ASSIGNMENT – 1

BUILD A SMART HOME IN THINKERCAD

Assignment date	26 September 2022
Student name	M.Vellaiammal
Student Roll number	815119106045
Maximum marks	2 marks

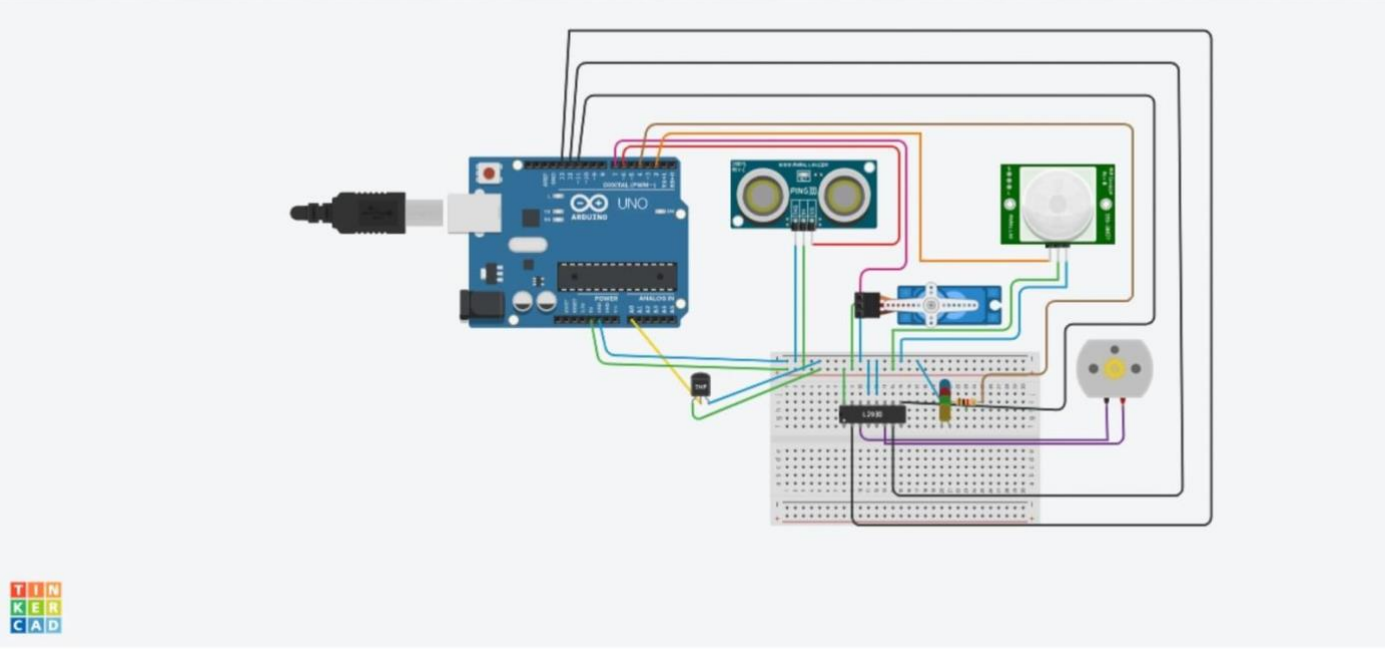
QUESTION -1:

Build a smart home in thinkercad

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(duratio
```

```
n);   cm =
microsecondsToCentimeters(d
uration);


 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;
}
```