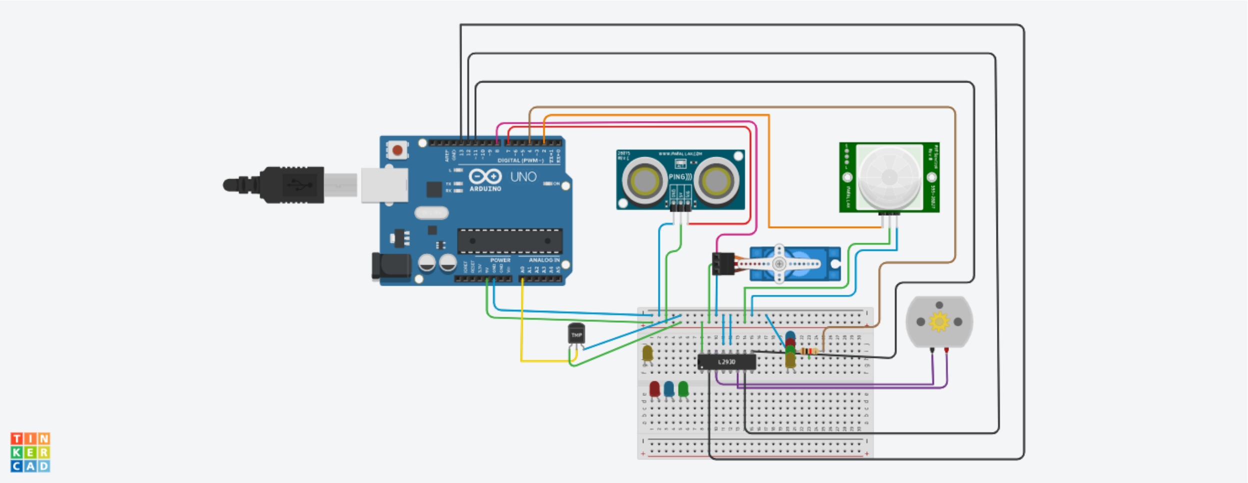
CIRCUIT DIAGRAM:



SOURCE CODE:

```
 #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;
}
```