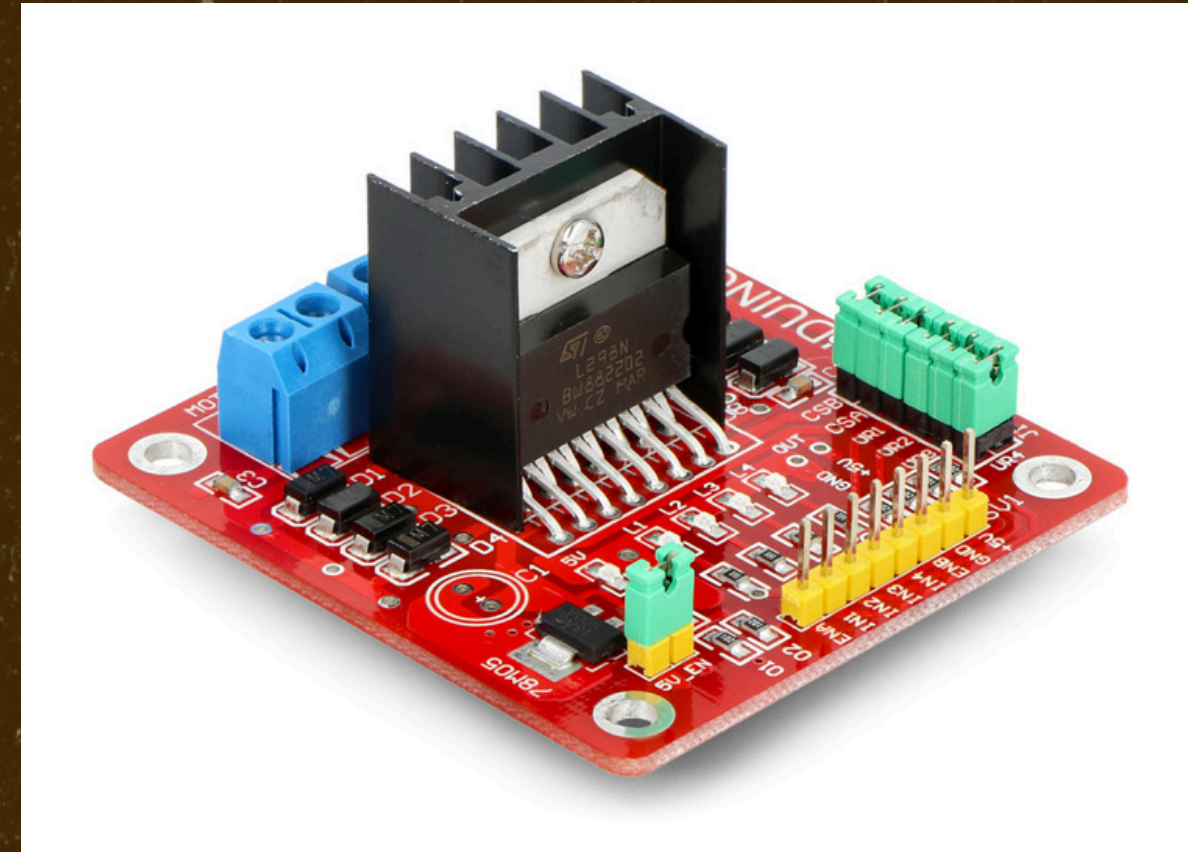
HARDWARE PART



Water Heater
220 V: for
heating the
water

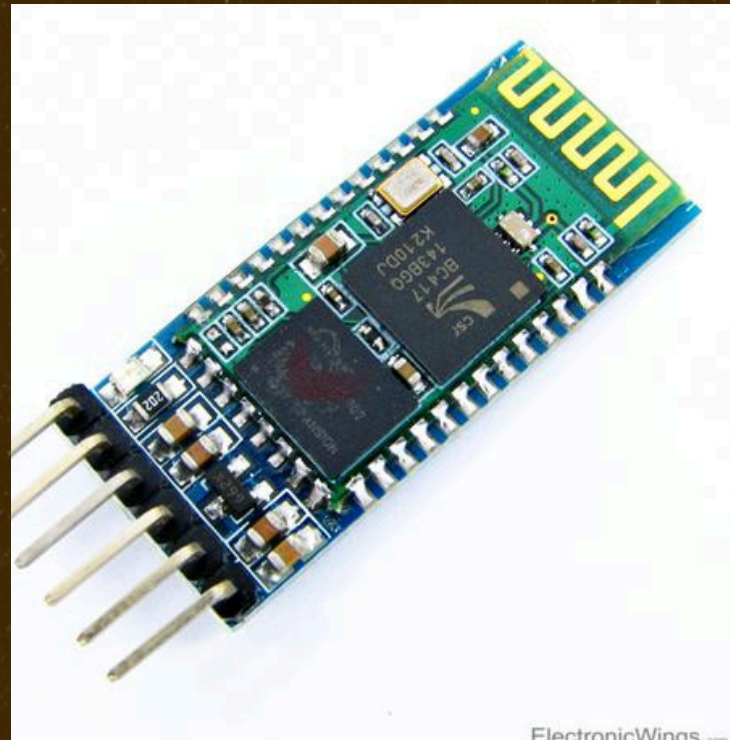


channel relay:for
controlling heater
and water pumps

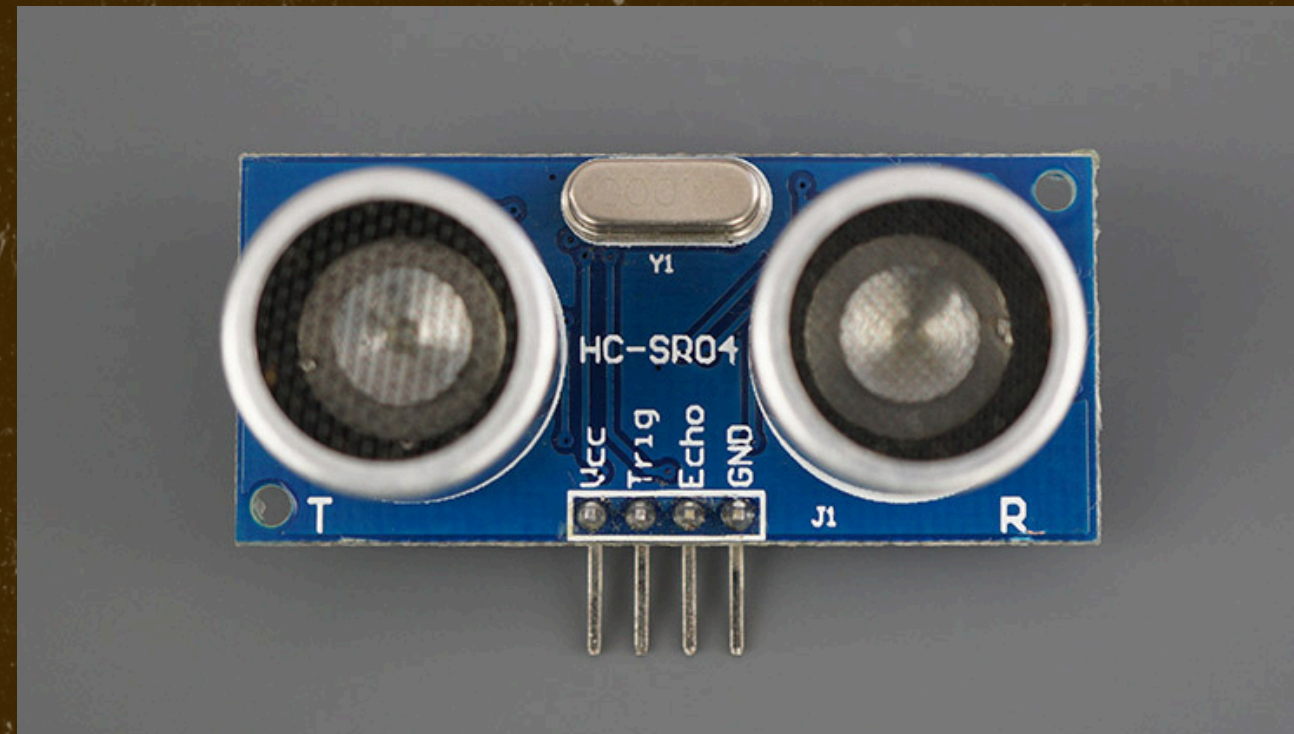


LN298N:for controlling
stepper motors

HARDWARE PART



HC-
05:bluetooth
module



Ultrasonic sensor



HARDWARE PART



stepper motor

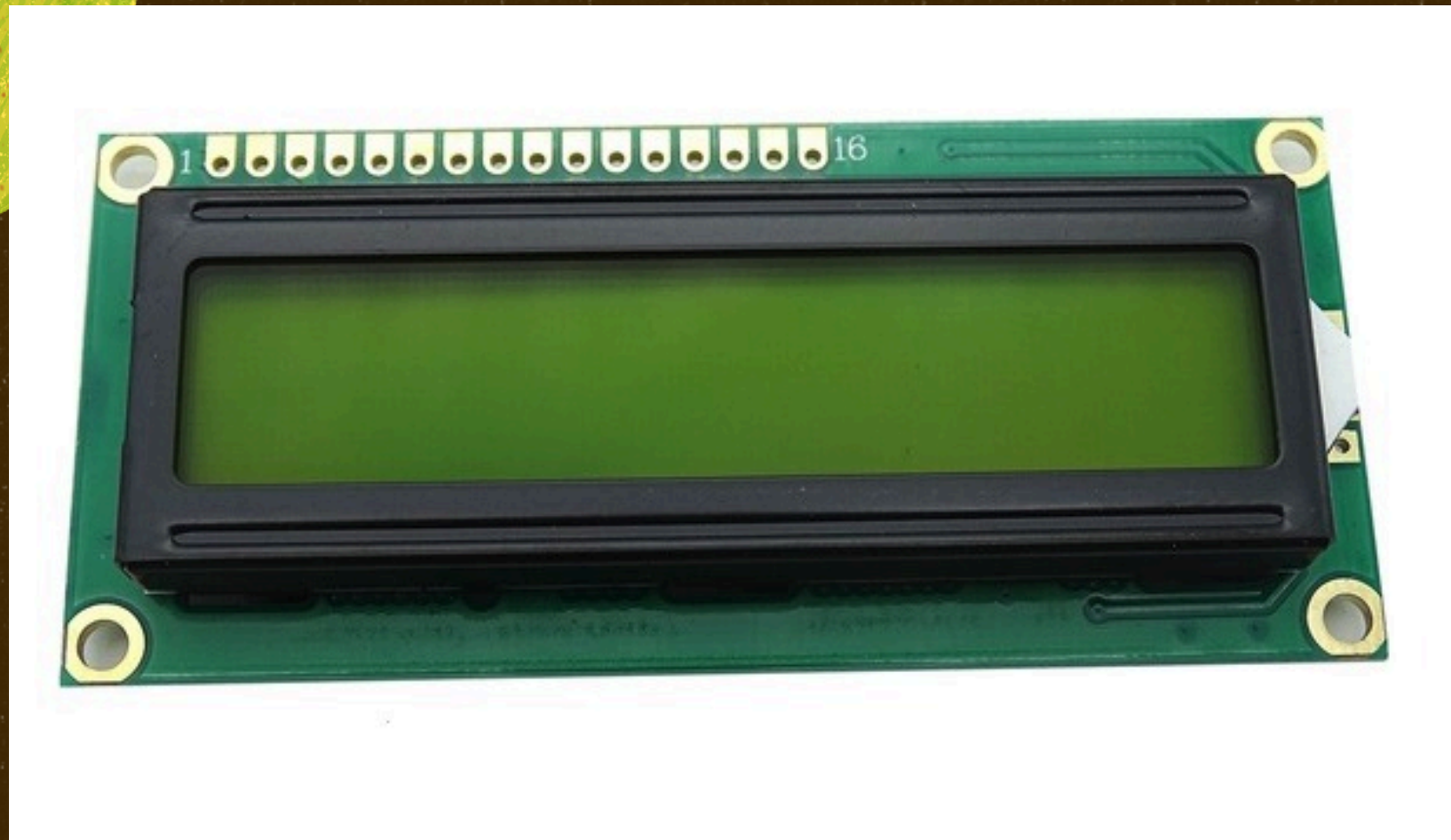


Water Pump



Servo Motor

HARDWARE PART

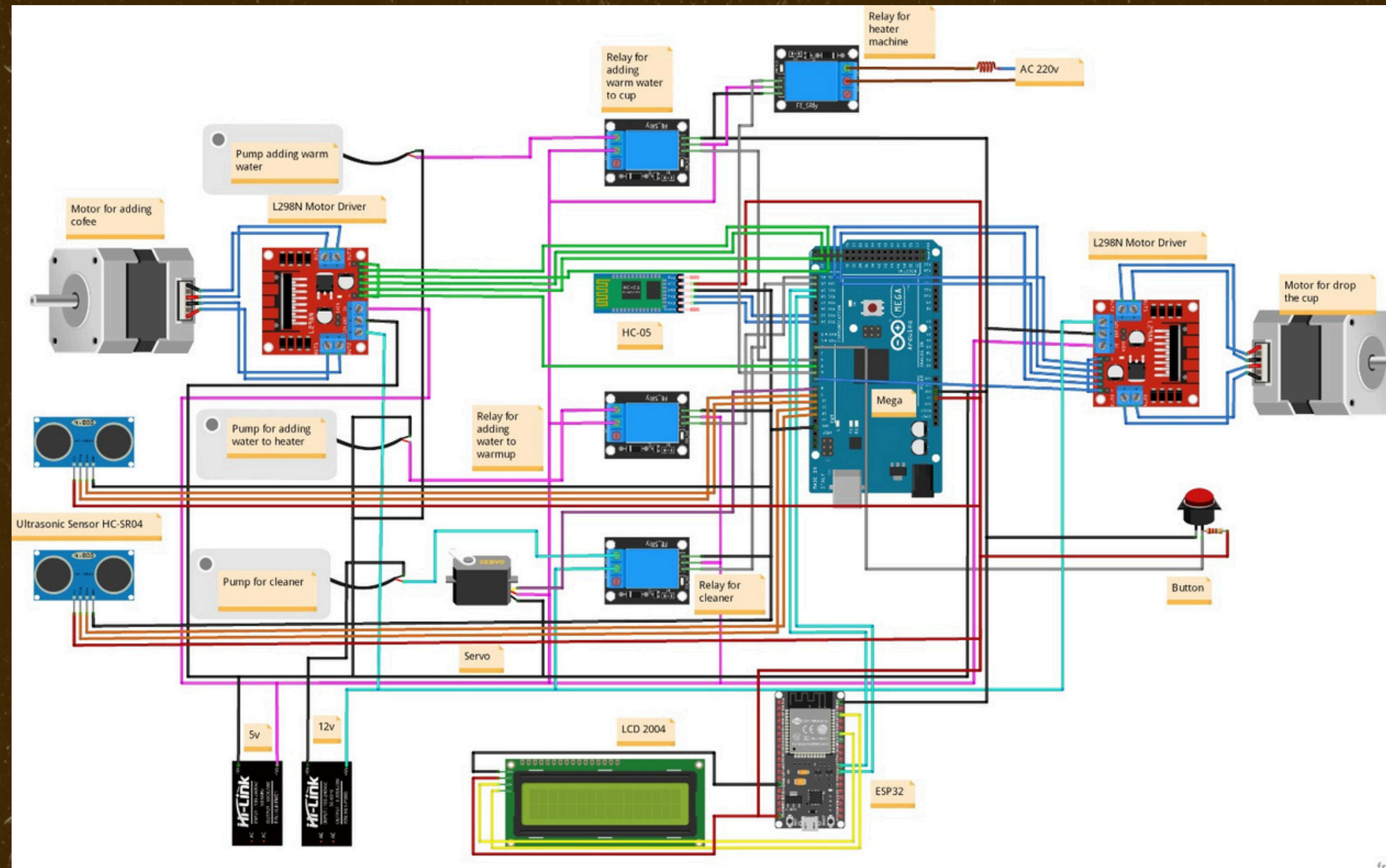


16x4 LCD



Push Button

SCHEMATIC FOR PROJECT ELECTRONICS

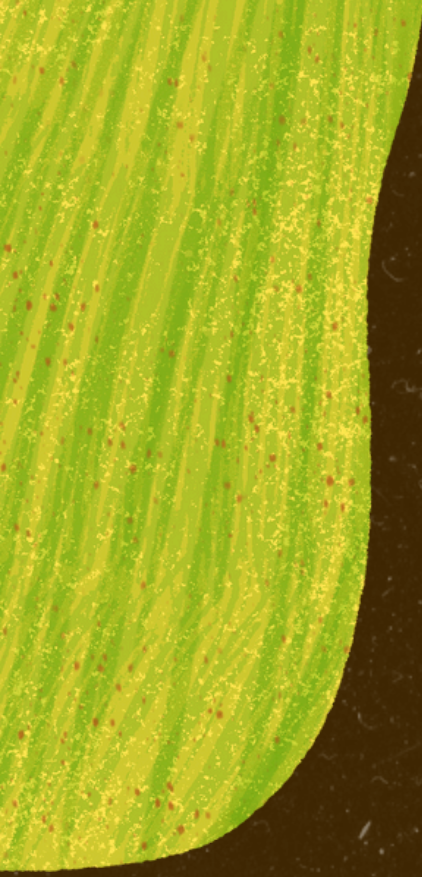


FUTURE WORK

- Add multiple cup sizes and an intelligent cup-size detection system.
- Integrate a smart sugar dispensing module.
- Enable mobile application control through wireless connectivity.



Any Questions?





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**THANK
YOU**

