

Assignment -1

Assignment Date	03 October 2022
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Question-1 :

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

Solution :

Code:

```
#include<Servo.h>

const int takePin = 7;

int servePin = 8;

Servo servo;

void setup() {

  // serial communication initializing:

  Serial.begin(9600);

  servo.attach(servePin);

  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(takePin, OUTPUT);
    digitalWrite(takePin, LOW);
    delayMicroseconds(2);
    digitalWrite(takePin, HIGH);
    delayMicroseconds(5);
    digitalWrite(takePin, LOW);

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

    // conversion of 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);
```

```
servo.write(0);
```

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

```
{
```

```
    servo.write(90);
```

```
    delay(2000);
```

```
}
```

```
else
```

```
{
```

```
    servo.write(0);
```

```
}
```

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

```
if(pir == HIGH)
```

```
{
```

```
    digitalWrite(4,HIGH);
```

```
        delay(1000);
    }

    else if(pir == LOW)
    {
        digitalWrite(4,LOW);
    }


    float reading=analogRead(A0);

    float tempdeg=value*0.48;


    Serial.println("temperature");

    Serial.println(temperature);


    if(tempdeg > 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;  
  
}
```

Output:

