```arduino
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)

  {


```

```arduino
    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);

}
```



```
}
```