```
#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;
}
```