

IBM NALIYA THIRAN

TEAM MEMBERS:

917719IT057 – MITHUL KANNAN K R

917719IT067 – PALANI KUMAR S

917719IT010 – ARAVINTH S

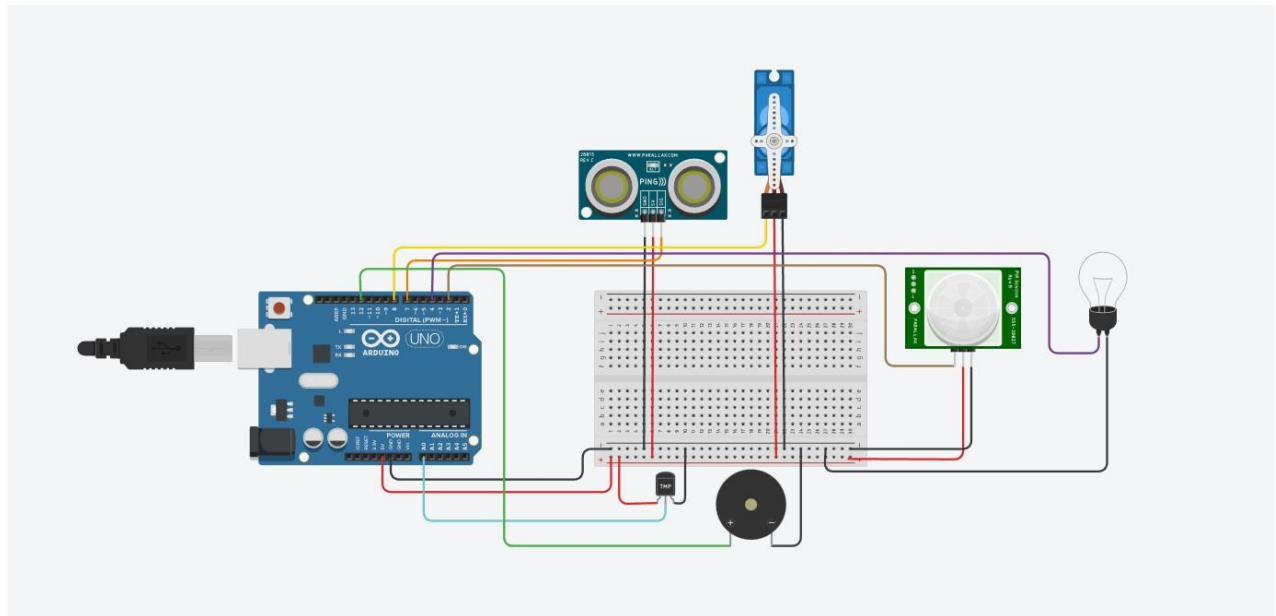
917719IT108 – SURYA KUMAR K

ASSIGNMENT - 1

Tinkercad Stimulation Link:

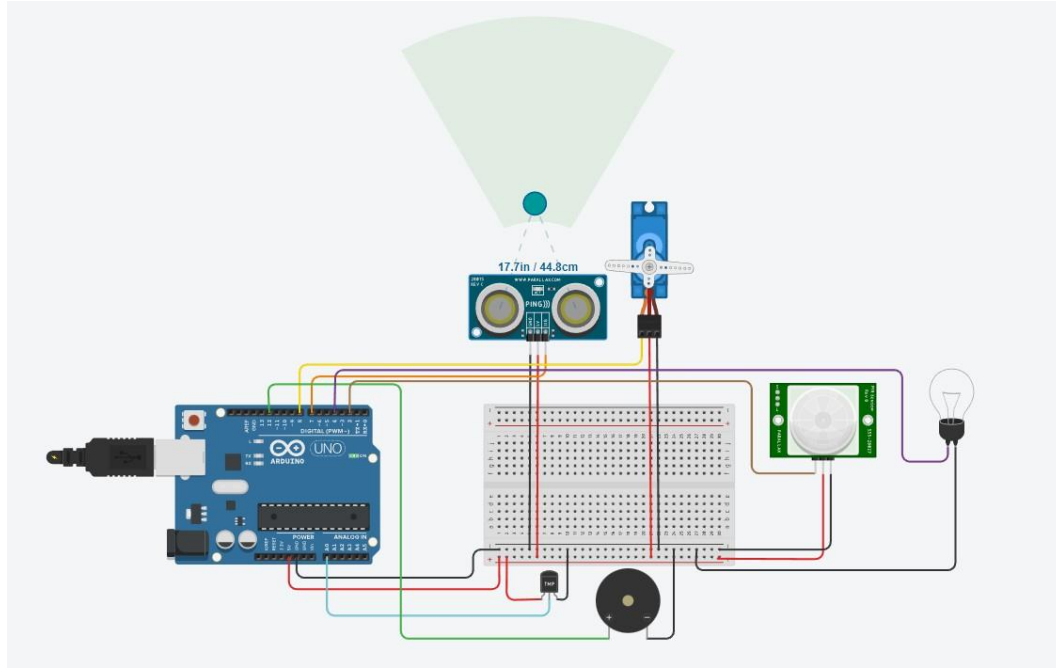
<https://www.tinkercad.com/things/96cBvAnrQ6n-tremendous-bruticus-borwo/editel>

Circuit Design:



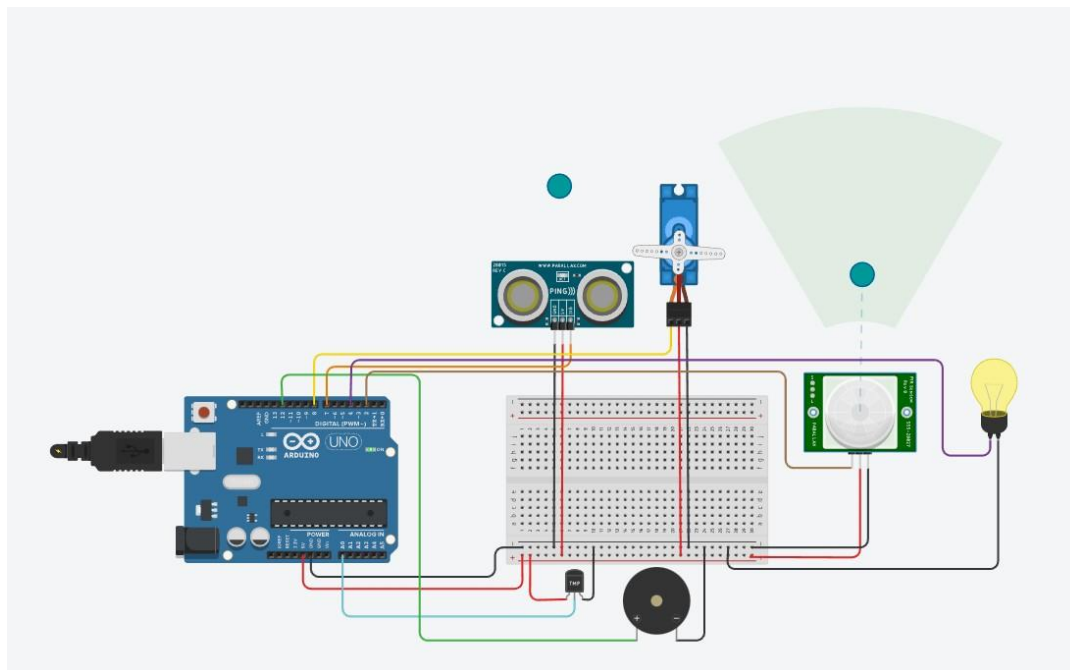
Ultrasonic sensor and Servo motor working:

The Ultrasonic sensor detects if a person is closer than 80 cm and opens the door for 5 seconds. Here, we have used Servo motor for simulation of door. After 5 seconds, the door will automatically close.



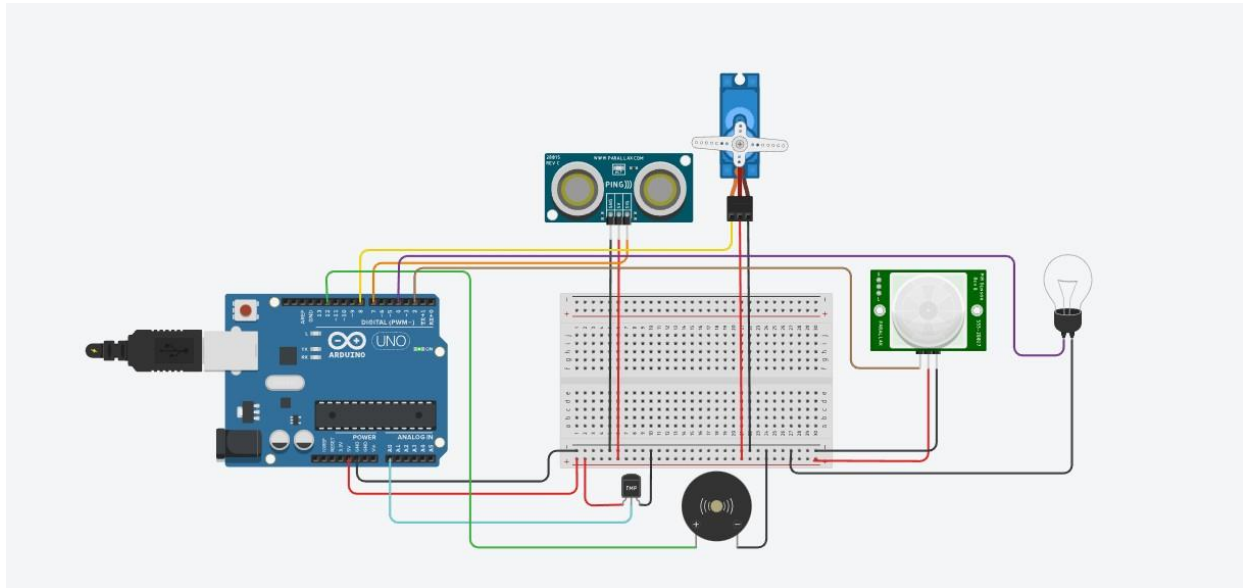
PIR sensor and Bulb working:

The PIR sensor can be fit in any room, if motion is detected then the light is turned on in that particular room. The light will turn off if there is no movement.



Temperature sensor and Buzzer working:

The Temperature sensor will detect the temperature and if it is more than 50 degrees Celsius, then the buzzer sound is turned on to alert the person.



Code:

```
#include<Servo.h>

const int ultPin = 7;

int servoPin = 8;

Servo servo1;

void setup() {
  Serial.begin(9600);
  servo1.attach(servoPin);
  pinMode(2,INPUT);
  pinMode(4,OUTPUT);
  pinMode(12,OUTPUT);
  pinMode(A0,INPUT);
  digitalWrite(2,LOW);
```

```
}  
void loop() {  
  
    long duration, inches, cm;  
  
    pinMode(ultPin, OUTPUT);  
    digitalWrite(ultPin, LOW);  
    delayMicroseconds(2);  
    digitalWrite(ultPin, HIGH);  
    delayMicroseconds(5);  
    digitalWrite(ultPin, LOW);  
    pinMode(ultPin, INPUT);  
    duration = pulseIn(ultPin, HIGH);  
  
    cm = duration / 29 / 2;  
  
    servo1.write(0);  
    if(cm < 80)  
    {  
        servo1.write(90);  
        delay(5000);  
    }  
    else  
    {  
        servo1.write(0);  
    }  
}
```

```
int pir = digitalRead(2);  
if(pir == HIGH)  
{  
    digitalWrite(4,HIGH);  
    delay(1000);  
}  
else if(pir == LOW)  
{  
    digitalWrite(4,LOW);  
}  
float value=analogRead(A0);  
float temperature=value*0.48;  
if(temperature > 80)  
{  
    digitalWrite(12,HIGH);  
}  
else  
{  
    digitalWrite(12,LOW);  
}  
}
```