```
#include<Servo.h>
const int pingPin = 7;
int servoPin = 8;

Servo servo1;

void setup() {
  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);

  inches = microsecondsToInches(duration);
  cm = microsecondsToCentimeters(duration);

  servo1.write(0);

  if(cm < 80)
  {
    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);
  }

  //temp with fan
  float value=analogRead(A0);
  float voltage=value*5.0;
  voltage/=1024;
  float temperature=(voltage-0.5)*100;

  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;
```

}