Assignment-1

Assignment Date	03 November 2022
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Maximum Marks	2 Marks

STATEMENT:

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

PROGRAM :

```
#include<Servo.h>
const int pingPin = 2;
int servoPin = 3;
char degree = 176;

Servo servo1;

void setup() {
  Serial.begin(9600);
  servo1.attach(servoPin);
  pinMode(4,INPUT);
  pinMode(5,OUTPUT);
  pinMode(11,OUTPUT);
  pinMode(12,OUTPUT);
  pinMode(13,OUTPUT);
  pinMode(A0,INPUT);
  digitalWrite(4,LOW);
  digitalWrite(11,HIGH);

}

void loop() {
```

```
long duration, inches, cm;

pinMode(pingPin, OUTPUT);
digitalWrite(pingPin, LOW);
delayMicroseconds(2);
digitalWrite(pingPin, HIGH);
delayMicroseconds(5);
digitalWrite(pingPin, LOW);



pinMode(pingPin, INPUT);
duration = pulseIn(pingPin, HIGH);

inches = microsecondsToInches(duration);
cm = microsecondsToCentimeters(duration);

servo1.write(0);

if(cm > 100)
{
  servo1.write(90);
  delay(10);
}
else
{
  servo1.write(0);
}

int pir = digitalRead(4);

if(pir == HIGH)
{
```

```
  digitalWrite(5,HIGH);
  delay(1000);
 }
 else if(pir == LOW)
 {
  digitalWrite(5,LOW);
 }

 float tmp = analogRead(A0);
 float voltage = (tmp * 5.0)/1024;
 float milliVolt = voltage * 1000;
 float tmpCel =  (milliVolt-500)/10;
 if(tmpCel > 20){
  digitalWrite(12, HIGH);
        digitalWrite(13, LOW);
  Serial.print("Temperature: ");
  Serial.print(tmpCel);
  Serial.println(degree);
  Serial.println("Fan is ON now");
  delay(2000);
 }
 else{
  digitalWrite(12, LOW);
        digitalWrite(13, LOW);
  Serial.print("Temperature: ");
  Serial.print(tmpCel);
  Serial.println(degree);
  Serial.println("Fan is Off now");
  delay(2000);
 }

}
```

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

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

CIRCUIT: