



**MA2012**

# **Rest n Ride**

**Box 12 and 14**



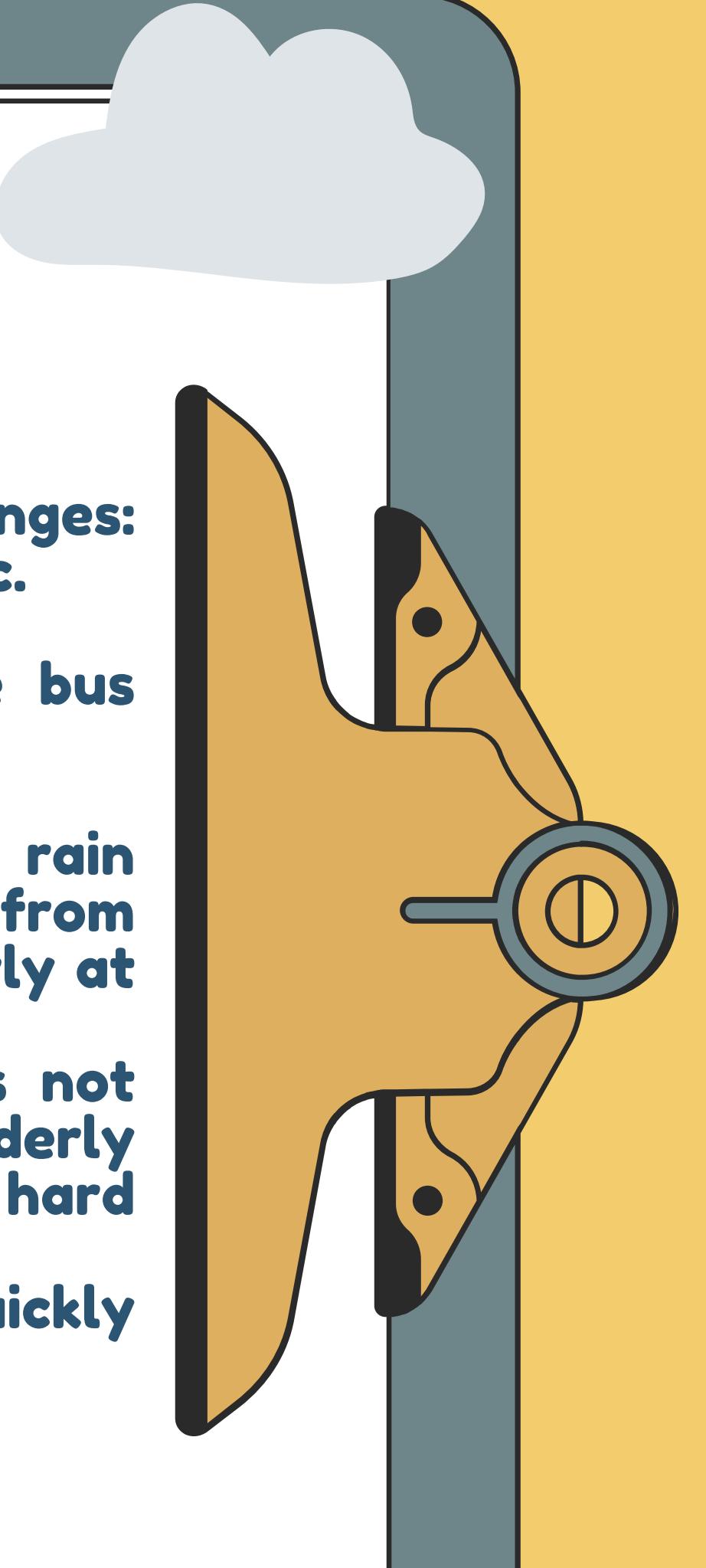
# BACKGROUND

- Increasing aging population.
- The elderly often face mobility challenges: reduced physical strength, health risks, etc.

**Even with these issue, public facilities like bus stops are not designed with elderly needs:**

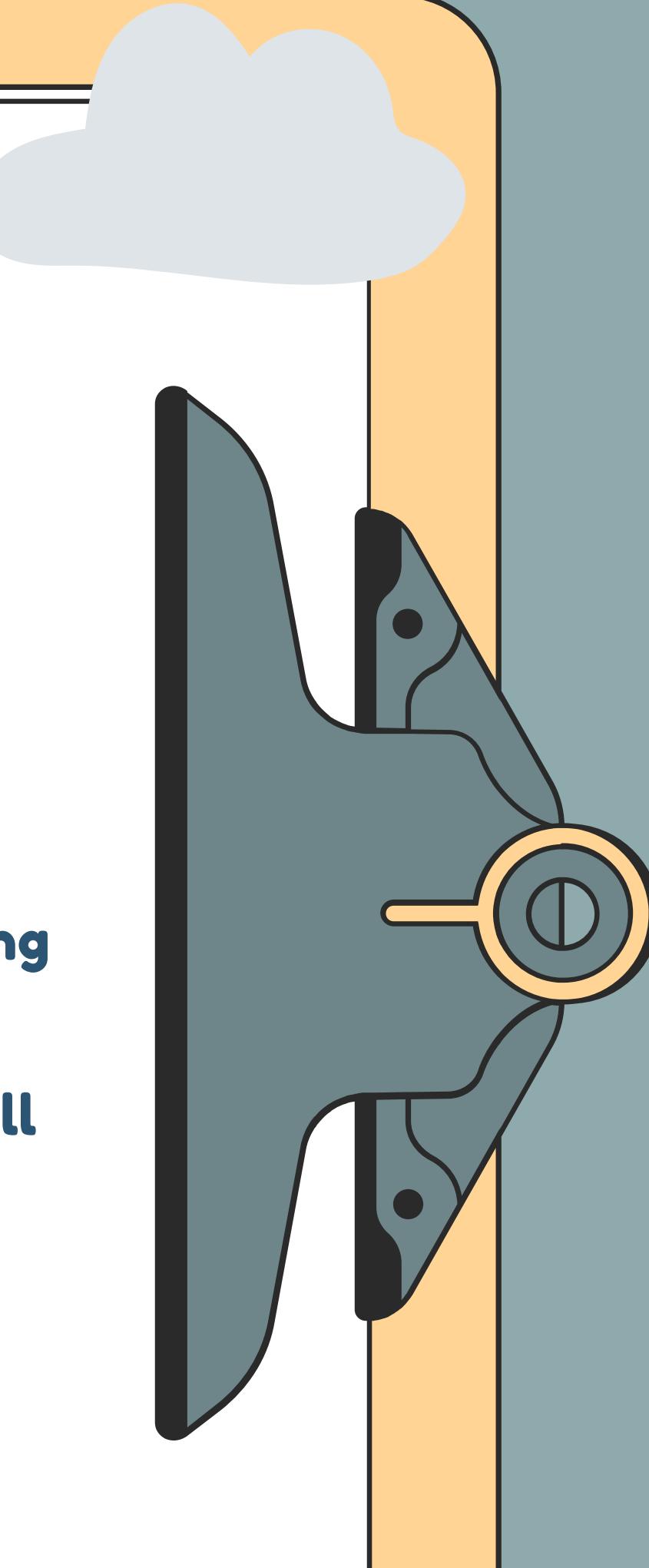


- Bus stops are lacking of protection from rain and harsh weather: making the transition from bus stop to bus quite dangerous for elderly at a risk of slipping and falling.
- Traditional seating in bus shelters does not address the physical limitations of elderly passengers, where most elderly having hard time standing up from sitting position.
- Elderly struggle to flag down buses quickly enough.



# PROBLEM STATEMENT

**How can we create a bus stop facility that ensures the safety, comfort, and accessibility of elderly individuals, particularly during harsh weather, while also assisting them with standing up from their seats and providing an easy way to input bus numbers to call for specific buses?**



# FEATURES OF THE SMART BUS STOP



Automated Flag



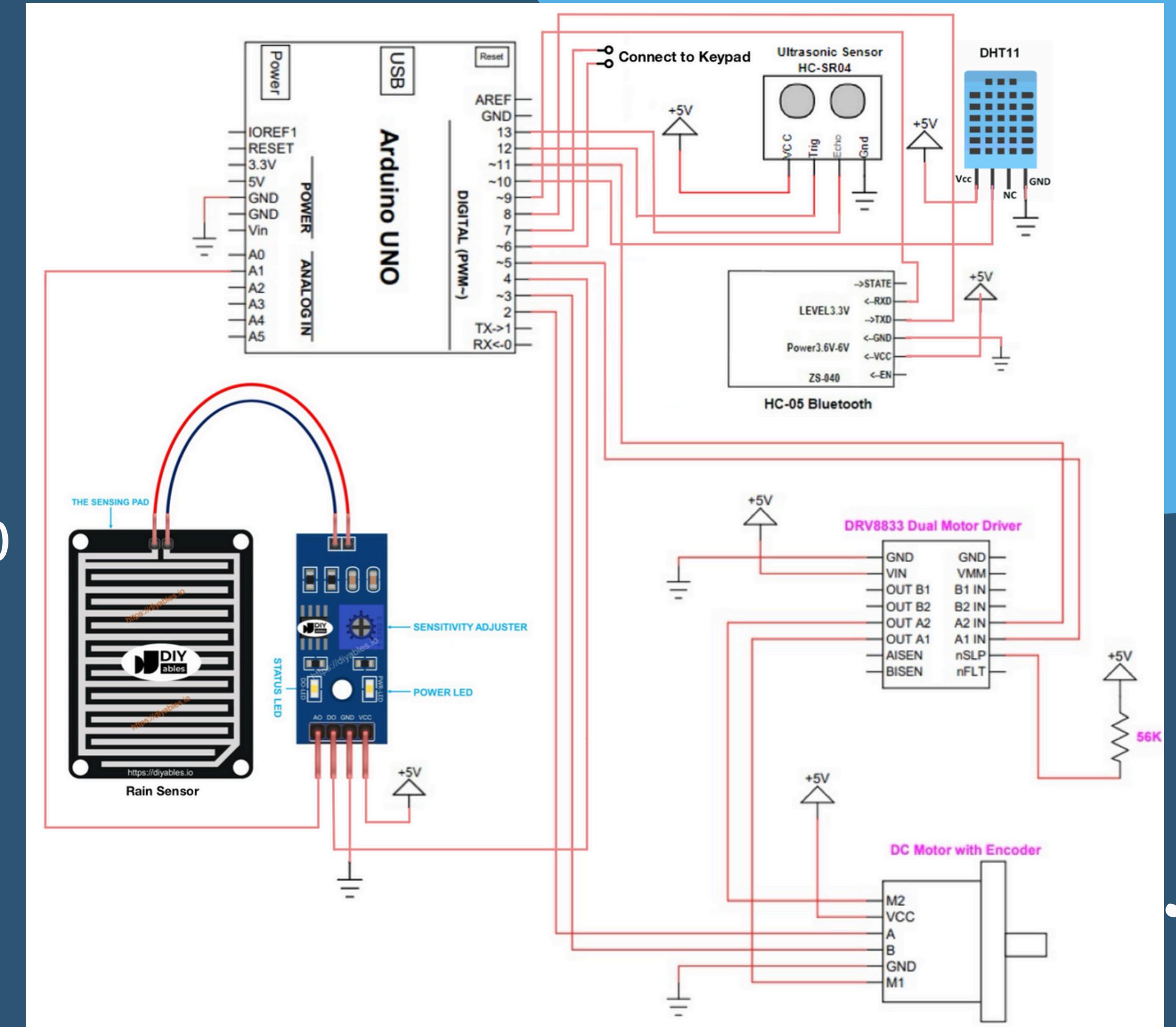
Shelter



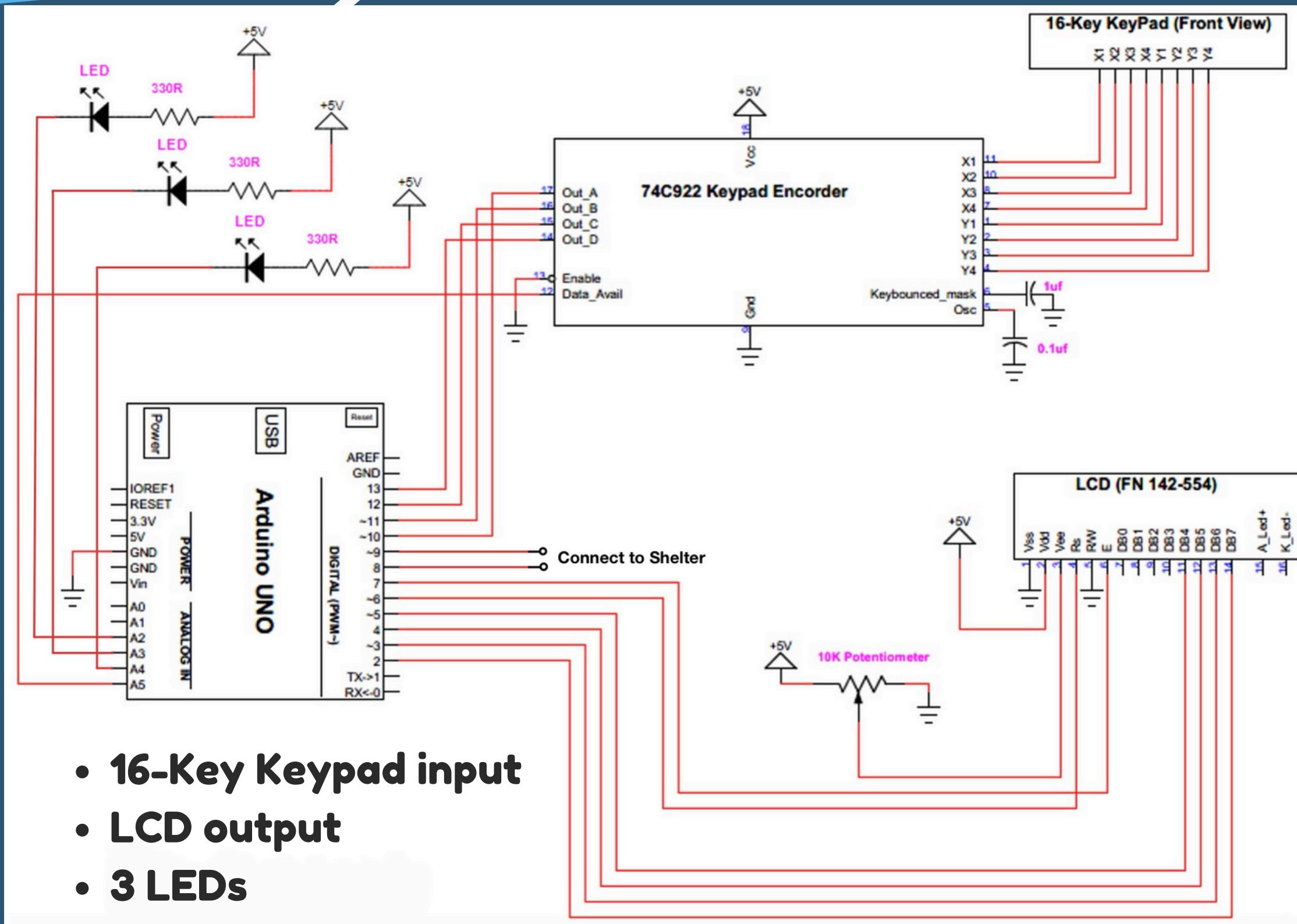
Sit-stand Helper

# Shelter

- Rain detection (DHT11-Humidity Sensor & Raindrop Sensor)
- Proximity detection (Ultrasonic Sensor)
- Bluetooth connection with bus
- DC motor with encoder

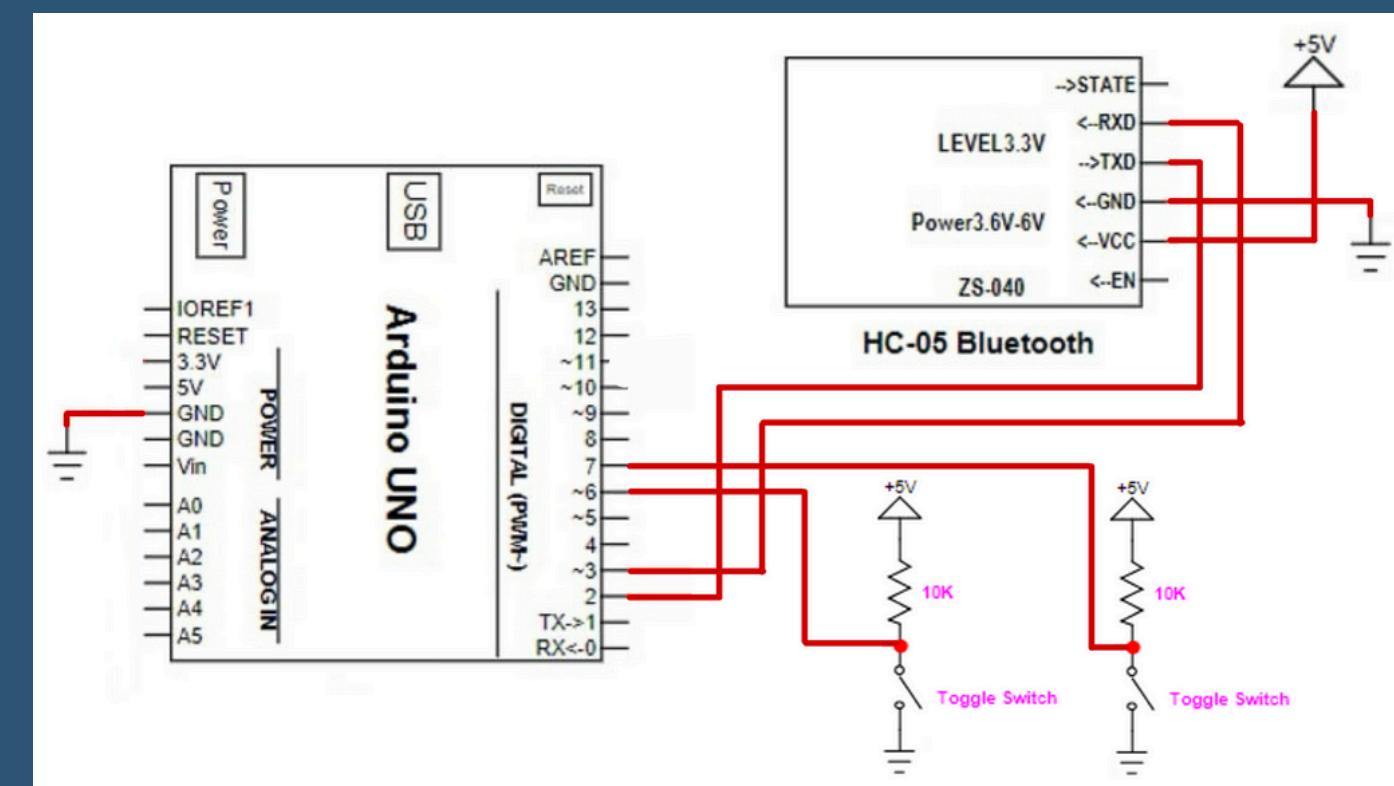


# The Automated Flag

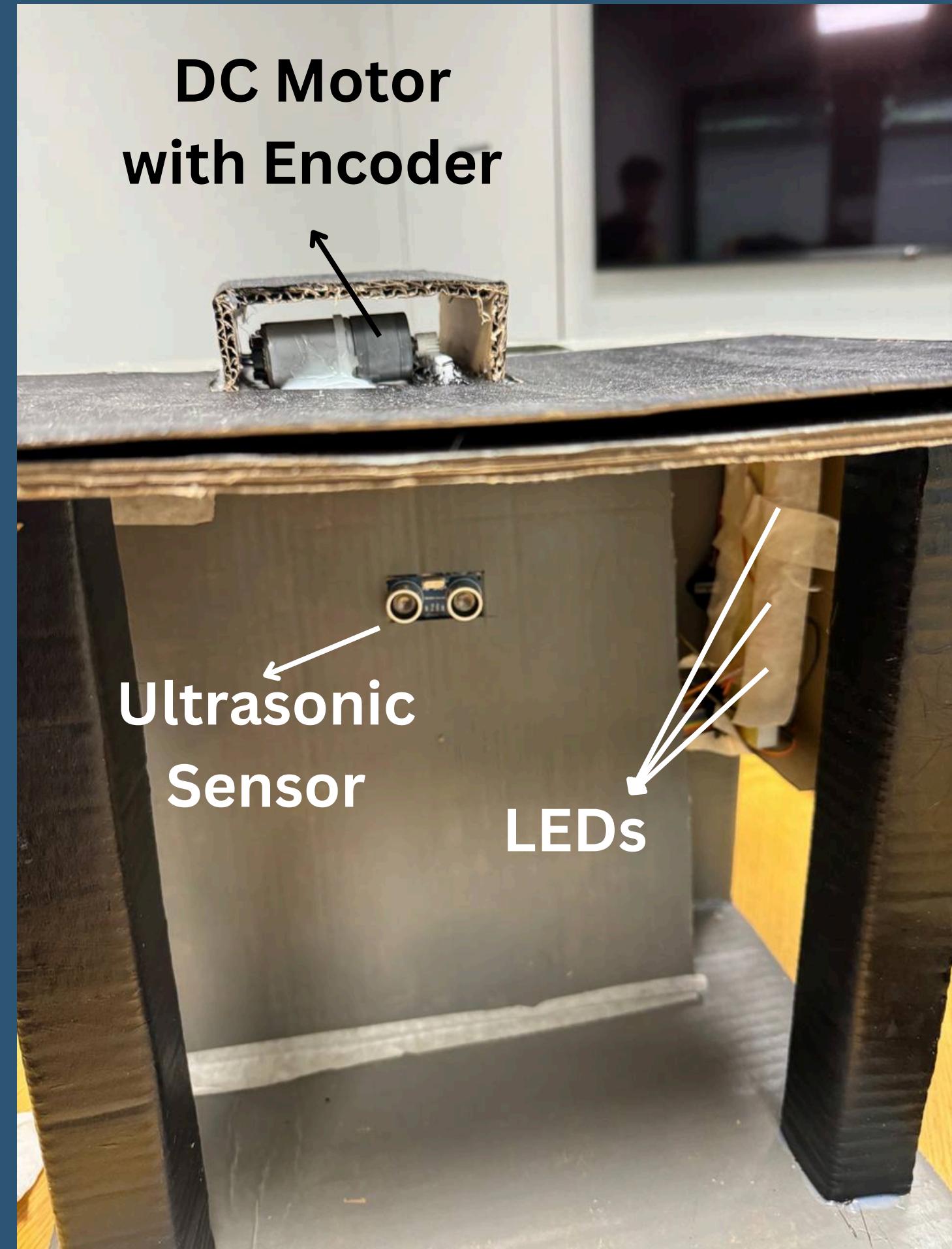
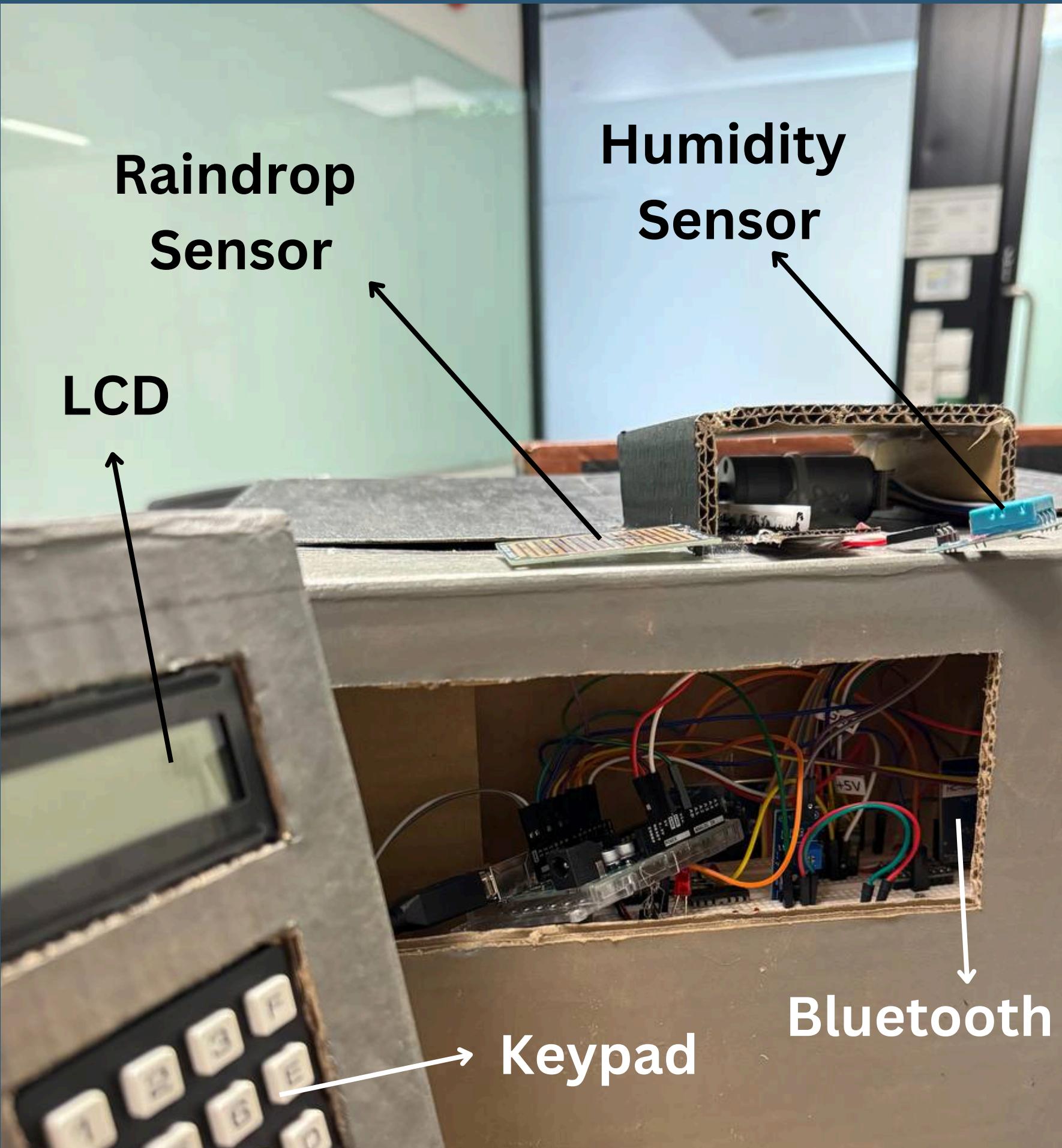


- 16-Key Keypad input
- LCD output
- 3 LEDs

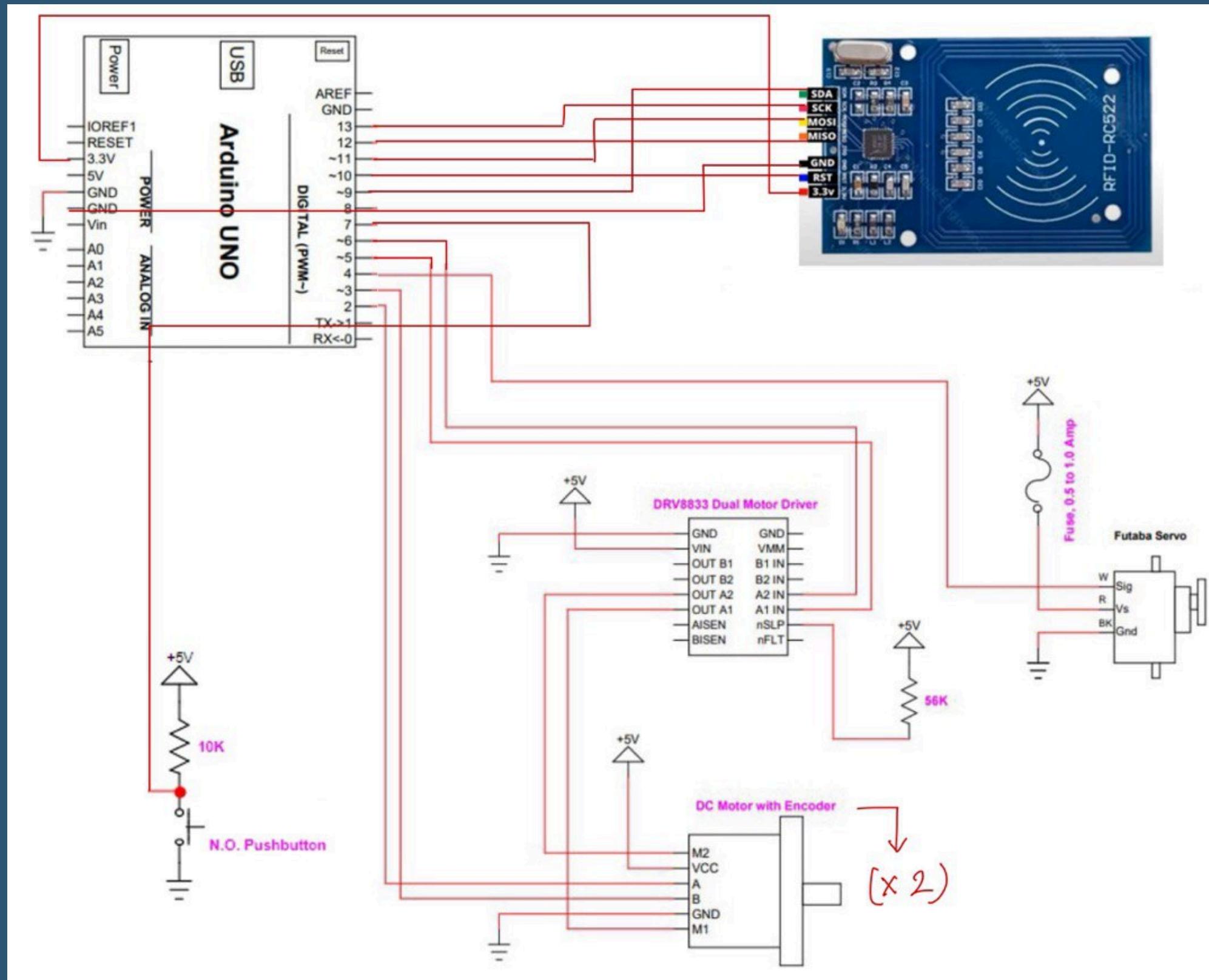
- Bluetooth connection with shelter



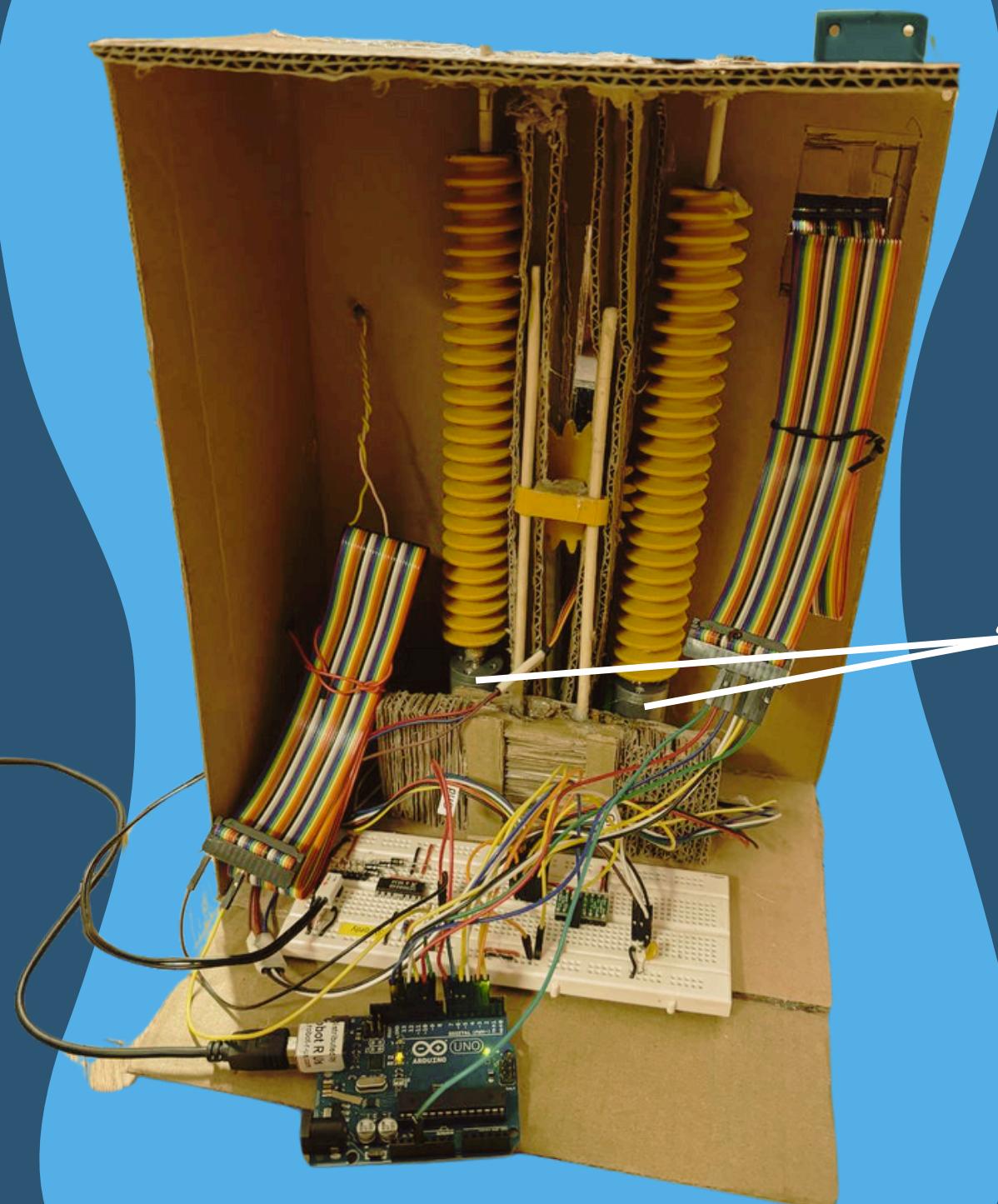
Bus



# Sit-Stand Helper



- **RFID Card Reader**
- **2 DC Encoder**
- **Servo**
- **Push Button**



RFID

DC Encoder



Push  
Button

Servo



# THANK YOU

- 
- Agustinus Ivan Effendi
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