```cpp
#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);
```

```arduino
//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;
}
```