ASSIGNMENT – 1

BUILD A SMART HOME IN TINKERCAD

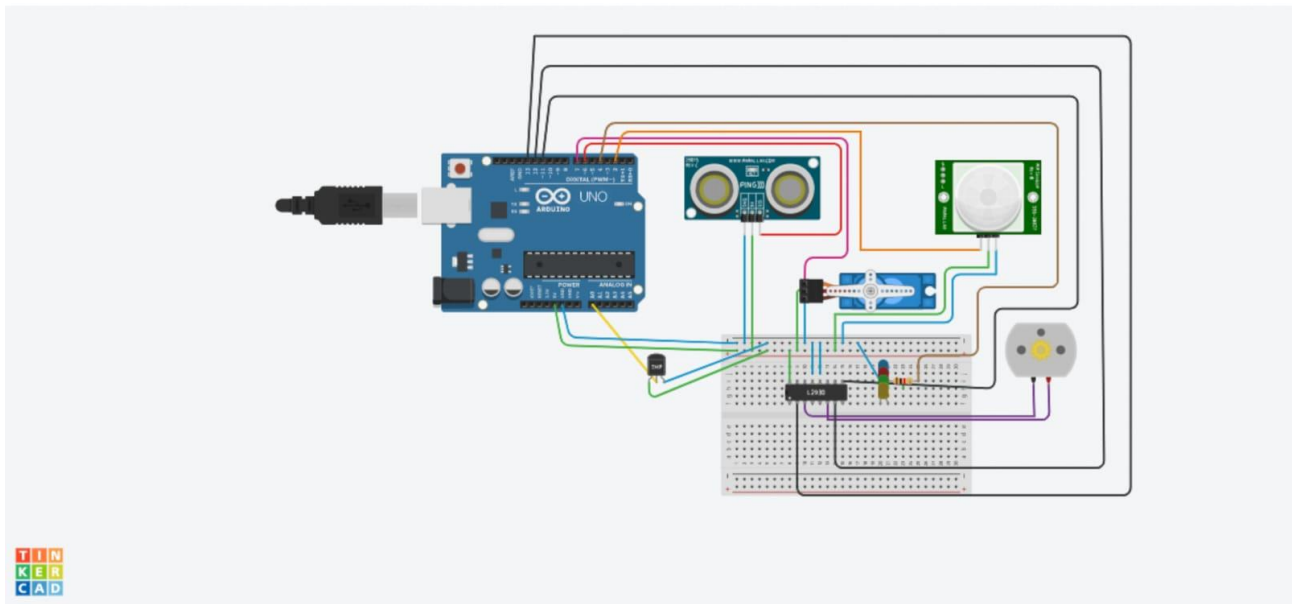| Assignment date	26 September 2022
Student name	Deepak M
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Maximum marks	2 marks

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
```

```cpp
{
  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;

}
```