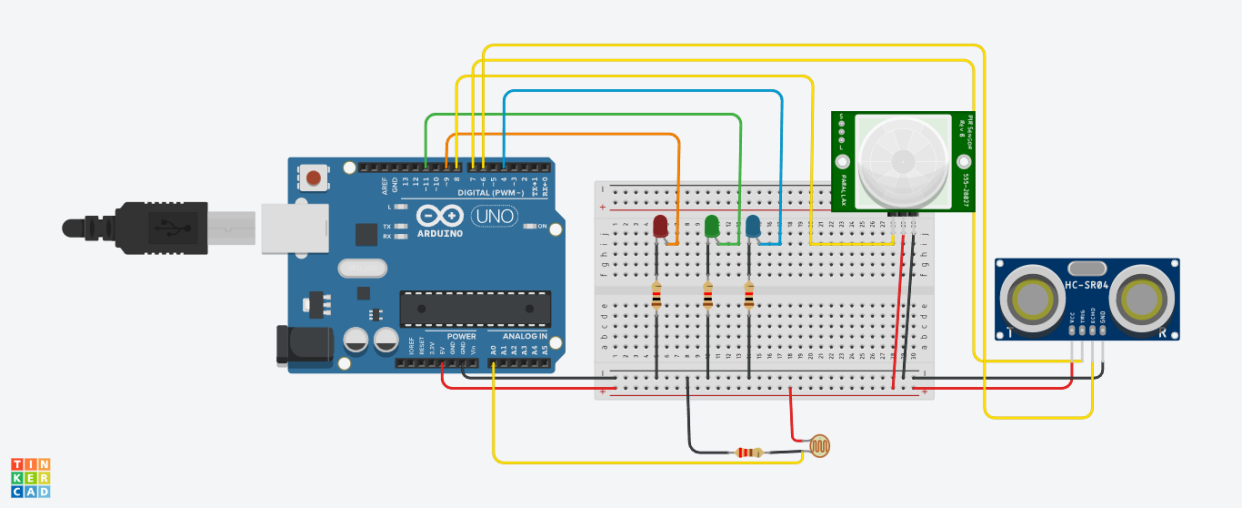
Nalaiya Thiran (IBM)

ASSIGNMENT – 1

Make a Smart Home in Tinkercad, using 2+ sensors, Led, Buzzer in single code and circuit.

Link : https://www.tinkercad.com/things/bp5Szquq8lU-copy-of-osamayalzamzami-experiment-3-sensors-with-3-leds/editel?sharecode=dW8W6xWYVIIQyR_plvxE5gwhvqcg5cabgXbniLV87T4




```
int sensorValue = 0; // photo sensor

int buttonState = 0; // RIP

int distanceThreshold = 0; // Ultrasonic

int cm = 0;

int inches = 0;
```

```
long readUltrasonicDistance(int triggerPin, int echoPin)
{
  pinMode(triggerPin, OUTPUT);  // Clear the trigger
  digitalWrite(triggerPin, LOW);
  delayMicroseconds(2);
  // Sets the trigger pin to HIGH state for 10 microseconds
  digitalWrite(triggerPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(triggerPin, LOW);
  pinMode(echoPin, INPUT);
  // Reads the echo pin, and returns the sound wave travel time in microseconds
  return pulseIn(echoPin, HIGH);
}

void setup()
{
  Serial.begin(9600);
  pinMode(A0, INPUT);// photo sensor
  pinMode(9, OUTPUT);// photo sensor
pinMode(8, INPUT);  // RIP
  pinMode(11, OUTPUT);// RIP

  pinMode(4, OUTPUT);// Ultrasonic
}

void loop()
{
  // photo sensor
  // read the value from the sensor
  sensorValue = analogRead(A0);
  // print the sensor reading so you know its range
  Serial.println(sensorValue);
  // map the sensor reading to a range for the
  // speaker
```

```
analogWrite(9, map(sensorValue, 0, 1023, 0, 255));
delay(1000); // Wait for 100 millisecond(s)

//RIP
// read the state of the pushbutton
buttonState = digitalRead(8);
// check if pushbutton is pressed. if it is, the
// button state is HIGH
if (buttonState == HIGH) {
  digitalWrite(11, HIGH);
} else {
  digitalWrite(11, LOW);
}
delay(100); // Delay a little bit to improve simulation performance

// set threshold distance to activate LEDs
distanceThreshold = 350;
// measure the ping time in cm
cm = 0.01723 * readUltrasonicDistance(7, 6);
// convert to inches by dividing by 2.54
inches = (cm / 2.54);
Serial.print(cm);
Serial.print("cm, ");
Serial.print(inches);
Serial.println("in");
if (cm > distanceThreshold) {

  digitalWrite(4, LOW);

}
if (cm <= distanceThreshold - 100 && cm > distanceThreshold - 150) {

  digitalWrite(4, LOW);
}
if (cm <= distanceThreshold - 150 && cm > distanceThreshold - 350) {
```

```
    digitalWrite(4, HIGH);


  }
  delay(1000); // Wait for 100 millisecond(s)
}
```