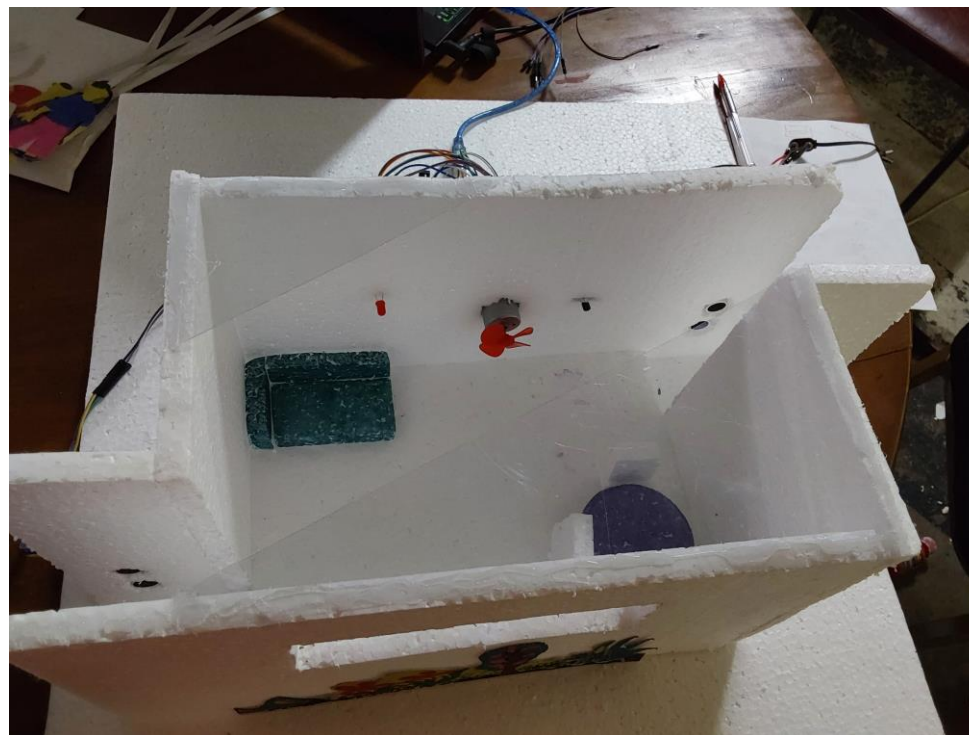


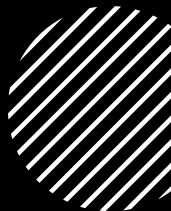
# Smart Room

Group 23





# Assumptions In The System



Initially no one is in the room.



Only one person is allowed to come at a time.



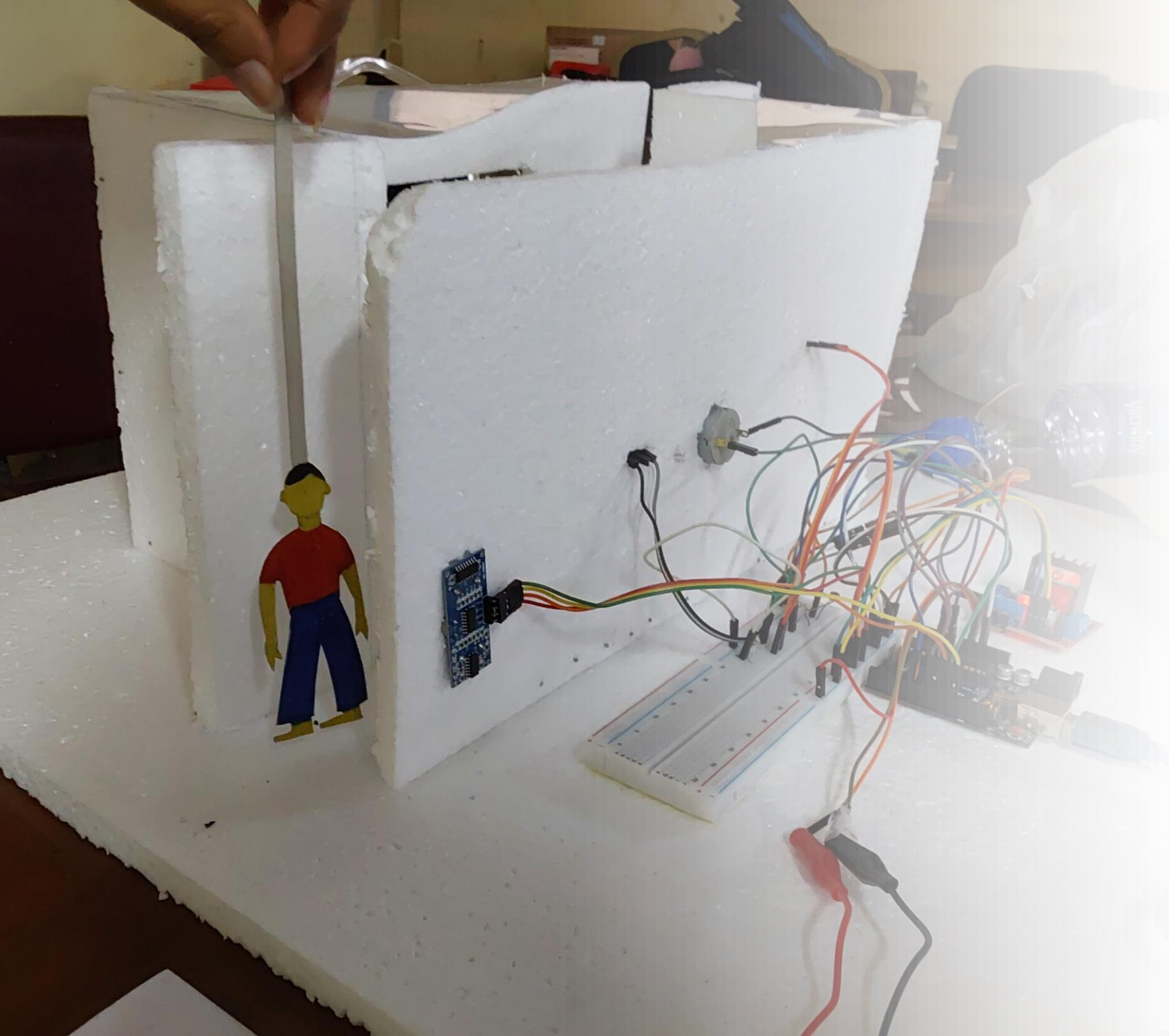
There are two separate doors for enter and exit from the room.



Indoor light intensity and outdoor light intensity is same.

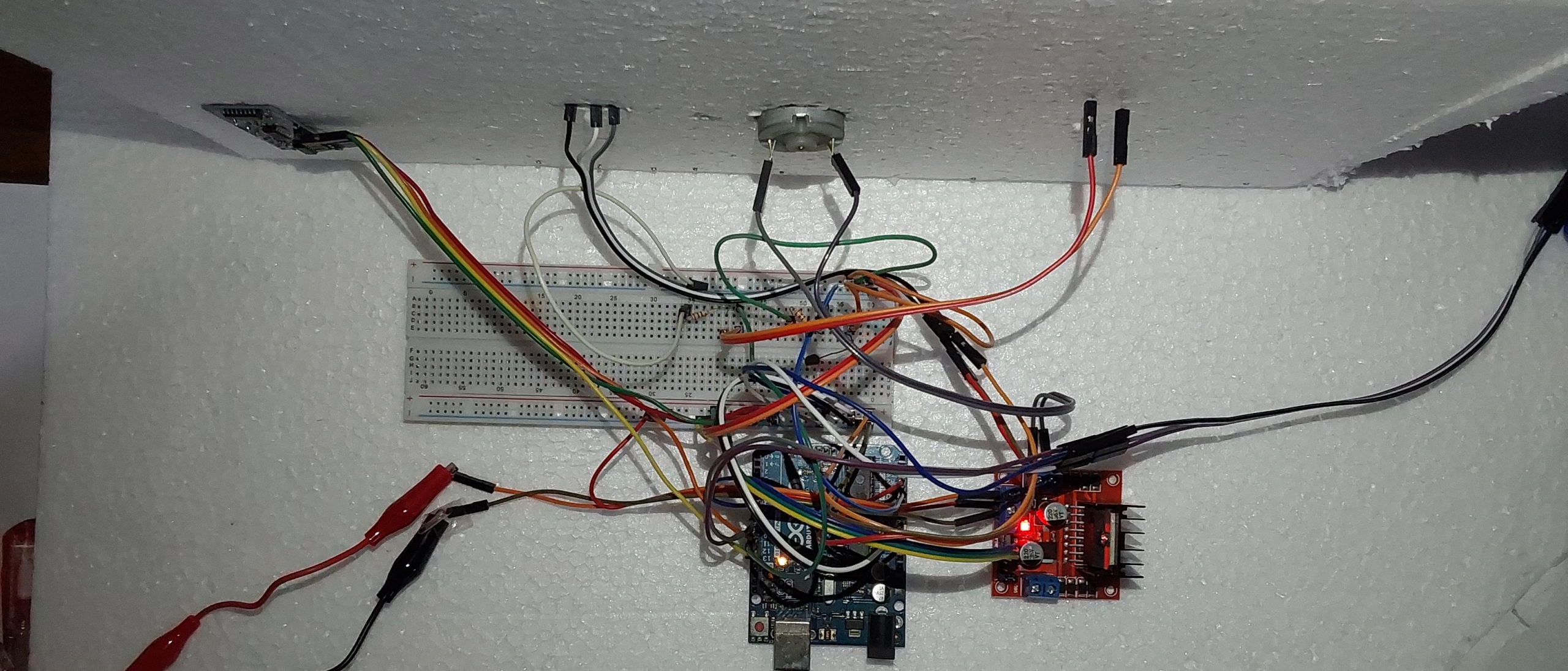


No one is allowed to stay in-front of the passage.



Demonstration



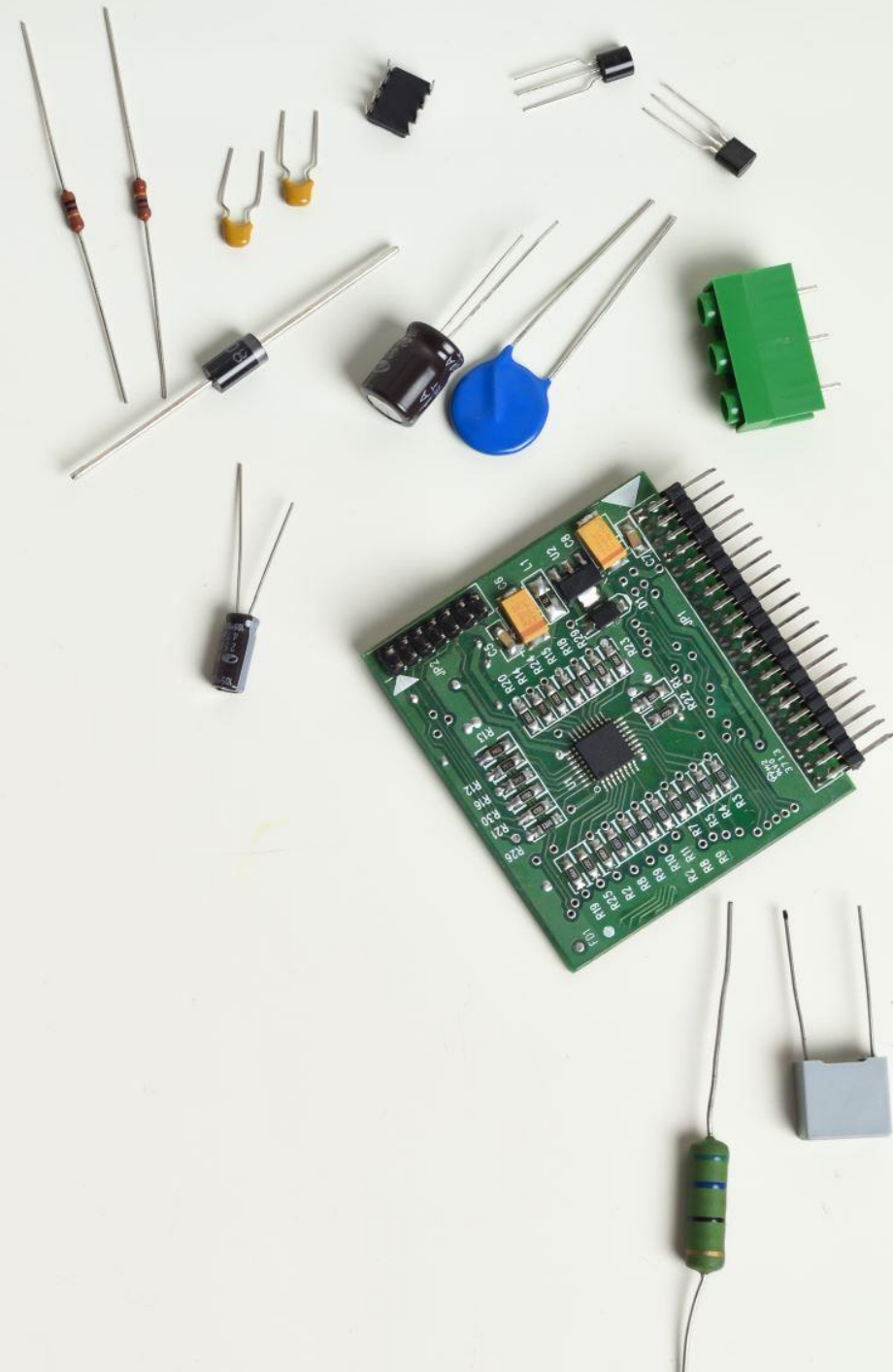


Circuit Diagram



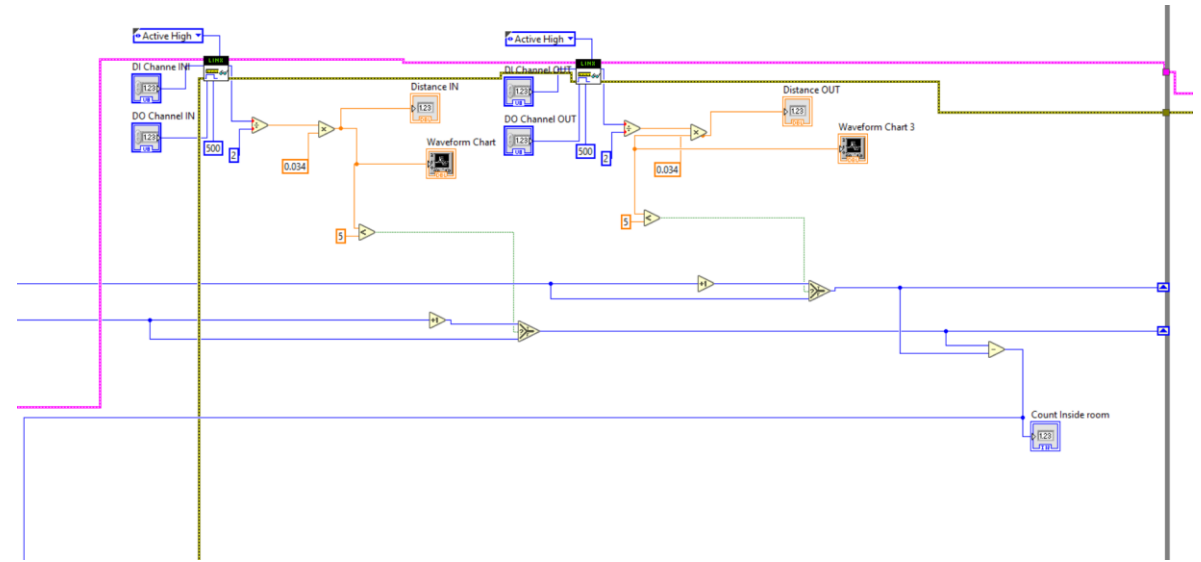
# Lab-View

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# Ultra-Sonic Sensors

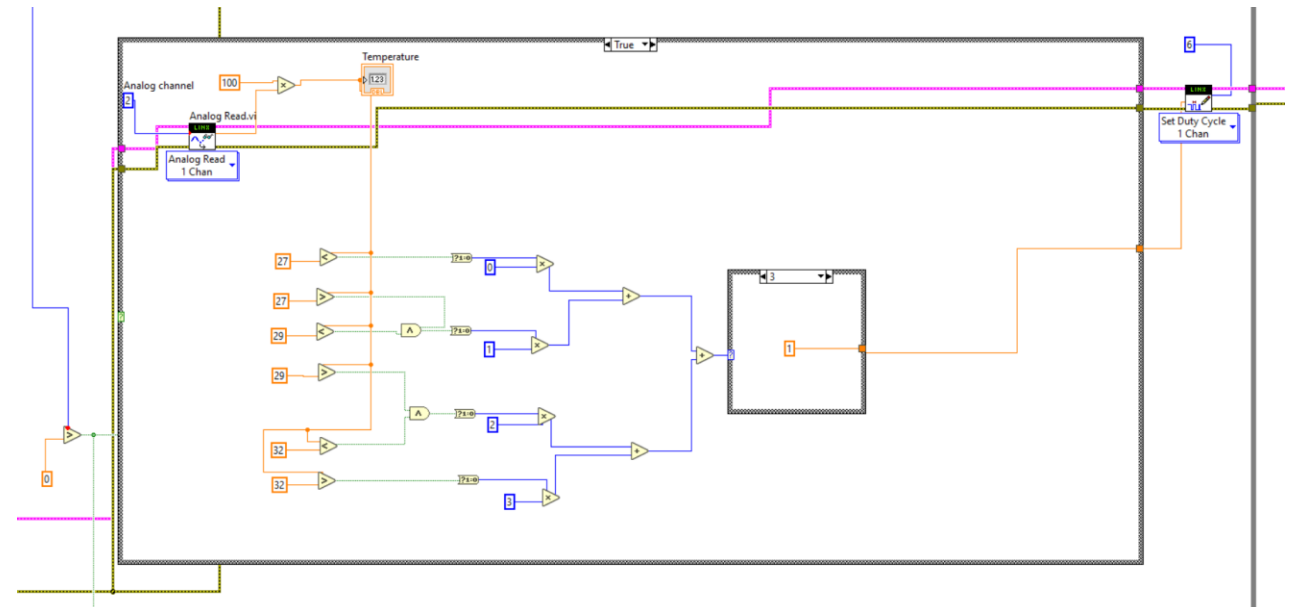
Working Voltage - DC 5 V  
Working Current - 15mA  
Working Frequency - 40Hz  
Max Range - 4m  
Min Range - 2cm  
Measuring Angle - 15 degree  
Trigger Input Signal - 10uS TTL pulse  
Echo Output Signal - Input TTL lever signal and the range in proportion  
Dimension - 45\*20\*15mm



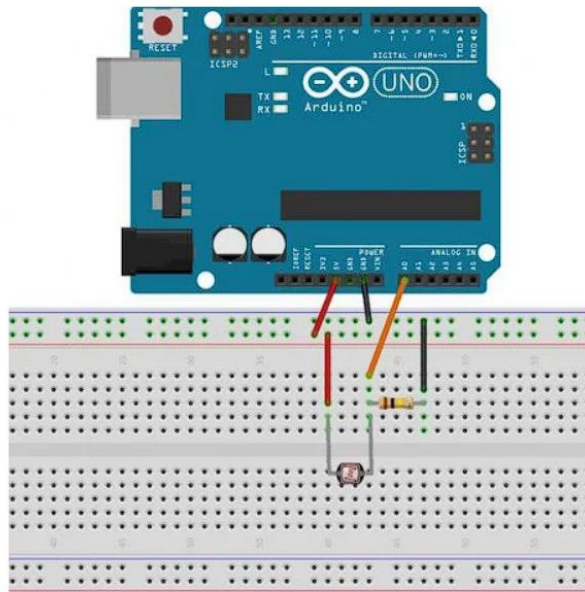
# Temperature Sensor

## Specification of LM35 Temperature Sensor

- Operating Voltage: 4 V to 30 V
- Output Voltage: 10mV/°C
- Sensitivity: 10mV/°C
- Linearity Error:  $\pm 1^\circ\text{C}$  (for  $0^\circ\text{C}$  to  $+100^\circ\text{C}$ )
- Operating Temperature:  $-55^\circ\text{C}$  to  $+150^\circ\text{C}$
- Output Impedance: 100  $\Omega$
- Power Consumption: 60  $\mu\text{A}$  (typical)
- Package Type: TO-92, TO-220, SOIC
- Output Type: Analog
- Accuracy:  $\pm 1^\circ\text{C}$  (typical)



# Sensor Calibration using LDR



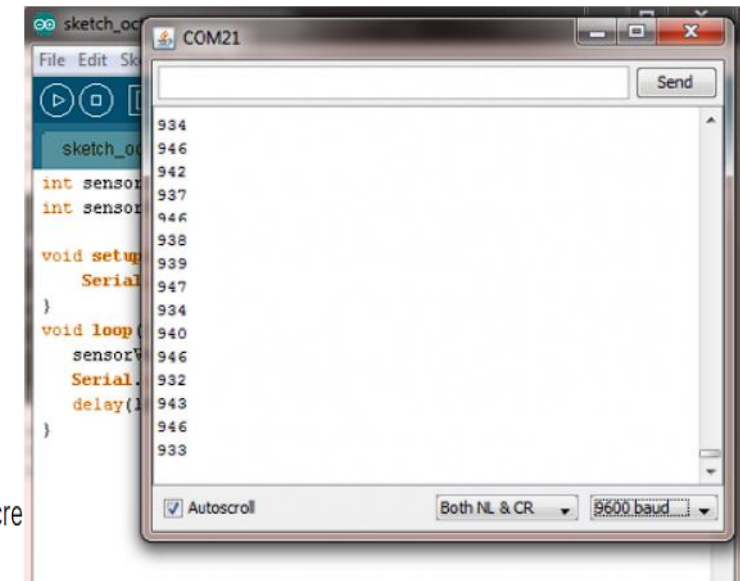
Arduino LDR connections

```
int sensorPin = A0; // select the input pin for LDR

int sensorValue = 0; // variable to store the value coming from the sensor
void setup() {
  Serial.begin(9600); //sets serial port for communication
}

void loop() {
  sensorValue = analogRead(sensorPin); // read the value from the sensor
  Serial.println(sensorValue); //prints the values coming from the sensor on the screen

  delay(100);
}
```



For 5v Arduino gives maximum reading as 1023

For 0 v it gives 0 as the reading



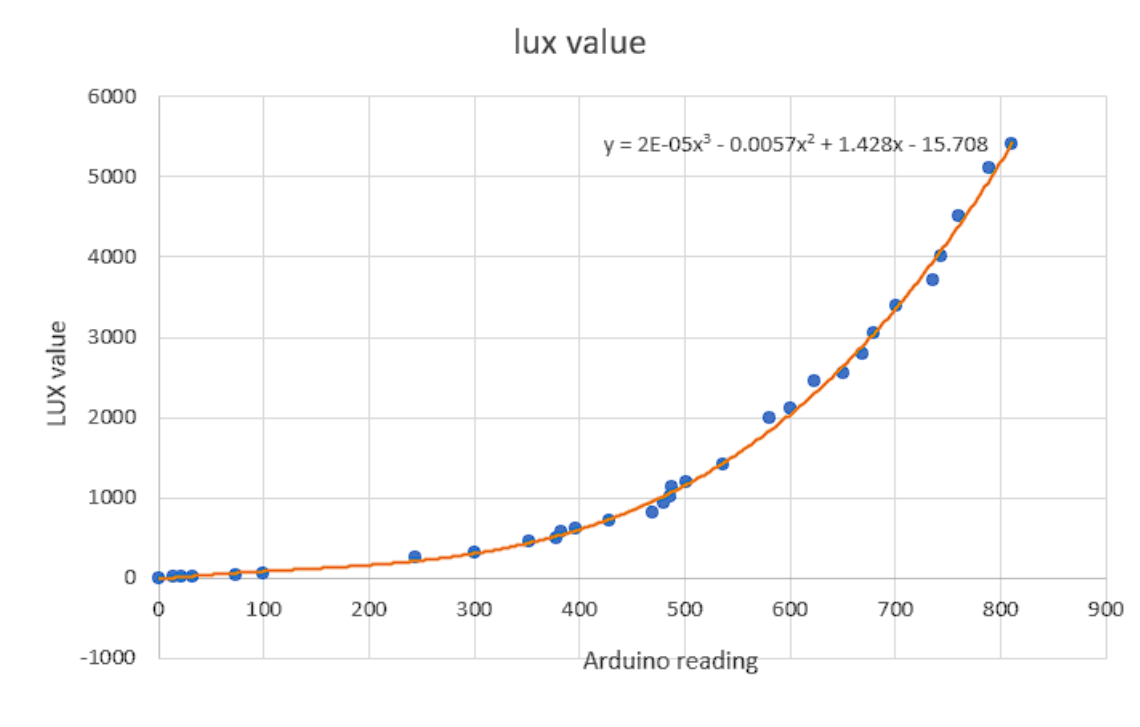
# Plots

ldr	lux value
736	3700
743	4000
761	4500
789	5100
811	5400
701	3400
680	3060
669	2800
650	2550
623	2460
600	2110
580	1990
536	1420

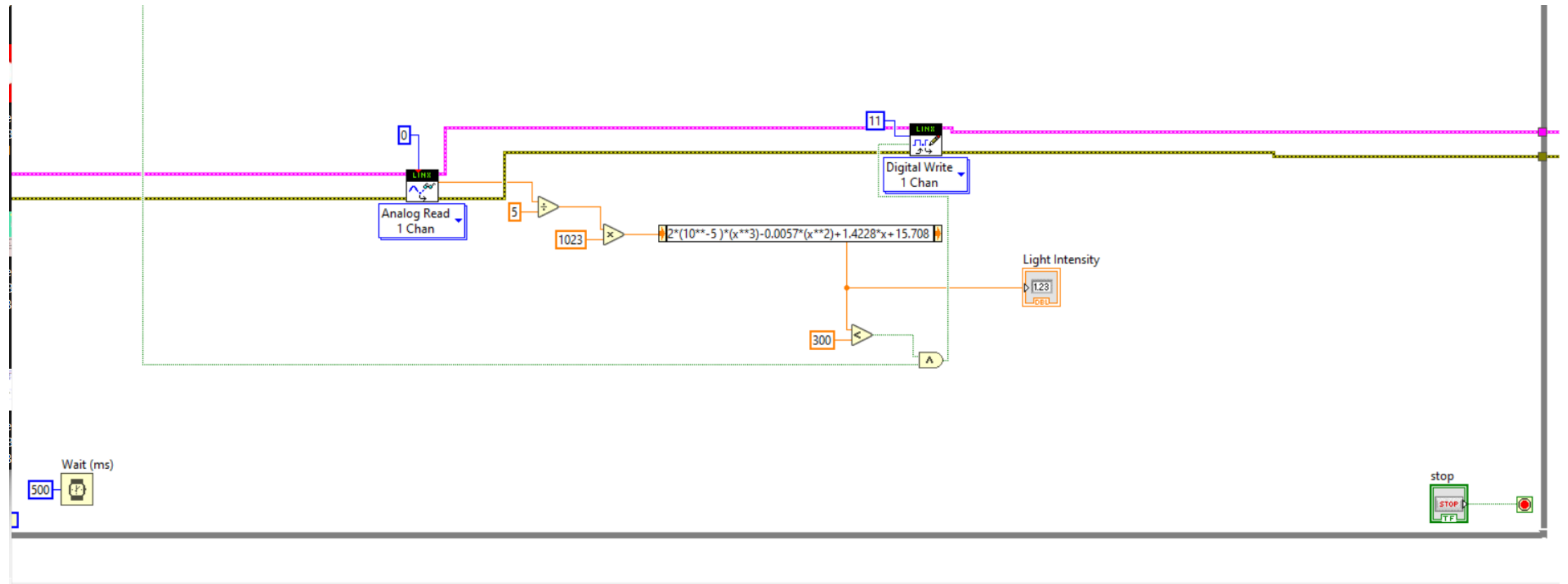
501	1200
488	1130
486	1010
480	926
469	820
428	714
397	620
382	570
378	500
353	450
301	320
244	247
100	61.5
74	40

32	22
22	16
14	10
1	2.5

# Variation of the intensity with the voltage



# Light Intensity Sensor







# Safety Precautions

- Measure the maximum and minimum voltage and current values of motor and make sure they are in the rated levels.
- Power is delivered using separate power supply which has self protection system.
- Use 1 k $\Omega$  resistor for the protection of LED bulb.



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## Why?

- Energy saving.
- High system durability.
- Convenience for the consumers.



A bright, airy dining room with a table set for a meal, a large potted plant, and open windows looking out onto a garden. The room features a white wall, a wooden table, and a patterned tablecloth. A large potted plant sits on a wooden surface to the right. Two windows with white frames are open, showing a view of a garden with green trees and white flowers. A black pendant light hangs from the ceiling. The text "Thank You" is overlaid in the center.

Thank You