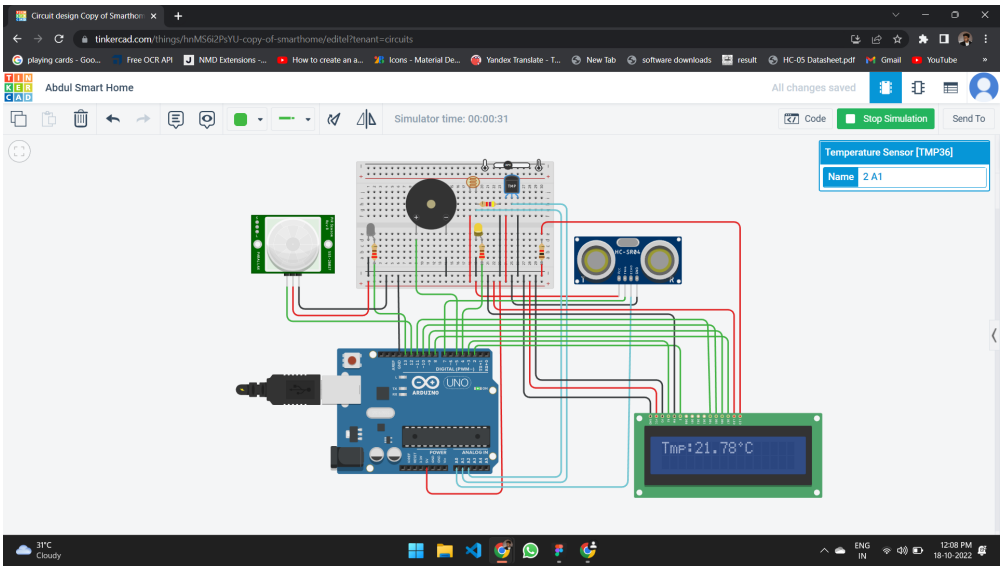
Assignment -1
Smart Home

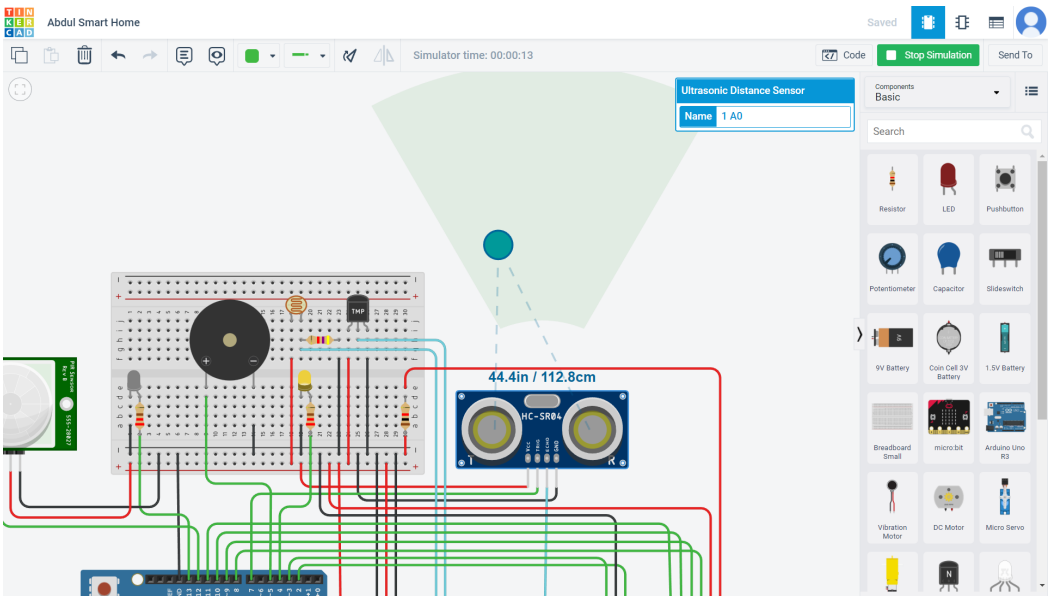
Date	29 September 2022
Student Name	Abdul Rahman S
Student Roll No	911719104002
Maximum Marks	2 Marks

Question-1:

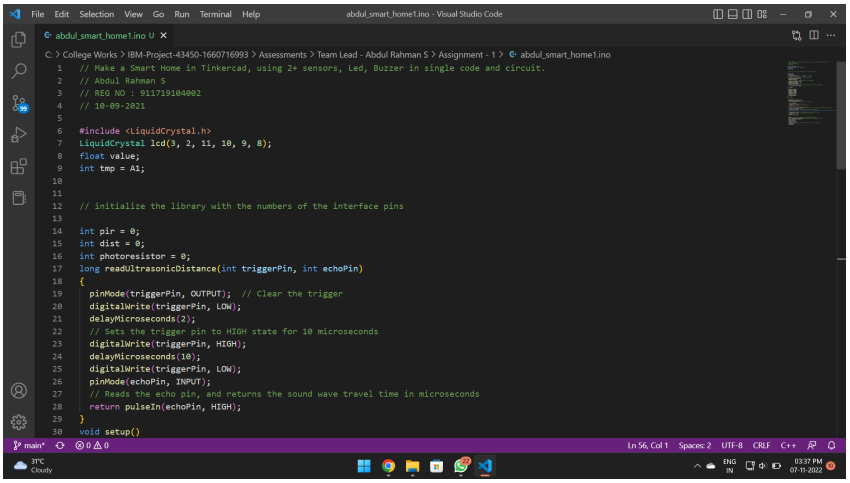
Build a smart home in Thinkercad with 2 sensors, an Led, buzzer and submit it

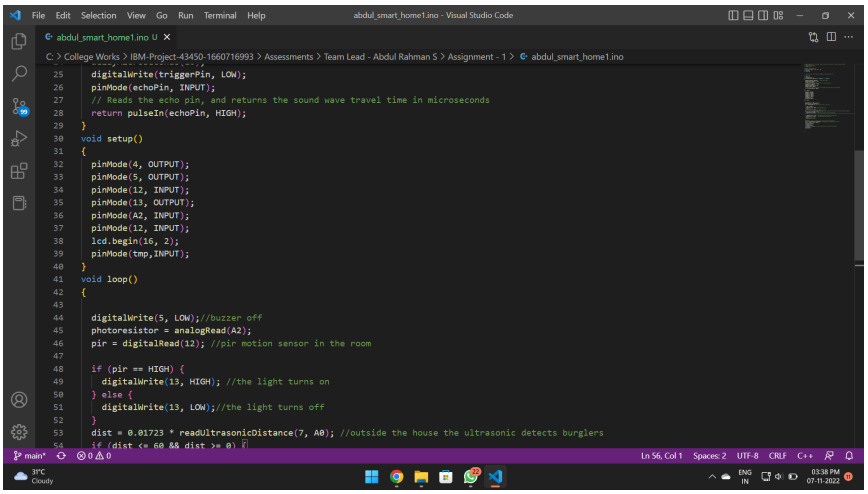
Output :

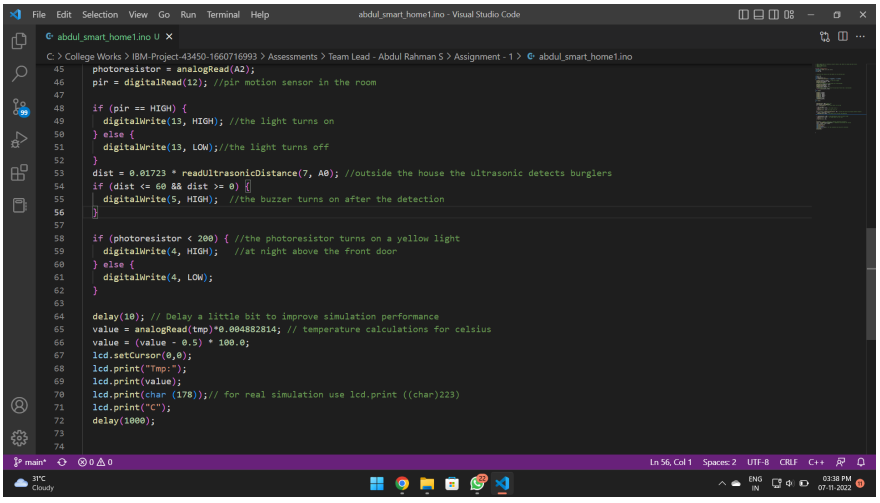




Screenshot :


// Make a Smart Home in Tinkercad, using 2+ sensors, Led, Buzzer in single code and circuit.
// Abdul Rahman S
// REG NO : 911719104002
// 10-09-2021
#include <LiquidCrystal.h>
LiquidCrystal lcd(3, 2, 11, 10, 9, 8);
float value;
int tmp = A1;
// initialize the library with the numbers of the interface pins
int pir = 0;
int dist = 0;
int photoresistor = 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()


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()
{
pinMode(4, OUTPUT);
pinMode(5, OUTPUT);
pinMode(12, INPUT);
pinMode(13, OUTPUT);
pinMode(A2, INPUT);
pinMode(12, INPUT);
lcd.begin(16, 2);
pinMode(tmp,INPUT);
}
void loop()
{
digitalWrite(5, LOW);//buzzer off
photoresistor = analogRead(A2);
pir = digitalRead(12); //pir motion sensor in the room
if (pir == HIGH) {
digitalWrite(13, HIGH); //the light turns on
} else {
digitalWrite(13, LOW);//the light turns off
}
dist = 0.01723 * readUltrasonicDistance(7, A0); //outside the house the ultrasonic detects burglers


photoresistor = analogRead(A2);
pir = digitalRead(12); //pir motion sensor in the room
if (pir == HIGH) {
digitalWrite(13, HIGH); //the light turns on
} else {
digitalWrite(13, LOW);//the light turns off
}
dist = 0.01723 * readUltrasonicDistance(7, A0); //outside the house the ultrasonic detects burglers
if (dist <= 60 && dist >= 0) {
digitalWrite(5, HIGH); //the buzzer turns on after the detection
}
if (photoresistor < 200) { //the photoresistor turns on a yellow light
digitalWrite(4, HIGH); //at night above the front door
} else {
digitalWrite(4, LOW);
}
delay(10); // Delay a little bit to improve simulation performance
value = analogRead(tmp)*0.004882814; // temperature calculations for celsius
value = (value - 0.5) * 100.0;
lcd.setCursor(0,0);
lcd.print("Tmp:");
lcd.print(value);
lcd.print(char (178));// for real simulation use lcd.print ((char)223)
lcd.print("C");
delay(1000);