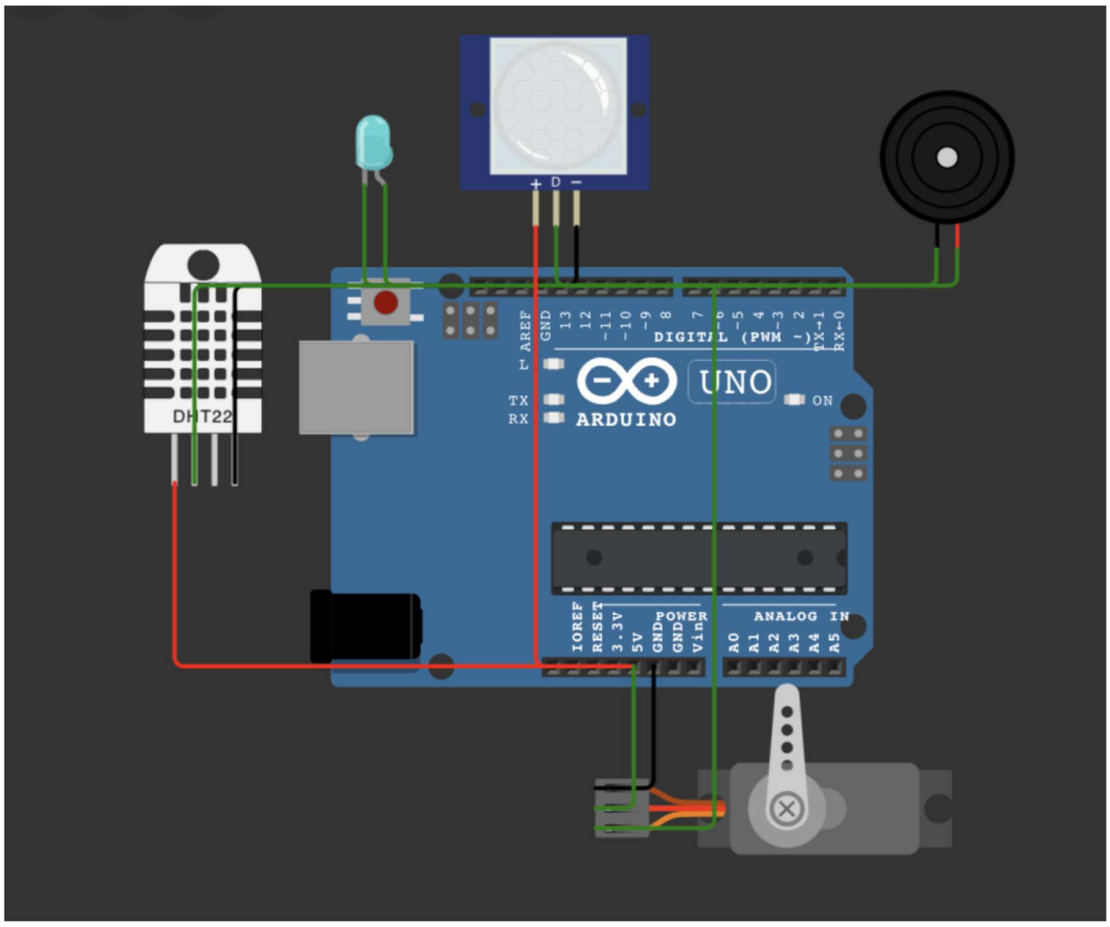
IoT ASSIGNMENT 2

SCHEMATIC

Build a smart home in wokwi with minimum 2 sensors, Led, buzzer.



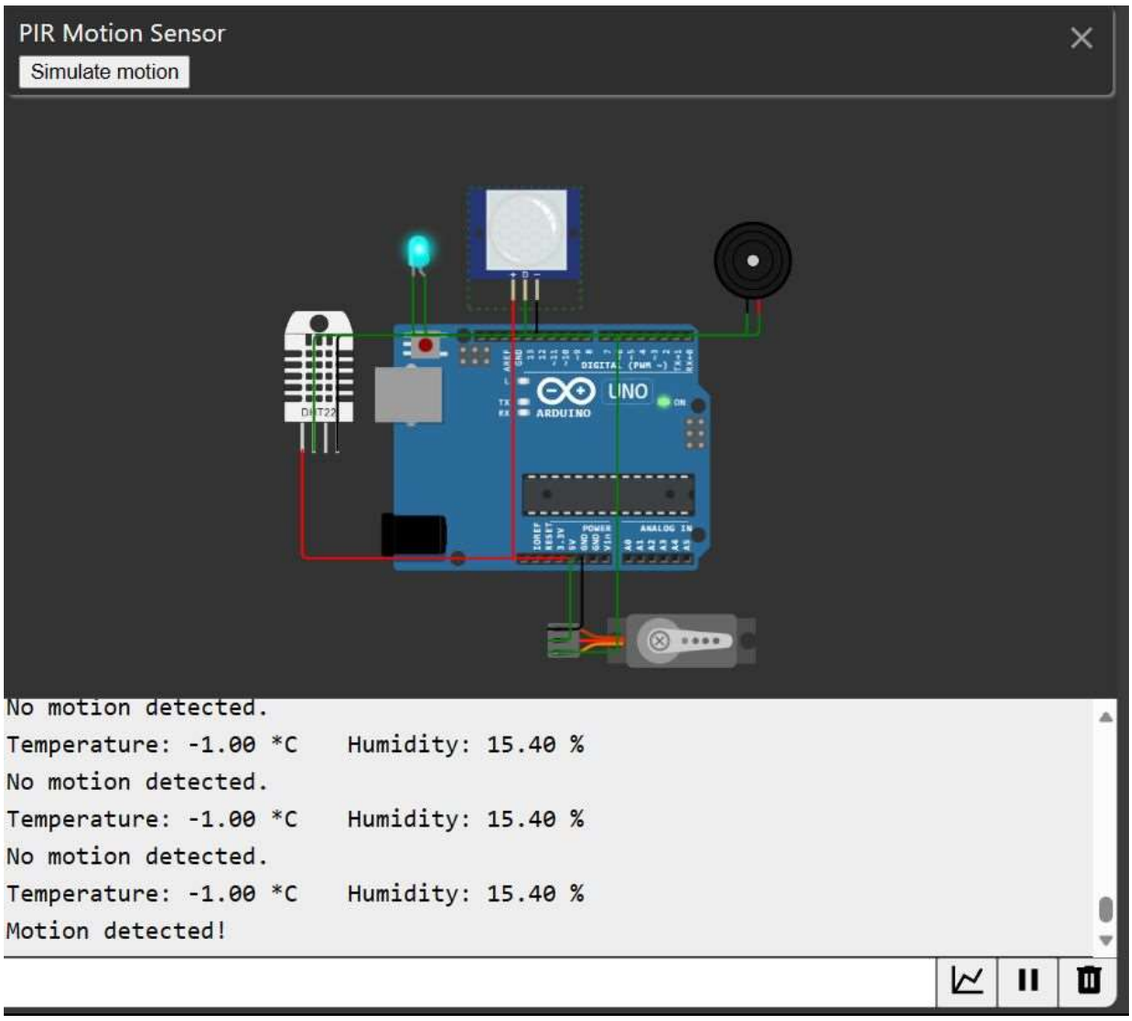
CODE:

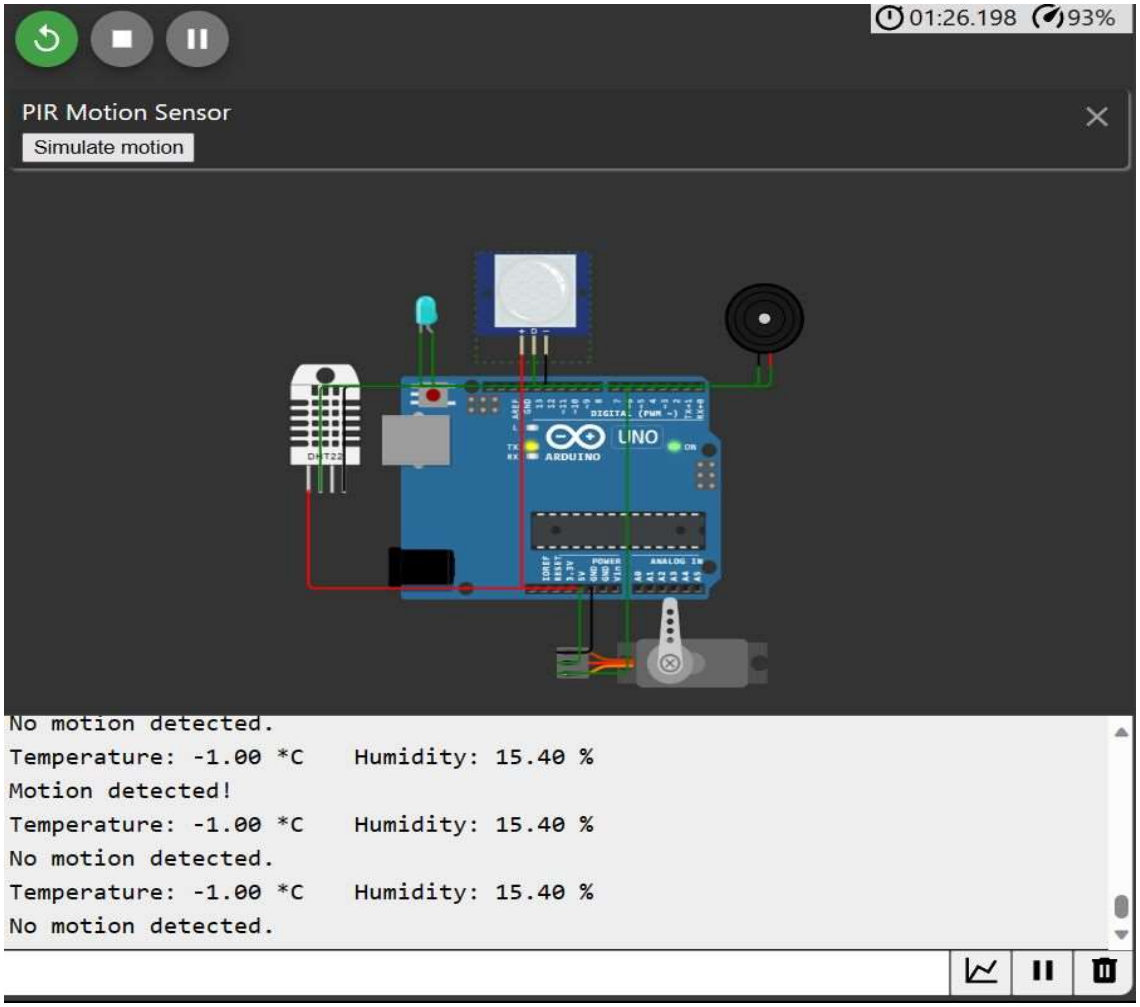
```
#include <Servo.h>
#include <Adafruit_Sensor.h>
#include <DHT.h>

#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 SERVOPIN 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(LEDPIN, OUTPUT);
 pinMode(BUZZERPIN, 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
```

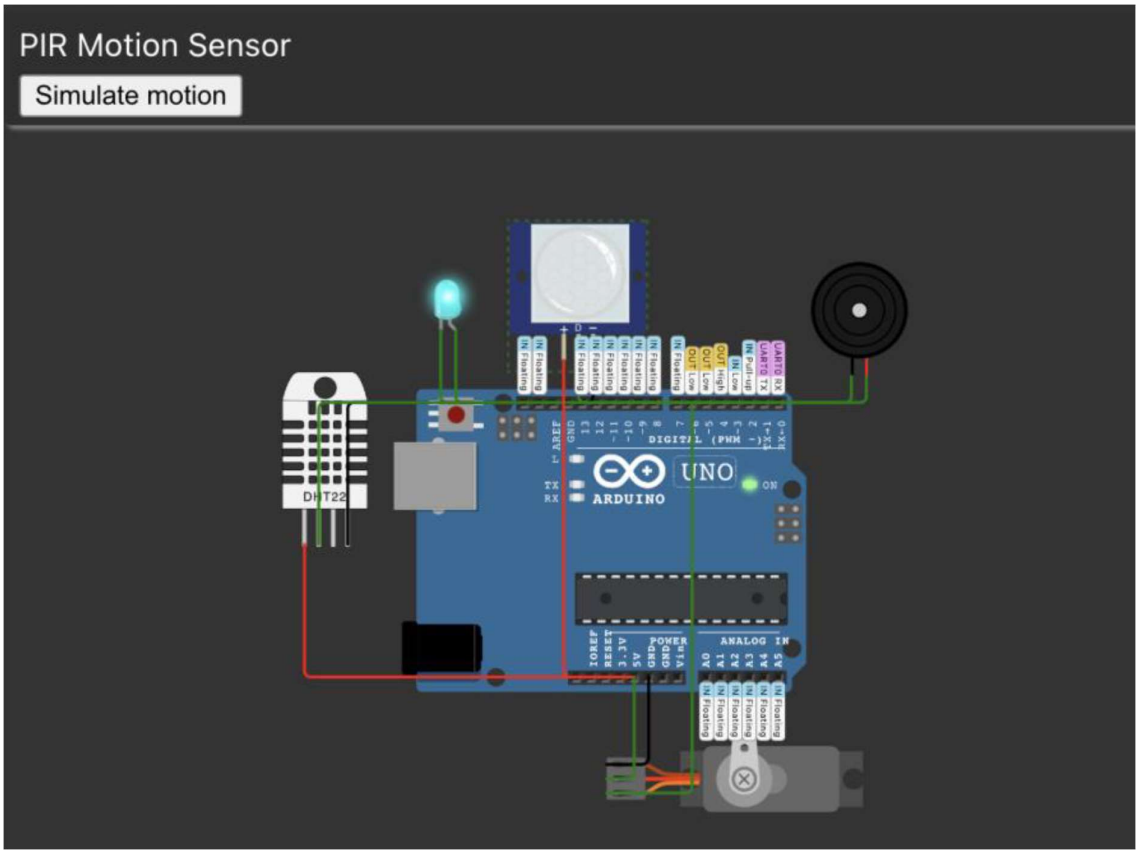
```
 servo.write(doorClosedAngle); // Lock the door
 } else {
 Serial.println("No motion detected.");
 pirstate = LOW;
 digitalWrite(LEDPIN, LOW); // Turn off the LED
 noTone(BUZZERPIN); // Turn off the buzzer
 }

 delay(1000); // Wait for 1 second before taking the next measurement
}
```

RESULT:





MOTION DETECTED SO SERVO MOTOR OPENS THE DOOR FOR FIVE SECONDS AFTER FIVE



AFTER FIVE SECONDS THE SERVO MOTOR CLOSES THE DOOR