

## ASSIGNMENT-1

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MAXIMUM MARKS	2 Marks

### Question 1

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

### Program:

```
#include<Servo.h>

const int pingPin = 7;

int servoPin = 8;

Servo servo1;

void setup() {
  // initialize serial communication:
  Serial.begin(9600);
  servo1.attach(servoPin);
  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(pingPin, OUTPUT);
```

```
digitalWrite(pingPin, LOW);
```

```
delayMicroseconds(2);
```

```
digitalWrite(pingPin, HIGH);
```

```
delayMicroseconds(5);
```

```
digitalWrite(pingPin, LOW);
```

```
pinMode(pingPin, INPUT);
```

```
duration = pulseIn(pingPin, HIGH);
```

```
// convert the time into a distance
```

```
inches = microsecondsToInches(duration);
```

```
cm = microsecondsToCentimeters(duration);
```

```
Serial.print(inches);
```

```
Serial.print("in, ");
```

```
Serial.print(cm);
```

```
Serial.print("cm");
```

```
Serial.println();
```

```
delay(100);
```

```
servo1.write(0);
```

```
if(cm < 40)
```

```
{
```

```
    servo1.write(90);
```

```
    delay(2000);
```

```
}  
  
else  
  
{  
    servo1.write(0);  
}
```

```
int pir = digitalRead(2);
```

```
if(pir == HIGH)  
{  
    digitalWrite(4,HIGH);  
    delay(1000);  
}  
else if(pir == LOW)  
{  
    digitalWrite(4,LOW);  
}
```

```
float value=analogRead(A0);  
float temperature=value*0.48;
```

```
Serial.println("temperature");  
Serial.println(temperature);
```

```
if(temperature > 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;
}

```

