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);

  // convertion 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: