



```
const int pingpin=4;
```

```
const int led = 13;
```

```
int baselineTemp = 0;
```

```
int celsius = 0;
```

```
int fahrenheit = 0;
```

```
void setup()
```

```
{  
  Serial.begin(9600);  
  pinMode(led, OUTPUT);  
  pinMode(2, OUTPUT);  
  
}  
  
void loop() {  
  long duration, cm;  
  pinMode(pingpin, OUTPUT);  
  digitalWrite(pingpin, LOW);  
  delayMicroseconds(2);  
  digitalWrite(pingpin, HIGH);  
  delayMicroseconds(10);  
  digitalWrite(pingpin, LOW);  
  pinMode(pingpin, INPUT);  
  duration = pulseIn(pingpin, HIGH);  
  cm = duration * 0.034 / 2;  
  if(cm<100) {  
    digitalWrite(led, HIGH);  
  }  
  else  
  {  
    digitalWrite(led, LOW);  
  }  
}
```

```
// temp sensor

baselineTemp = 40;

celsius = map(((analogRead(A0) - 20) * 3.04), 0, 1023, -40, 125);

fahrenheit = ((celsius * 9) / 5 + 32);

Serial.print(celsius);

Serial.print(" C, ");

Serial.print(fahrenheit);

Serial.println(" F");

if (celsius < baselineTemp) {

    digitalWrite(2, LOW);}

if (celsius >= baselineTemp && celsius < baselineTemp + 10) {

    digitalWrite(2, HIGH);}

if (celsius >= baselineTemp + 10 && celsius < baselineTemp + 20) {

    digitalWrite(2, HIGH);}

if (celsius >= baselineTemp + 20 && celsius < baselineTemp + 30) {

    digitalWrite(2, HIGH);}

if (celsius >= baselineTemp + 30) {

    digitalWrite(2, HIGH);}

delay(100);

}
```

