```
#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);
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;

}
```