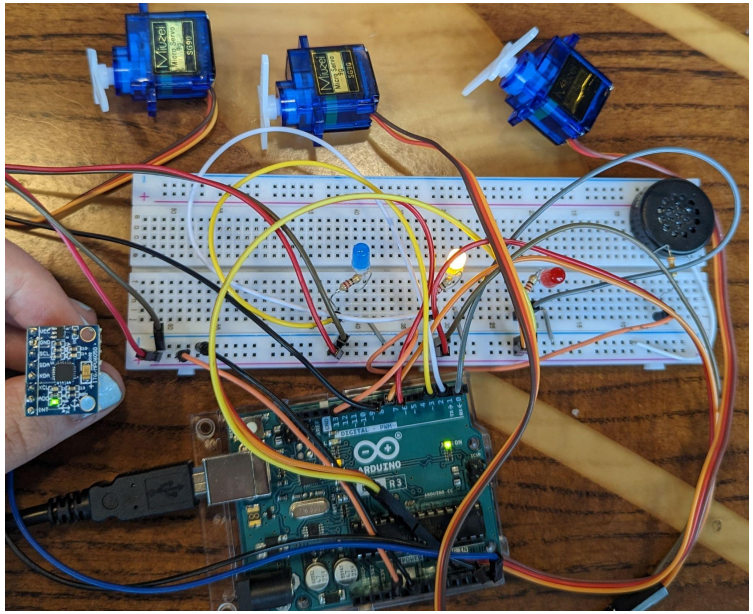
# Motioned Motors

**Problem statement:** How might I control specific motors with the motion of my hand?

## BREADBOARD SET-UP



## CODE HIGHLIGHTS

```
void loop() {
  // Get new sensor events with the readings
  sensors_event_t a, g, temp;
  mpu.getEvent(&a, &g, &temp);
```

```
// Check range of x acceleration (left-right) and light LEDs accordingly
if (4 <= a.acceleration.x && !buzzed) {
  digitalWrite(led_3, HIGH);
  digitalWrite(led_2, LOW);
  digitalWrite(led_1, LOW);
  activated = 3;
}
```

```
// Check range of y acceleration (forward-backward) and adjust buzzer/servos accordingly
if (a.acceleration.y < -7 && buzzed) {
  // Activated value represents which LED is on and therefore which servo will move
  if (activated == 1) {
    myservo1.write(120);
  }
  if (activated == 2) {
    myservo2.write(120);
  }
  if (activated == 3) {
    myservo3.write(120);
  }
  buzzed = true;
}
```

```
// Activate buzzer if y accleration is backwards quick enough
if (a.acceleration.y > 8) {
  tone(buzzer, 500);
  buzzed = true;
}
else if (a.acceleration.y < 1) {
  noTone(buzzer);
}
```

**Project Features**: Tilt the accelerometer left/right to change which LED lights up. Tilt back quick enough to activate buzzer. Tilt forward quick enough after activating buzzer to turn the motor according to which LED is lit up. LEDs lock in place once buzzer or servo is activated.

*Greta Brown, CSE 1012 Spring 2023*