```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);

//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

{
```

```arduino
 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;

}
```