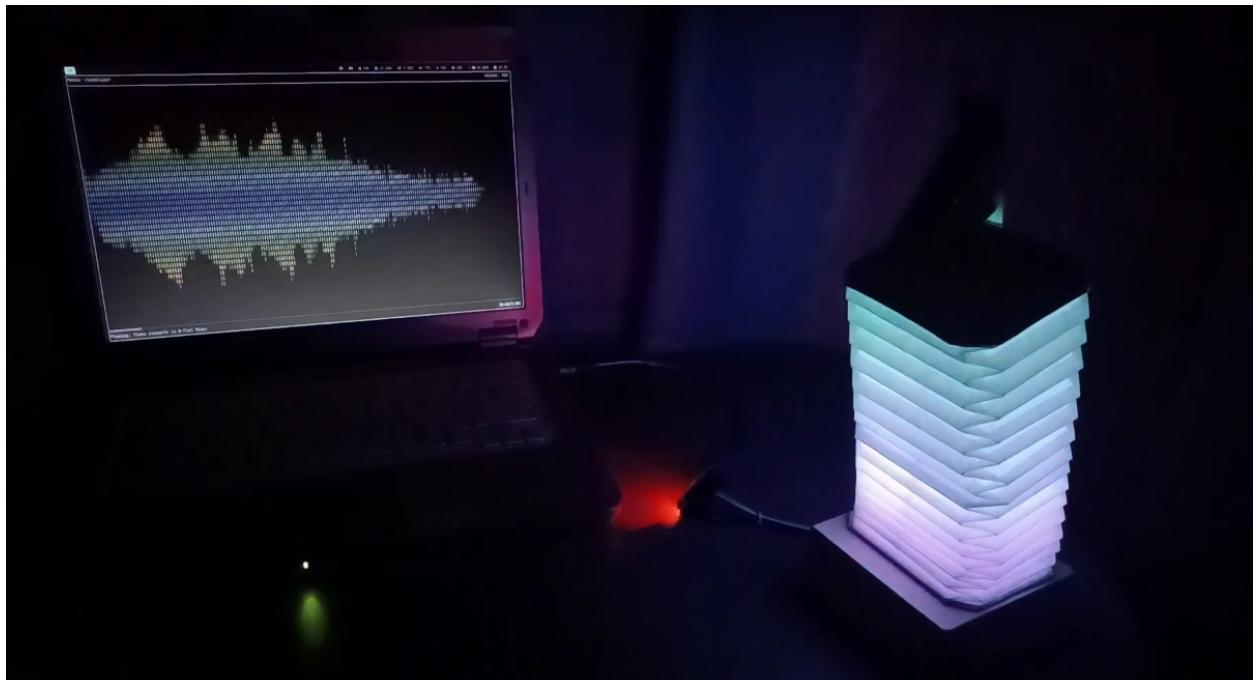
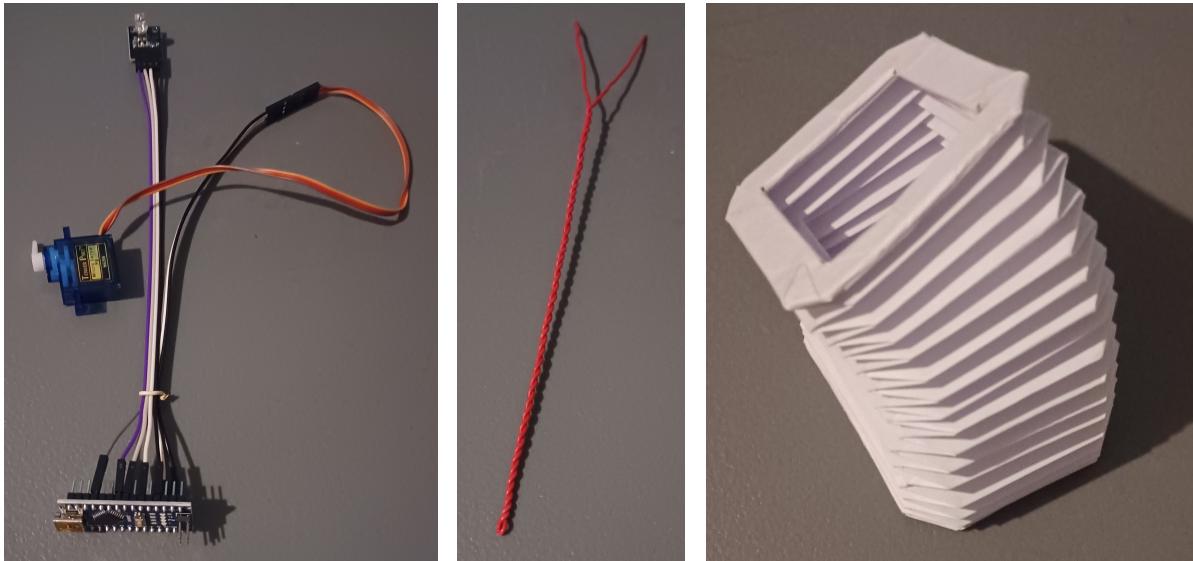


Name: CAOILE, KEN RENDELL L.
Section: BSECE-2E

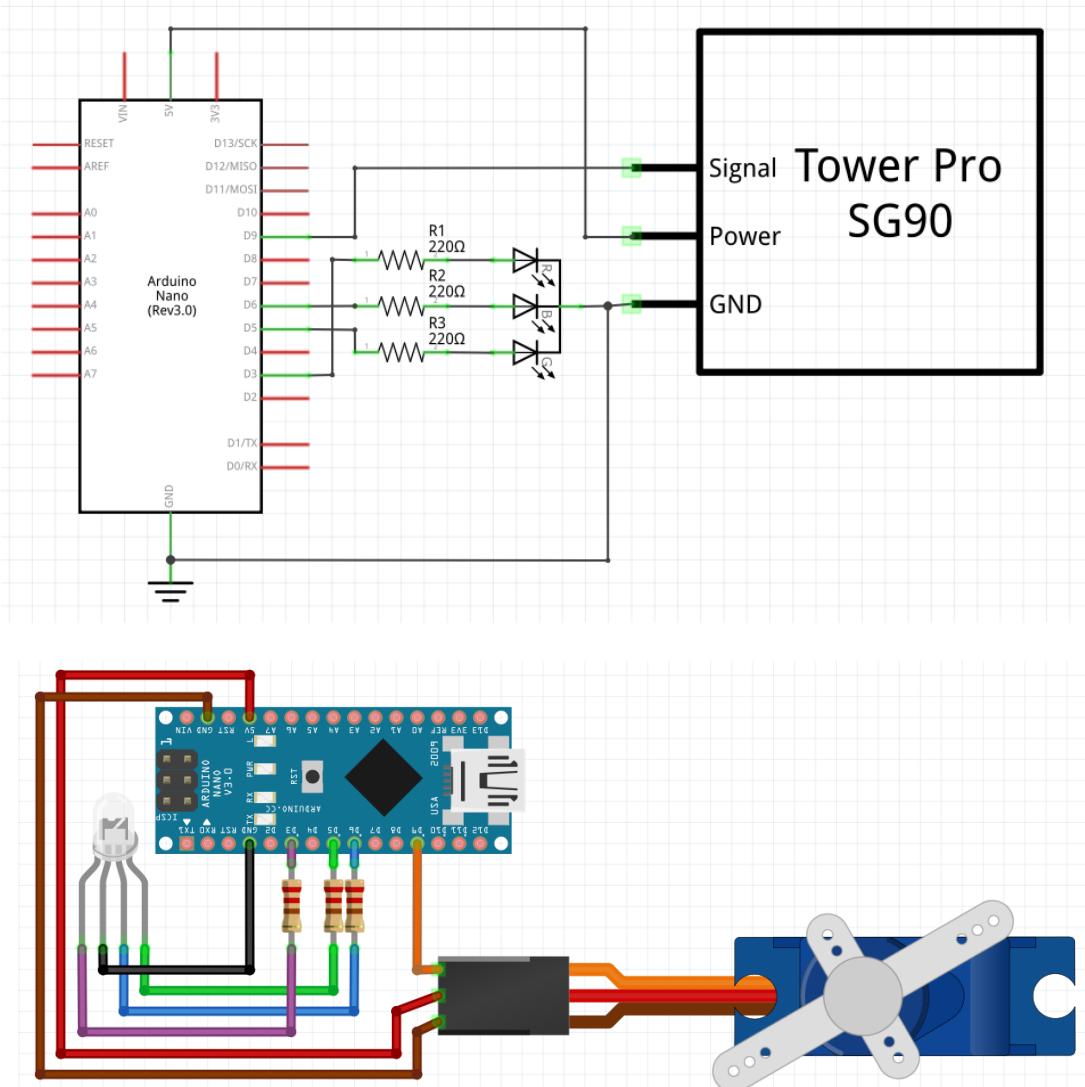
GEC6 Project:
Accordion Lamp - Kinetic Sculpture
(see https://youtu.be/xBuIJY7_qXs)



- Main Parts (accordion origami, arduino nano, servo motor, LED, and pulling/pushing wire)



- Schematics



- Code

```

1 #include <Servo.h>
2 []
3 const byte SERVO_PIN = 9; // PWM
4 const byte RGB_PIN[3] = { 3, 5, 6 }; // PWM
5 const unsigned int LOOP_DELAY = 10;
6
7 unsigned int servo_step_delay = 10;
8 unsigned int rgb_step_delay = 4;
9
10 byte rgb[3], rand_rgb[3], servo_position, servo_increment = 1;
11 unsigned int rgb_timeout, servo_timeout;
12
13 Servo servo;
14
15 void setup() {
16 >   for (byte i = 0; i < 3; ++i) {
17 >     pinMode(RGB_PIN[i], OUTPUT);
18 >     rgb[i] = rand_rgb[i] = 0;
19 >   } randomSeed(analogRead(0));
20
21 >   servo.attach(SERVO_PIN);
22 >   servo.write(0);
23
24 >   servo_timeout = (servo_step_delay *= LOOP_DELAY);
25 >   rgb_timeout = (rgb_step_delay *= LOOP_DELAY);
26 }
27
28 void loop() {
29 >   delay(LOOP_DELAY);
30 >   if ((rgb_timeout -= rgb_timeout ? LOOP_DELAY : 0) == 0) {
31 >     for (byte i = 0; i < 3; ++i) {
32 >       if (rgb[i] == rand_rgb[i]) rand_rgb[i] = random(256);
33 >       if (rgb[i] != rand_rgb[i]) analogWrite(RGB_PIN[i], (rgb[i] += (rgb[i] < rand_rgb[i]) ? 1 : -1));
34 >     } rgb_timeout = rgb_step_delay;
35 >   }
36 >   if ((servo_timeout -= servo_timeout ? LOOP_DELAY : 0) == 0) {
37 >     servo.write((servo_position += servo_increment));
38 >     if (servo_position % 180 == 0) servo_increment = -servo_increment;
39 >     servo_timeout = servo_step_delay;
40 >   }
41 }

/*
*/
accordion-lamp.ino .arduino utf-8 0:0x0 2/41

```