Ian and Josie Portable Button Controlled Servo

Goal

To create a portable Arduino and servo.

Materials

- ➢ Software
  - Solidworks
  - Fritzing
  - Arduino Software
- ➢ Actual Solid Materials
  - 9V Battery Mounts
  - 9V Battery
  - Arduino Uno
  - Prototyping Shield
  - 10k Resistors
  - Panel Mount Pushbutton Switches
  - Continuous Servo
  - Laser-Cut Acrylic
  - Wires (we used custom wire lengths)
  - #4-40 x ⅝” Socket Head Cap Screws
  - #4-40 Machine Screw Nuts
  - ¼” x ½” Male-Female Aluminum Standoffs
  - #1-72 x ⅜” Socket Head Cap Screws
  - #1-72 Machine Screw Nuts

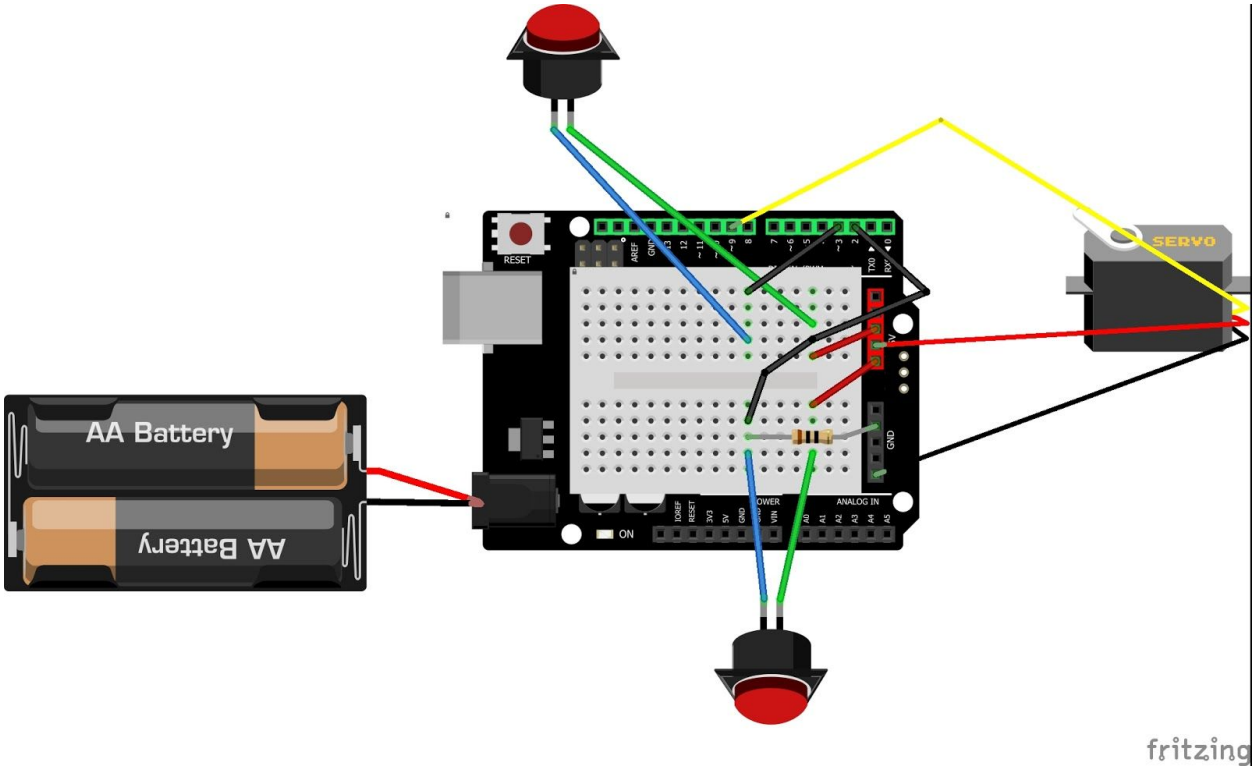
Schedule and Jobs

Ian: Solidworks, Fritzing
Josie: Wiring, Coding

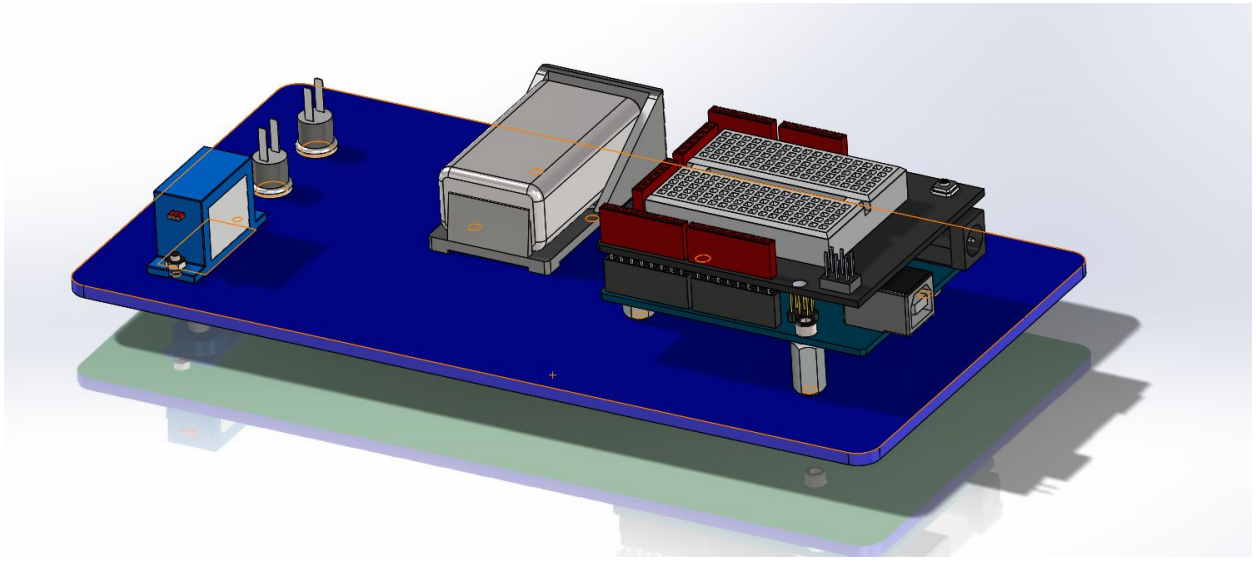
By end of week one finish planning, assemble materials, and begin solidworks and arduino code.
By end of week two have everything ready for assembly.

By end of week three finish assembly and full project

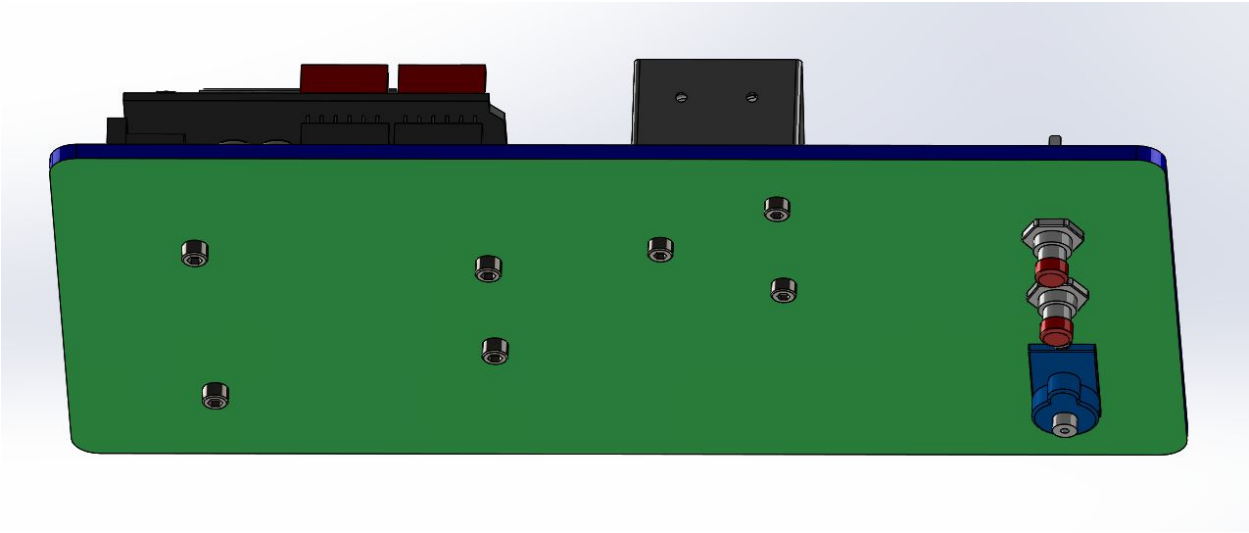
Diagrams



Wiring^



Top of the SolidWorks Assembly



Bottom of the SolidWorks Assembly

Code

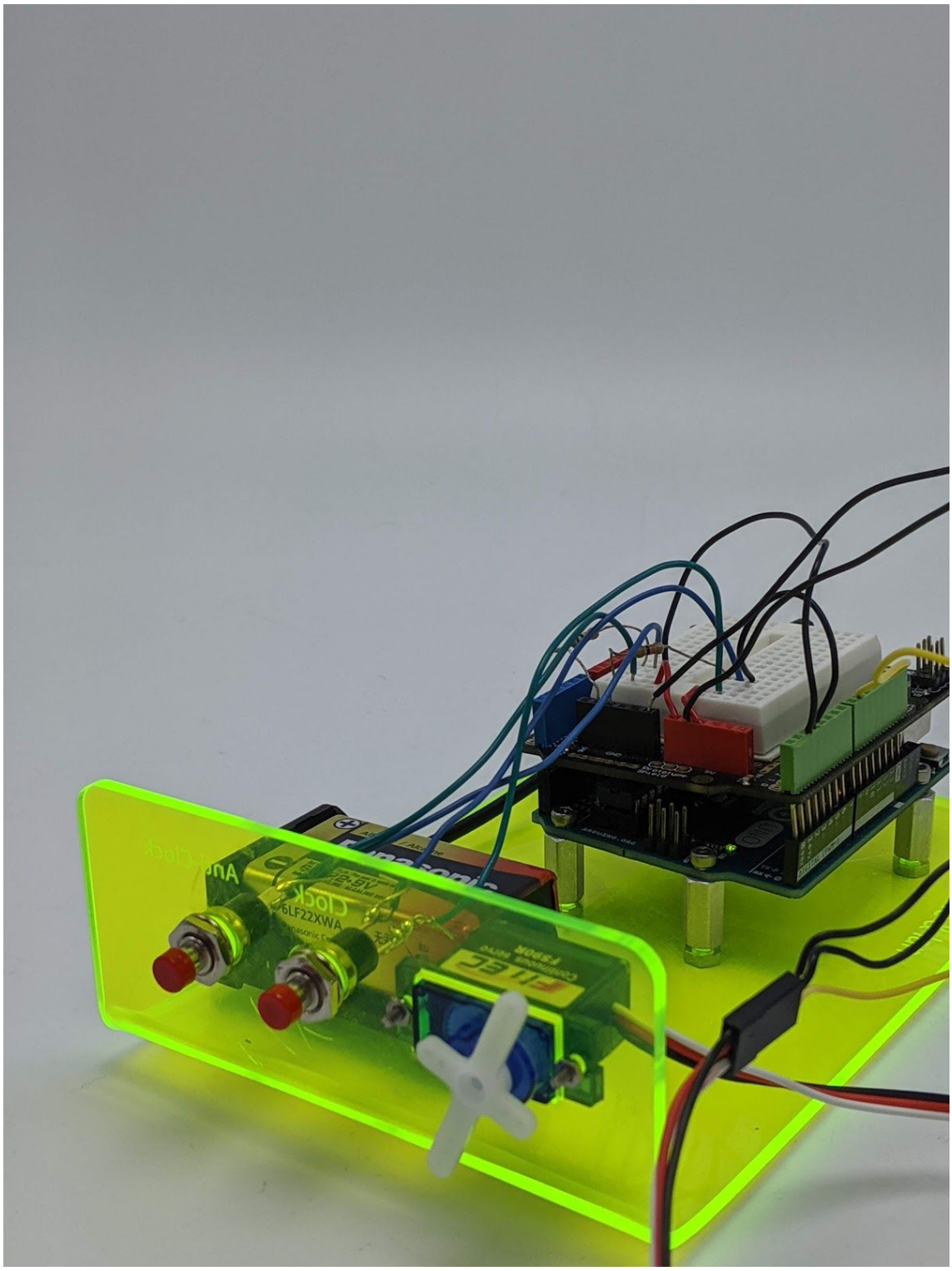
Portable_Servo | Arduino 1.8.9

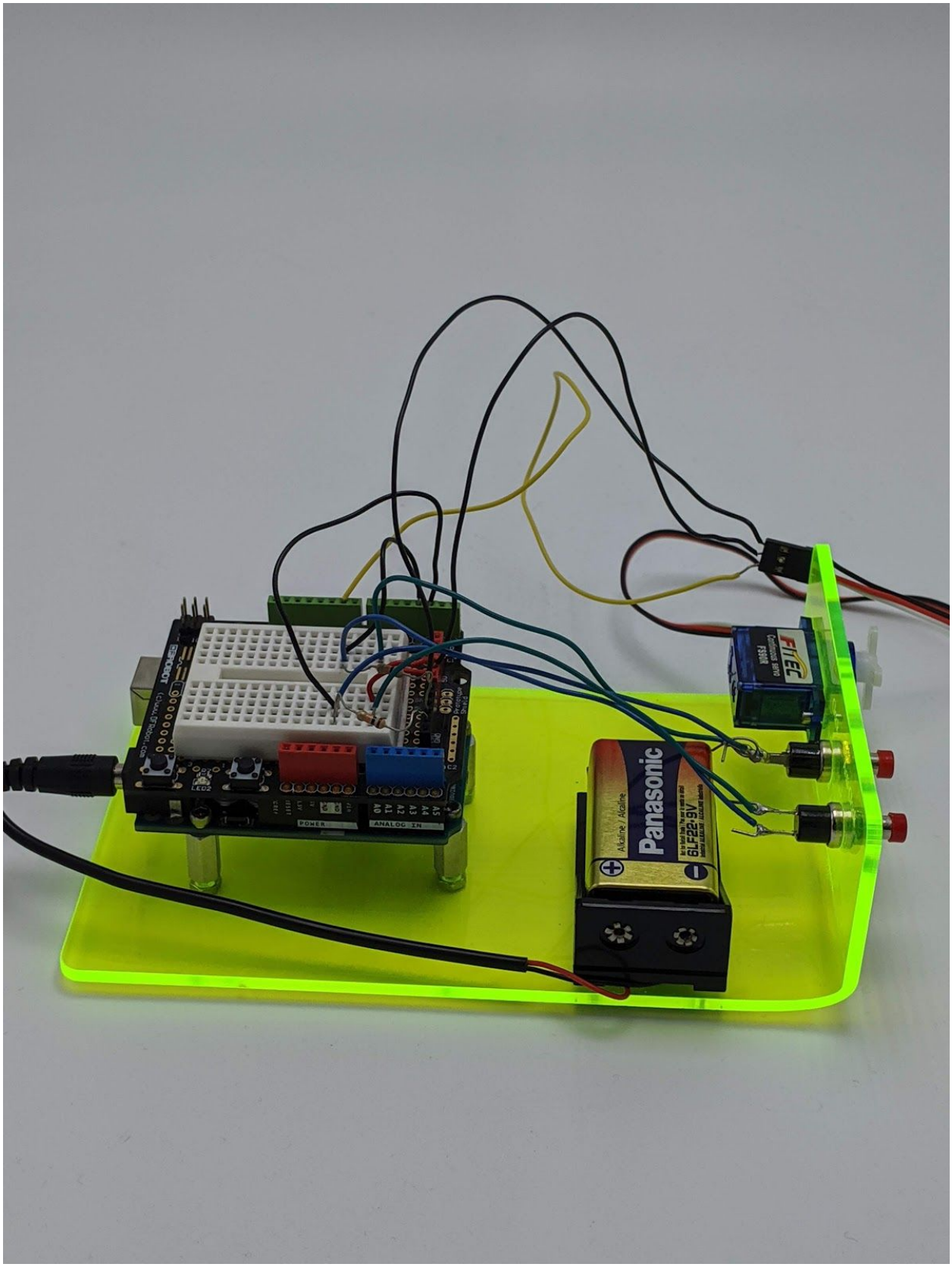
File Edit Sketch Tools Help

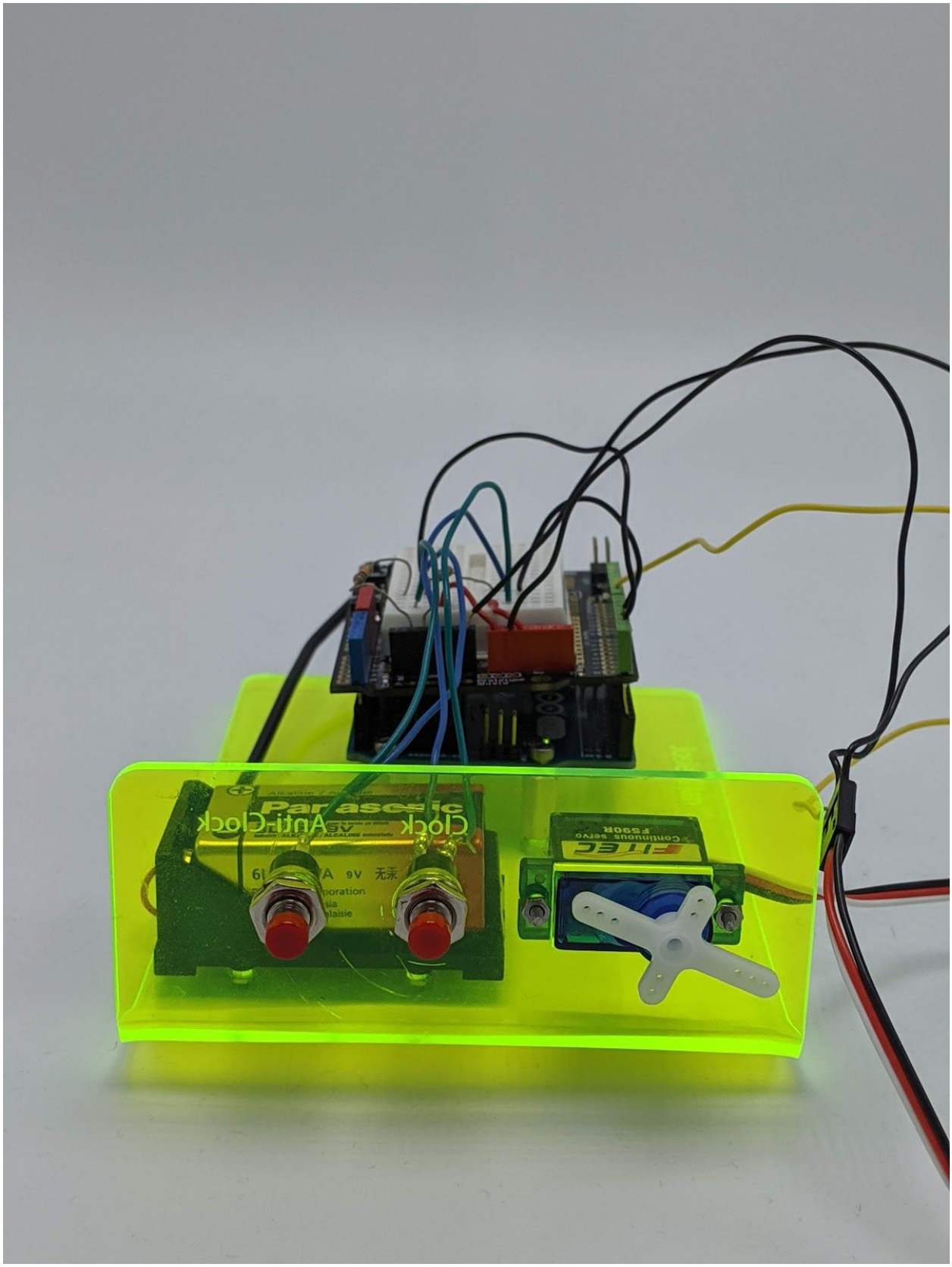
Portable_Servo

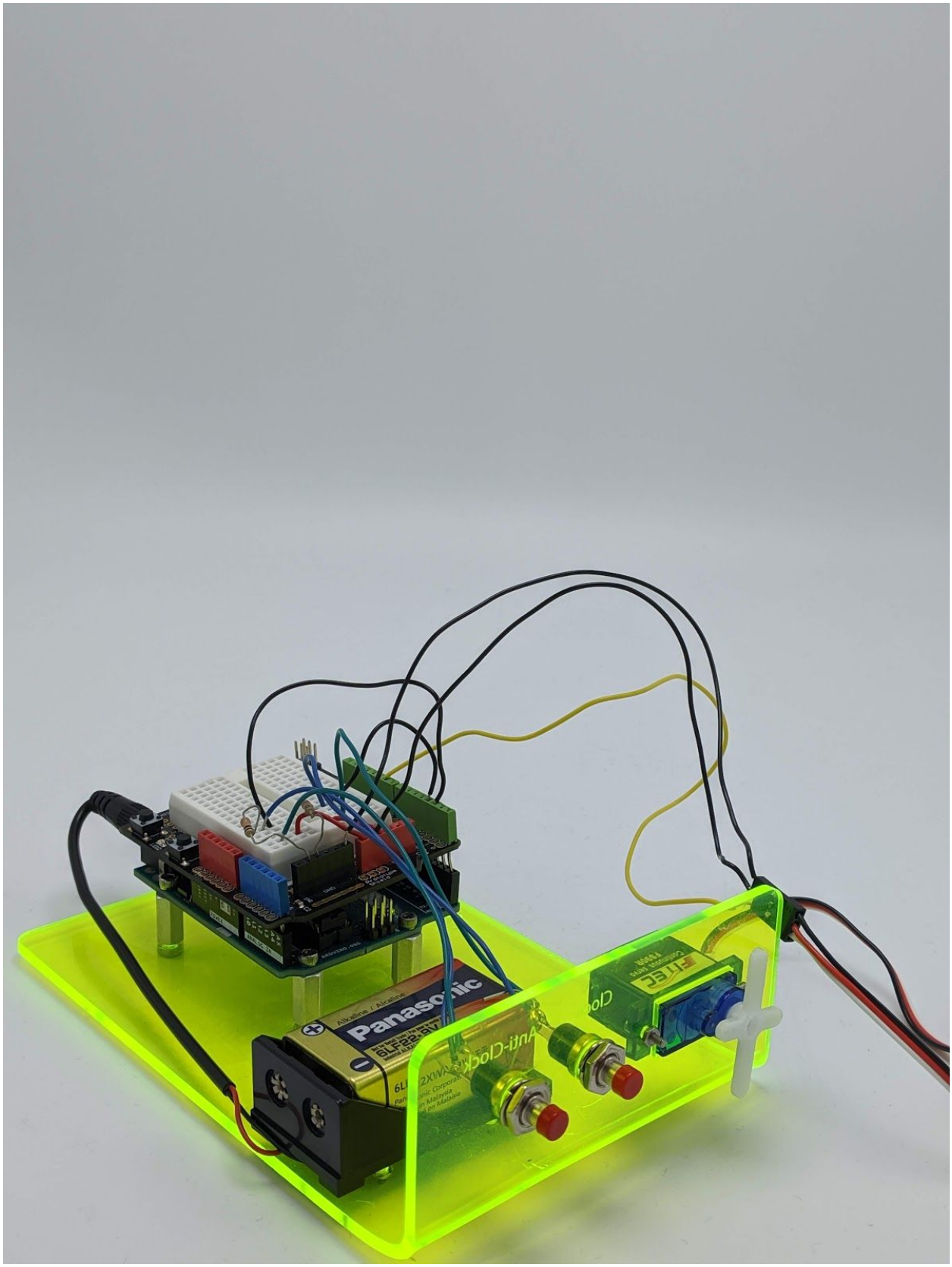
```
#include <Servo.h>

Servo myServo;

int btn1Pin = 3;
int btn2Pin = 2;
int servoPin = 9;
int btn1State;
int btn2State;
int pos = 90;

void setup() {
  // put your setup code here, to run once:
  Serial.begin(9600);
 myServo.attach(servoPin);
}

void loop() {
  // put your main code here, to run repeatedly:
 btn1State = digitalRead(btn1Pin);
 btn2State = digitalRead(btn2Pin);
  if (btn1State == HIGH) {
    Serial.println("Button 1 is on");
    Serial.println(pos);
    myServo.write(pos);
    pos = 50;
    myServo.write(pos);
  }
  if (btn2State == HIGH) {
   Serial.println("Button 2 is on");
   Serial.println(pos);
   myServo.write(pos);
   pos = 130;
   myServo.write(pos);
  }
  if (btn1State == LOW && btn2State == LOW) {
   Serial.println("Both buttond are off");
   Serial.println(pos);
   myServo.write(pos);
   pos = 90;
   myServo.write(pos);
  }
}
```

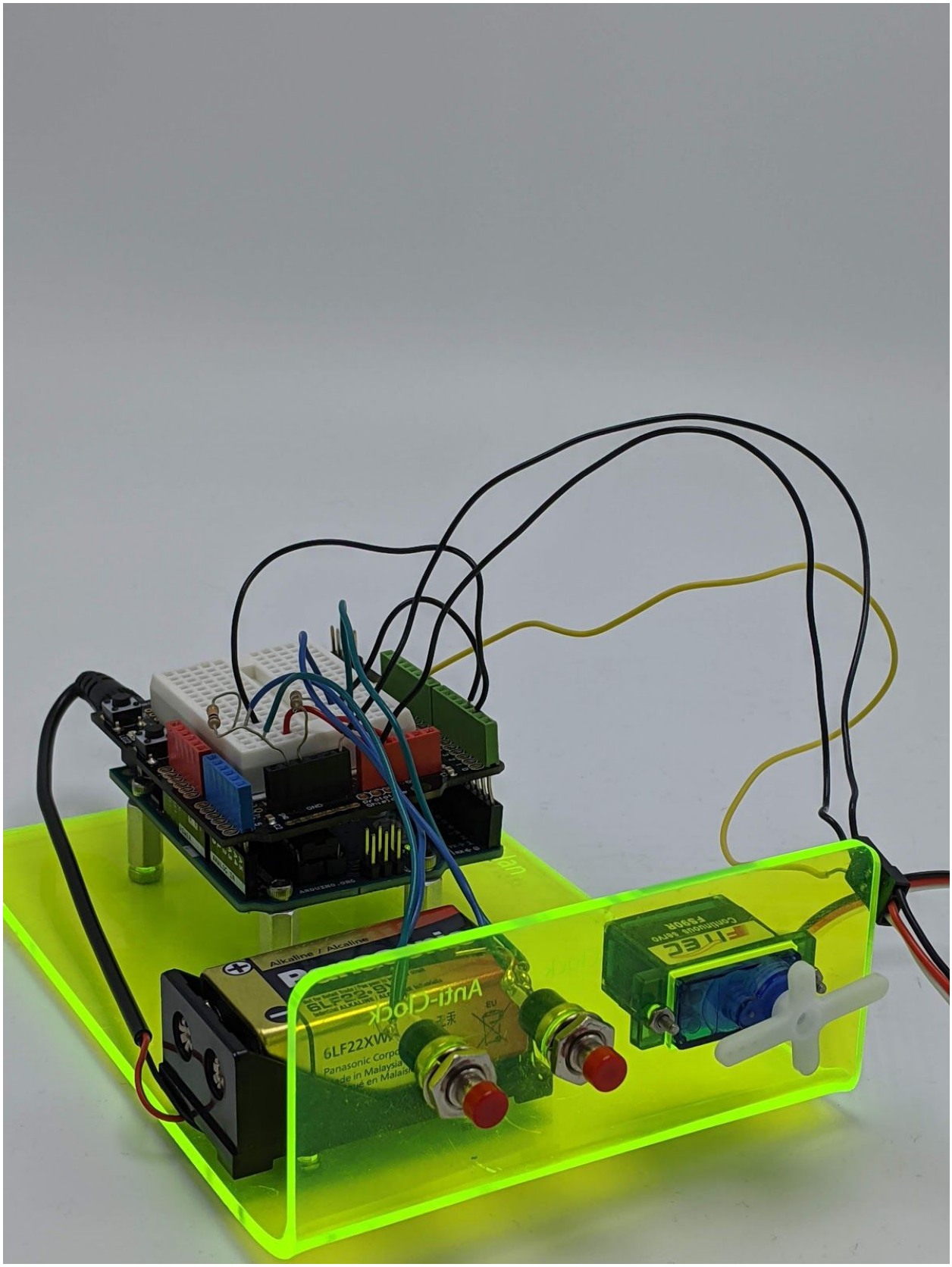
The Final Product (Photos)

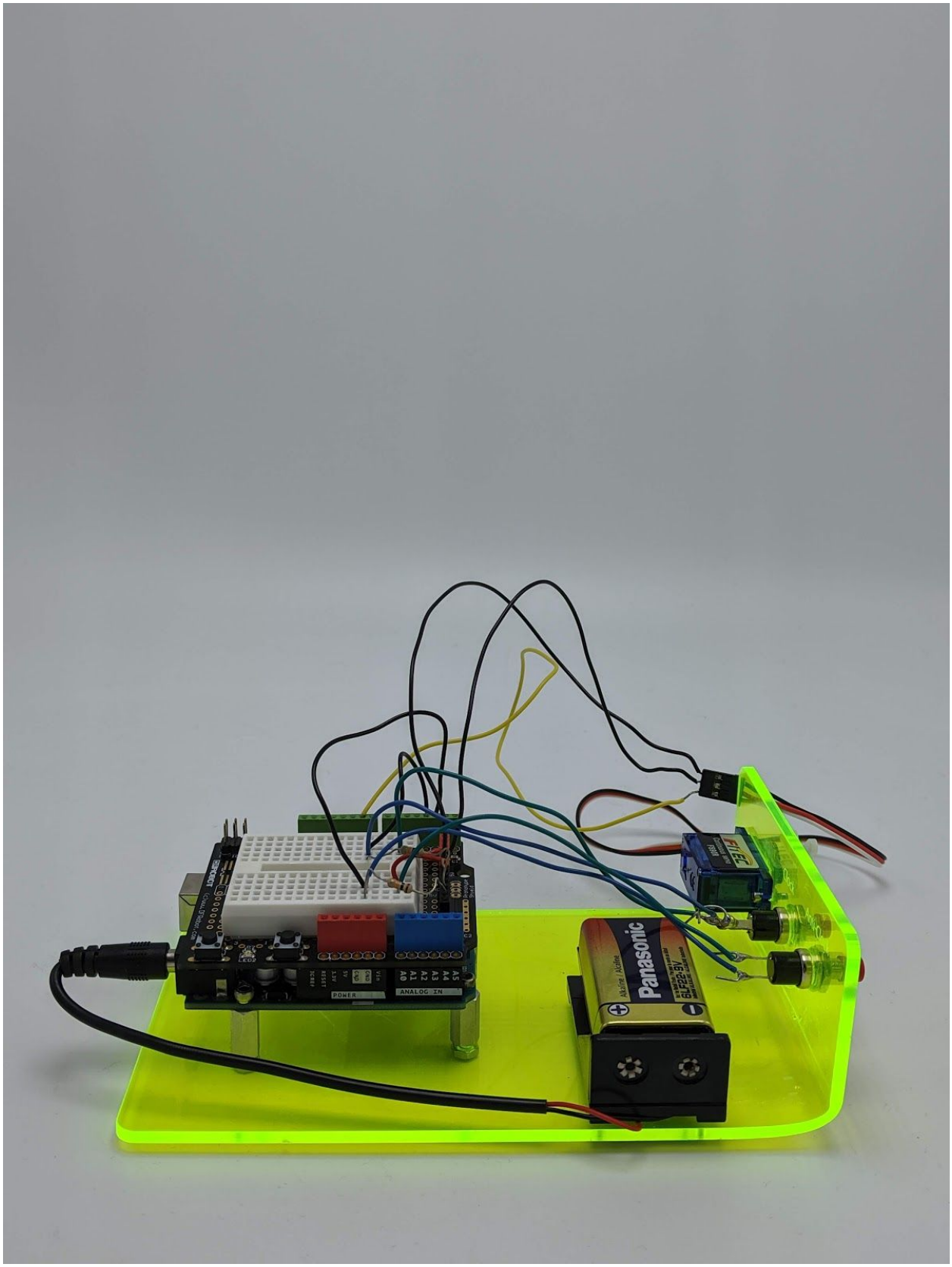


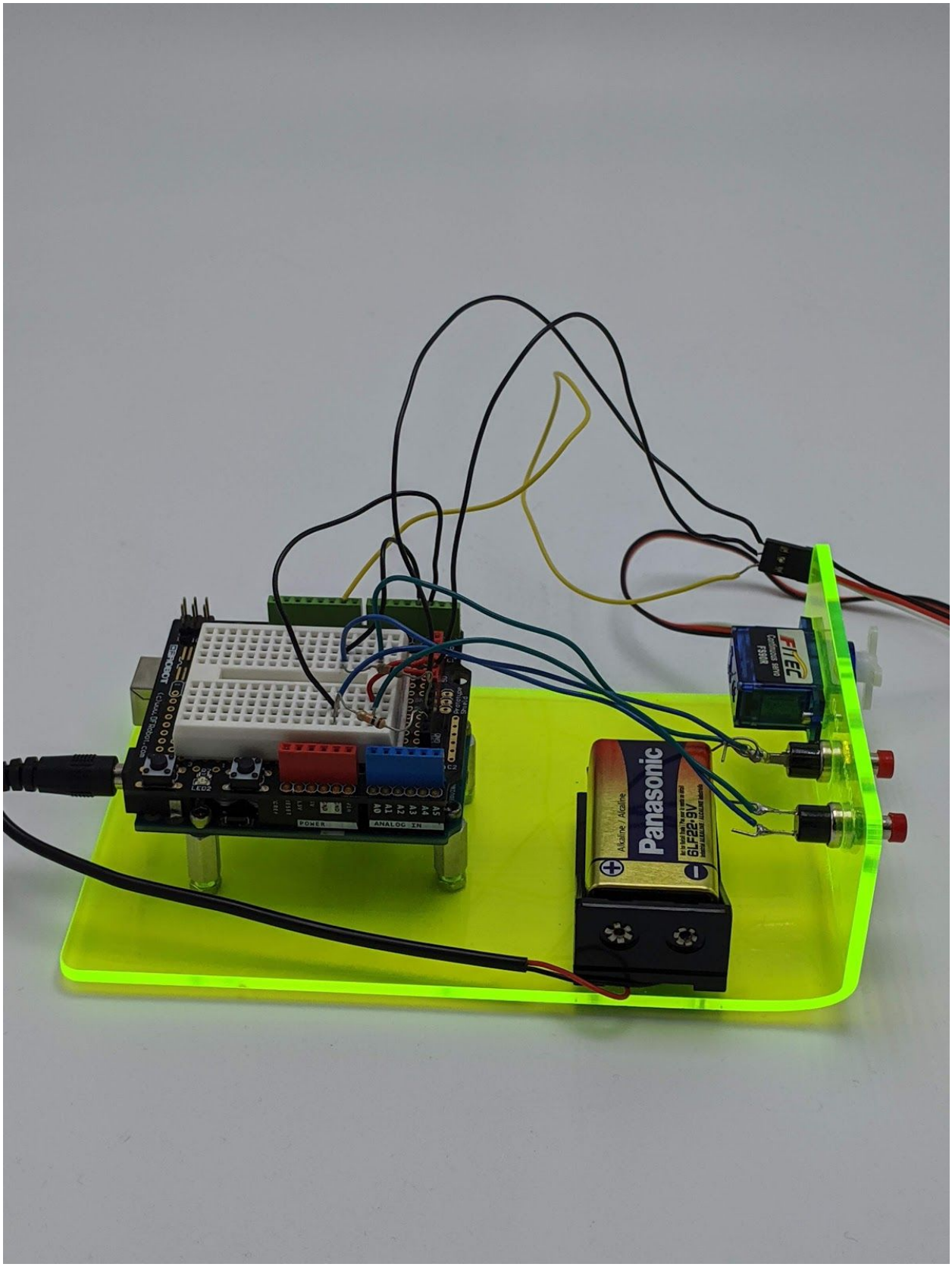

Panasonic
Alkaline / Alkaline
6LF22 9V
FITEC
POWER
ANALOG IN


Panasonic
Clock
Anti-Clock
9V
FITEC
FS90R
Continuous Servo


Panasonic
Alkaline / Alcaline


Alkaline / Alcaline
6LF22XW
Panasonic Corp
Made in Malaysia
Fabriqué en Malaisie
FEC
Continuous Servo
FS90R


Panasonic
Alkaline Alcaline
6LR22.5V
POWER
ANALOG IN


Panasonic
Alkaline / Alkaline
6LF22 9V
FITEC
POWER
ANALOG IN

Problems:

Problem: Button inputs were effectively random

Solution: Wiring was incorrect, we forgot important components, fixed wiring.

Problem: Servo keeps ticking

Solution: Let it keep ticking. Maybe it will stop on its own.

Problem: Button 1 wouldn't turn on

Solution: Button was faulty, used a different button.