```
#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);

  // The same pin is used to read the signal from the PING))): a HIGH pulse
  // whose duration is the time (in microseconds) from the sending of the ping
  // to the reception of its echo off of an object.
  pinMode(pingPin, INPUT);
  duration = pulseIn(pingPin, HIGH);

  // convert 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);

  servo1.write(0);

  if(cm < 40)
  {
    servo1.write(90);
    delay(2000);
  }
  else
```

```
    {
      servo1.write(0);
    }

    // PIR with LED starts
    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 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;
}
```