```
#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;
}
```