Assignment -1

Smart home appliances

Assignment Date	09 September 2022
Student Name	Ms. Anandhi
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Maximum Marks	2 Marks

TASK:

SMART HOME APPLIANCES

PROJECT:

Motion and object detection

CODE:

```
int inches = 0;


int cm = 0;
int ma=0;
float lastLight=0;
float light=0;
float lightPersnt=0;
int motion = 0;
int lastMotion=1;


long readUltrasonicDistance(int pin)
{
  pinMode(pin, OUTPUT);  // Clear the
trigger
  digitalWrite(pin, LOW);
  delayMicroseconds(2);
  // Sets the pin on HIGH state for 10 micro
seconds
  digitalWrite(pin, HIGH);
```

```
  delayMicroseconds(10);
  digitalWrite(pin, LOW);
  pinMode(pin, INPUT);
  // Reads the pin, and returns the sound
wave travel time in microseconds
  return pulseIn(pin, HIGH);
}

void setup()
{
  pinMode(5, INPUT); // Destance
  pinMode(A0, INPUT); //LIGHT
  pinMode(8, INPUT);  // MOTION

  Serial.begin(9600);

}

void loop()
{

  // measure the ping time in cm
  cm = 0.01723 *
readUltrasonicDistance(5);
  // convert to inches by dividing by 2.54
  inches = (cm / 2.54);
  if(cm != ma)
  {
  Serial.print(inches);
  Serial.print("in, ");
  Serial.print(cm);
```

```
  Serial.println("cm    ");
  ma=cm;}

  light = analogRead(A0)-205;
        lightPersnt= 100-(100*(light/818));
 if(light != lastLight)
 {

Serial.print(lightPersnt);Serial.println("%");
  lastLight=light;
 }
 motion=digitalRead(8);
 if(motion!=lastMotion)
 {
 Serial.println(motion);
  lastMotion=motion;
 }
  if(cm>=150)
 {
  digitalWrite(2,HIGH);
 }
 else {digitalWrite(2,LOW);}

 if(lightPersnt>=50)
 {
  digitalWrite(3,HIGH);
 }
 else {digitalWrite(3,LOW);}
```

```
if(lastMotion>=0.50)
{
 digitalWrite(4,HIGH);
}
else {digitalWrite(4,LOW);}


delay(100); // Wait for 100 millisecond(s)

}
```

CIRCUIT: