```
int temperature_sensor=A0;
int ultra_in=3,PIR=4,photo_diode=5;
int ultra_out = 2,led_r=13,sound1=12,bulb=9,sound2=11,led_b=10,led_g=8;

void setup()
{
  Serial.begin(9600);
  pinMode(ultra_in,INPUT);
  pinMode(ultra_out,OUTPUT);
  pinMode(led_r,OUTPUT);
  pinMode(sound1,OUTPUT);
  pinMode(temperature_sensor,INPUT);
  pinMode(PIR,INPUT);
  pinMode(bulb,OUTPUT);
  pinMode(photo_diode,INPUT_PULLUP);
  pinMode(sound2,OUTPUT);
  pinMode(led_b,OUTPUT);
  pinMode(led_g,OUTPUT);
}
void loop()
{
    //PIR for motion detection and alerting
 double x=digitalRead(PIR);
  if(x)
  {

    tone(sound1,30);
```

```
  delay(10);
 }

 else
 {

  noTone(sound1);
  delay(10);
 }

 //temperature sensor to indicate the temperature
 double a = analogRead(temperature_sensor);
 double value = (((a/1024)*5)-0.5)*100;
if(value>90)
{
  Serial.println("High");
  analogWrite(led_r,255);
  analogWrite(led_b,0);
  analogWrite(led_g,0);
}
 else if(value>30&&value<90)
 {
Serial.println("Moderate");
   analogWrite(led_r,0);
   analogWrite(led_b,0);
   analogWrite(led_g,153);
 }
```

```
else
{
  Serial.println("Cold");
  analogWrite(led_r,0);
  analogWrite(led_b,153);
  analogWrite(led_g,0);
}

//Ultrasonic detection
digitalWrite(ultra_out,LOW);
digitalWrite(ultra_out,HIGH);
delayMicroseconds(10);
digitalWrite(ultra_out,LOW);

float duration =pulseIn(ultra_in,HIGH);
float distance=(duration*0.0343)/2;
if(distance<100)
{

  delay(10);
  tone(sound2,20);
  delay(1000);
}
else
{

  noTone(sound2);
```

```
 }
 //photodiode for turning on and off of bulb
 if(digitalRead(photo_diode)==HIGH)
 {
   digitalWrite(bulb,HIGH);
 }
 else{
   digitalWrite(bulb,LOW);
 }
}
```