

## ASSIGNMENT – 1

## BUILD A SMART HOME IN TINKERCAD

Assignment date	26 September 2022
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Maximum marks	2 marks

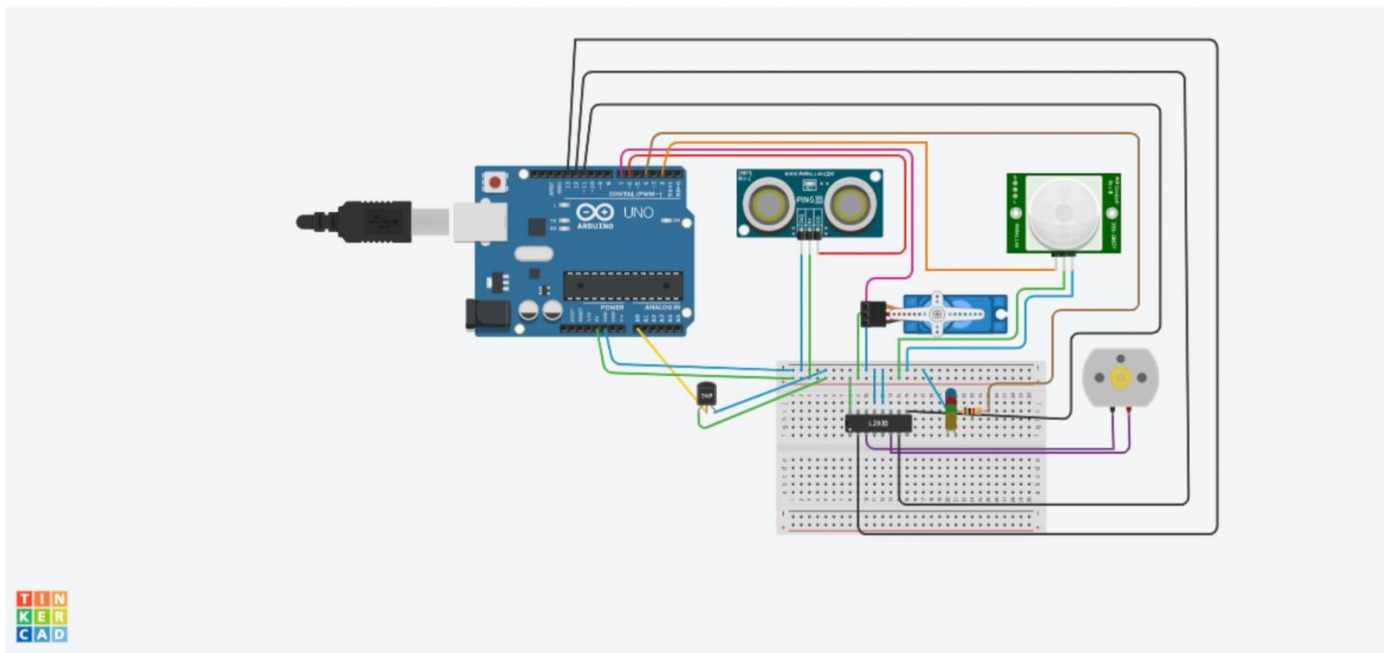
**QUESTION -1:**

## Build a smart home in tinkercad

Use atleast 2 sensor, led, buzzer in a circuit. Stimulate in a single code.

**Solution:**

## CIRCUIT



**CODE:**

```
#include<Servo.h>

int us = 6;

int servo = 7;

Servo servo1;

void setup() {
```

```

Serial.begin(9600);
servo1.attach(servo);
pinMode(2,INPUT);
pinMode(4,OUTPUT);
pinMode(11,OUTPUT);
pinMode(12,OUTPUT);
pinMode(13,OUTPUT);
pinMode(A0,INPUT);
digitalWrite(2,LOW);
digitalWrite(11,HIGH);
}

void loop() {
    long duration, inches, cm;
    pinMode(us, OUTPUT);
    digitalWrite(us, LOW);
    delayMicroseconds(2);
    digitalWrite(us, HIGH);
    delayMicroseconds(5);
    digitalWrite(us, LOW);
    pinMode(us, INPUT);
    duration = pulseIn(us, HIGH);
    inches = microsecondsToInches(duration);
    cm = microsecondsToCentimeters(duration);
    servo1.write(0);
    if(cm < 30)
    {
        servo1.write(120);
        Serial.println("A Person Arrived, Door is Opening.....");
        delay(2000);
    }
    Else

```

```
{  
    servo1.write(0);  
    Serial.println("Door is Closed.....");  
}  
int pir = digitalRead(2);  
if(pir == HIGH)  
{  
    digitalWrite(4,HIGH);  
    delay(3000);  
}  
else if(pir == LOW)  
{  
    digitalWrite(4,LOW);  
}  
float value=analogRead(A0);  
float temp=(((value/1024)*5.0199)-0.5)*100;  
Serial.print("temp is ");  
Serial.println(temp);  
delay(3000);  
if(temp > 20)  
{  
    digitalWrite(12,HIGH);  
    digitalWrite(13,LOW);  
}  
else  
{  
    digitalWrite(12,LOW);  
    digitalWrite(13,LOW);  
}  
}
```

```
long microsecondsToInches(long microseconds) {  
    return microseconds / 74 / 2;  
}  
  
long microsecondsToCentimeters(long microseconds) {  
    return microseconds / 29 / 2;  
}
```