

GOWTHAM S

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<https://wokwi.com/projects/363882517585338369>

WOKWI

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ASSIGNMENT 1

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sketch.ino diagram.json Library Manager

```
1 #include <Servo.h>
2 #include <DHT.h>
3
4 #define PIR_PIN 2
5 #define DHT_PIN 3
6 #define LED_PIN 4
7 #define BUZZER_PIN 5
8 #define SERVO_PIN 6
9
10 // Create instances of the DHT and Servo classes
11 DHT dht(DHT_PIN, DHT11);
12 Servo servo;
13
14 void setup() {
15   pinMode(PIR_PIN, INPUT);
16   pinMode(LED_PIN, OUTPUT);
17   pinMode(BUZZER_PIN, OUTPUT);
18   servo.attach(SERVO_PIN);
19
20   // Initialize serial communication
21   Serial.begin(9600);
22   Serial.println("Smart Home System Ready");
23 }
24
25 void loop() {
26   // Read the PIR sensor
27   int pirValue = digitalRead(PIR_PIN);
28
29   // If motion is detected, turn on the LED and play a tone
```

Simulation

Smart Home System Ready
Temperature or humidity outside safe range!
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SKETCH.INFO

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#include <DHT.h>
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#define PIR_PIN 2
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#define LED_PIN 4
#define BUZZER_PIN 5
#define SERVO_PIN 6
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```
// Create instances of the DHT and Servo classes
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```

DHT dht(DHT_PIN, DHT11);
Servo servo;

void setup() {
  pinMode(PIR_PIN, INPUT);
  pinMode(LED_PIN, OUTPUT);
  pinMode(BUZZER_PIN, OUTPUT);
  servo.attach(SERVO_PIN);

  // Initialize serial communication
  Serial.begin(9600);
  Serial.println("Smart Home System Ready");
}

void loop() {
  // Read the PIR sensor
  int pirValue = digitalRead(PIR_PIN);

  // If motion is detected, turn on the LED and play a tone
  if (pirValue == HIGH) {
    digitalWrite(LED_PIN, HIGH);
    tone(BUZZER_PIN, 1000, 1000);
    Serial.println("Motion detected!");
  } else {
    digitalWrite(LED_PIN, LOW);
    noTone(BUZZER_PIN);
  }

  // Read the temperature and humidity values from the DHT11 sensor
  float temperature = dht.readTemperature();
  float humidity = dht.readHumidity();

  // If the temperature or humidity is outside the safe range, play a tone
  if (temperature < 20 || temperature > 30 || humidity < 40 || humidity > 60) {
    tone(BUZZER_PIN, 2000, 1000);
    Serial.println("Temperature or humidity outside safe range!");
  } else {
    noTone(BUZZER_PIN);
  }

  // If the temperature is too high, unlock the door
  if (temperature > 30) {
    Serial.println("Temperature too high, unlocking door");
    servo.write(90);
    delay(1000);
  }
}

```

```
    servo.write(0);  
}  
  
// Wait for a short period before repeating the loop  
delay(100);  
}
```