7. Designideen, Arbeitsprinzip und Prozess (Projekt 2)

Das intelligente Warnsystem für Kleidung wird für die Menschen, die jeden Tag zur Arbeit gehen müssen aber nicht genug Zeit haben, um die Kleidungen rechtzeitig von draußen zurückzunehmen, entwickelt.

Das System verfügt über folgende Funktionen:
(1) Erfassung der aktuellen und zukünftigen Wetterinformationen von draußen
(2) Erfassung der aktuellen Informationen der Kleidungen
(3) Analyse der Kleidungs- und Wetterzustand und deren Sendungen durch E-Mail
(4) Entwicklermodus

Wenn das Wetter gut ist, macht das System gar nichts. Aber wenn es nicht so schön für die zu trocknenden Kleidungen ist, wie z.B. regnen oder schneien in drei Stunden, alarmiert das System durch Sendung eines (bis maximal drei pro Tag) E-Mails, damit die Leute rechtzeitig die Kleidungen zurückzunehmen können. Es ist aber auch möglich, das System mit einem Motor intergiert, um automatisch die Kleidungen nach Hause zu transformieren.

Die Erfassung der Kleidungszustand wird durch zwei DHT11 Sensoren realisiert. Dabei werden die Temperatur sowie Feuchtigkeit gemessen und durch MQTT-Protokoll übertragen. Um Genauigkeit zu sichern, werden zwei Sensoren statt ein ausgewählt. Und durch Vergleich der Kleidung- und Wetterzustand wird ein Ergebnis gegeben, ob die Kleidungen schon trocknet werden haben. Wenn ja, sendet das System ein E-Mail.
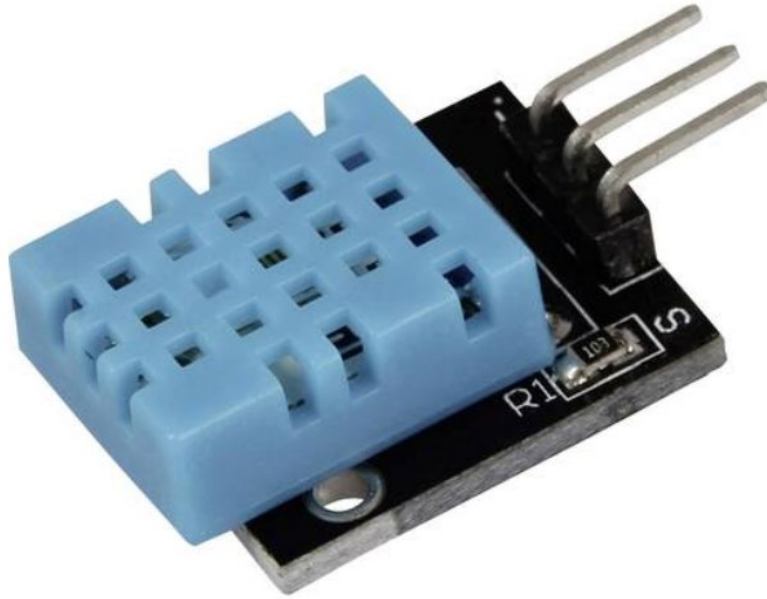
Dank des Entwicklermodus kann man selbst die Sensoren Daten einstellen, damit beim Debug die möglichen Fehler gefunden werden können.

8. Hardware-Aufbau und Beschreibung (Projekt 2)

8.1 Hardware

Die wichtige Hardware des Systems besteht aus den folgenden Teilen:
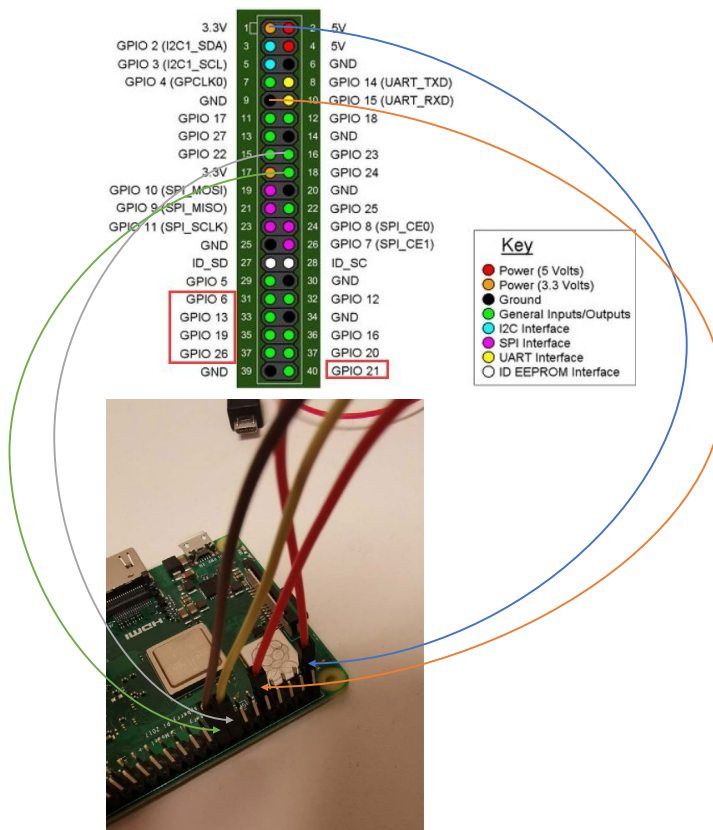
1. zwei DHT11 Sensoren

2. zwei Raspberry Pi (Typ: 3B+ und 3B)

3. zugehörige Kabel und Breadboard

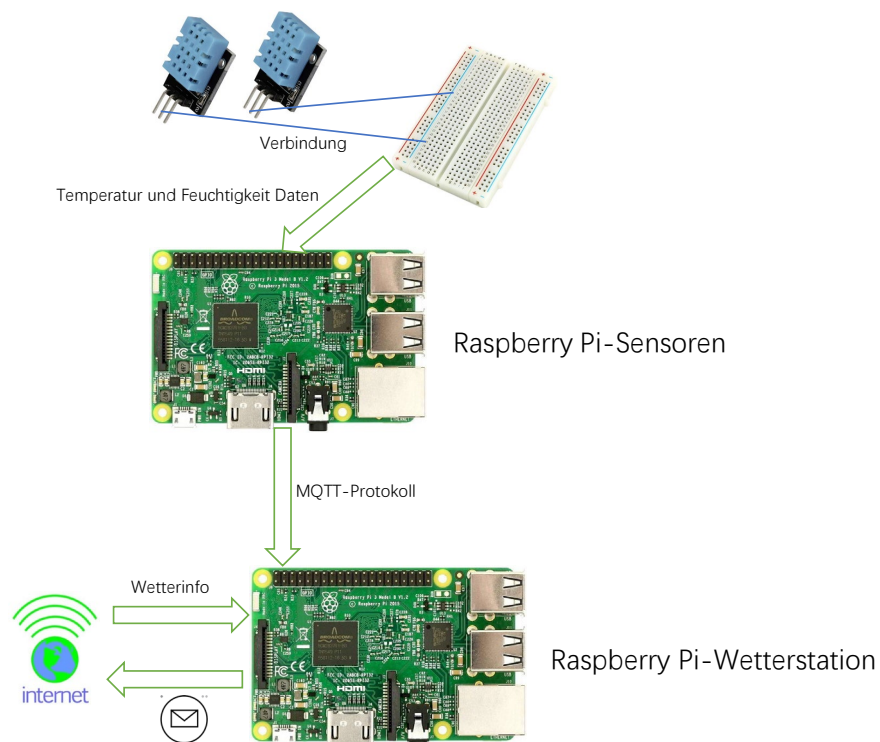## 8.2 Steuerung von DHT11 Sensoren

Nach Prüfung der Raspberry-PIN werden folgenden Kabeln wie untern verbunden:

8.3 Hardware-Aufbau

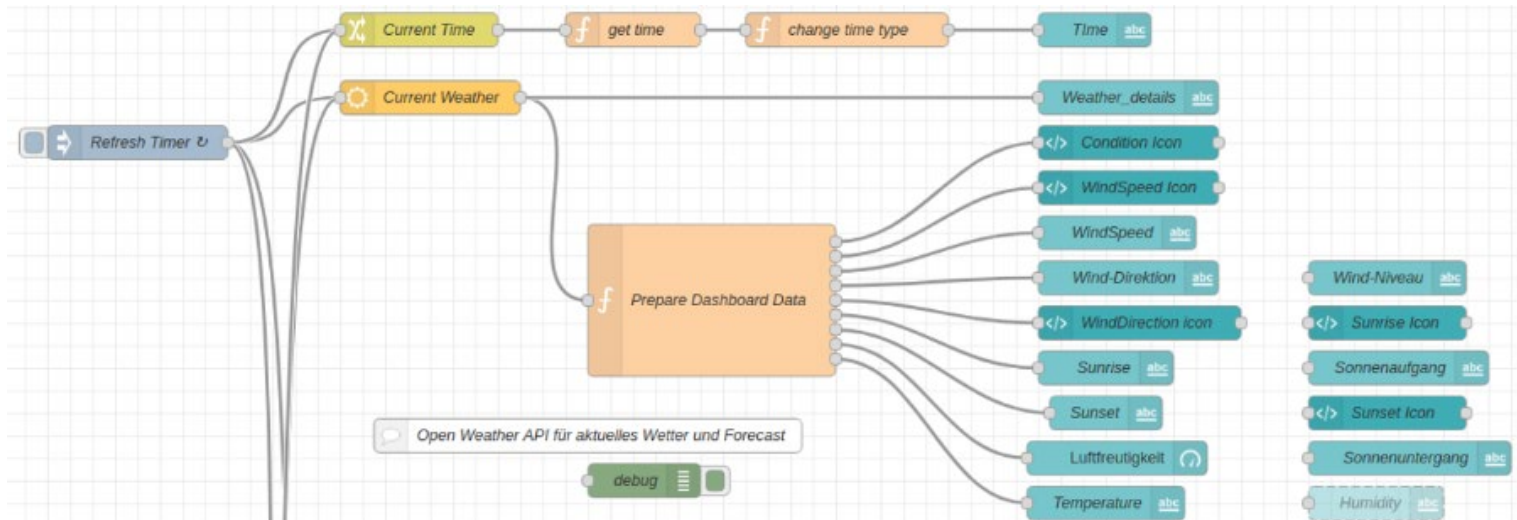Die Hardware-verbindung wird wie untern realisiert.

9. Node-RED-Programmierung (Projekt 2)

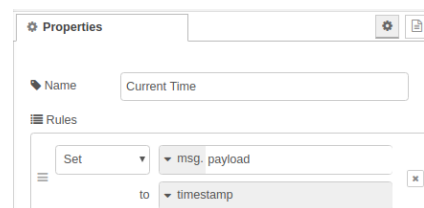In diesem Kapitel wird eine Node-RED-Programmierungsablauf beschrieben.

9.1 Programm für die Raspberry Pi-Wetterstation Design:

9.1.1 Programm für Erfassung der aktuellen Wetterinformationen

(1) Beschreibung „Current Time"
Das ganze System muss automatisch erneuen können, um die aktuellsten Informationen zu bekommen. Deshalb wird „Current Time" entwickelt.

Zuerst wird im „Current Time" timestamp erfasst.
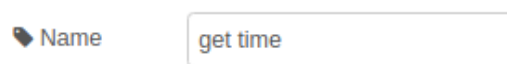

```
1  var d = new Date();
2  d.setHours(d.getHours() + 1);
3  time= d.toISOString();
4  msg.payload = time;
5  return msg;
```

Dann wird Datentyp geändert.


```
1  var year = msg.payload.substring(0, 4);
2  var month = msg.payload.substring(5, 7);
3  var date = msg.payload.substring(8, 10);
4  var others = msg.payload.substring(11, 16);
5  msg.payload = date + " / " + month + " / " + year + "  "+ others;
6  return msg;
```
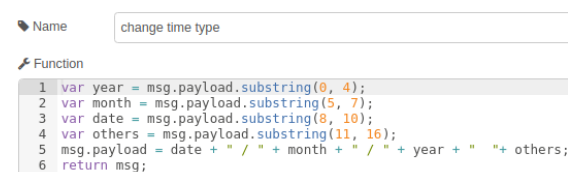
(2) Beschreibung „Current Weather"

Dank der intergierten Funktion „Openweathermap" ist die Erfassung der aktuellen sowie zukünftigen Wetterinformationen realisierbar. Nach erfolgreichem Einloggen und Einstellung bekommt man die jeweiligen Wetterinformationen. (wie untern gezeigt)

(3) Beschreibung „Prepare Dashboard Data"

Nach der Erfassung muss man den Datentyp vielmals verändern, um sie im Dashboard besser zu zeigen. Die Programmiersprache in Node-Red ist JavaScript, wie untern gezeigt.

```
var windDirection = {};
var windDirectionIcon = {};
var windSpeed = {};
var windSpeedIcon = {};
var sunRise = {};
var sunSet = {};
var conditionIcon = {};
var date = new Date ();
var humidity = {};
var temperature = {};

/* function for converting meteorogical degree to text */

var degToCard = function(deg){
if (deg>11.25 && deg<=33.75){
return "Nord-Nord-Ost";
   }else if (deg>33.75 && deg<56.25){
return "Nord-Ost";
   }else if (deg>56.25 && deg<78.75){
return "Ost-Nord-Ost";
   }else if (deg>78.75 && deg<101.25){
return "Ost";
   }else if (deg>101.25 && deg<123.75){
return "Ost-Süd-Ost";
   }else if (deg>123.75 && deg<146.25){
return "Süd-Ost";
   }else if (deg>146.25 && deg<168.75){
return "Süd-Süd-Ost";
   }else if (deg>168.75 && deg<191.25){
return "Süd";
   }else if (deg>191.25 && deg<213.75){
return "Süd-Süd-West";
   }else if (deg>213.75 && deg<236.25){
return "Süd-West";
   }else if (deg>236.25 && deg<258.75){
return "West-Süd-West";
   }else if (deg>258.75 && deg<281.25){
return "West";
   }else if (deg>281.25 && deg<303.75){
return "West-Nord-West";
   }else if (deg>303.75 && deg<326.25){
return "Nord-West";
   }else if (deg>326.25 && deg<348.75){
return "Nord-Nord-West";
```
1
```
   }else{
return "Nord";
   }
};

/* function for converting meteorogical degree to weather icons */

var degToCardIcon = function(deg){
if (deg>11.25 && deg<=33.75){
return "wi-from-nne";
   }else if (deg>33.75 && deg<56.25){
return "wi-from-ne";
   }else if (deg>56.25 && deg<78.75){
return "wi-from-ene";
   }else if (deg>78.75 && deg<101.25){
return "wi-from-e";
   }else if (deg>101.25 && deg<123.75){
return "wi-from-ese";
   }else if (deg>123.75 && deg<146.25){
return "wi-from-se";
   }else if (deg>146.25 && deg<168.75){
return "wi-from-sse";
   }else if (deg>168.75 && deg<191.25){
return "wi-from-s";
   }else if (deg>191.25 && deg<213.75){
return "wi-from-ssw";
   }else if (deg>213.75 && deg<236.25){
return "wi-from-sw";
   }else if (deg>236.25 && deg<258.75){
return "wi-from-wsw";
   }else if (deg>258.75 && deg<281.25){
return "wi-from-w";
   }else if (deg>281.25 && deg<303.75){
return "wi-from-wnw";
   }else if (deg>303.75 && deg<326.25){
return "wi-from-nw";
   }else if (deg>326.25 && deg<348.75){
return "wi-from-nnw";
   }else{
return "wi-from-n";
   }
};

/* Function for converting wind speed into Beaufort scale icon */
```
2
```
var speedToCardIcon = function(speed){
if (speed>0.5 && speed<=1.5){
return "wi-wind-beaufort-1";
   }else if (speed>1.5 && speed<=3.3){
return "wi-wind-beaufort-2";
   }else if (speed>3.3 && speed<=5.5){
return "wi-wind-beaufort-3";
   }else if (speed>5.5 && speed<=7.9){
return "wi-wind-beaufort-4";
   }else if (speed>7.9 && speed<=10.7){
return "wi-wind-beaufort-5";
   }else if (speed>10.7 && speed<=13.8){
return "wi-wind-beaufort-6";
   }else if (speed>13.8 && speed<=17.1){
return "wi-wind-beaufort-7";
   }else if (speed>17.1 && speed<=20.7){
return "wi-wind-beaufort-8";
   }else if (speed>20.7 && speed<=24.4){
return "wi-wind-beaufort-9";
   }else if (speed>24.4 && speed<=28.4){
return "wi-wind-beaufort-10";
   }else if (speed>28.4 && speed<=32.6){
return "wi-wind-beaufort-11";
   }else if (speed>32.6){
return "wi-wind-beaufort-12";
   }else{
return "wi-wind-beaufort-0";
   }
};

/* Function for Time Conversions */

function timeConverter(UNIX_timestamp) {
    var a = new Date(UNIX_timestamp * 1000);
    var hour = a.getHours();
    var min = a.getMinutes();
    if (min < 10) {min = "0" + min;}
       else {min = min;}
    var sec = a.getSeconds();
    if (sec < 10) {sec = "0" + sec;}
       else {sec = sec;}
    var time = hour + ':' + min + ':' + sec ;
    return time;
```
3
```
sunSet.payload = timeConverter(msg.payload.sunset);

owIconMap.clear(); //freeing resource

humidity.topic = "Humidity";
humidity.payload = msg.payload.humidity;
global.set("humiditynow",msg.payload.humidity);

temperature.topic = "Humidity";
temperature.payload = msg.payload.tempc + "°C";
global.set("temperaturenow",msg.payload.tempc);
```
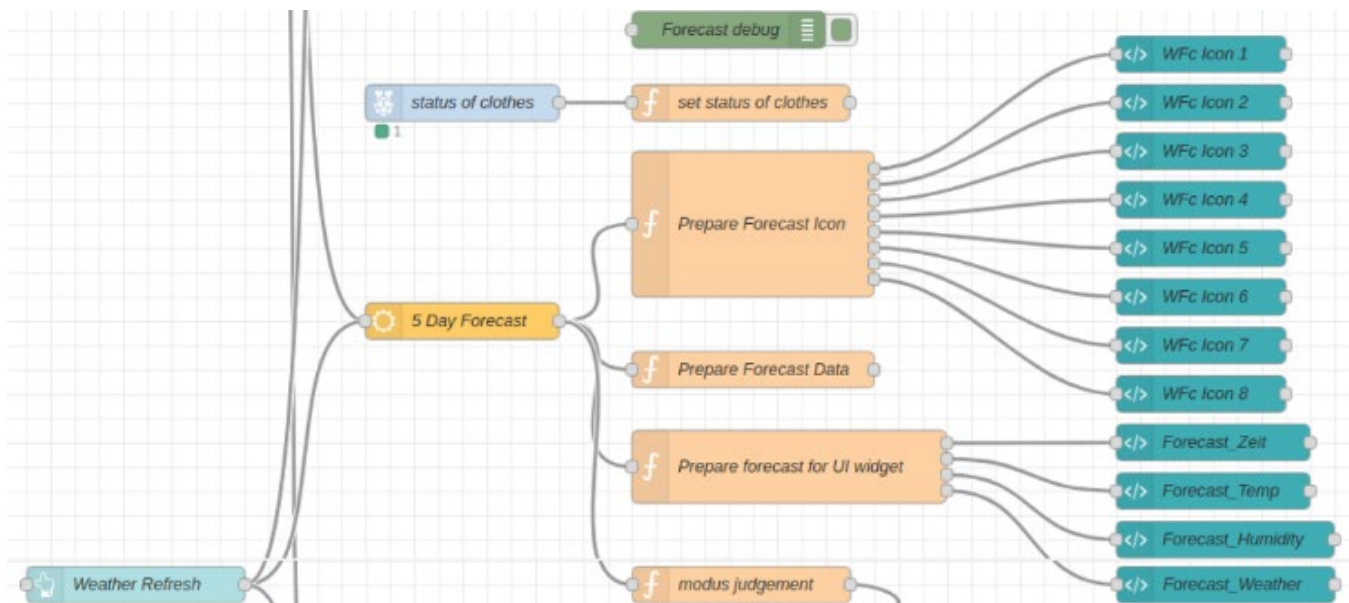4
```
return [c onditionIcon, windSpeedIcon, windSpeed, windDirection, windDirectionIcon,
sunRise, sunSet, humidity, temperature];
```

38

9.1.2 Programm für Erfassung der zukünftigen Wetterinformationen

(1) Beschreibung „5 Day Forecast"

Durch dieses Modul kann man das Wettervoraussagen bis zum 5 Tage bekommen. Aber es ist nicht notwendig, wenn wir alle Informationen benutzen. In Hinsicht auf Kleidung benutzen wir auf diesem Fall nur eintägige Wetterinformationen. (3 Stunden * 8-mal)

(2) Beschreibung „Prepare Forecast Icon"

Wir müssen die Wetterinformationen auf Display also Dashboard anzeigen, deshalb ist es wichtig, sie aus „5 Day Forecast" bekommene Daten fehlerlos in Bild umzuwandeln. Die Programmierung ist wie untern gezeigt.

```
var wfcIcon1 = {};
var wfcIcon2 = {};
var wfcIcon3 = {};
var wfcIcon4 = {};
var wfcIcon5 = {};
var wfcIcon6 = {};
var wfcIcon7 = {};
var wfcIcon8 = {};


var date = new Date ();


/* Function for Time Conversions */

function timeConverter(UNIX_timestamp){
  var a = new Date(UNIX_timestamp * 1000);
  var hour = a.getHours();
  var min = a.getMinutes();
  if (min < 10) {min = "0" + min;}
    else {min = min;}
  var sec = a.getSeconds();
  if (sec < 10) {sec = "0" + sec;}
    else {sec = sec;}

  var time = hour + ':' + min; /* + ':' + sec ;*/
  return time;
}

/* Convert OpenWeeather Map Icon to https://erikflowers.github.io/weather-icons/ */

const owIconMap = new Map();

owIconMap.set('01d', 'wi-owm-01d'); // clear sky
owIconMap.set('02d', 'wi-owm-02d'); // few clouds
owIconMap.set('03d', 'wi-owm-03d'); // scattered clouds
owIconMap.set('04d', 'wi-owm-04d'); // broken clouds
owIconMap.set('09d', 'wi-owm-09d'); // shower rain
owIconMap.set('10d', 'wi-owm-10d'); // rain
owIconMap.set('11d', 'wi-owm-11d'); // thunderstorm
owIconMap.set('13d', 'wi-owm-13d'); // snow
owIconMap.set('50d', 'wi-owm-50d'); // mist
owIconMap.set('01n', 'wi-owm-01n'); // clear sky
owIconMap.set('02n', 'wi-owm-02n'); // few clouds
owIconMap.set('03n', 'wi-owm-03n'); // scattered clouds
```

1

```
owIconMap.set('04n', 'wi-owm-04n'); // broken clouds
owIconMap.set('09n', 'wi-owm-09n'); // shower rain
owIconMap.set('10n', 'wi-owm-10n'); // rain
owIconMap.set('11n', 'wi-owm-11n'); // thunderstorm
owIconMap.set('13n', 'wi-owm-13n'); // snow
owIconMap.set('50n', 'wi-owm-50n'); // mist

wfcIcon1.topic = msg.payload[0].dt_txt;
wfcIcon1.payload = owIconMap.get(msg.payload[0].weather[0].icon);

wfcIcon2.topic = msg.payload[1].dt_txt;
wfcIcon2.payload = owIconMap.get(msg.payload[1].weather[0].icon);

wfcIcon3.topic = msg.payload[2].dt_txt;
wfcIcon3.payload = owIconMap.get(msg.payload[2].weather[0].icon);

wfcIcon4.topic = msg.payload[3].dt_txt;
wfcIcon4.payload = owIconMap.get(msg.payload[3].weather[0].icon);

wfcIcon5.topic = msg.payload[4].dt_txt;
wfcIcon5.payload = owIconMap.get(msg.payload[4].weather[0].icon);

wfcIcon6.topic = msg.payload[5].dt_txt;
wfcIcon6.payload = owIconMap.get(msg.payload[5].weather[0].icon);

wfcIcon7.topic = msg.payload[6].dt_txt;
wfcIcon7.payload = owIconMap.get(msg.payload[6].weather[0].icon);

wfcIcon8.topic = msg.payload[7].dt_txt;
wfcIcon8.payload = owIconMap.get(msg.payload[7].weather[0].icon);


owIconMap.clear(); //freeing resource

return [wfcIcon1, wfcIcon2, wfcIcon3, wfcIcon4, wfcIcon5, wfcIcon6, wfcIcon7, wfcIcon8];
```

2

Achtung: Eine Voraussetzung für richtigen Display auf Raspberry-Pi ist Herunterladen der Wetter-Icons aus Internet und zugehörige Einstellungen, als Detail bitte siehe:
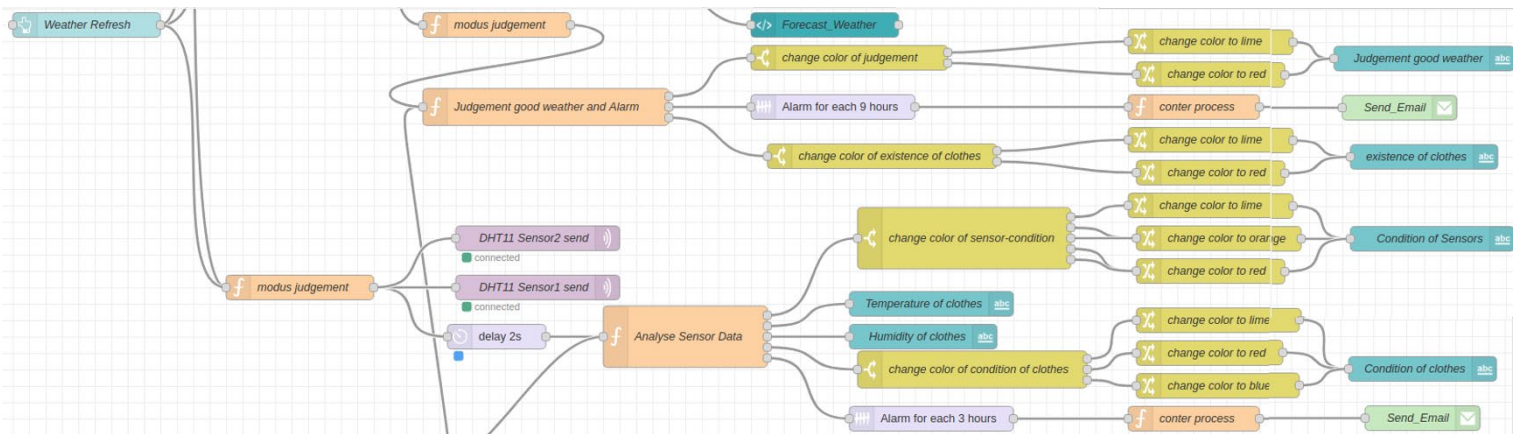
https://github.com/Paul-Reed/weather-icons

auch

https://erikflowers.github.io/weather-icons/

Gleichzeitig muss man darauf beachten, dass es jederzeitig genug Speicherplatz auf Raspberry-Pi gibt.

9.1.3 Programm für Analyse der Wetter- und Kleidungszustand

(1) Beschreibung „Judgement good weather and Alarm"

In dieses Modul analysiert Raspberry-Pi die Wetterinformationen, ob das Wetter gut ist. Einerseits wird das Ergebnis auf Dashboard gezeigt, andererseits sendet das System beim Bestehen der Kleidung und schlechten Wetter jeder neun Stunden ein E-Mail.

```javascript
var judge = "Ja";
var icon = "0";
var k = 0;
var msg2 = {};
var msg1 = {};

var msg3 = {};
var testclothes = global.get("clothes");
var judgeget11 = global.get("get11");
var judgeget66 = global.get("get66");
var judgesudo = global.get("sudo");
var forecastdata = global.get("forecast");
msg3.payload = testclothes;

if (judgesudo === 1){
    if (judgeget66 == "ja"){
    judge = "ja";
    }else if (judgeget66 == "nein"){
        judge = "nein";}
    if (judgeget11 == "ja"){
        msg3.payload = "ja";
        alarm0 = forecastdata[0].weather[0].icon;
        alarm1 = forecastdata[1].weather[0].icon;
        alarm2 = forecastdata[2].weather[0].icon;
        if (alarm0 === "09d" || alarm0 === "10d" || alarm0 === "11d" || alarm0 === "13d"
|| alarm0 === "50d" ||
        alarm0 === "09n" || alarm0 === "10n" || alarm0 === "11n" || alarm0 === "13n"
|| alarm0 === "50n" ){
            msg2.payload = "Vorsicht! Es regnet in drei Stunden, bitte nehmen Sie Ihre
Kleidungen zurück!";
        }else if (alarm1 === "09d" || alarm1 === "10d" || alarm1 === "11d" || alarm1 ===
"13d" || alarm1 === "50d" ||
        alarm1 === "09n" || alarm1 === "10n" || alarm1 === "11n" || alarm1 === "13n"
|| alarm1 === "50n" ){
            msg2.payload = "Vorsicht! Es regnet in drei bis sechs Stunden, bitte
nehmen Sie Ihre Kleidungen zurück!";
        }else if (alarm2 === "09d" || alarm2 === "10d" || alarm2 === "11d" || alarm2 ===
"13d" || alarm2 === "50d" ||
        alarm2 === "09n" || alarm2 === "10n" || alarm2 === "11n" || alarm2 === "13n"
|| alarm2 === "50n" ){
            msg2.payload = "Vorsicht! Es regnet in sechs bins neun Stunden, bitte
nehmen Sie Ihre Kleidungen zurück!";
            }
    }else if (judgeget11 == "nein"){
        }
    }else{
    msg2 = null;
    msg3.payload = "nein";
    }
}

return [msg1,msg2,msg3];
```

(2) Beschreibung „Analyse Sensor Data"

Hier wird eine Toleranz zwischen den aus Sensoren angegebenen Temperatur sowie Feuchtigkeit der Kleidung und den aus Internet erfassten Wetterinformationen eingestellt. Der Betrag der Toleranz ist 20 Prozent (Wie untern gezeigt)

Wenn die Differenz dazwischen kleiner als 20 Prozent ist, wird das Ergebnis als „Die Kleidung ist schon getrocknet." gegeben. Gleichzeitig sendet es jede drei Stunden ein E-Mail.

```
var con1 = global.get("condition1");
var con2 = global.get("condition2");
var msg1 = {};
var err1 = global.get("errors1");
var err2 = global.get("errors2");
var humi1 = global.get("humidity1");
var humi2 = global.get("humidity2");
var temp1 = global.get("temperature1");
var temp2 = global.get("temperature2");

var tempnow = global.get("temperaturenow");
var huminow = global.get("humiditynow");
var tempmax = tempnow * 1.1;
var tempmin = tempnow * 0.9;
var humimax = huminow * 1.1;
var humimin = huminow * 0.9;
var testclothes = global.get("clothes");

var msg2 = {};
var msg3 = {};
var msg4 = {};
var msg5 = {};

var judgesudo = global.get("sudo");
var judgeget11 = global.get("get11");
var judgeget22 = global.get("get22");
var judgeget33 = global.get("get33");
var judgeget44 = global.get("get44");
var judgeget55 = global.get("get55");

if (judgesudo === 1){
    if (judgeget22 == "ja" && judgeget11 == "ja"){
        msg4.payload = "ja";
        msg5.payload = "Die Kleidung ist schon getrocknet.";
    }else if(judgeget22 == "nein" && judgeget11 == "ja"){
        msg4.payload = "nein";
        msg5 = null;
    }else{
        msg4.payload = "keine Kleidung!";
        msg5 = null;
    }
    msg1.condition = judgeget55;
    msg2.payload = judgeget33 + "°C";
    msg3.payload = judgeget44 + "%";
```
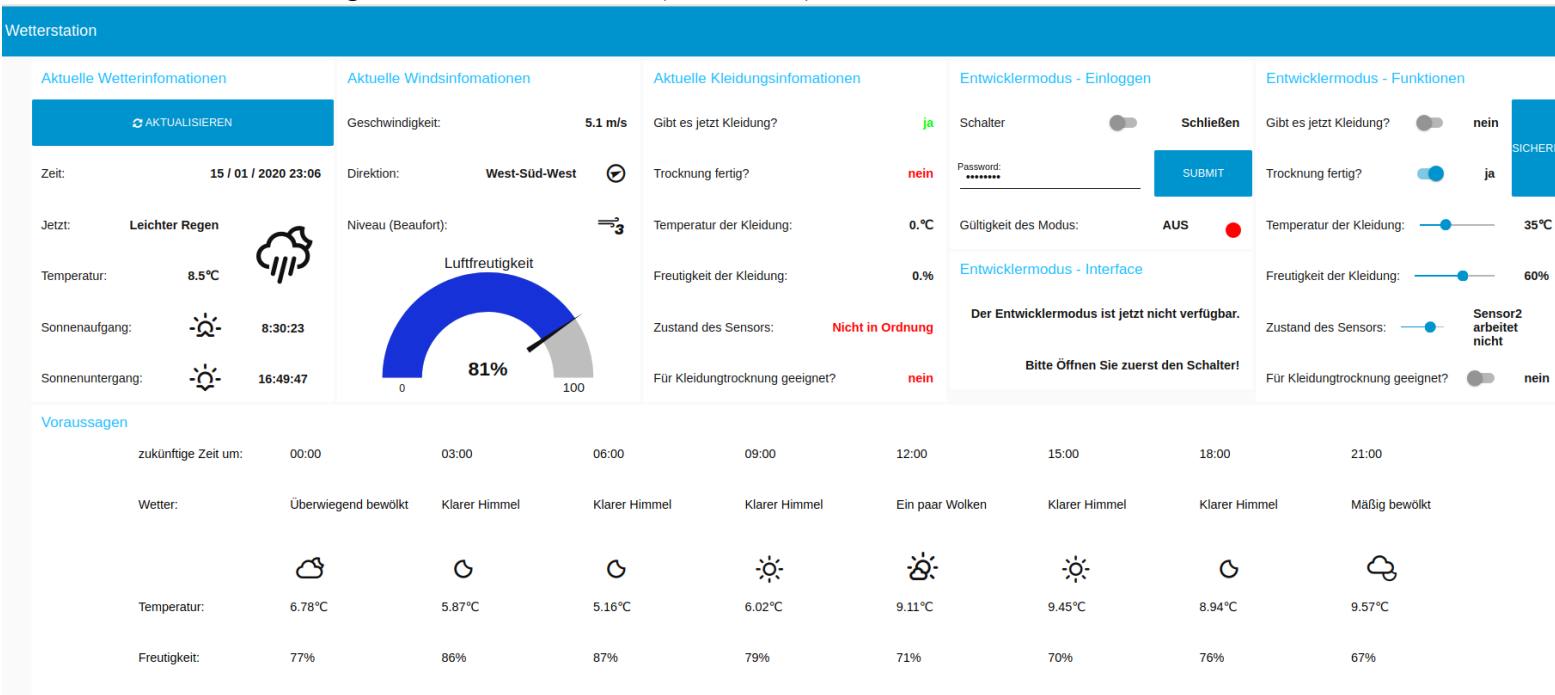
1

```
}
else{
    if (con1 == 1 && con2 == 1){
        if (err1 < err2){
            msg1.temperature = temp1;
            msg1.humidity = humi1;
        }
        else{
            msg1.temperature = temp2;
            msg1.humidity = humi2;
        }
        msg1.condition = "In Ordnung";
    }
    else if (con1 == 1 && con2 === 0){
        msg1.temperature = temp1;
        msg1.humidity = humi1;
        msg1.condition = "Sensor2 arbeitet nicht";
    }
    else if (con1 === 0 && con2 == 1){
        msg1.temperature = temp2;
        msg1.humidity = humi2;
        msg1.condition = "Sensor1 arbeitet nicht";
    }
    else if (con1 === 0 && con2 === 0){
        msg1.temperature = "0.000";
        msg1.humidity = "0.000";
        msg1.condition = "Nicht in Ordnung";
    }
    else{
        msg1.condition = "Fehler";
    }
    msg2.payload = msg1.temperature.substring(0,2) + "°C";
    msg3.payload = msg1.humidity.substring(0,2) + "%";

    if (testclothes === 1){
        if (msg1.tempature > tempmin && msg1.tempature < tempmax && msg1.humidity
humimin && msg1.humidity < humimax ){
            msg4.payload = "ja";
            msg5.payload = "Die Kleidung ist schon getrocknet."
        }else {
            msg4.payload = "nein";
            msg5 = null;
        }
    }else{
```

2

```
        msg4.payload = "keine Kleidung!";
            msg5 = null;
        }
    }
    return [msg1,msg2,msg3,msg4,msg5];
```

3

9.1.4 Programm für Entwicklermodus

Das obige Bild zeigt Programm für Entwicklung der Entwicklermodus. Entwicklermodus wird so definiert, dass man als Entwickler oder gut Benutzer selbst nach seinem oder ihrem Wunsch die Sensordaten einstellen kann. Wenn das System in Entwicklermodus ist, geht das Erneuen der Wetterinformationen weiter, aber Sensordaten werden nicht automatisch erfasst und aktualisiert.

Es hängt auch mit 9.1.3 Programm für Analyse der Wetter- und Kleidungszustand ab. Aus Sicherheitsgründen muss man zuerst richtiges Passwort eingeben, bevor man Entwicklermodus einloggt. Um es leichter zu machen, wird ein User-Interface auch daneben entwickelt.

9.1.5 Programm für Schnittstelle (Dashboard)

Die Schnittstelle sowie Dashboard wird in obigem Bild darrgestellt. Daraus kann man ersehen, dass es insgesamt sieben Funktionsbereiche gibt.

Funktionsbereiche „Aktuelle Wetterinformationen" und „Aktuelle Wetterinformationen" werden in 9.1.1 intergiert.

Funktionsbereiche „Voraussagen" werden in 9.1.2 intergiert.

Funktionsbereiche „Aktuelle Kleidungsinformationen" werden in 9.1.3 intergiert.

Funktionsbereiche „Entwicklermodus" werden in 9.1.4 intergiert.

9.2 Programm für die Raspberry Pi-Sensoren Design:
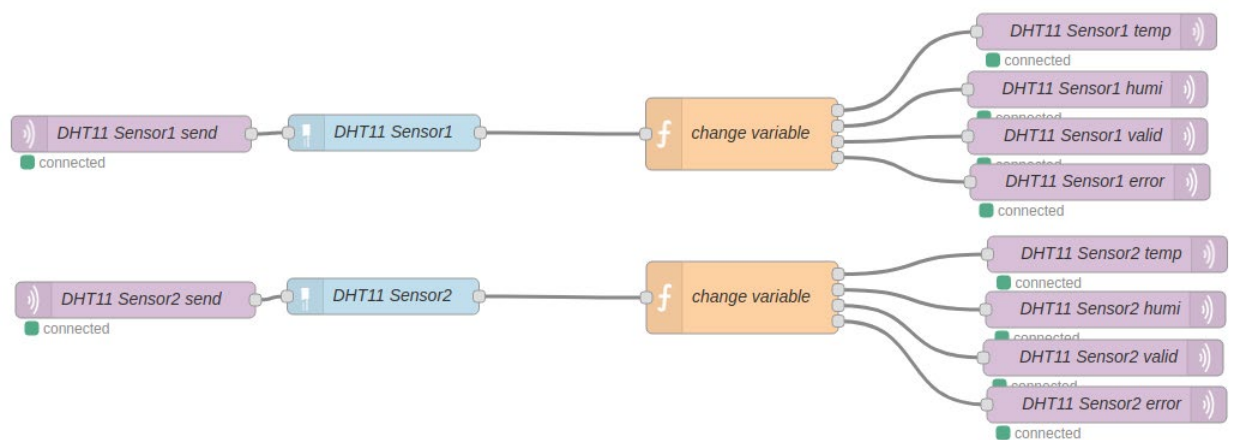
Das Programm für die Raspberry Pi-Sensoren seht einfach aus. Dank des Node-RED kann man gerade das Modul „DHT11 Sensor" benutzen. Nach der Veränderung des Datentyps übertragt durch MQTT-Protokoll die Daten. Unter ist die Einstellung des MQTT-Protokolls.
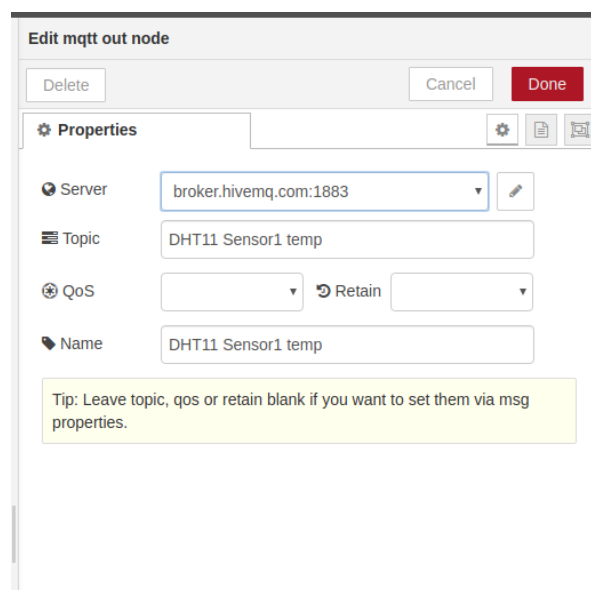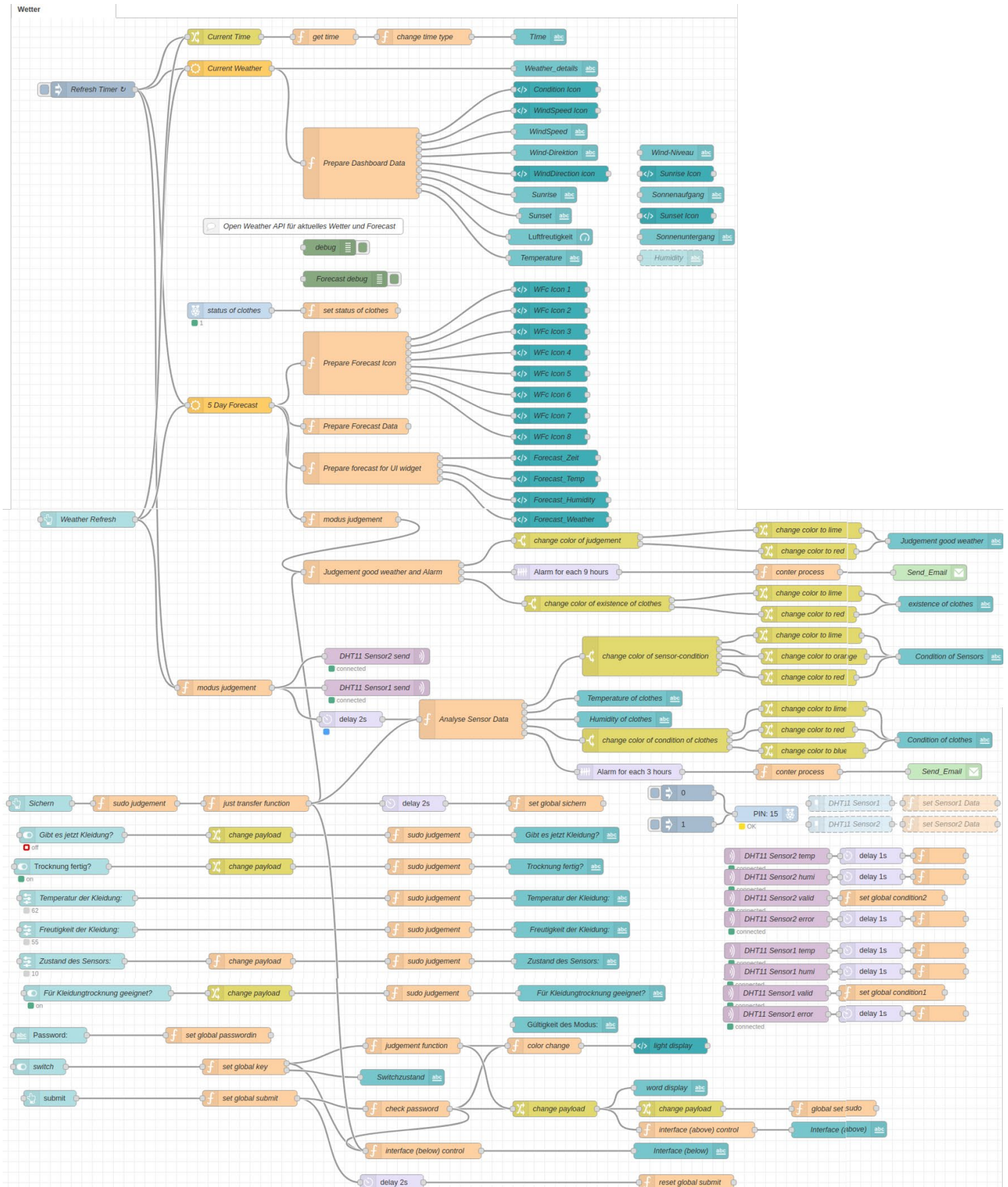
10. Programmfluss der Sensor und Wetterstation

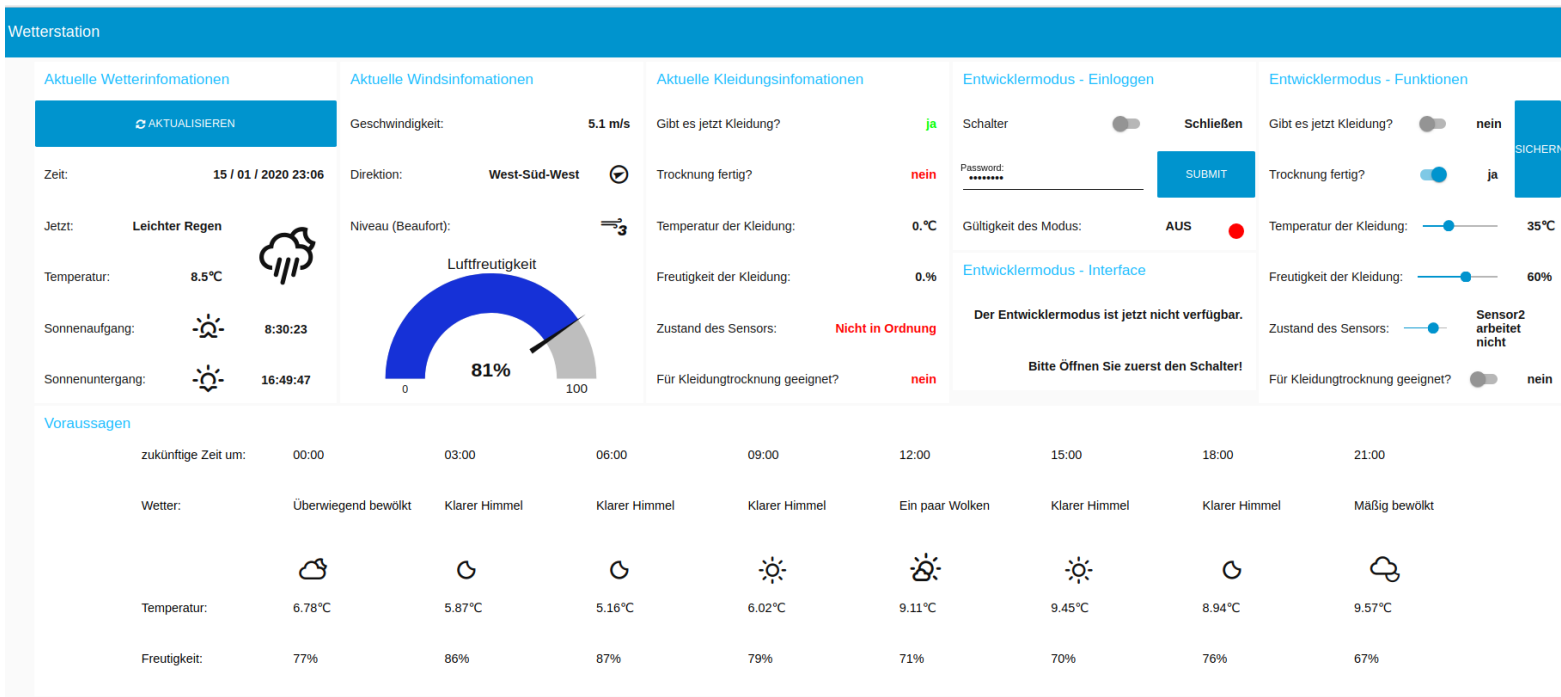## 10.1 Node-Red

10.1.1 Sensor-Raspberry Pi
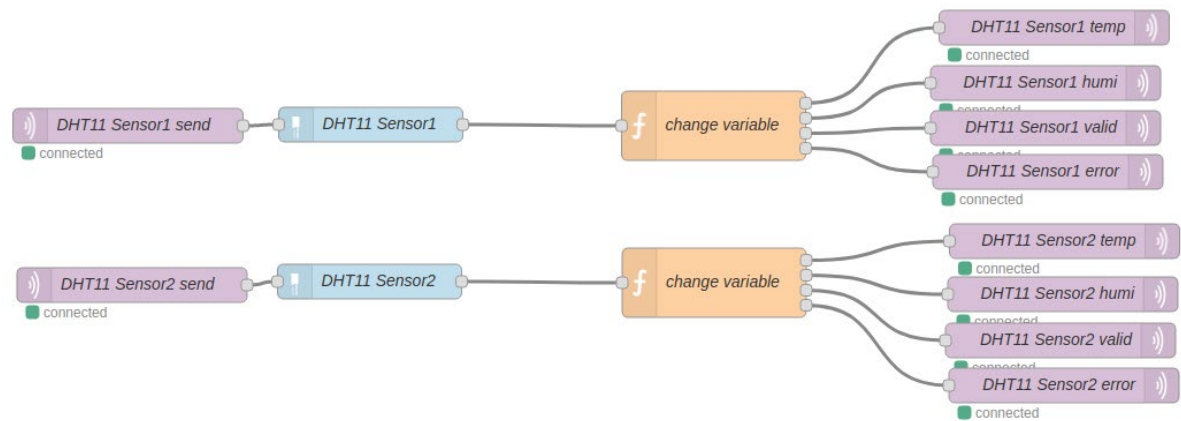
10.1.2 Wetterstation

10.2 Design der Dashboard-Steuerungsschnittstelle

10.2.1 Sensor-Raspberry Pi

keine

10.2.2 Wetterstation

Wetterstation

Aktuelle Wetterinfomationen

Zeit:	15 / 01 / 2020 23:06
Jetzt:	Leichter Regen
Temperatur:	8.5℃
Sonnenaufgang:	8:30:23
Sonnenuntergang:	16:49:47

AKTUALISIEREN

Aktuelle Windsinfomationen

Geschwindigkeit:	5.1 m/s
Direktion:	West-Süd-West
Niveau (Beaufort):	3

Luftfreutigkeit

81%

0   100

Aktuelle Kleidungsinfomationen

Gibt es jetzt Kleidung?	ja
Trocknung fertig?	nein
Temperatur der Kleidung:	0.℃
Freutigkeit der Kleidung:	0.%
Zustand des Sensors:	Nicht in Ordnung
Für Kleidungtrocknung geeignet?	nein

Entwicklermodus - Einloggen

Schalter		Schließen
Password:		SUBMIT
Gültigkeit des Modus:		AUS

Entwicklermodus - Interface

Der Entwicklermodus ist jetzt nicht verfügbar.

Bitte Öffnen Sie zuerst den Schalter!

Entwicklermodus - Funktionen

Gibt es jetzt Kleidung?	nein
Trocknung fertig?	ja
Temperatur der Kleidung:	35℃
Freutigkeit der Kleidung:	60%
Zustand des Sensors:	Sensor2 arbeitet nicht
Für Kleidungtrocknung geeignet?	nein

SICHERN

Voraussagen

zukünftige Zeit um:	00:00	03:00	06:00	09:00	12:00	15:00	18:00	21:00
Wetter:	Überwiegend bewölkt	Klarer Himmel	Klarer Himmel	Klarer Himmel	Ein paar Wolken	Klarer Himmel	Klarer Himmel	Mäßig bewölkt
Temperatur:	6.78℃	5.87℃	5.16℃	6.02℃	9.11℃	9.45℃	8.94℃	9.57℃
Freutigkeit:	77%	86%	87%	79%	71%	70%	76%	67%

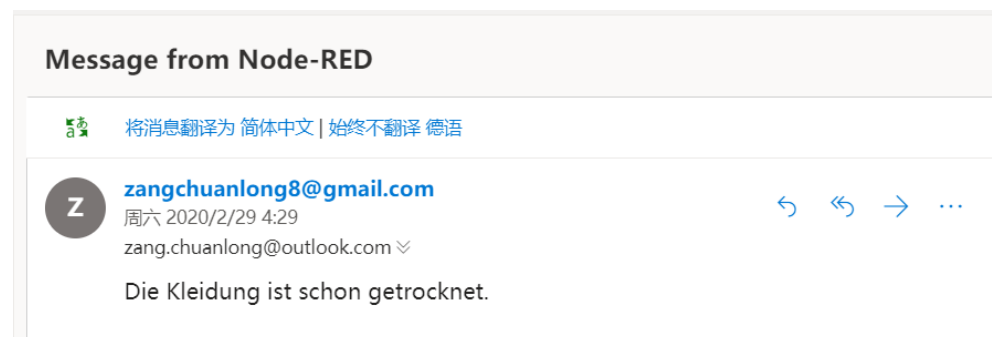# 11. Simulation und Testen (Projekt 2)

11.1 Simulation des Arbeitsmodus

11.1.1 Beim schlechten Wetter
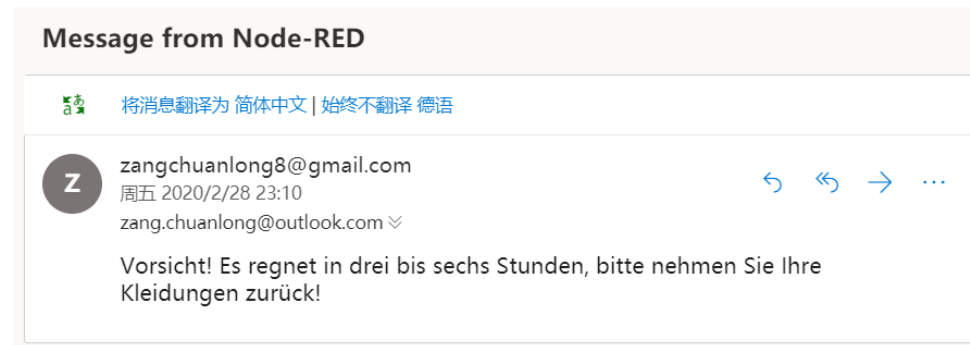
Z.B. Wenn es regnen werde, bekommt man ein E-Mail mit Regenzeit wie oben.

11.1.2 Bei den getrockneten Kleidungen

Auf diesem Fall bekommt man auch ein E-Mail wie oben.

11.2 Simulation des Entwicklermodus

(1) Anfangszustand

Entwicklermodus - Einloggen

Schalter   Schließen

Password:
••••••••

SUBMIT

Gültigkeit des Modus: AUS

Entwicklermodus - Interface

Der Entwicklermodus ist jetzt nicht verfügbar.

Bitte Öffnen Sie zuerst den Schalter!

Entwicklermodus - Funktionen

Gibt es jetzt Kleidung?   ja

Trocknung fertig?   ja

SICHERN

Temperatur der Kleidung: °C

Freutigkeit der Kleidung: %

Zustand des Sensors:

Für Kleidungtrocknung geeignet?

(2) Nach dem Öffnung des Schalter.

Entwicklermodus - Einloggen

Schalter   Öffnen

Password:

SUBMIT

Gültigkeit des Modus: AUS

Entwicklermodus - Interface

Der Entwicklermodus ist jetzt nicht verfügbar.

Bitte geben Sie dann das Geheimzahl und 'Submit'!

Entwicklermodus - Funktionen

Gibt es jetzt Kleidung?   ja

Trocknung fertig?   ja

SICHERN

Temperatur der Kleidung: °C

Freutigkeit der Kleidung: %

Zustand des Sensors:

Für Kleidungtrocknung geeignet?

(3) Geheimzahl eingeben und einloggen

Entwicklermodus - Einloggen

Schalter   Öffnen

Password:
••••••••

SUBMIT

Gültigkeit des Modus: EIN

Entwicklermodus - Interface

Jetzt können Sie Entwicklermodus benutzen.

Bitte nach der Veränderung 'sichern'!

Entwicklermodus - Funktionen

Gibt es jetzt Kleidung?   ja

Trocknung fertig?   ja

SICHERN

Temperatur der Kleidung: °C

Freutigkeit der Kleidung: %

Zustand des Sensors:

Für Kleidungtrocknung geeignet?

(4) nach Wunsch die Daten einstellen

Aktuelle Kleidungsinfomationen		Entwicklermodus - Einloggen		Entwicklermodus - Funktionen	
Gibt es jetzt Kleidung?	nein	Schalter Öffnen		Gibt es jetzt Kleidung? nein	
Trocknung fertig?	keine Kleidung!	Password: SUBMIT		Trocknung fertig? ja	
Temperatur der Kleidung:	71℃	Gültigkeit des Modus: EIN		Temperatur der Kleidung: 71℃	
Freutigkeit der Kleidung:	37%			Freutigkeit der Kleidung: 37%	
Zustand des Sensors:	Sensor1 arbeitet nicht	Entwicklermodus - Interface		Zustand des Sensors: Sensor1 arbeitet nicht	
Für Kleidungtrocknung geeignet?	ja	Jetzt können Sie Entwicklermodus benutzen. Veränderungen werden erfolgreich gespeichert.		Für Kleidungtrocknung geeignet? ja	

12. Quellcode (Projekt 2)

12.1 Das Programm für Wetterstation

[{"id":"d5a4ac6e.7e43a","type":"tab","label":"Wetter","disabled":false,"info":""},{"id":"708b4165.aefbe","type":"inject","z":"d5a4ac6e.7e43a","name":"Refresh Timer","topic":"Refresh Timer","payload":"true","payloadType":"bool","repeat":"60","crontab":"","once":false,"onceDelay":"","x":180,"y":160,"wires":[["471aa7e1.c28c08","c0c55d77.2e601","92c50e42.03f8f","68f4de33.65c8a"]]},{"id":"b9a3c039.5f5bb","type":"ui_button","z":"d5a4ac6e.7e43a","name":"Weather Refresh","group":"968f93d7.ab3f2","order":1,"width":6,"height":1,"passthru":false,"label":"Aktualisieren","tooltip":"Wetterdaten aktualisieren","color":"","bgcolor":"","icon":"fa-refresh","payload":"true","payloadType":"bool","topic":"","x":170,"y":980,"wires":[["471aa7e1.c28c08","c0c55d77.2e601","92c50e42.03f8f","68f4de33.65c8a"]]},{"id":"edc29849.e738b8","type":"ui_text","z":"d5a4ac6e.7e43a","group":"968f93d7.ab3f2","order":3,"width":4,"height":1,"name":"Weather_details","label":"Jetzt: ","format":"{{msg.payload.detail}}","layout":"row-spread","x":1060,"y":120,"wires":[]},{"id":"86fd3da5.b1a27","type":"function","z":"d5a4ac6e.7e43a","name":"Prepare Dashboard Data","func":"var windDirection = {};\nvar windDirectionIcon = {};\nvar windSpeed = {};\nvar windSpeedIcon = {};\nvar sunRise = {};\nvar sunSet = {};\nvar conditionIcon = {};\nvar date = new Date ();\nvar humidity = {};\nvar temperature = {};\n\n/* function for converting meteorogical degree to text */\n\nvar degToCard = function(deg){\nif (deg>11.25 && deg<=33.75){\nreturn \"Nord-Nord-Ost\";\n   }else if (deg>33.75 && deg<56.25){\nreturn \"Nord-Ost\";\n   }else if (deg>56.25 && deg<78.75){\nreturn \"Ost-Nord-Ost\";\n   }else if (deg>78.75 && deg<101.25){\nreturn \"Ost\";\n   }else if (deg>101.25 && deg<123.75){\nreturn \"Ost-Süd-Ost\";\n   }else if (deg>123.75 && deg<146.25){\nreturn \"Süd-Ost\";\n   }else if (deg>146.25 && deg<168.75){\nreturn \"Süd-Süd-Ost\";\n   }else if (deg>168.75 && deg<191.25){\nreturn \"Süd\";\n   }else if (deg>191.25 && deg<213.75){\nreturn \"Süd-Süd-West\";\n   }else if (deg>213.75 && deg<236.25){\nreturn \"Süd-West\";\n   }else if (deg>236.25 && deg<258.75){\nreturn

\"West-Süd-West\";\n   }else if (deg>258.75 && deg<281.25){\nreturn \"West\";\n   }else if (deg>281.25 && deg<303.75){\nreturn \"West-Nord-West\";\n   }else if (deg>303.75 && deg<326.25){\nreturn \"Nord-West\";\n   }else if (deg>326.25 && deg<348.75){\nreturn \"Nord-Nord-West\";\n   }else{\nreturn \"Nord\"; \n   }\n};\n\n/* function for converting meteorogical degree to weather icons */\n\nvar degToCardIcon = function(deg){\nif (deg>11.25 && deg<=33.75){\nreturn \"wi-from-nne\";\n   }else if (deg>33.75 && deg<56.25){\nreturn \"wi-from-ne\";\n   }else if (deg>56.25 && deg<78.75){\nreturn \"wi-from-ene\";\n   }else if (deg>78.75 && deg<101.25){\nreturn \"wi-from-e\";\n   }else if (deg>101.25 && deg<123.75){\nreturn \"wi-from-ese\";\n   }else if (deg>123.75 && deg<146.25){\nreturn \"wi-from-se\";\n   }else if (deg>146.25 && deg<168.75){\nreturn \"wi-from-sse\";\n   }else if (deg>168.75 && deg<191.25){\nreturn \"wi-from-s\";\n   }else if (deg>191.25 && deg<213.75){\nreturn \"wi-from-ssw\";\n   }else if (deg>213.75 && deg<236.25){\nreturn \"wi-from-sw\";\n   }else if (deg>236.25 && deg<258.75){\nreturn \"wi-from-wsw\";\n   }else if (deg>258.75 && deg<281.25){\nreturn \"wi-from-w\";\n   }else if (deg>281.25 && deg<303.75){\nreturn \"wi-from-wnw\";\n   }else if (deg>303.75 && deg<326.25){\nreturn \"wi-from-nw\";\n   }else if (deg>326.25 && deg<348.75){\nreturn \"wi-from-nnw\";\n   }else{\nreturn \"wi-from-n\"; \n   }\n};\n\n/* Function for converting wind speed into Beaufort scale icon */\n\nvar speedToCardIcon = function(speed){\nif (speed>0.5 && speed<=1.5){\nreturn \"wi-wind-beaufort-1\";\n   }else if (speed>1.5 && speed<=3.3){\nreturn \"wi-wind-beaufort-2\";\n   }else if (speed>3.3 && speed<=5.5){\nreturn \"wi-wind-beaufort-3\";\n   }else if (speed>5.5 && speed<=7.9){\nreturn \"wi-wind-beaufort-4\";\n   }else if (speed>7.9 && speed<=10.7){\nreturn \"wi-wind-beaufort-5\";\n   }else if (speed>10.7 && speed<=13.8){\nreturn \"wi-wind-beaufort-6\";\n   }else if (speed>13.8 && speed<=17.1){\nreturn \"wi-wind-beaufort-7\";\n   }else if (speed>17.1 && speed<=20.7){\nreturn \"wi-wind-beaufort-8\";\n   }else if (speed>20.7 && speed<=24.4){\nreturn \"wi-wind-beaufort-9\";\n   }else if (speed>24.4 && speed<=28.4){\nreturn \"wi-wind-beaufort-10\";\n   }else if (speed>28.4 && speed<=32.6){\nreturn \"wi-wind-beaufort-11\";\n   }else if (speed>32.6){\nreturn \"wi-wind-beaufort-12\";\n   }else{\nreturn \"wi-wind-beaufort-0\"; \n   }\n};\n\n/* Function for Time Conversions */\n\nfunction timeConverter(UNIX_timestamp){\n   var a = new Date(UNIX_timestamp * 1000);\n   var hour = a.getHours();\n   var min = a.getMinutes();\n   if (min < 10) {min = \"0\" + min;}\n   else {min = min;}\n   var sec = a.getSeconds();\n   if (sec < 10) {sec = \"0\" + sec;}\n   else {sec = sec;}\n   \n   var time = hour + ':' + min + ':' + sec ;\n   return time;\n};\n\n/* Convert OpenWeeather Map Icon to https://erikflowers.github.io/weather-icons/   */\n\nconst owIconMap = new Map();\n\nowIconMap.set('01d', 'wi-owm-01d'); // clear sky\nowIconMap.set('02d', 'wi-owm-02d'); // few clouds\nowIconMap.set('03d', 'wi-owm-03d'); // scattered clouds\nowIconMap.set('04d', 'wi-owm-04d'); // broken clouds\nowIconMap.set('09d', 'wi-owm-09d'); // shower rain\nowIconMap.set('10d', 'wi-owm-10d'); // rain\nowIconMap.set('11d', 'wi-owm-11d'); // thunderstorm\nowIconMap.set('13d', 'wi-owm-13d'); // snow\nowIconMap.set('50d', 'wi-owm-50d'); // mist\nowIconMap.set('01n', 'wi-owm-01n'); // clear sky\nowIconMap.set('02n', 'wi-owm-02n'); // few clouds\nowIconMap.set('03n', 'wi-owm-03n'); // scattered clouds\nowIconMap.set('04n', 'wi-

owm-04n'); // broken clouds\nowIconMap.set('09n', 'wi-owm-09n'); // shower rain\nowIconMap.set('10n', 'wi-owm-10n'); // rain\nowIconMap.set('11n', 'wi-owm-11n'); // thunderstorm\nowIconMap.set('13n', 'wi-owm-13n'); // snow\nowIconMap.set('50n', 'wi-owm-50n'); // mist\n\nconditionIcon.topic = \"ConditionIcon\";\nconditionIcon.payload = owIconMap.get(msg.payload.icon);\n\nwindDirection.topic = \"WindDirection\";\nwindDirection.payload = degToCard(msg.payload.winddirection);\n\nwindDirectionIcon.topic = \"WindDirectionIcon\";\nwindDirectionIcon.payload = degToCardIcon(msg.payload.winddirection);\n\nwindSpeed.topic = \"WindSpeed\";\nwindSpeed.payload = msg.payload.windspeed + \" m/s\"; /* \" + windDirection.payload; */\n\nwindSpeedIcon.topic = \"WindSpeedIcon\";\nwindSpeedIcon.payload = speedToCardIcon(msg.payload.windspeed);\n\nsunRise.topic = \"SunRise\";\nsunRise.payload = timeConverter(msg.payload.sunrise);\n\nsunSet.topic = \"SunRet\";\nsunSet.payload = timeConverter(msg.payload.sunset);\n\nowIconMap.clear(); //freeing resource\n\nhumidity.topic = \"Humidity\";\nhumidity.payload = msg.payload.humidity;\nglobal.set(\"humiditynow\",msg.payload.humidity);\n\ntemperature.topic = \"Humidity\";\ntemperature.payload = msg.payload.tempc + \"°C\";\nglobal.set(\"temperaturenow\",msg.payload.tempc);\n\nreturn [conditionIcon, windSpeedIcon, windSpeed, windDirection, windDirectionIcon, sunRise, sunSet, humidity, temperature];","outputs":9,"noerr":0,"x":690,"y":300,"wires":[["badf90d3.335ab"],["c6fbb8e.d606048"],["9294c8a1.6458d8"],["9adb53da.2bc72"],["ec2edfdf.25b98"],["3ebabfc8.01775"],["e0bb0699.4994b8"],["cc46f9d3.959868"],["e84c4609.311308"]]},{"id":"471aa7e1.c28c08","type":"openweathermap","z":"d5a4ac6e.7e43a","name":"Current Weather","wtype":"current","lon":"","lat":"","city":"Bochum","country":"Deutschland","language":"de","x":440,"y":120,"wires":[["86fd3da5.b1a27","edc29849.e738b8"]]},{"id":"5d90fc4f.18c5f4","type":"comment","z":"d5a4ac6e.7e43a","name":"Open Weather API für aktuelles Wetter und Forecast","info":"","x":580,"y":420,"wires":[]},{"id":"badf90d3.335ab","type":"ui_template","z":"d5a4ac6e.7e43a","group":"968f93d7.ab3f2","name":"Condition Icon","order":4,"width":2,"height":2,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div style=\"display: flex;height: 100%;justify-content: center;align-items: center;\">\n<i class=\"fa-4x wi {{msg.payload}}\"></i>\n</div>\n","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1060,"y":160,"wires":[[[]]]},{"id":"16311dec.907232","type":"debug","z":"d5a4ac6e.7e43a","name":"debug","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","targetType":"msg","x":630,"y":460,"wires":[]},{"id":"b38e6a31.8a5518","type":"debug","z":"d5a4ac6e.7e43a","name":"Forecast debug","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","targetType":"msg","x":660,"y":520,"wires":[]},{"id":"c0c55d77.2e601","type":"openweathermap","z":"d5a4ac6e.7e43a","name":"5 Day Forecast","wtype":"forecast","lon":"","lat":"","city":"Bochum","country":"Deutschland","language":"de","x":440,"y":760,"wires":[["3cd6f29f.ff219e","85927b11.3d2d48","b39f9d0.f3c146","a35179d.8f83988"]]},{"id":"3cd6f29f.ff219e","type":"function","z":"d5a4ac6e.7e43a","name":"Prepar

e Forecast Icon","func":"var wfcIcon1 = {};\nvar wfcIcon2 = {}; \nvar wfcIcon3 = {};\nvar wfcIcon4 = {};\nvar wfcIcon5 = {};\nvar wfcIcon6 = {};\nvar wfcIcon7 = {};\nvar wfcIcon8 = {};\n\n\nvar date = new Date ();\n\n/* Function for Time Conversions */\n\nfunction timeConverter(UNIX_timestamp){\n   var a = new Date(UNIX_timestamp * 1000);\n   var hour = a.getHours();\n   var min = a.getMinutes();\n   if (min < 10) {min = \"0\" + min;}\n   else {min = min;}\n   var sec = a.getSeconds();\n   if (sec < 10) {sec = \"0\" + sec;}\n   else {sec = sec;}\n   \n   var time = hour + ':' + min; /* + ':' + sec ;*/\n   return time;\n}\n\n/* Convert OpenWeeather Map Icon to https://erikflowers.github.io/weather-icons/ */\n\nconst owlconMap = new Map();\n\nowlconMap.set('01d', 'wi-owm-01d'); // clear sky\nowlconMap.set('02d', 'wi-owm-02d'); // few clouds\nowlconMap.set('03d', 'wi-owm-03d'); // scattered clouds\nowlconMap.set('04d', 'wi-owm-04d'); // broken clouds\nowlconMap.set('09d', 'wi-owm-09d'); // shower rain\nowlconMap.set('10d', 'wi-owm-10d'); // rain\nowlconMap.set('11d', 'wi-owm-11d'); // thunderstorm\nowlconMap.set('13d', 'wi-owm-13d'); // snow\nowlconMap.set('50d', 'wi-owm-50d'); // mist\nowlconMap.set('01n', 'wi-owm-01n'); // clear sky\nowlconMap.set('02n', 'wi-owm-02n'); // few clouds\nowlconMap.set('03n', 'wi-owm-03n'); // scattered clouds\nowlconMap.set('04n', 'wi-owm-04n'); // broken clouds\nowlconMap.set('09n', 'wi-owm-09n'); // shower rain\nowlconMap.set('10n', 'wi-owm-10n'); // rain\nowlconMap.set('11n', 'wi-owm-11n'); // thunderstorm\nowlconMap.set('13n', 'wi-owm-13n'); // snow\nowlconMap.set('50n', 'wi-owm-50n'); // mist\n\nwfcIcon1.topic = msg.payload[0].dt_txt;\nwfcIcon1.payload = owlconMap.get(msg.payload[0].weather[0].icon);\n\nwfcIcon2.topic = msg.payload[1].dt_txt;\nwfcIcon2.payload = owlconMap.get(msg.payload[1].weather[0].icon);\n\nwfcIcon3.topic = msg.payload[2].dt_txt;\nwfcIcon3.payload = owlconMap.get(msg.payload[2].weather[0].icon);\n\nwfcIcon4.topic = msg.payload[3].dt_txt;\nwfcIcon4.payload = owlconMap.get(msg.payload[3].weather[0].icon);\n\nwfcIcon5.topic = msg.payload[4].dt_txt;\nwfcIcon5.payload = owlconMap.get(msg.payload[4].weather[0].icon);\n\nwfcIcon6.topic = msg.payload[5].dt_txt;\nwfcIcon6.payload = owlconMap.get(msg.payload[5].weather[0].icon);\n\nwfcIcon7.topic = msg.payload[6].dt_txt;\nwfcIcon7.payload = owlconMap.get(msg.payload[6].weather[0].icon);\n\nwfcIcon8.topic = msg.payload[7].dt_txt;\nwfcIcon8.payload = owlconMap.get(msg.payload[7].weather[0].icon);\n\n\nowlconMap.clear();   //freeing resource\n\nreturn [wfcIcon1, wfcIcon2, wfcIcon3, wfcIcon4, wfcIcon5, wfcIcon6, wfcIcon7, wfcIcon8];","outputs":8,"noerr":0,"x":680,"y":680,"wires":[["b8ce5a8a.024868"],["3bdadb80.4887b4"],["32ad93ff.f00bfc"],["bf29d6d8.eaaf58"],["6737bbd6.003874"],["c81a6420.40b008"],["624c8d9b.5fbf04"],["6fbfaf8c.62665"]]},{"id":"b8ce5a8a.024868","type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"WFc Icon 1","order":8,"width":3,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div style=\"display: flex;height: 100%;justify-content: center;align-items: center;\">\n<i class=\"fa-2x wi

{{msg.payload}}\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1050,"y":540,"wires":[[]]},{"id":"3bdadb80.4887b4","type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"WFc Icon 2","order":9,"width":3,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div style=\"display: flex;height: 100%;justify-content: center;align-items: center;\">\n<i class=\"fa-2x wi {{msg.payload}}\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1050,"y":580,"wires":[[]]},{"id":"32ad93ff.f00bfc","type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"WFc Icon 3","order":10,"width":3,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div style=\"display: flex;height: 100%;justify-content: center;align-items: center;\">\n<i class=\"fa-2x wi {{msg.payload}}\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1050,"y":620,"wires":[[]]},{"id":"bf29d6d8.eaaf58","type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"WFc Icon 4","order":11,"width":3,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div style=\"display: flex;height: 100%;justify-content: center;align-items: center;\">\n<i class=\"fa-2x wi {{msg.payload}}\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1050,"y":660,"wires":[[]]},{"id":"6737bbd6.003874","type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"WFc Icon 5","order":12,"width":3,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div style=\"display: flex;height: 100%;justify-content: center;align-items: center;\">\n<i class=\"fa-2x wi {{msg.payload}}\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1050,"y":700,"wires":[[]]},{"id":"c81a6420.40b008","type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"WFc Icon 6","order":13,"width":3,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div style=\"display: flex;height: 100%;justify-content: center;align-items: center;\">\n<i class=\"fa-2x wi {{msg.payload}}\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1050,"y":740,"wires":[[]]},{"id":"624c8d9b.5fbf04","type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"WFc Icon 7","order":14,"width":3,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div style=\"display: flex;height: 100%;justify-content: center;align-items: center;\">\n<i class=\"fa-2x wi {{msg.payload}}\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1050,"y":780,"wires":[[]]},{"id":"6fbfaf8c.62665","type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"WFc Icon 8","order":15,"width":3,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div style=\"display: flex;height: 100%;justify-content: center;align-items: center;\">\n<i class=\"fa-2x wi {{msg.payload}}\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1050,"y":820,"wires":[[]]},{"id":"85927b11.3d2d48","type":"function","z":"d5a4

ac6e.7e43a","name":"Prepare Forecast Data","func":"var fcdata = {};\n\nfcdata.payload = {\n   forecast: {\n   dt00: {\n   dt_txt: msg.payload[0].dt_txt,\n   temp_min: msg.payload[0].main.temp_min,\n   temp_max: msg.payload[0].main.temp_max,\n   temp: msg.payload[0].main.temp,\n   desc: msg.payload[0].weather[0].description\n   },\n   dt01: {\n   dt_txt: msg.payload[1].dt_txt,\n   temp_min: msg.payload[1].main.temp_min,\n   temp_max: msg.payload[1].main.temp_max,\n   temp: msg.payload[1].main.temp,\n   desc: msg.payload[1].weather[0].description\n   },\n   dt02: {\n   dt_txt: msg.payload[2].dt_txt,\n   temp_min: msg.payload[2].main.temp_min,\n   temp_max: msg.payload[2].main.temp_max,\n   temp: msg.payload[2].main.temp,\n   desc: msg.payload[2].weather[0].description\n   },\n   dt03: {\n   dt_txt: msg.payload[3].dt_txt,\n   temp_min: msg.payload[3].main.temp_min,\n   temp_max: msg.payload[3].main.temp_max,\n   temp: msg.payload[3].main.temp,\n   desc: msg.payload[3].weather[0].description\n   },\n   dt04: {\n   dt_txt: msg.payload[4].dt_txt,\n   temp_min: msg.payload[4].main.temp_min,\n   temp_max: msg.payload[4].main.temp_max,\n   temp: msg.payload[4].main.temp,\n   desc: msg.payload[4].weather[0].description\n   },\n   dt05: {\n   dt_txt: msg.payload[5].dt_txt,\n   temp_min: msg.payload[5].main.temp_min,\n   temp_max: msg.payload[5].main.temp_max,\n   temp: msg.payload[5].main.temp,\n   desc: msg.payload[5].weather[0].description\n   },\n   dt06: {\n   dt_txt: msg.payload[6].dt_txt,\n   temp_min: msg.payload[6].main.temp_min,\n   temp_max: msg.payload[6].main.temp_max,\n   temp: msg.payload[6].main.temp,\n   desc: msg.payload[6].weather[0].description\n   },\n   dt07: {\n   dt_txt: msg.payload[7].dt_txt,\n   temp_min: msg.payload[7].main.temp_min,\n   temp_max: msg.payload[7].main.temp_max,\n   temp: msg.payload[7].main.temp,\n   desc: msg.payload[7].weather[0].description\n   }\n   }\n}\n\nglobal.set(\"forecast\",msg.payload);\n\nreturn fcdata;","outputs":1,"noerr":0,"x":680,"y":800,"wires":[[]]},{"id":"69548907.88fcc8","type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"Forecast_Zeit","order":2,"width":27,"height":1,"format":"<div layout=\"row\" layout-align=\"space-around start\" ng-repeat=\"data in msg.payload.row\">\n   {{data.cell01}}\n   {{data.cell02}}\n   {{data.cell03}}\n   {{data.cell04}}\n   {{data.cell05}}\n   {{data.cell06}}\n   {{data.cell07}}\n   {{data.cell08}}\n   {{data.cell09}}\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1060,"y":860,"wires":[[]]},{"id":"b39f9d0.f3c146","type":"function","z":"d5a4ac6e.7e43a","name":"Prepare forecast for UI widget","func":"var fcdata1 = {};\nvar fcdata2 = {};\nvar fcdata3 = {};\nvar fcdata4 = {};\n\n// prepare forecast data for CSS based

ui widget\n\nfcdata1.payload = {\n   row: {\n   \tdata01: {\n   \t   cell01:\"zukünftige Zeit um: \",\n   \t\tcell02:   msg.payload[0].dt_txt.substring(11,   16),\n   \t\tcell03: msg.payload[1].dt_txt.substring(11,   16),\n   \t\tcell04: msg.payload[2].dt_txt.substring(11, 16),\n   \t\tcell05:   msg.payload[3].dt_txt.substring(11,   16),\n   \t\tcell06: msg.payload[4].dt_txt.substring(11,   16),\n   \t\tcell07: msg.payload[5].dt_txt.substring(11, 16),\n   \t\tcell08:   msg.payload[6].dt_txt.substring(11,   16),\n   \t\tcell09: msg.payload[7].dt_txt.substring(11, 16)\n   \t},\n   }\n}\nfcdata2.payload = {\n   row: {\n \tdata02: {\n   \t   cell01:\"Temperatur:\",\n   \t\tcell02: msg.payload[0].main.temp   + \"°C\",\n   \t\tcell03:   msg.payload[1].main.temp   +   \"°C\",\n   \t\tcell04: msg.payload[2].main.temp + \"°C\",\n   \t\tcell05: msg.payload[3].main.temp + \"°C\",\n \t\tcell06: msg.payload[4].main.temp + \"°C\",\n   \t\tcell07: msg.payload[5].main.temp   + \"°C\",\n   \t\tcell08:   msg.payload[6].main.temp   +   \"°C\",\n   \t\tcell09: msg.payload[7].main.temp + \"°C\"\n   \t}\n   }\n}\nfcdata3.payload = {\n   row: {\n \tdata03: {\n   \t   cell01:\"Freutigkeit:\",\n   \t\tcell02: msg.payload[0].main.humidity   + \"%\",\n   \t\tcell03:   msg.payload[1].main.humidity   +   \"%\",\n   \t\tcell04: msg.payload[2].main.humidity + \"%\",\n   \t\tcell05: msg.payload[3].main.humidity + \"%\",\n \t\tcell06: msg.payload[4].main.humidity + \"%\",\n   \t\tcell07: msg.payload[5].main.humidity   +   \"%\",\n   \t\tcell08:   msg.payload[6].main.humidity   +   \"%\",\n   \t\tcell09: msg.payload[7].main.humidity + \"%\"\n   \t}\n   }\n}\nfcdata4.payload = {\n   row: {\n \tdata03:   {\n   \t   cell01:\"Wetter:\",\n   \t\tcell02: msg.payload[0].weather[0].description,\n   \t\tcell03: msg.payload[1].weather[0].description,\n   \t\tcell04: msg.payload[2].weather[0].description,\n   \t\tcell05: msg.payload[3].weather[0].description,\n   \t\tcell06: msg.payload[4].weather[0].description,\n   \t\tcell07: msg.payload[5].weather[0].description,\n   \t\tcell08: msg.payload[6].weather[0].description,\n   \t\tcell09: msg.payload[7].weather[0].description\n   \t}\n   }\n}\nreturn [fcdata1,fcdata2,fcdata3,fcdata4];","outputs":4,"noerr":0,"x":710,"y":880,"wires":[["69548907.88fcc8"],["6459fd2f.436254"],["a00c82ac.0b89c"],["d338e5b3.e77ce8"]]},{"id":"9294c8a1.6458d8","type":"ui_text","z":"d5a4ac6e.7e43a","group":"9eb0630f.503e3","order":1,"width":6,"height":1,"name":"WindSpeed","label":"Geschwindigkeit:","format":"{{msg.payload}}","layout":"row-spread","x":1050,"y":240,"wires":[]},{"id":"3ebabfc8.01775","type":"ui_text","z":"d5a4ac6e.7e43a","group":"968f93d7.ab3f2","order":8,"width":2,"height":1,"name":"Sunrise","label":"","format":"{{msg.payload}}","layout":"col-center","x":1040,"y":360,"wires":[]},{"id":"e0bb0699.4994b8","type":"ui_text","z":"d5a4ac6e.7e43a","group":"968f93d7.ab3f2","order":11,"width":2,"height":1,"name":"Sunset","label":"","format":"{{msg.payload}}","layout":"col-center","x":1040,"y":400,"wires":[]},{"id":"251611f7.0a790e","type":"ui_template","z":"d5a4ac6e.7e43a","group":"968f93d7.ab3f2","name":"Sunrise Icon","order":7,"width":1,"height":1,"format":"<link   rel=\"stylesheet\"   href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div   style=\"display: flex;height: 100%;justify-content: left;align-items: center;\">\n<i class=\"fa-2x wi wi-sunrise\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1290,"y":320,"wi

res":[[]]},{"id":"26b03bc7.13eca4","type":"ui_template","z":"d5a4ac6e.7e43a","group":"968f93d7.ab3f2","name":"Sunset Icon","order":10,"width":1,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons.min.css\">\n<div style=\"display: flex;height: 100%;justify-content: left;align-items: center;\">\n<i class=\"fa-2x wi wi-sunset\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1290,"y":400,"wires":[[]]},{"id":"ec2edfdf.25b98","type":"ui_template","z":"d5a4ac6e.7e43a","group":"9eb0630f.503e3","name":"WindDirection icon","order":3,"width":1,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons-wind.css\">\n<div style=\"display: flex;height: 100%;justify-content: center;align-items: center;\">\n<i class=\"fa-2x wi wi-wind {{msg.payload}}\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1070,"y":320,"wires":[[]]},{"id":"c6fbb8e.d606048","type":"ui_template","z":"d5a4ac6e.7e43a","group":"9eb0630f.503e3","name":"WindSpeed Icon","order":5,"width":1,"height":1,"format":"<link rel=\"stylesheet\" href=\"/weather-icons/mycss/weather-icons-wind.css\">\n<div style=\"display: flex;height: 100%;justify-content: left;align-items: center;\">\n<i class=\"fa-2x wi wi-wind {{msg.payload}}\"></i>\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1060,"y":200,"wires":[[]]},{"id":"c084f669.c1a978","type":"ui_text","z":"d5a4ac6e.7e43a","group":"9eb0630f.503e3","order":4,"width":5,"height":1,"name":"Wind-Niveau","label":"Niveau (Beaufort):","format":"","layout":"row-spread","x":1290,"y":280,"wires":[]},{"id":"9adb53da.2bc72","type":"ui_text","z":"d5a4ac6e.7e43a","group":"9eb0630f.503e3","order":2,"width":5,"height":1,"name":"Wind-Direktion","label":"Direktion:","format":"{{msg.payload}}","layout":"row-spread","x":1060,"y":280,"wires":[]},{"id":"e84c4609.311308","type":"ui_text","z":"d5a4ac6e.7e43a","group":"968f93d7.ab3f2","order":5,"width":4,"height":1,"name":"Temperature","label":"Temperatur:","format":"{{msg.payload}}","layout":"row-spread","x":1040,"y":480,"wires":[]},{"id":"6459fd2f.436254","type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"Forecast_Temp","order":18,"width":27,"height":1,"format":"<div layout=\"row\" layout-align=\"space-around start\" ng-repeat=\"data in msg.payload.row\">\n {{data.cell01}}\n {{data.cell02}}\n {{data.cell03}}\n {{data.cell04}}\n {{data.cell05}}\n {{data.cell06}}\n {{data.cell07}}\n {{data.cell08}}\n {{data.cell09}}\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1060,"y":900,"wires":[[]]},{"id":"91ef4a72.2d4748","type":"ui_text","z":"d5a4ac6e.7e43a","group":"968f93d7.ab3f2","order":6,"width":3,"height":1,"name":"Sonnenaufgang","label":"Sonnenaufgang:","format":"","layout":"row-spread","x":1300,"y":360,"wires":[]},{"id":"ee54be29.db47b","type":"ui_text","z":"d5a4ac6e.7e43a","group":"968f93d7.ab3f2","order":9,"width":3,"height":1,"name":"Sonnenuntergang","labe

l":"Sonnenuntergang:","format":"","layout":"row-
spread","x":1310,"y":440,"wires":[]},{"id":"beb46ffa.e47b9","type":"ui_text","z":"d5a4ac6e.7e43
a","group":"968f93d7.ab3f2","order":2,"width":6,"height":1,"name":"TIme","label":"Zeit:","form
at":"{{msg.payload}}","layout":"row-
spread","x":1030,"y":60,"wires":[]},{"id":"92c50e42.03f8f","type":"change","z":"d5a4ac6e.7e43a
","name":"Current
Time","rules":[{"t":"set","p":"payload","pt":"msg","to":"","tot":"date"}],"action":"","property":"","f
rom":"","to":"","reg":false,"x":430,"y":60,"wires":[["54fd8b8c.d16254"]]},{"id":"54fd8b8c.d16254
","type":"function","z":"d5a4ac6e.7e43a","name":"get   time","func":"var   d   =   new
Date();\nd.setHours(d.getHours() + 1);\ntime= d.toISOString();\nmsg.payload = time;\nreturn
msg;","outputs":1,"noerr":0,"x":620,"y":60,"wires":[["65963c5e.ffea14"]]},{"id":"65963c5e.ffea14
","type":"function","z":"d5a4ac6e.7e43a","name":"change   time   type","func":"var   year   =
msg.payload.substring(0, 4);\nvar month = msg.payload.substring(5, 7);\nvar date =
msg.payload.substring(8, 10);\nvar others = msg.payload.substring(11, 16);\nmsg.payload =
date   +   \"   /   \"   +   month   +   \"   /   \"   +   year   +   \"   \"+   others;\nreturn
msg;","outputs":1,"noerr":0,"x":810,"y":60,"wires":[["beb46ffa.e47b9"]]},{"id":"a00c82ac.0b89c",
"type":"ui_template","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"Forecast_Hu
midity","order":21,"width":27,"height":1,"format":"<div layout=\"row\" layout-align=\"space-
around   start\"   ng-repeat=\"data   in   msg.payload.row\">\n   <span flex style=\"color:
black\">{{data.cell01}}\n   <span   flex   style=\"color:
black\">{{data.cell02}}\n   <span   flex   style=\"color:
black\">{{data.cell03}}\n   <span   flex   style=\"color:
black\">{{data.cell04}}\n   <span   flex   style=\"color:
black\">{{data.cell05}}\n   <span   flex   style=\"color:
black\">{{data.cell06}}\n   <span   flex   style=\"color:
black\">{{data.cell07}}\n   <span   flex   style=\"color:
black\">{{data.cell08}}\n   <span   flex   style=\"color:
black\">{{data.cell09}}\n</div>","storeOutMessages":true,"fwdInMessages":true,"te
mplateScope":"local","x":1070,"y":940,"wires":[[]]},{"id":"d338e5b3.e77ce8","type":"ui_templat
e","z":"d5a4ac6e.7e43a","group":"37b19686.0a7c0a","name":"Forecast_Weather","order":5,"w
idth":27,"height":1,"format":"<div layout=\"row\" layout-align=\"space-around start\" ng-
repeat=\"data   in   msg.payload.row\">\n   <span   flex   style=\"color:
black\">{{data.cell01}}\n   <span   flex   style=\"color:
black\">{{data.cell02}}\n   <span   flex   style=\"color:
black\">{{data.cell03}}\n   <span   flex   style=\"color:
black\">{{data.cell04}}\n   <span   flex   style=\"color:
black\">{{data.cell05}}\n   <span   flex   style=\"color:
black\">{{data.cell06}}\n   <span   flex   style=\"color:
black\">{{data.cell07}}\n   <span   flex   style=\"color:
black\">{{data.cell08}}\n   <span   flex   style=\"color:
black\">{{data.cell09}}\n</div>","storeOutMessages":true,"fwdInMessages":true,"te
mplateScope":"local","x":1070,"y":980,"wires":[[]]},{"id":"46a0557b.be270c","type":"e-
mail","z":"d5a4ac6e.7e43a","server":"smtp.gmail.com","port":"465","secure":true,"tls":true,"na
me":"zang.chuanlong@outlook.com","dname":"Send_Email","x":1770,"y":1080,"wires":[]},{"id":

"d6575941.a71908","type":"ui_text","z":"d5a4ac6e.7e43a","group":"7014e357.18188c","order":6,"width":6,"height":1,"name":"Judgement good weather","label":"Für Kleidungtrocknung geeignet?","format":" {{msg.payload}} ","layout":"row-spread","x":1800,"y":1020,"wires":[]},{"id":"97d4b696.772458","type":"function","z":"d5a4ac6e.7e43a","name":"Judgement good weather and Alarm","func":"var judge = \"Ja\";\nvar icon = \"0\";\nvar k = 0;\nvar msg2 = {};\nvar msg1 = {};\nvar msg3 = {};\nvar testclothes = global.get(\"clothes\");\nvar judgeget11 = global.get(\"get11\");\nvar judgeget66 = global.get(\"get66\");\nvar judgesudo = global.get(\"sudo\");\nvar forecastdata = global.get(\"forecast\");\nmsg3.payload = testclothes;\n\nif (judgesudo === 1){\n   if (judgeget66 == \"ja\"){\n   judge = \"ja\";\n   }else if (judgeget66 == \"nein\"){\n   judge = \"nein\";}\n   if (judgeget11 == \"ja\"){\n   msg3.payload = \"ja\";\n   alarm0 = forecastdata[0].weather[0].icon;\n   alarm1 = forecastdata[1].weather[0].icon;\n   alarm2 = forecastdata[2].weather[0].icon;\n   if (alarm0 === \"09d\" || alarm0 === \"10d\" || alarm0 === \"11d\" || alarm0 === \"13d\" || alarm0 === \"50d\" ||\n   alarm0 === \"09n\" || alarm0 === \"10n\" || alarm0 === \"11n\" || alarm0 === \"13n\" || alarm0 === \"50n\"){\n   msg2.payload = \"Vorsicht! Es regnet in drei Stunden, bitte nehmen Sie Ihre Kleidungen zurück!\";\n   }else if (alarm1 === \"09d\" || alarm1 === \"10d\" || alarm1 === \"11d\" || alarm1 === \"13d\" || alarm1 === \"50d\" ||\n   alarm1 === \"09n\" || alarm1 === \"10n\" || alarm1 === \"11n\" || alarm1 === \"13n\" || alarm1 === \"50n\"){\nmsg2.payload = \"Vorsicht! Es regnet in drei bis sechs Stunden, bitte nehmen Sie Ihre Kleidungen zurück!\";\n   }else if (alarm2 === \"09d\" || alarm2 === \"10d\" || alarm2 === \"11d\" || alarm2 === \"13d\" || alarm2 === \"50d\" ||\n   alarm2 === \"09n\" || alarm2 === \"10n\" || alarm2 === \"11n\" || alarm2 === \"13n\" || alarm2 === \"50n\"){\n   msg2.payload = \"Vorsicht! Es regnet in sechs bins neun Stunden, bitte nehmen Sie Ihre Kleidungen zurück!\";\n   }\n   }else if (judgeget11 == \"nein\"){\n   msg2 = null;\n   msg3.payload = \"nein\";\n   }\n   msg1.payload = judge;\n   return [msg1,msg2,msg3];\n}else{\n   for (k =0;k<=7;k++){\n   icon = msg.payload[k].weather[0].icon;\n   if(icon === \"09d\" || \n   icon === \"10d\" ||\n   icon === \"11d\" ||\nicon === \"13d\" ||\n   icon === \"50d\" ||\n   icon === \"09n\" ||\nicon === \"10n\" ||\n   icon === \"11n\" ||\n   icon === \"13n\" ||\nicon === \"50n\"){judge = \"nein\";}\n   }\n   msg1.payload = judge;\n// Es alärmt sich nur, wenn es Kleidung gibt.--globale Variable \"clothes\" //\n   if (testclothes === 1){\n   msg3.payload = \"ja\";\n   alarm0 = msg.payload[0].weather[0].icon;\nalarm1 = msg.payload[1].weather[0].icon;\n   alarm2 = msg.payload[2].weather[0].icon;\n   if (alarm0 === \"09d\" || alarm0 === \"10d\" || alarm0 === \"11d\" || alarm0 === \"13d\" || alarm0 === \"50d\" ||\n   alarm0 === \"09n\" || alarm0 === \"10n\" || alarm0 === \"11n\" || alarm0 === \"13n\" || alarm0 === \"50n\"){\n   msg2.payload = \"Vorsicht! Es regnet in drei Stunden, bitte nehmen Sie Ihre Kleidungen zurück!\";\n   }else if (alarm1 === \"09d\" || alarm1 === \"10d\" || alarm1 === \"11d\" || alarm1 === \"13d\" || alarm1 === \"50d\" ||\n   alarm1 === \"09n\" || alarm1 === \"10n\" || alarm1 === \"11n\" || alarm1 === \"13n\" || alarm1 === \"50n\"){\n   msg2.payload = \"Vorsicht! Es regnet in drei bis sechs Stunden,

bitte nehmen Sie Ihre Kleidungen zurück!\";\n   }else if (alarm2 === \"09d\" || alarm2 === \"10d\" || alarm2 === \"11d\" || alarm2 === \"13d\" || alarm2 === \"50d\" ||\n alarm2 === \"09n\" || alarm2 === \"10n\" || alarm2 === \"11n\" || alarm2 === \"13n\" || alarm2 === \"50n\"){\n   msg2.payload = \"Vorsicht! Es regnet in sechs bins neun   Stunden,   bitte   nehmen   Sie   Ihre   Kleidungen zurück!\";\n   }\n   }else{\n   msg2 = null;\n   msg3.payload = \"nein\";\n   }\n}\n\n\nreturn [msg1,msg2,msg3];","outputs":3,"noerr":0,"x":730,"y":1080,"wires":[["5b5901ee.a306d"],["e33f c50c.c631d8"],["3fd822bb.dfe37e"]],"info":"owlconMap.set('01d', 'wi-owm-01d'); // clear sky\nowlconMap.set('02d', 'wi-owm-02d'); // few clouds\nowlconMap.set('03d', 'wi-owm-03d'); // scattered clouds\nowlconMap.set('04d', 'wi-owm-04d'); // broken clouds\nowlconMap.set('09d', 'wi-owm-09d'); // shower rain\nowlconMap.set('10d', 'wi-owm-10d'); // rain\nowlconMap.set('11d', 'wi-owm-11d'); // thunderstorm\nowlconMap.set('13d', 'wi-owm-13d'); // snow\nowlconMap.set('50d', 'wi-owm-50d'); // mist\nowlconMap.set('01n', 'wi-owm-01n'); // clear sky\nowlconMap.set('02n', 'wi-owm-02n'); // few clouds\nowlconMap.set('03n', 'wi-owm-03n'); // scattered clouds\nowlconMap.set('04n', 'wi-owm-04n'); // broken clouds\nowlconMap.set('09n', 'wi-owm-09n'); // shower rain\nowlconMap.set('10n', 'wi-owm-10n'); // rain\nowlconMap.set('11n', 'wi-owm-11n'); // thunderstorm\nowlconMap.set('13n', 'wi-owm-13n'); // snow\nowlconMap.set('50n', 'wi-owm-50n'); // mist\n\n"},{"id":"e33fc50c.c631d8","type":"timed-counter","z":"d5a4ac6e.7e43a","name":"Alarm for each 9 hours","timelimit":"9","timeunit":"3600000","withhold":false,"fixedtimeout":true,"pertopic":false,"x":1080,"y":1080,"wires":[["ff58196a.623a78"]]},{"id":"ff58196a.623a78","type":"function","z":"d5a4ac6e.7e43a","name":"conter process","func":"if(msg.count === 1){\nreturn msg;}\nelse{\nreturn null;\n}","outputs":1,"noerr":0,"x":1520,"y":1080,"wires":[["46a0557b.be270c"]]},{"id":"31a1179.9bf62e8","type":"rpi-gpio in","z":"d5a4ac6e.7e43a","name":"status of clothes","pin":"15","intype":"tri","debounce":"25","read":true,"x":440,"y":580,"wires":[["ed2261fa.a995d"]]},{"id":"ed2261fa.a995d","type":"function","z":"d5a4ac6e.7e43a","name":"set status of clothes","func":"global.set(\"clothes\",msg.payload);\n\nreturn msg;","outputs":1,"noerr":0,"x":670,"y":580,"wires":[[]]},{"id":"bc832858.5b8d58","type":"inject","z":"d5a4ac6e.7e43a","name":"","topic":"","payload":"1","payloadType":"num","repeat":"","crontab":"","once":false,"onceDelay":0.1,"x":1310,"y":1560,"wires":[["7ee6fa05.271124"]]},{"id":"c0371024.bf708","type":"inject","z":"d5a4ac6e.7e43a","name":"","topic":"","payload":"0","payloadType":"num","repeat":"","crontab":"","once":false,"onceDelay":0.1,"x":1310,"y":1500,"wires":[["7ee6fa05.271124"]]},{"id":"7ee6fa05.271124","type":"rpi-gpio out","z":"d5a4ac6e.7e43a","name":"","pin":"15","set":"","level":"0","freq":"","out":"out","x":1460,"y":1540,"wires":[]},{"id":"be3b1ef1.0ec4f","type":"ui_text","z":"d5a4ac6e.7e43a","group":"7014e357.18188c","order":1,"width":6,"height":1,"name":"existence of clothes","label":"Gibt es jetzt Kleidung?","format":" {{msg.payload}} ","layout":"row-spread","x":1800,"y":1140,"wires":[]},{"id":"cced6a32.35ef08","type":"rpi-dht22","z":"d5a4ac6e.7e43a","d":true,"name":"DHT11 Sensor1","topic":"Sensor1","dht":"11","pintype":"0","pin":"23","x":1620,"y":1520,"wires":[["1e8a

bc91.e5ed83"]]},{"id":"4001b514.54514c","type":"rpi-dht22","z":"d5a4ac6e.7e43a","d":true,"name":"DHT11 Sensor2","topic":"Sensor2","dht":"11","pintype":"0","pin":"24","x":1620,"y":1560,"wires":[["748e4af8.a74ac4"]]},{"id":"1e8abc91.e5ed83","type":"function","z":"d5a4ac6e.7e43a","d":true,"name":"set Sensor1 Data","func":"if (msg.isValid === true){\n   global.set(\"condition1\",1);\n   global.set(\"errors1\",msg.errors);\n   global.set(\"humidity1\",msg.humidity);\n   global.set(\"temperature1\",msg.payload);\n}\nelse   {\n   global.set(\"condition1\",0);\n}\nreturn msg;","outputs":1,"noerr":0,"x":1810,"y":1520,"wires":[[]]},{"id":"748e4af8.a74ac4","type":"function","z":"d5a4ac6e.7e43a","d":true,"name":"set Sensor2 Data","func":"if (msg.isValid === true){\n   global.set(\"condition2\",1);\n   global.set(\"errors2\",msg.errors);\n   global.set(\"humidity2\",msg.humidity);\n   global.set(\"temperature2\",msg.payload);\n}\nelse{\n   global.set(\"condition2\",0);\n}\nreturn msg;","outputs":1,"noerr":0,"x":1810,"y":1560,"wires":[[]]},{"id":"e3048712.1d8438","type":"function","z":"d5a4ac6e.7e43a","name":"Analyse Sensor Data","func":"var con1 = global.get(\"condition1\");\nvar con2 = global.get(\"condition2\");\nvar msg1 = {};\nvar err1 = global.get(\"errors1\");\nvar err2 = global.get(\"errors2\");\nvar humi1 = global.get(\"humidity1\");\nvar humi2 = global.get(\"humidity2\");\nvar temp1 = global.get(\"temperature1\");\nvar temp2 = global.get(\"temperature2\");\n\nvar tempnow = global.get(\"temperaturenow\");\nvar huminow = global.get(\"humiditynow\");\nvar tempmax = tempnow * 1.1;\nvar tempmin = tempnow * 0.9;\nvar humimax = huminow * 1.1;\nvar humimin = huminow * 0.9;\nvar testclothes = global.get(\"clothes\");\n\nvar msg2 = {};\nvar msg3 = {};\nvar msg4 = {};\nvar msg5 = {};\n\nvar judgesudo = global.get(\"sudo\");\nvar judgeget11 = global.get(\"get11\");\nvar judgeget22 = global.get(\"get22\");\nvar judgeget33 = global.get(\"get33\");\nvar judgeget44 = global.get(\"get44\");\nvar judgeget55 = global.get(\"get55\");\n\nif (judgesudo === 1){\n   if (judgeget22 == \"ja\" && judgeget11 == \"ja\"){\n   msg4.payload = \"ja\";\n   msg5.payload = \"Die Kleidung ist schon getrocknet.\";\n   }else if(judgeget22 == \"nein\" && judgeget11 == \"ja\"){\n   msg4.payload = \"nein\";\n   msg5 = null;\n   }else{\n   msg4.payload = \"keine Kleidung!\";\n   msg5 = null;\n   }\n   msg1.condition = judgeget55;\n   msg2.payload = judgeget33 + \"°C\";\n   msg3.payload = judgeget44 + \"%\";\n}\nelse{\n   if (con1 == 1 && con2 == 1){\n   if (err1 < err2){\n   msg1.temperature = temp1;\n   msg1.humidity = humi1;\n   }\n   else{\n   msg1.temperature = temp2;\n   msg1.humidity = humi2;\n   }\n   msg1.condition = \"In Ordnung\";\n   }\n   else if (con1 == 1 && con2 === 0){\n   msg1.temperature = temp1;\n   msg1.humidity = humi1;   \n   msg1.condition = \"Sensor2 arbeitet nicht\";\n   }\n   else if (con1 === 0 && con2 == 1){\n   msg1.temperature = temp2;\n   msg1.humidity = humi2;   \n   msg1.condition = \"Sensor1 arbeitet nicht\";\n   }\n   else if (con1 === 0 && con2 === 0){\n   msg1.temperature = \"0.000\";\n   msg1.humidity = \"0.000\";   \n   msg1.condition = \"Nicht in Ordnung\";\n   }\n   else{\n   msg1.condition = \"Fehler\";\n   }\n   msg2.payload = msg1.temperature.substring(0,2) + \"°C\";\n

msg3.payload = msg1.humidity.substring(0,2) + \"%\";\n   \n   if (testclothes === 1){\n   if (msg1.tempature > tempmin && msg1.tempature < tempmax && msg1.humidity > humimin && msg1.humidity < humimax){\n   msg4.payload = \"ja\";\n   msg5.payload = \"Die Kleidung ist schon getrocknet.\"\n   }else {\n   msg4.payload = \"nein\";\n   msg5 = null;\n   }\n   }else{\n   msg4.payload = \"keine Kleidung!\";\n   msg5 = null;\n   }\n}\nreturn [msg1,msg2,msg3,msg4,msg5];\n","outputs":5,"noerr":0,"x":900,"y":1360,"wires":[["e0cd21e7.a4cc6"],["e0e5d0c.dab9a3"],["5cafe475.62340c"],["66cfbba2.121724"],["4b9fe5e1.821b1c"]]},{"id":"e0e5d0c.dab9a3","type":"ui_text","z":"d5a4ac6e.7e43a","group":"7014e357.18188c","order":3,"width":6,"height":1,"name":"Temperature of clothes","label":"Temperatur der Kleidung:","format":"{{msg.payload}}","layout":"row-spread","x":1200,"y":1320,"wires":[]},{"id":"5cafe475.62340c","type":"ui_text","z":"d5a4ac6e.7e43a","group":"7014e357.18188c","order":4,"width":6,"height":1,"name":"Humidity of clothes","label":"Freutigkeit der Kleidung:","format":"{{msg.payload}}","layout":"row-spread","x":1190,"y":1360,"wires":[]},{"id":"e2237761.23ab38","type":"ui_text","z":"d5a4ac6e.7e43a","group":"7014e357.18188c","order":5,"width":6,"height":1,"name":"Condition of Sensors","label":"Zustand des Sensors:","format":" {{msg.condition}} ","layout":"row-spread","x":1810,"y":1240,"wires":[],"info":" Zustand des Sensors "},{"id":"c66d2ef1.fd58","type":"ui_text","z":"d5a4ac6e.7e43a","group":"7014e357.18188c","order":2,"width":6,"height":1,"name":"Condition of clothes","label":"Trocknung fertig?","format":" {{msg.payload}} ","layout":"row-spread","x":1800,"y":1400,"wires":[]},{"id":"9bb4aac5.ddd658","type":"change","z":"d5a4ac6e.7e43a","name":"change color to lime","rules":[{"t":"set","p":"color","pt":"msg","to":"lime","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1540,"y":1200,"wires":[["e2237761.23ab38"]]},{"id":"e0cd21e7.a4cc6","type":"switch","z":"d5a4ac6e.7e43a","name":"change color of sensor-condition","property":"condition","propertyType":"msg","rules":[{"t":"eq","v":"In Ordnung","vt":"str"},{"t":"eq","v":"Sensor2 arbeitet nicht","vt":"str"},{"t":"eq","v":"Sensor1 arbeitet nicht","vt":"str"},{"t":"eq","v":"nicht in Ordnung","vt":"str"},{"t":"eq","v":"Fehler","vt":"str"}],"checkall":"true","repair":false,"outputs":5,"x":1240,"y":1240,"wires":[["9bb4aac5.ddd658"],["f25d6c78.2e"],["f25d6c78.2e"],["81c0a6b8.038d28"],["81c0a6b8.038d28"]]},{"id":"f25d6c78.2e","type":"change","z":"d5a4ac6e.7e43a","name":"change color to orange","rules":[{"t":"set","p":"color","pt":"msg","to":"orange","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1550,"y":1240,"wires":[["e2237761.23ab38"]]},{"id":"81c0a6b8.038d28","type":"change","z":"d5a4ac6e.7e43a","name":"change color to red","rules":[{"t":"set","p":"color","pt":"msg","to":"red","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1540,"y":1280,"wires":[["e2237761.23ab38"]]},{"id":"3fd822bb.dfe37e","type":"switch","z":"d5a4ac6e.7e43a","name":"change color of existence of clothes","property":"payload","propertyType":"msg","rules":[{"t":"eq","v":"ja","vt":"str"},{"t":"eq","v":"nein","vt":"str"}],"checkall":"true","repair":false,"outputs":2,"x":1140,"y":1140,"wires":[["e4bd5ada.bed958"],["433a2d31.a09a14"]]},{"id":"66cfbba2.121724","type":"switch","z":"d5a4ac6e.7e43a","name":"change color of condition of

clothes","property":"payload","propertyType":"msg","rules":[{"t":"eq","v":"ja","vt":"str"},{"t":"eq","v":"nein","vt":"str"},{"t":"eq","v":"keine Kleidung!","vt":"str"}],"checkall":"true","repair":false,"outputs":3,"x":1250,"y":1400,"wires":[["f5158ea5.303fa"],["b001a60c.acbbb8"],["65072eeb.435ce"]]},{"id":"5b5901ee.a306d","type":"switch","z":"d5a4ac6e.7e43a","name":"change color of judgement","property":"payload","propertyType":"msg","rules":[{"t":"eq","v":"ja","vt":"str"},{"t":"eq","v":"nein","vt":"str"}],"checkall":"true","repair":false,"outputs":2,"x":1100,"y":1020,"wires":[["b61a2528.d4db18"],["3ff6f053.9da72"]]},{"id":"b61a2528.d4db18","type":"change","z":"d5a4ac6e.7e43a","name":"change color to lime","rules":[{"t":"set","p":"color","pt":"msg","to":"lime","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1540,"y":1000,"wires":[["d6575941.a71908"]]},{"id":"3ff6f053.9da72","type":"change","z":"d5a4ac6e.7e43a","name":"change color to red","rules":[{"t":"set","p":"color","pt":"msg","to":"red","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1540,"y":1040,"wires":[["d6575941.a71908"]]},{"id":"e4bd5ada.bed958","type":"change","z":"d5a4ac6e.7e43a","name":"change color to lime","rules":[{"t":"set","p":"color","pt":"msg","to":"lime","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1540,"y":1120,"wires":[["be3b1ef1.0ec4f"]]},{"id":"433a2d31.a09a14","type":"change","z":"d5a4ac6e.7e43a","name":"change color to red","rules":[{"t":"set","p":"color","pt":"msg","to":"red","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1540,"y":1160,"wires":[["be3b1ef1.0ec4f"]]},{"id":"f5158ea5.303fa","type":"change","z":"d5a4ac6e.7e43a","name":"change color to lime","rules":[{"t":"set","p":"color","pt":"msg","to":"lime","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1550,"y":1340,"wires":[["c66d2ef1.fd58"]]},{"id":"b001a60c.acbbb8","type":"change","z":"d5a4ac6e.7e43a","name":"change color to red","rules":[{"t":"set","p":"color","pt":"msg","to":"red","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1540,"y":1380,"wires":[["c66d2ef1.fd58"]]},{"id":"fa5a0220.fea14","type":"delay","z":"d5a4ac6e.7e43a","name":"","pauseType":"delay","timeout":"2","timeoutUnits":"seconds","rate":"1","nbRateUnits":"1","rateUnits":"second","randomFirst":"1","randomLast":"5","randomUnits":"seconds","drop":false,"x":670,"y":1360,"wires":[["e3048712.1d8438"]]},{"id":"faada2e3.e0512","type":"e-mail","z":"d5a4ac6e.7e43a","server":"smtp.gmail.com","port":"465","secure":true,"tls":true,"name":"zang.chuanlong@outlook.com","dname":"Send_Email","x":1800,"y":1460,"wires":[]},{"id":"4b9fe5e1.821b1c","type":"timed-counter","z":"d5a4ac6e.7e43a","name":"Alarm for each 3 hours","timelimit":"3","timeunit":"3600000","withhold":false,"fixedtimeout":true,"pertopic":false,"x":1200,"y":1460,"wires":[["4478e3eb.517fdc"]]},{"id":"4478e3eb.517fdc","type":"function","z":"d5a4ac6e.7e43a","name":"conter process","func":"if(msg.count === 1){\nreturn msg;}\nelse{\nreturn null;\n}","outputs":1,"noerr":0,"x":1520,"y":1460,"wires":[["faada2e3.e0512"]]},{"id":"cc46f9d3.959868","type":"ui_gauge","z":"d5a4ac6e.7e43a","name":"","group":"9eb0630f.503e3","order":7,"width":6,"height":3,"gtype":"gage","title":"Luftfreutigkeit","label":"","format":"{{value}}%","min":0,"max":"100","colors":["#12ede3","#0980f6","#1631d7"],"seg1":"33","seg2":"67","x":1050,"y":440,"wires":[]},{"id":"58b46d7d.4d3944","type":"ui_text","z":"d5a4ac6e.7e43a","d":true,"group":"9eb0630f.503e3","order":6,"width":6,"height":1,"name":"Humidity","label":"Freutigkeit:","format":"{{msg.payload}}","layout":"row-

spread","x":1280,"y":480,"wires":[]},{"id":"90712ce8.eefe4","type":"ui_switch","z":"d5a4ac6e.7e43a","name":"switch","label":"Schalter","tooltip":"","group":"f5f8af29.a1599","order":1,"width":4,"height":1,"passthru":true,"decouple":"false","topic":"key","style":"","onvalue":"1","onvalueType":"num","onicon":"","oncolor":"","offvalue":"0","offvalueType":"num","officon":"","offcolor":"","x":80,"y":2020,"wires":[["b1badba6.ee7e28"]]},{"id":"bf7f4831.2bb958","type":"ui_text_input","z":"d5a4ac6e.7e43a","name":"","label":"Password: ","tooltip":"","group":"f5f8af29.a1599","order":3,"width":4,"height":1,"passthru":true,"mode":"password","delay":"300","topic":"password","x":100,"y":1960,"wires":[["134ec910.6d3cb7"]]},{"id":"b1badba6.ee7e28","type":"function","z":"d5a4ac6e.7e43a","name":"set global key","func":"global.set(\"key\",msg.payload);\nvar msg2 = {};\nif (msg.payload === 1){\n msg2.payload = \"Öffnen\";\n}else{\n msg2.payload = \"Schließen\";\n}\n\n\nreturn [msg,msg2];","outputs":2,"noerr":0,"x":470,"y":2020,"wires":[["1d54740e.2cebfc","ecbed7f5.7117d8"],["d4de8279.5d6a6"]]},{"id":"4c92df48.0dbc7","type":"function","z":"d5a4ac6e.7e43a","name":"check password","func":"var key1 = global.get(\"key\");\nvar submit1 = global.get(\"submit\");\nvar password1 = global.get(\"passwordin\");\n\nvar check = function(pass){\n if (pass == \"88569638\"){\n return \"richtig\";\n }else {\n return \"falsch\";\n }\n}\n\nif (key1 === 0){\n return null;\n}else{if (submit1 === 1){\n msg.payload = check(password1);\n \n return msg;}\n else{\n return null;\n}\n}","outputs":1,"noerr":0,"x":780,"y":2100,"wires":[["7b52df87.a14c4","e16168b7.fed5f8","ecbed7f5.7117d8"]]},{"id":"4b2ef22.893060c","type":"ui_button","z":"d5a4ac6e.7e43a","name":"","group":"f5f8af29.a1599","order":4,"width":2,"height":1,"passthru":false,"label":"submit","tooltip":"","color":"","bgcolor":"","icon":"","payload":"1","payloadType":"num","topic":"","x":100,"y":2080,"wires":[["56b52191.51fcb"]]},{"id":"56b52191.51fcb","type":"function","z":"d5a4ac6e.7e43a","name":"set global submit","func":"global.set(\"submit\",msg.payload);\n\nreturn msg;","outputs":1,"noerr":0,"x":480,"y":2080,"wires":[["730e8874.a1bc18","4c92df48.0dbc7"]]},{"id":"730e8874.a1bc18","type":"delay","z":"d5a4ac6e.7e43a","name":"","pauseType":"delay","timeout":"2","timeoutUnits":"seconds","rate":"1","nbRateUnits":"1","rateUnits":"second","randomFirst":"1","randomLast":"5","randomUnits":"seconds","drop":false,"x":750,"y":2240,"wires":[["4d0a9e44.e71e1"]]},{"id":"4d0a9e44.e71e1","type":"function","z":"d5a4ac6e.7e43a","name":"reset global submit","func":"global.set(\"submit\",0);\n\nreturn msg;","outputs":1,"noerr":0,"x":1310,"y":2240,"wires":[[]]},{"id":"134ec910.6d3cb7","type":"function","z":"d5a4ac6e.7e43a","name":"set global passwordin","func":"global.set(\"passwordin\",msg.payload);\nreturn msg;","outputs":1,"noerr":0,"x":420,"y":1960,"wires":[[]]},{"id":"495827ac.14b8a8","type":"ui_template","z":"d5a4ac6e.7e43a","group":"f5f8af29.a1599","name":"light display","order":7,"width":1,"height":1,"format":"<div style=\"display:flex; overflow: hidden;tex-align:left\"><p> \n<svg height=\"40\" width=\"80\">\n<circle cx=\"30\" cy=\"30\" r=\"10\" style=\"stroke: none; fill: {{msg.payload}};\"/>\n</svg></p>\n\n</div>","storeOutMessages":true,"fwdInMessages":true,"templateScope":"local","x":1280,"y":1980,"wires":[[]],"info":"Light Status "},{"id":"7b52df87.a14c4","type":"function","z":"d5a4ac6e.7e43a","name":"color change","func":"\nif(msg.payload == \"richtig\")\n{\n\tvar newmsg = {\n payload: \"lime\" \n\t};\n\treturn newmsg;}\nelse if(msg.payload == \"falsch\")\n{\n\tvar newmsg =

{\n payload: \"red\" \n\t};\n\treturn newmsg;\n}","outputs":1,"noerr":0,"x":1040,"y":1980,"wires":[["495827ac.14b8a8"]]},{"id":"457afc28.b396f4","type":"ui_text","z":"d5a4ac6e.7e43a","group":"f5f8af29.a1599","order":5,"width":3,"height":1,"name":"","label":"Gültigkeit des Modus:","format":"","layout":"row-spread","x":1080,"y":1940,"wires":[]},{"id":"e16168b7.fed5f8","type":"change","z":"d5a4ac6e.7e43a","name":"change payload","rules":[{"t":"change","p":"payload","pt":"msg","from":"richtig","fromt":"str","to":"EIN","tot":"str"},{"t":"change","p":"payload","pt":"msg","from":"falsch","fromt":"str","to":"AUS","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1060,"y":2100,"wires":[["ee0c6f4c.17afb","4aaa06e4.fc0d48","67fd4443.4d645c"]]},{"id":"1d54740e.2cebfc","type":"function","z":"d5a4ac6e.7e43a","name":"judgement function","func":"if (msg.payload === 0){\n msg.payload = \"falsch\";\n return msg;\n}\nreturn null;","outputs":1,"noerr":0,"x":790,"y":1980,"wires":[["7b52df87.a14c4","e16168b7.fed5f8"]]},{"id":"743449eb.1cfb68","type":"function","z":"d5a4ac6e.7e43a","name":"global set sudo","func":"global.set(\"sudo\",msg.payload);\nreturn msg;","outputs":1,"noerr":0,"x":1590,"y":2100,"wires":[[]]},{"id":"ee0c6f4c.17afb","type":"change","z":"d5a4ac6e.7e43a","name":"change payload","rules":[{"t":"change","p":"payload","pt":"msg","from":"EIN","fromt":"str","to":"1","tot":"num"},{"t":"change","p":"payload","pt":"msg","from":"AUS","fromt":"str","to":"0","tot":"num"}],"action":"","property":"","from":"","to":"","reg":false,"x":1300,"y":2100,"wires":[["743449eb.1cfb68"]]},{"id":"d4de8279.5d6a6","type":"ui_text","z":"d5a4ac6e.7e43a","group":"f5f8af29.a1599","order":2,"width":2,"height":1,"name":"Switchzustand","label":"","format":"{{msg.payload}}","layout":"row-spread","x":770,"y":2040,"wires":[]},{"id":"4aaa06e4.fc0d48","type":"ui_text","z":"d5a4ac6e.7e43a","group":"f5f8af29.a1599","order":6,"width":2,"height":1,"name":"word display","label":"","format":"{{msg.payload}}","layout":"row-spread","x":1280,"y":2060,"wires":[]},{"id":"477befbf.2c471","type":"ui_switch","z":"d5a4ac6e.7e43a","name":"Gibt es jetzt Kleidung?","label":"Gibt es jetzt Kleidung?","tooltip":"","group":"8c3e6f35.f6726","order":1,"width":4,"height":1,"passthru":true,"decouple":"false","topic":"m1","style":"","onvalue":"1","onvalueType":"num","onicon":"","oncolor":"","offvalue":"0","offvalueType":"num","officon":"","offcolor":"","x":140,"y":1580,"wires":[["4b19b326.548bec"]]},{"id":"6486484a.1b79f8","type":"ui_switch","z":"d5a4ac6e.7e43a","name":"Für Kleidungtrocknung geeignet?","label":"Für Kleidungtrocknung geeignet?","tooltip":"","group":"8c3e6f35.f6726","order":12,"width":5,"height":1,"passthru":true,"decouple":"false","topic":"6","style":"","onvalue":"1","onvalueType":"num","onicon":"","oncolor":"","offvalue":"0","offvalueType":"num","officon":"","offcolor":"","x":190,"y":1880,"wires":[["71480c71.26cce4"]]},{"id":"eff64c25.14dc","type":"ui_switch","z":"d5a4ac6e.7e43a","name":"","label":"Trocknung fertig?","tooltip":"","group":"8c3e6f35.f6726","order":4,"width":4,"height":1,"passthru":true,"decouple":"false","topic":"2","style":"","onvalue":"1","onvalueType":"num","onicon":"","oncolor":"","offvalue":"0","offvalueType":"num","officon":"","offcolor":"","x":120,"y":1640,"wires":[["645d570.9c958a8"]]},{"id":"a2abd1e5.dcc5b","type":"ui_slider","z":"d5a4ac6e.7e43a","name":"Freutigkeit der Kleidung:","label":"Freutigkeit der Kleidung:","tooltip":"","group":"8c3e6f35.f6726","order":8,"width":5,"height":1,"passthru":true,

"outs":"all","topic":"4","min":0,"max":"100","step":1,"x":150,"y":1760,"wires":[["707aff81.8733f"]]},{"id":"ec37476.280c4b8","type":"ui_slider","z":"d5a4ac6e.7e43a","name":"Zustand des Sensors:","label":"Zustand des Sensors:","tooltip":"","group":"8c3e6f35.f6726","order":10,"width":4,"height":1,"passthru":true,"outs":"all","topic":"5","min":0,"max":"19","step":1,"x":140,"y":1820,"wires":[["81978648.159e78"]]},{"id":"261f6c11.9a2fc4","type":"ui_slider","z":"d5a4ac6e.7e43a","name":"Temperatur der Kleidung:","label":"Temperatur der Kleidung:","tooltip":"","group":"8c3e6f35.f6726","order":6,"width":5,"height":1,"passthru":true,"outs":"all","topic":"3","min":0,"max":"100","step":1,"x":150,"y":1700,"wires":[["be638a63.8e75d8"]]},{"id":"88004cb.ed149b","type":"ui_text","z":"d5a4ac6e.7e43a","group":"779f3205.8de5fc","order":2,"width":6,"height":1,"name":"Interface (below)","label":"","format":"{{msg.payload}}","layout":"row-spread","x":1300,"y":2180,"wires":[]},{"id":"67fd4443.4d645c","type":"function","z":"d5a4ac6e.7e43a","name":"interface (above) control","func":"var msg1 = {};\n\nif (msg.payload == \"AUS\"){\n   msg1.payload = \"Der Entwicklermodus ist jetzt nicht verfügbar.\";\n}else{\n   msg1.payload = \"Jetzt können Sie Entwicklermodus benutzen.\";\n}\n\n\nreturn msg1;","outputs":1,"noerr":0,"x":1330,"y":2140,"wires":[["382a0b7f.d749f4"]]},{"id":"382a0b7f.d749f4","type":"ui_text","z":"d5a4ac6e.7e43a","group":"779f3205.8de5fc","order":1,"width":6,"height":1,"name":"Interface (above)","label":"","format":"{{msg.payload}}","layout":"row-spread","x":1600,"y":2140,"wires":[]},{"id":"ecbed7f5.7117d8","type":"function","z":"d5a4ac6e.7e43a","name":"interface (below) control","func":"var key2 = global.get(\"key\");\nvar msg1 = {};\nvar get0 = global.get(\"sichern\");\n\n\n   \nif (key2 === 0){\nmsg.payload = \"Bitte Öffnen Sie zuerst den Schalter!\";\n}else if (key2 === 1){\n   if (msg.payload == \"richtig\"){\n   msg.payload = \"Bitte nach der Veränderung 'sichern'!\";\n return msg;\n   }else if (msg.payload == \"falsch\"){\n   msg.payload = \"Falsches Geheimzahl!\";\n   return msg;\n   }else if (get0 == 1){\n   msg.payload = \"Veränderungen werden erfolgreich gespeichert.\";\n   return msg;\n}\n   msg.payload = \"Bitte geben Sie dann das Geheimzahl und 'Submit'!\";\n}\n\n\nreturn msg;","outputs":1,"noerr":0,"x":810,"y":2180,"wires":[["88004cb.ed149b"]]},{"id":"4a39508.a1344b","type":"ui_text","z":"d5a4ac6e.7e43a","group":"8c3e6f35.f6726","order":2,"width":1,"height":1,"name":"Gibt es jetzt Kleidung?","label":"","format":"{{msg.payload}}","layout":"row-spread","x":1080,"y":1580,"wires":[]},{"id":"4b19b326.548bec","type":"change","z":"d5a4ac6e.7e43a","name":"change payload","rules":[{"t":"change","p":"payload","pt":"msg","from":"0","fromt":"num","to":"nein","tot":"str"},{"t":"change","p":"payload","pt":"msg","from":"1","fromt":"num","to":"ja","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":480,"y":1580,"wires":[["44fa0225.fc6fdc"]]},{"id":"645d570.9c958a8","type":"change","z":"d5a4ac6e.7e43a","name":"change payload","rules":[{"t":"change","p":"payload","pt":"msg","from":"0","fromt":"num","to":"nein","tot":"str"},{"t":"change","p":"payload","pt":"msg","from":"1","fromt":"num","to":"ja","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":480,"y":1640,"wires":[["e62fab4.fb06258"]]},{"id":"be34f253.e837f","type":"ui_text","z":"d5a4ac6e.7e43a","group":"8c3e6f35.f6726","order":5,"width":1,"height":1,"name":"Trocknung fertig?","label":"","format":"{{msg.payload}}","layout":"row-spread","x":1060,"y":1640,"wires":[]},{"id":"dc9479d1.4d73e8","type":"ui_text","z":"d5a4ac6e.7e

43a","group":"8c3e6f35.f6726","order":7,"width":1,"height":1,"name":"Temperatur der Kleidung:","label":"","format":"{{msg.payload}}°C","layout":"row-spread","x":1090,"y":1700,"wires":[]},{"id":"4a0cc040.25f63","type":"ui_text","z":"d5a4ac6e.7e43a","group":"8c3e6f35.f6726","order":9,"width":1,"height":1,"name":"Freutigkeit der Kleidung:","label":"","format":"{{msg.payload}}%","layout":"row-spread","x":1090,"y":1760,"wires":[]},{"id":"81978648.159e78","type":"function","z":"d5a4ac6e.7e43a","name":"change payload","func":"if (msg.payload <= 4){\n   msg.payload = \"In Ordnung\";\n}else if (msg.payload <= 9){\n   msg.payload = \"Sensor1 arbeitet nicht\";\n}else if (msg.payload <= 14){\n   msg.payload = \"Sensor2 arbeitet nicht\";\n}else {\n   msg.payload = \"nicht in Ordnung\";\n}\nreturn msg;","outputs":1,"noerr":0,"x":480,"y":1820,"wires":[["ce2bca00.978618"]]},{"id":"4ee9a27b.a0403c","type":"ui_text","z":"d5a4ac6e.7e43a","group":"8c3e6f35.f6726","order":11,"width":2,"height":1,"name":"Zustand des Sensors:","label":"","format":"{{msg.payload}}","layout":"row-spread","x":1080,"y":1820,"wires":[]},{"id":"4d4491f5.cd1e","type":"ui_text","z":"d5a4ac6e.7e43a","group":"8c3e6f35.f6726","order":13,"width":1,"height":1,"name":"Für Kleidungtrocknung geeignet?","label":"","format":"{{msg.payload}}","layout":"row-spread","x":1130,"y":1880,"wires":[]},{"id":"71480c71.26cce4","type":"change","z":"d5a4ac6e.7e43a","name":"change payload","rules":[{"t":"change","p":"payload","pt":"msg","from":"0","fromt":"num","to":"nein","tot":"str"},{"t":"change","p":"payload","pt":"msg","from":"1","fromt":"num","to":"ja","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":480,"y":1880,"wires":[["e3ce3abb.5ad208"]]},{"id":"8761e762.c494f8","type":"ui_button","z":"d5a4ac6e.7e43a","name":"Sichern","group":"8c3e6f35.f6726","order":3,"width":1,"height":2,"passthru":false,"label":"Sichern","tooltip":"","color":"","bgcolor":"","icon":"","payload":"1","payloadType":"num","topic":"sichern","x":80,"y":1520,"wires":[["c1b08861.ea7ef8"]]},{"id":"251adb9c.648094","type":"function","z":"d5a4ac6e.7e43a","name":"just transfer function","func":"return msg;","outputs":1,"noerr":0,"x":490,"y":1520,"wires":[["13996e4c.8033a2","ecbed7f5.7117d8","97d4b696.772458","e3048712.1d8438"]],"info":"   var get1 = global.get(\"get11\");\n   var get2 = global.get(\"get22\");\n   var get3 = global.get(\"get33\");\n   var get4 = global.get(\"get44\");\n   var get5 = global.get(\"get55\");\n   var get6 = global.get(\"get66\");"},{"id":"13996e4c.8033a2","type":"delay","z":"d5a4ac6e.7e43a","name":"","pauseType":"delay","timeout":"2","timeoutUnits":"seconds","rate":"1","nbRateUnits":"1","rateUnits":"second","randomFirst":"1","randomLast":"5","randomUnits":"seconds","drop":false,"x":790,"y":1520,"wires":[["87e2ba68.6b13d8"]]},{"id":"87e2ba68.6b13d8","type":"function","z":"d5a4ac6e.7e43a","name":"set global sichern","func":"global.set(\"sichern\",0);\n\nreturn msg;","outputs":1,"noerr":0,"x":1060,"y":1520,"wires":[[]]},{"id":"c1b08861.ea7ef8","type":"function","z":"d5a4ac6e.7e43a","name":"sudo judgement","func":"var jsudo = global.get(\"sudo\");\nif (jsudo == 1){\nglobal.set(\"sichern\",msg.payload);\nreturn msg;\n}else{\n   return null;\n}\n","outputs":1,"noerr":0,"x":260,"y":1520,"wires":[["251adb9c.648094"]]},{"id":"44fa0225.fc6fdc","type":"function","z":"d5a4ac6e.7e43a","name":"sudo judgement","func":"var jsudo = global.get(\"sudo\");\nif (jsudo == 1){\nglobal.set(\"get11\",msg.payload);\nreturn msg;\n}else{\n   msg.payload = \"---\";\n   return msg;\n}","outputs":1,"noerr":0,"x":820,"y":1580,"wires":[["4a39508.a1344b"]]},{"id":"e62fab4.fb

06258","type":"function","z":"d5a4ac6e.7e43a","name":"sudo judgement","func":"var jsudo = global.get(\"sudo\");\nif (jsudo == 1){\nglobal.set(\"get22\",msg.payload);\nreturn msg;\n}else{\n msg.payload = \"---\";\n return msg;\n}","outputs":1,"noerr":0,"x":820,"y":1640,"wires":[["be34f253.e837f"]]},{"id":"be638a63.8 e75d8","type":"function","z":"d5a4ac6e.7e43a","name":"sudo judgement","func":"var jsudo = global.get(\"sudo\");\nif (jsudo == 1){\nglobal.set(\"get33\",msg.payload);\nreturn msg;\n}else{\n msg.payload = \"---\";\n return msg;\n}","outputs":1,"noerr":0,"x":820,"y":1700,"wires":[["dc9479d1.4d73e8"]]},{"id":"707aff81. 8733f","type":"function","z":"d5a4ac6e.7e43a","name":"sudo judgement","func":"var jsudo = global.get(\"sudo\");\nif (jsudo == 1){\nglobal.set(\"get44\",msg.payload);\nreturn msg;\n}else{\n msg.payload = \"---\";\n return msg;\n}","outputs":1,"noerr":0,"x":820,"y":1760,"wires":[["4a0cc040.25f63"]]},{"id":"ce2bca00.9 78618","type":"function","z":"d5a4ac6e.7e43a","name":"sudo judgement","func":"var jsudo = global.get(\"sudo\");\nif (jsudo == 1){\nglobal.set(\"get55\",msg.payload);\nreturn msg;\n}else{\n msg.payload = \"---\";\n return msg;\n}","outputs":1,"noerr":0,"x":820,"y":1820,"wires":[["4ee9a27b.a0403c"]]},{"id":"e3ce3abb .5ad208","type":"function","z":"d5a4ac6e.7e43a","name":"sudo judgement","func":"var jsudo = global.get(\"sudo\");\nif (jsudo == 1){\nglobal.set(\"get66\",msg.payload);\nreturn msg;\n}else{\n msg.payload = \"---\";\n return msg;\n}","outputs":1,"noerr":0,"x":820,"y":1880,"wires":[["4d4491f5.cd1e"]]},{"id":"a35179d.8f8 3988","type":"function","z":"d5a4ac6e.7e43a","name":"modus judgement","func":"var judgesudo = global.get(\"sudo\");\n\nif (judgesudo == 1){\n return null;\n}\nreturn msg;","outputs":1,"noerr":0,"x":670,"y":980,"wires":[["97d4b696.772458"]]},{"id":"68f4de33.65c 8a","type":"function","z":"d5a4ac6e.7e43a","name":"modus judgement","func":"var judgesudo = global.get(\"sudo\");\n\nif (judgesudo == 1){\n return null;\n}\nreturn msg;","outputs":1,"noerr":0,"x":430,"y":1300,"wires":[["fa5a0220.fea14","1054ae35.1599a2","aa 89e12.fcdc82"]]},{"id":"1054ae35.1599a2","type":"mqtt out","z":"d5a4ac6e.7e43a","name":"DHT11 Sensor1 send","topic":"DHT11 Sensor1 send","qos":"","retain":"","broker":"6d1b30f5.9dd1f","x":720,"y":1300,"wires":[]},{"id":"4f46f4a7. b7cc0c","type":"mqtt in","z":"d5a4ac6e.7e43a","name":"DHT11 Sensor1 temp","topic":"DHT11 Sensor1 temp","qos":"2","datatype":"auto","broker":"6d1b30f5.9dd1f","x":1480,"y":1800,"wires":[["5a15 5536.56b76c"]]},{"id":"1e1d885.6bbf778","type":"mqtt in","z":"d5a4ac6e.7e43a","name":"DHT11 Sensor2 temp","topic":"DHT11 Sensor2 temp","qos":"0","datatype":"auto","broker":"6d1b30f5.9dd1f","x":1480,"y":1620,"wires":[["e842 1136.ae534"]]},{"id":"aa89e12.fcdc82","type":"mqtt out","z":"d5a4ac6e.7e43a","name":"DHT11 Sensor2 send","topic":"DHT11 Sensor2 send","qos":"","retain":"","broker":"6d1b30f5.9dd1f","x":720,"y":1240,"wires":[]},{"id":"584e535 4.3eecac","type":"mqtt in","z":"d5a4ac6e.7e43a","name":"DHT11 Sensor1 humi","topic":"DHT11 Sensor1 humi","qos":"2","datatype":"auto","broker":"6d1b30f5.9dd1f","x":1480,"y":1840,"wires":[["b50b c500.851ce8"]]},{"id":"61fef866.ce3988","type":"mqtt in","z":"d5a4ac6e.7e43a","name":"DHT11 Sensor2 humi","topic":"DHT11 Sensor2 humi","qos":"0","datatype":"auto","broker":"6d1b30f5.9dd1f","x":1480,"y":1660,"wires":[["8b25

58db.546948"]]},{"id":"e363b888.2391c8","type":"mqtt in","z":"d5a4ac6e.7e43a","name":"DHT11 Sensor1 valid","topic":"DHT11 Sensor1 valid","qos":"2","datatype":"auto","broker":"6d1b30f5.9dd1f","x":1480,"y":1880,"wires":[["c3ac 154.6f9f8e8"]]},{"id":"e96a9377.c6239","type":"mqtt in","z":"d5a4ac6e.7e43a","name":"DHT11 Sensor2 valid","topic":"DHT11 Sensor2 valid","qos":"0","datatype":"auto","broker":"6d1b30f5.9dd1f","x":1480,"y":1700,"wires":[["f2ed 3eaa.fa36e"]]},{"id":"a86ce4e.c8bf218","type":"mqtt in","z":"d5a4ac6e.7e43a","name":"DHT11 Sensor1 error","topic":"DHT11 Sensor1 error","qos":"2","datatype":"auto","broker":"6d1b30f5.9dd1f","x":1480,"y":1920,"wires":[["bed6 b477.6f8218"]]},{"id":"3d09cb07.7d9a04","type":"mqtt in","z":"d5a4ac6e.7e43a","name":"DHT11 Sensor2 error","topic":"DHT11 Sensor2 error","qos":"0","datatype":"auto","broker":"6d1b30f5.9dd1f","x":1480,"y":1740,"wires":[["b60c 45.125153b8"]]},{"id":"c3ac154.6f9f8e8","type":"function","z":"d5a4ac6e.7e43a","name":"set global condition1","func":"if (msg.payload === \"true\"){\n global.set(\"condition1\",1);\n}else{\n global.set(\"condition1\",0);\n}\nmsg.payload = global.get(\"condition1\");\nreturn msg;","outputs":1,"noerr":0,"x":1700,"y":1880,"wires":[[]]},{"id":"5a155536.56b76c","type":"dela y","z":"d5a4ac6e.7e43a","name":"","pauseType":"delay","timeout":"1","timeoutUnits":"seconds ","rate":"1","nbRateUnits":"1","rateUnits":"second","randomFirst":"1","randomLast":"5","rando mUnits":"seconds","drop":false,"x":1660,"y":1800,"wires":[["9c7c2828.b133b8"]]},{"id":"9c7c28 28.b133b8","type":"function","z":"d5a4ac6e.7e43a","name":"","func":"var judge1 = global.get(\"condition1\");\nif (judge1 === 1){\n global.set(\"temperature1\",msg.payload);\n}\n\n\nreturn msg;\n","outputs":1,"noerr":0,"x":1790,"y":1800,"wires":[[]]},{"id":"b50bc500.851ce8","type":"d elay","z":"d5a4ac6e.7e43a","name":"","pauseType":"delay","timeout":"1","timeoutUnits":"seco nds","rate":"1","nbRateUnits":"1","rateUnits":"second","randomFirst":"1","randomLast":"5","ran domUnits":"seconds","drop":false,"x":1660,"y":1840,"wires":[["304a1fb8.61b01"]]},{"id":"304a1f b8.61b01","type":"function","z":"d5a4ac6e.7e43a","name":"","func":"var judge1 = global.get(\"condition1\");\nif (judge1 === 1){\n global.set(\"humidity1\",msg.payload);\n}\n\n\n\n\nreturn msg;\n","outputs":1,"noerr":0,"x":1790,"y":1840,"wires":[[]]},{"id":"bed6b477.6f8218","type":"de lay","z":"d5a4ac6e.7e43a","name":"","pauseType":"delay","timeout":"1","timeoutUnits":"secon ds","rate":"1","nbRateUnits":"1","rateUnits":"second","randomFirst":"1","randomLast":"5","rand omUnits":"seconds","drop":false,"x":1660,"y":1920,"wires":[["f448304.a19abd"]]},{"id":"f448304 .a19abd","type":"function","z":"d5a4ac6e.7e43a","name":"","func":"var judge1 = global.get(\"condition1\");\nif (judge1 === 1){\n global.set(\"errors1\",msg.payload);\n}\n\nreturn msg;\n","outputs":1,"noerr":0,"x":1790,"y":1920,"wires":[[]]},{"id":"f2ed3eaa.fa36e","type":"func tion","z":"d5a4ac6e.7e43a","name":"set global condition2","func":"if (msg.payload === \"true\"){\n global.set(\"condition2\",1);\n}else{\n global.set(\"condition2\",0);\n}\nreturn msg;","outputs":1,"noerr":0,"x":1700,"y":1700,"wires":[[]]},{"id":"e8421136.ae534","type":"delay ","z":"d5a4ac6e.7e43a","name":"","pauseType":"delay","timeout":"1","timeoutUnits":"seconds" ,"rate":"1","nbRateUnits":"1","rateUnits":"second","randomFirst":"1","randomLast":"5","random

Units":"seconds","drop":false,"x":1660,"y":1620,"wires":[["e08fd9f.6d5a828"]]},{"id":"e08fd9f.6d5a828","type":"function","z":"d5a4ac6e.7e43a","name":"","func":"var judge1 = global.get(\"condition2\");\nif (judge1 === 1){\n global.set(\"temperature2\",msg.payload);\n}\n\n\nreturn msg;\n","outputs":1,"noerr":0,"x":1790,"y":1620,"wires":[[]]},{"id":"8b2558db.546948","type":"delay","z":"d5a4ac6e.7e43a","name":"","pauseType":"delay","timeout":"1","timeoutUnits":"seconds","rate":"1","nbRateUnits":"1","rateUnits":"second","randomFirst":"1","randomLast":"5","randomUnits":"seconds","drop":false,"x":1660,"y":1660,"wires":[["a99ac659.c4a888"]]},{"id":"a99ac659.c4a888","type":"function","z":"d5a4ac6e.7e43a","name":"","func":"var judge1 = global.get(\"condition2\");\nif (judge1 === 1){\n global.set(\"humidity2\",msg.payload);\n}\n\n\n\n\nreturn msg;\n","outputs":1,"noerr":0,"x":1790,"y":1660,"wires":[[]]},{"id":"b60c45.125153b8","type":"delay","z":"d5a4ac6e.7e43a","name":"","pauseType":"delay","timeout":"1","timeoutUnits":"seconds","rate":"1","nbRateUnits":"1","rateUnits":"second","randomFirst":"1","randomLast":"5","randomUnits":"seconds","drop":false,"x":1660,"y":1740,"wires":[["46ebdfe0.4796c"]]},{"id":"46ebdfe0.4796c","type":"function","z":"d5a4ac6e.7e43a","name":"","func":"var judge1 = global.get(\"condition2\");\nif (judge1 === 1){\n global.set(\"errors2\",msg.payload);\n}\n\nreturn msg;\n","outputs":1,"noerr":0,"x":1790,"y":1740,"wires":[[]]},{"id":"65072eeb.435ce","type":"change","z":"d5a4ac6e.7e43a","name":"change color to blue","rules":[{"t":"set","p":"color","pt":"msg","to":"blue","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":1550,"y":1420,"wires":[["c66d2ef1.fd58"]]},{"id":"968f93d7.ab3f2","type":"ui_group","z":"","name":"Aktuelle Wetterinfomationen","tab":"17a04fab.621d9","order":1,"disp":true,"width":"6","collapse":false},{"id":"37b19686.0a7c0a","type":"ui_group","z":"","name":"Voraussagen","tab":"17a04fab.621d9","order":7,"disp":true,"width":"30","collapse":false},{"id":"9eb0630f.503e3","type":"ui_group","z":"","name":"Aktuelle Windsinfomationen","tab":"17a04fab.621d9","order":2,"disp":true,"width":6,"collapse":false},{"id":"7014e357.18188c","type":"ui_group","z":"","name":"Aktuelle Kleidungsinfomationen","tab":"17a04fab.621d9","order":3,"disp":true,"width":"6","collapse":false},{"id":"f5f8af29.a1599","type":"ui_group","z":"","name":"Entwicklermodus - Einloggen","tab":"17a04fab.621d9","order":4,"disp":true,"width":6,"collapse":false},{"id":"8c3e6f35.f6726","type":"ui_group","z":"","name":"Entwicklermodus - Funktionen","tab":"17a04fab.621d9","order":5,"disp":true,"width":6,"collapse":false},{"id":"779f3205.8de5fc","type":"ui_group","z":"","name":"Entwicklermodus - Interface","tab":"17a04fab.621d9","order":6,"disp":true,"width":"6","collapse":false},{"id":"6d1b30f5.9dd1f","type":"mqtt-broker","z":"","name":"","broker":"broker.hivemq.com","port":"1883","clientid":"","usetls":false,"compatmode":false,"keepalive":"15","cleansession":true,"birthTopic":"","birthQos":"0","birthPayload":"","closeTopic":"","closeQos":"0","closePayload":"","willTopic":"","willQos":"0","willPayload":""},{"id":"17a04fab.621d9","type":"ui_tab","z":"","name":"Wetterstation","icon":"fa-thermometer-half","order":5,"disabled":false,"hidden":false}]

12.2 Das Programm für Sensoren Raspberry-Pi

[{"id":"dfcbf0bf.6cc5a","type":"mqtt   out","z":"a90f375.44766c8","name":"DHT11   Sensor1 temp","topic":"DHT11   Sensor1 temp","qos":"","retain":"","broker":"83f6b9fe.c53f08","x":1077.5,"y":224,"wires":[]},{"id":" 83f6b9fe.c53f08","type":"mqtt-broker","z":"","name":"","broker":"broker.hivemq.com","port":"1883","clientid":"","usetls":f alse,"compatmode":true,"keepalive":"60","cleansession":true,"birthTopic":"","birthQos":"0"," birthPayload":"","closeTopic":"","closeQos":"0","closePayload":"","willTopic":"","willQos":" 0","willPayload":""}]