

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 servol;

void setup() {
  Serial.begin(9600);
  servol.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:

