ASSIGNMENT – 1

BUILD A SMART HOME IN TINKERCAD

Assignment date	26 September 2022
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Maximum marks	2 marks

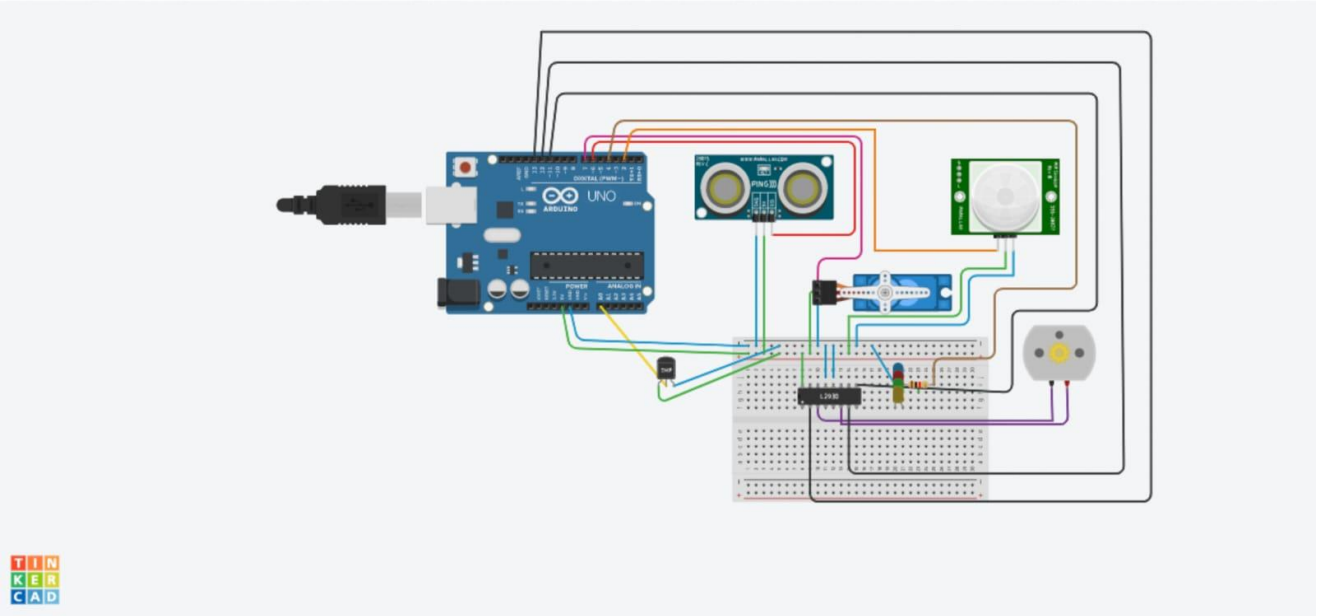
QUESTION -1:

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;
}
```