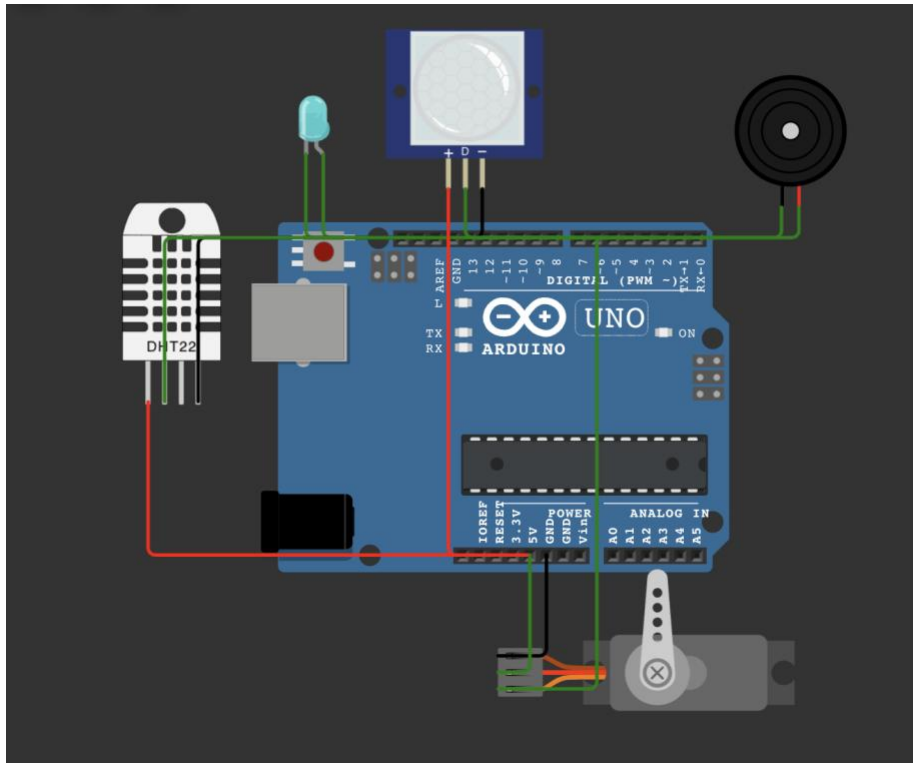


# ASSIGNMENT 1

SCHEMATIC:



CODE:

```
#include <Servo.h>
#include <Adafruit_Sensor.h>
#include <DHT.h>

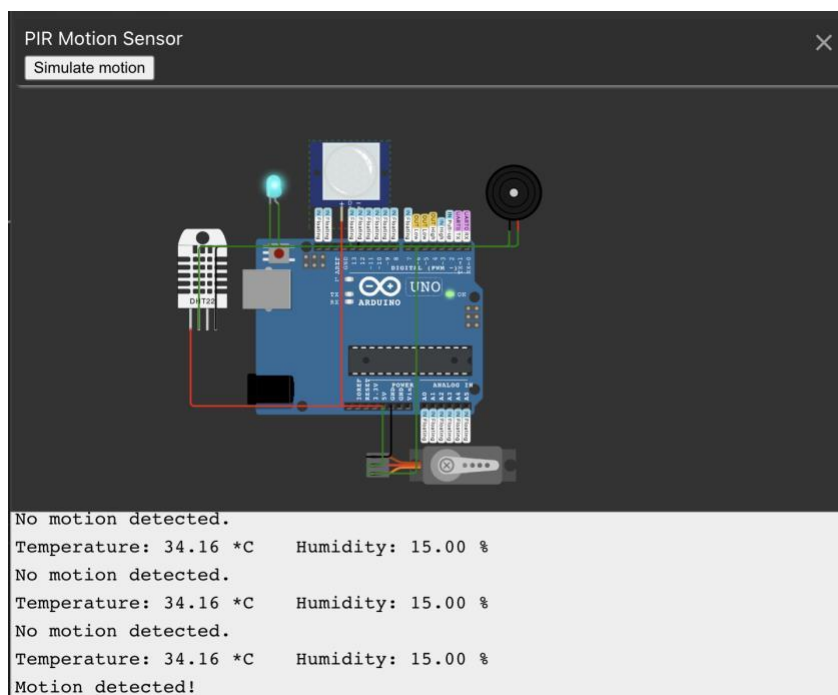
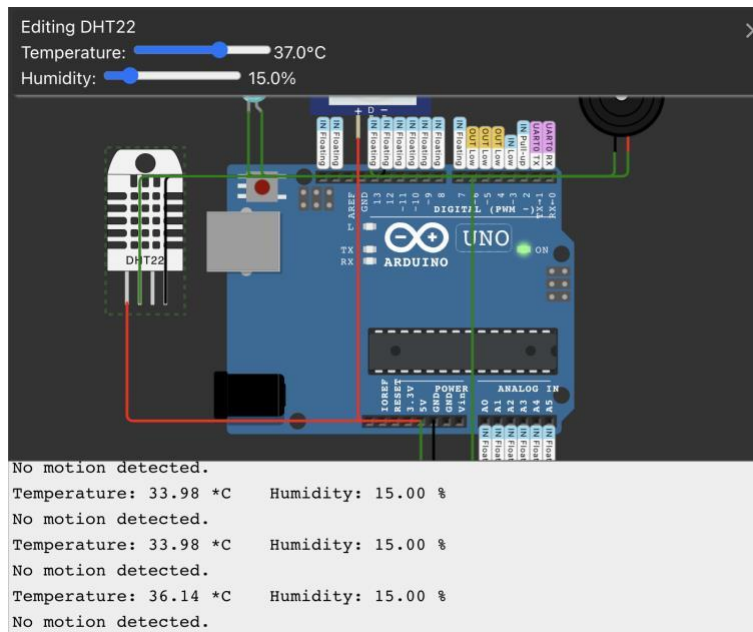
#define DHTPIN 2 // Digital pin connected to the DHT sensor
#define DHTTYPE DHT11 // DHT 11
#define LEDPIN 4 // Digital pin connected to the LED
#define BUZZERPIN 5 // Digital pin connected to the Buzzer
#define SERVO PIN 6 // Digital pin connected to the Servo motor
int pirpin = 3 ; // Digital pin connected to the PIR sensor
int pirstate = LOW; // we start, assuming no motion detected
int val = 0; // variable for reading the pin status
DHT dht(DHTPIN, DHTTYPE); // Create a DHT object
Servo servo; // Create a Servo object
int doorClosedAngle = 0; // Angle for closed door position
int doorOpenAngle = 90; // Angle for open door position
void setup() {
  Serial.begin(9600);
  dht.begin();
  pinMode(LED PIN, OUTPUT);
  pinMode(BUZZER PIN, OUTPUT);
}
```

```

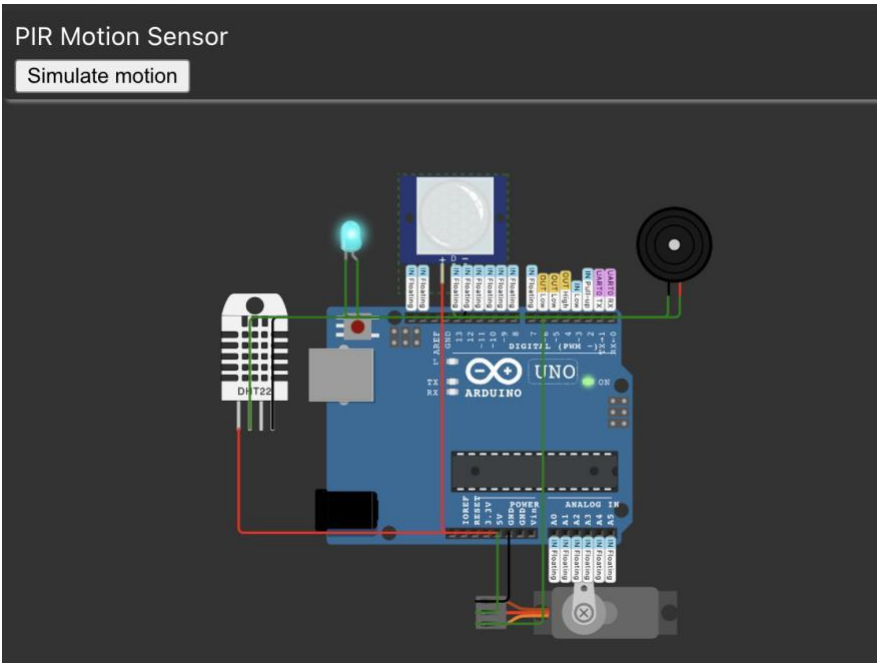
pinMode(pirpin, INPUT); // declare sensor as input
servo.attach(SERVOPIN);
servo.write(doorClosedAngle);
}
void loop() {
// Read the temperature and humidity values from the DHT sensor
val = digitalRead(pirpin); // read input value
float temperature = dht.readTemperature();
float humidity = dht.readHumidity();
Serial.print("Temperature: ");
Serial.print(temperature);
Serial.print(" *C\t Humidity: ");
Serial.print(humidity);
Serial.println(" %");
// Check if there is motion detected by the PIR sensor
if (val) {
Serial.println("Motion detected!");
digitalWrite(LEDPIN, HIGH); // Turn on the LED
pirstate = HIGH;
tone(BUZZERPIN, 500, 1000); // Play a 1-second tone on the buzzer
servo.write(doorOpenAngle); // Unlock the door
delay(5000); // Wait for 5 seconds
servo.write(doorClosedAngle); // Lock the door
} else {
Serial.println("No motion detected.");
pirstate = LOW;
digitalWrite(LEDPIN, LOW); // Turn off the LED
noTone(BUZZERPIN); // Turn off the buzzer
}
delay(1000); // Wait for 1 second before taking the next measurement
}

```

## RESULTS:



MOTION DETECTED SO SERVO MOTOR OPENS THE DOOR FOR FIVE SECONDS



AFTER FIVE SECONDS THE SERVO MOTOR CLOSES THE DOOR