GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN IN PUBLICA COMMODA SEIT 1737

CALLIOPE TAG 2025

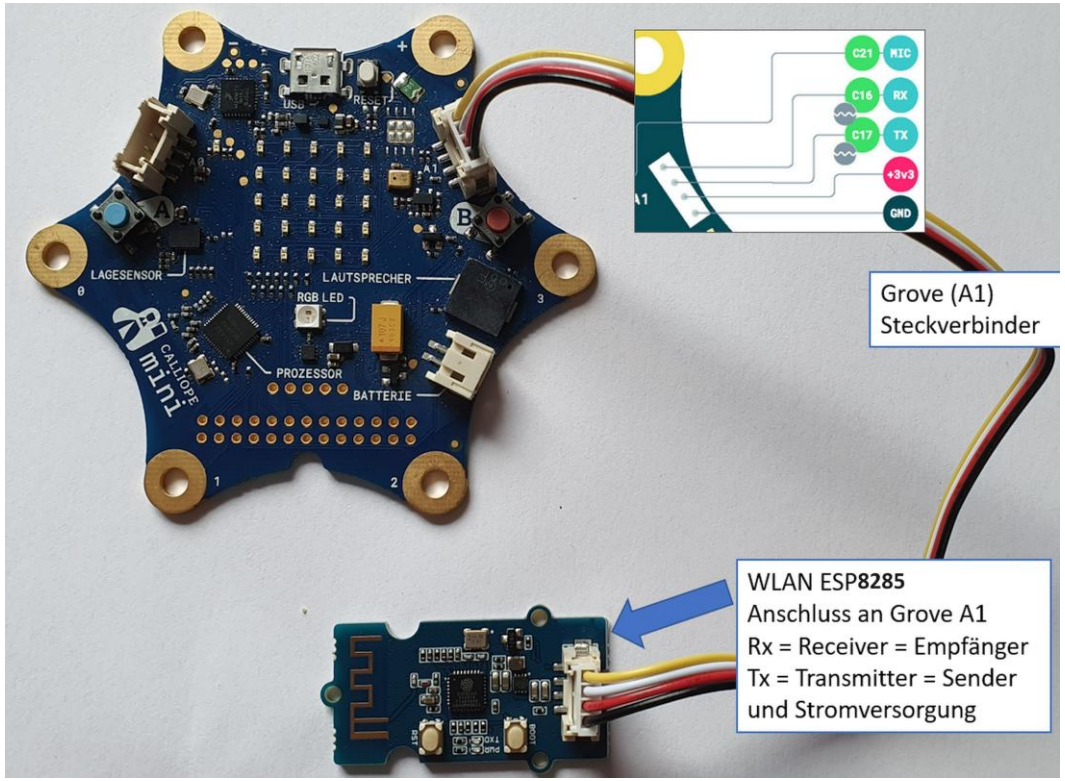
Sensordaten erfassen und im IOT anzeigen im Bereich SmartHome

Dr. Judith Boine – XLAB Göttingen
Lucas Warnecke – DDI Uni Göttingen

Was benötigen wir?

- WLAN-Modul ESP8285 mit Grove-Anschluss
- Zusätzliche Sensoren für den Calliope
  - z.B. BME680-Sensor mit Grove-Anschluss (für Temperatur, Feuchtigkeit, Luftdruck)
- Kostenlosen ThinkSpeak-Account

WLAN-Modul



- Heusel, H. (2024). *Call IoT - CO_2-Messgerät » Calliope goes Internet*. # inf-schule.de. https://inf-schule.de/kids/calliope/calliot_co2/schritt6

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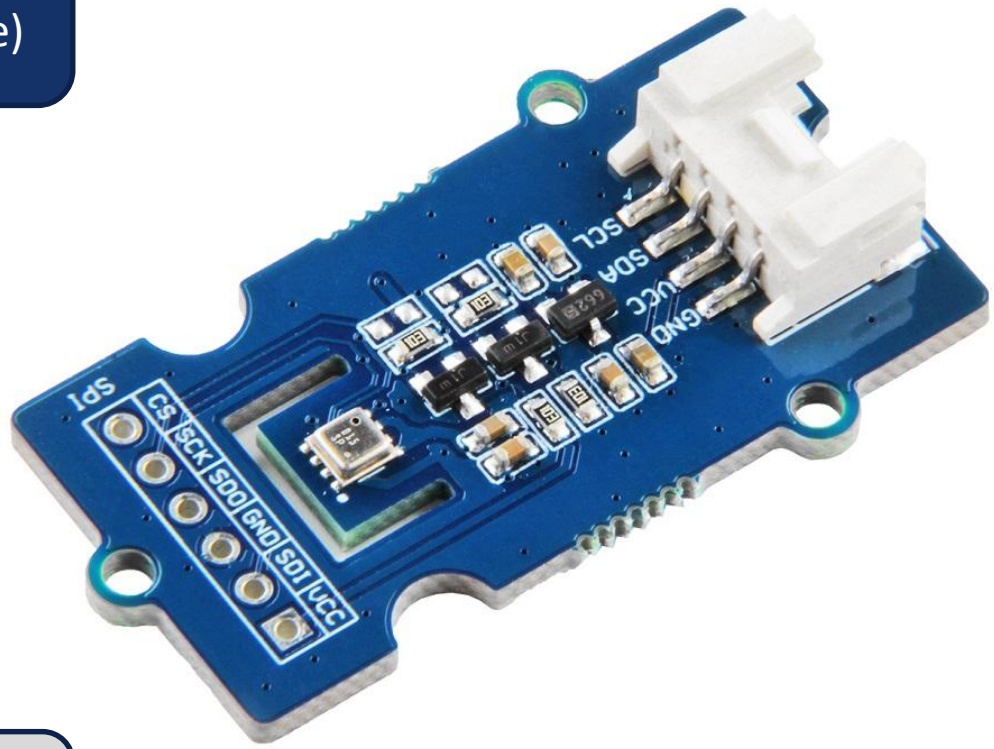
BME680

Temperatur in °C
(mit zwei Nachkommastelle)



Luftdruck in KPascal

Luftfeuchtigkeit in %

Luftqualität
(kann nicht ausgelesen werden)

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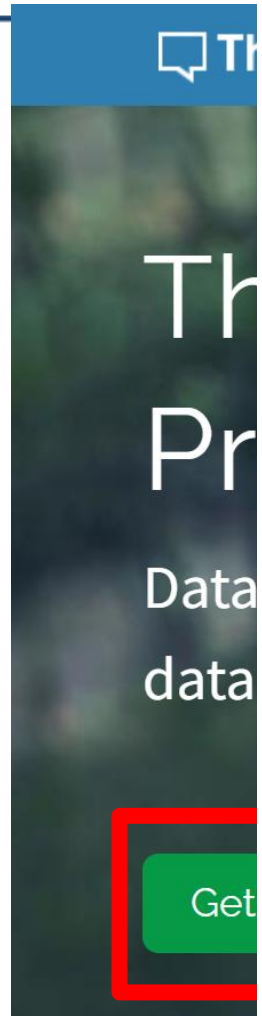

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ThingSpeak Usage Intent

How are you planning to use ThingSpeak?

- ( ) Commercial work (including research)
- ( ) Government work (including research)
- ( ) Personal, non-commercial projects
- (•) Student use, Teaching, or Research in academia

What is the name of your University?*

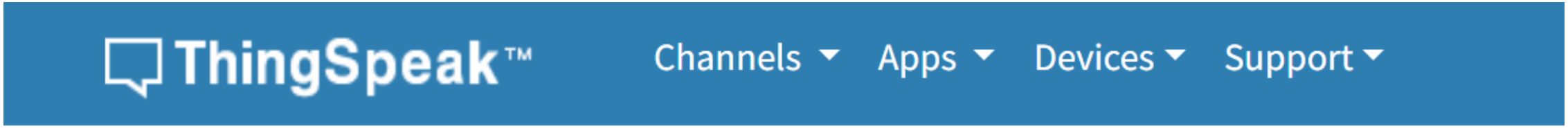
Universität Göttingen

What best describes your current role?*

( ) Student ( ) Professor (•) Researcher

What is the name of your Course or Project?*

Calliope + IoT



My Channels

New Channel

Search by tag

New Channel

Name Calliope IoT

Description

Field 1 Feuchtigkeit ☑

Field 2 Temperatur ☑

ThingSpeak™ Channels Apps Devices Support

Calliope IoT

Channel ID: **3073026**

Author: mwa0000038715436

Access: Private

Private View | Public View | Channel Settings | Sharing | API Keys

Write API Key

Key: 8SEHG5930LRJNE5S

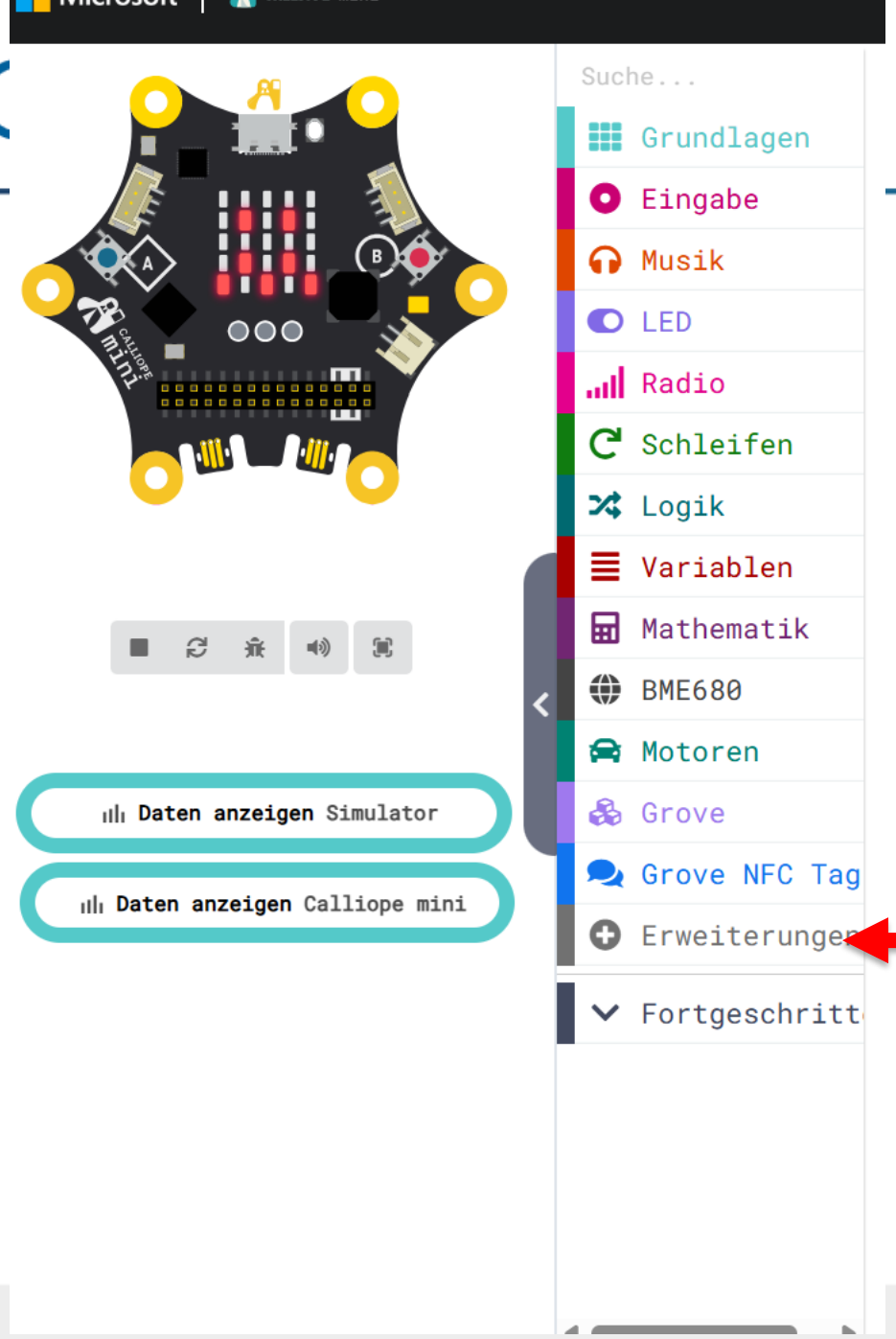
Generate New Write API Key

Help

API keys er
private cha
channel.

API Ke

- **Write**



Erweiterungen

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urückgehen

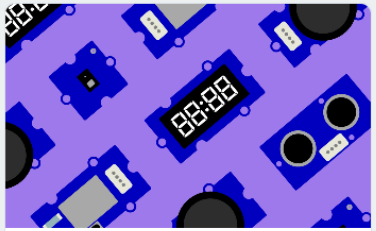
Erweiterungen

Grove

RGB | Klima | Motor | Anzeige | Software | Jacdac | KI | IoT | Audio | Wissenschaft | Lichter und Bildschirm | Netzwerk

Startseite

Datei importieren



grove
A Microsoft MakeCode package for Seeed [illegible]io Grove module

Weitere Informationen

calliope-grovePCF85063…
Calliope extension for High Precision RTC Grove PCF85063TP.

Weitere Informationen

grove-soilmoisture-jac…
Jacdac for Grove soil moisture sensor at Calliope mini

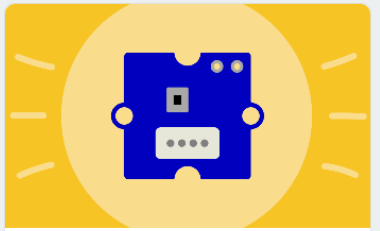
Weitere Informationen

grove-ultrasonic-jacdac
Jacdac for Grove Ultrasonic Ranger and Calliope mini

Weitere Informationen

grove-relay-jacdac
Jacdac for Calliope mini and Seeed Grove Relay

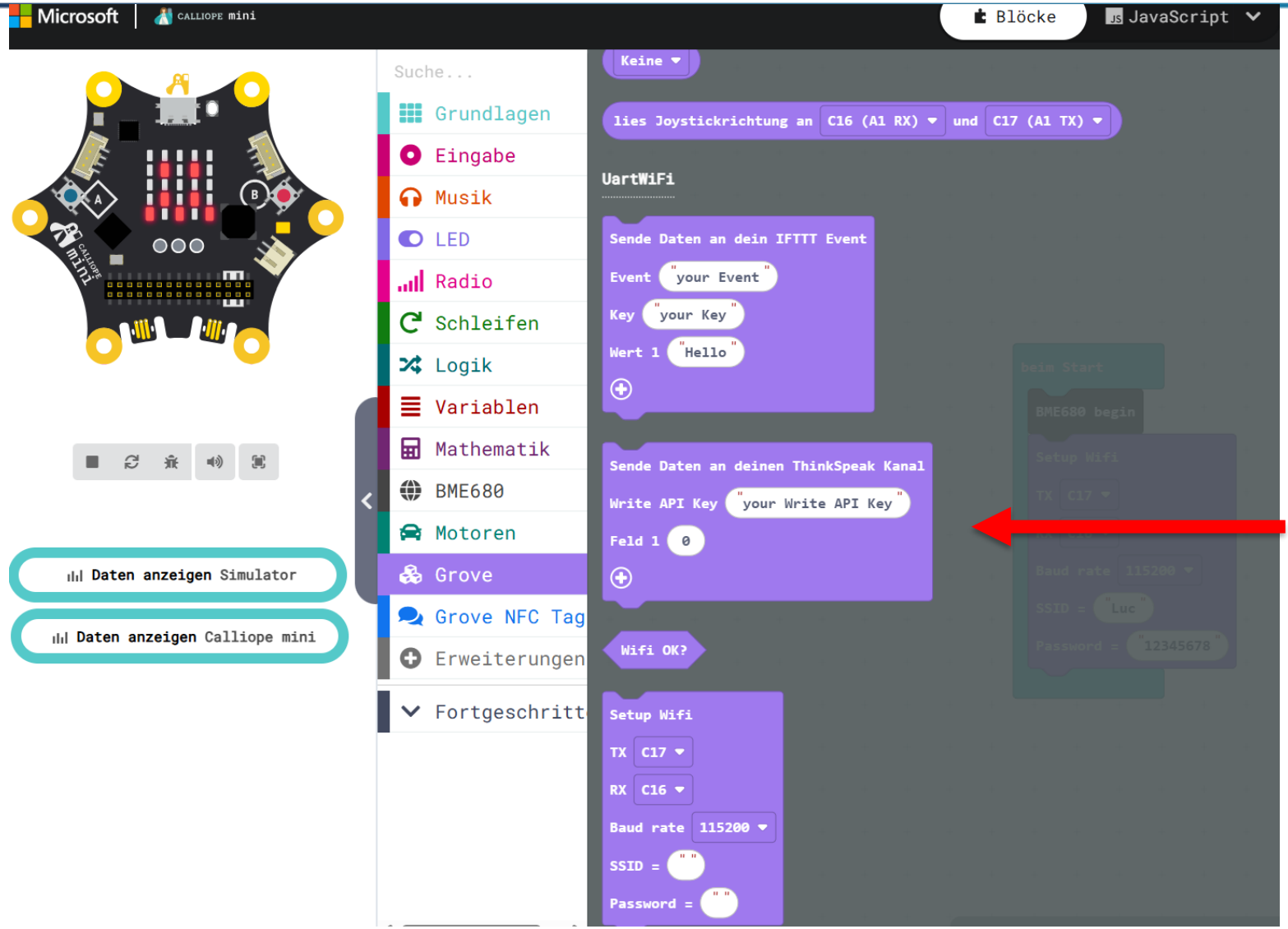
Weitere Informationen



sunlightsensor-si1145
Grove Sunlight Sensor module for MakeCode

Weitere Informationen

Grove Erweiterung



Blöcke für IoT

ThingSpeak™ Channels Apps Devices Support

Calliope IoT

Channel ID: **3073026**

Author: mwa0000038715436

Access: Private

Private View | Public View | Channel Settings | Sharing | API Keys

Write API Key

Key 8SEHG5930LRJNE5S

Kopieren

Generate New Write API Key

Help

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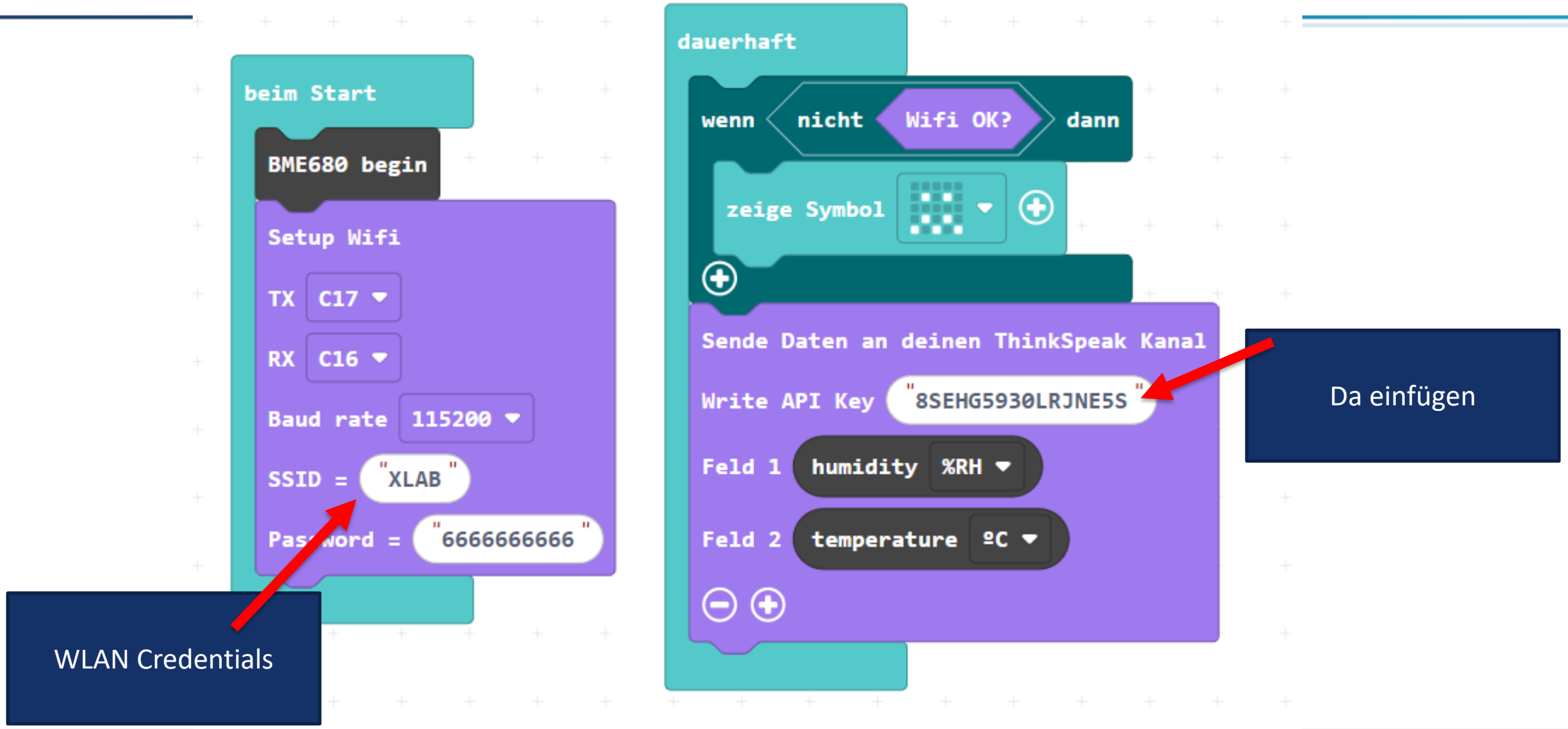
e cha
nel.

API Ke

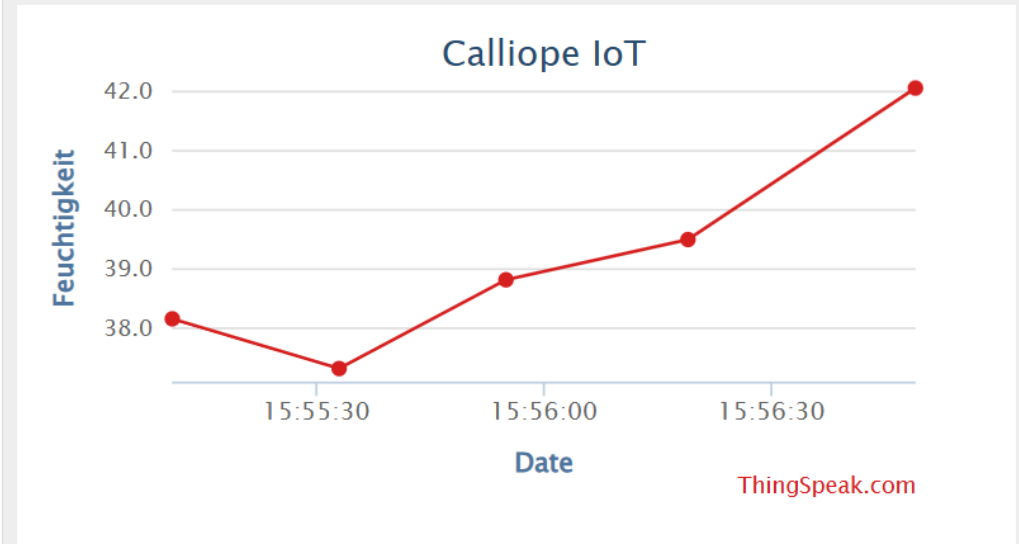
- **Write**


beim Start
BME680 begin
Setup Wifi
TX C17
RX C16
Baud rate 115200
SSID = "XLAB"
Password = "6666666666"
dauerhaft
wenn nicht Wifi OK? dann
zeige Symbol
Sende Daten an deinen ThinkSpeak Kanal
Write API Key "8SEHG5930LRJNE5S"
Feld 1 humidity %RH
Feld 2 temperature ºC
WLAN Credentials
Da einfügen

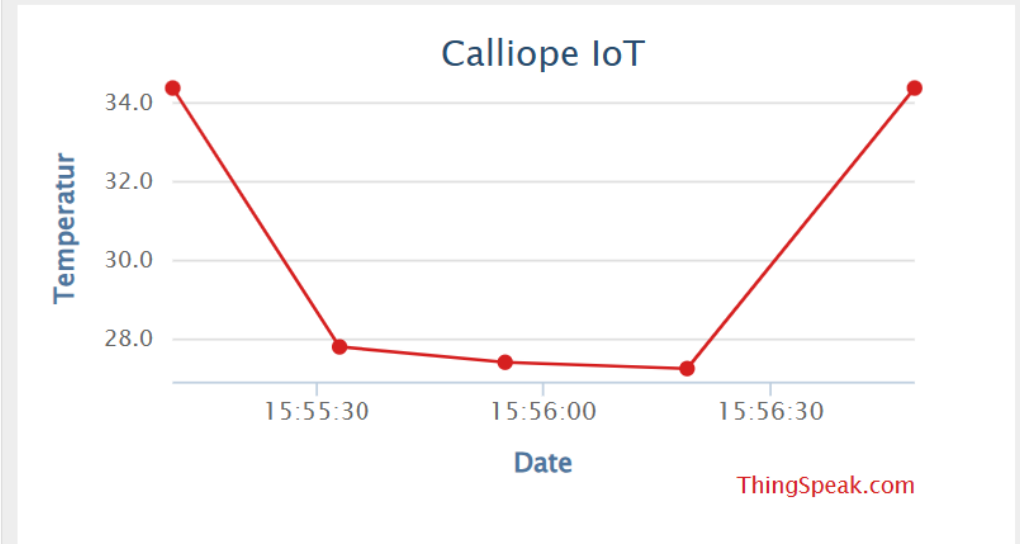
Channel Stats

Created: 7 minutes ago
Last entry: less than a minute ago
Entries: 5

Field 1 Chart



Field 2 Chart



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„Live“-Anzeige

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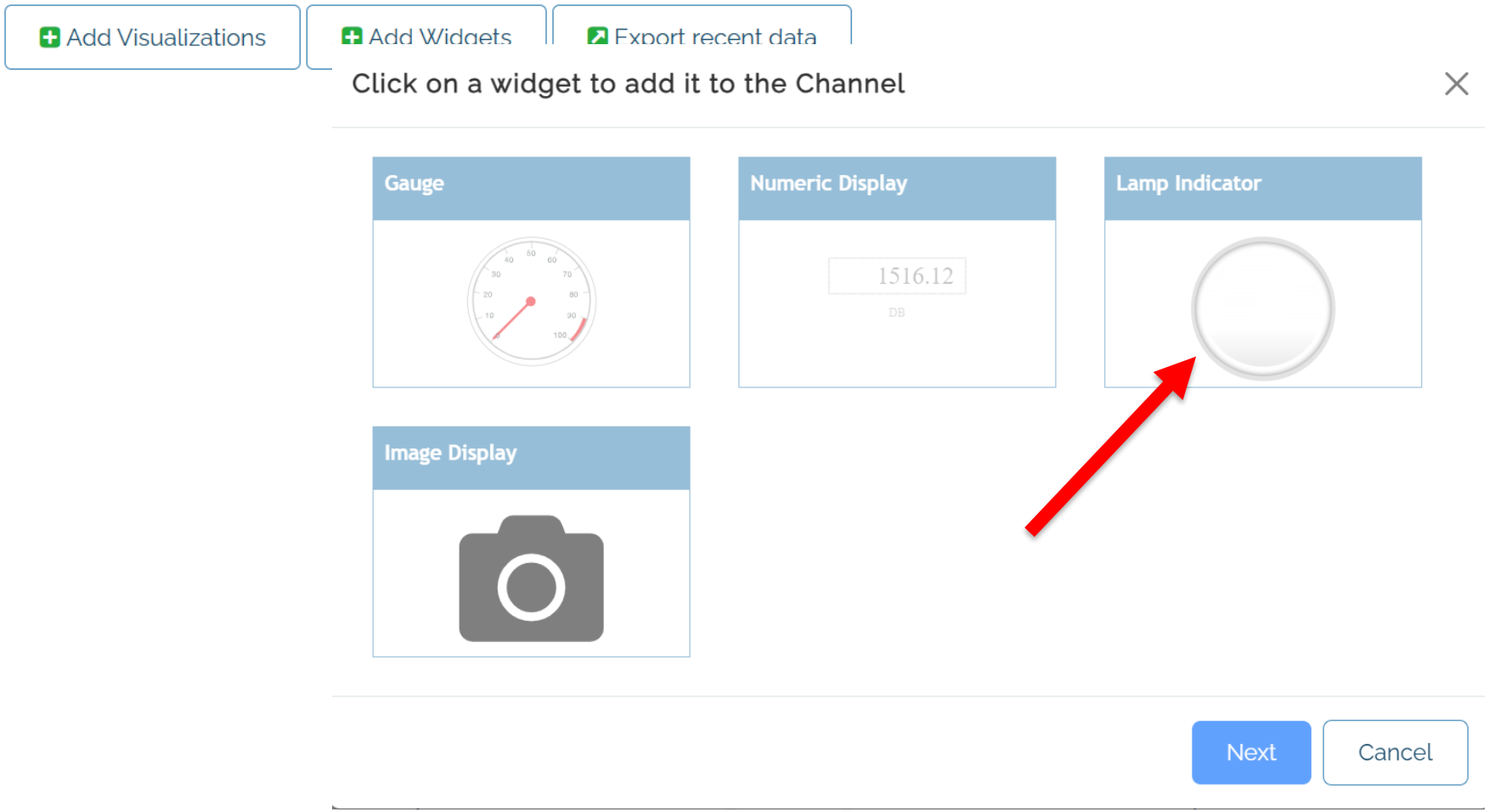
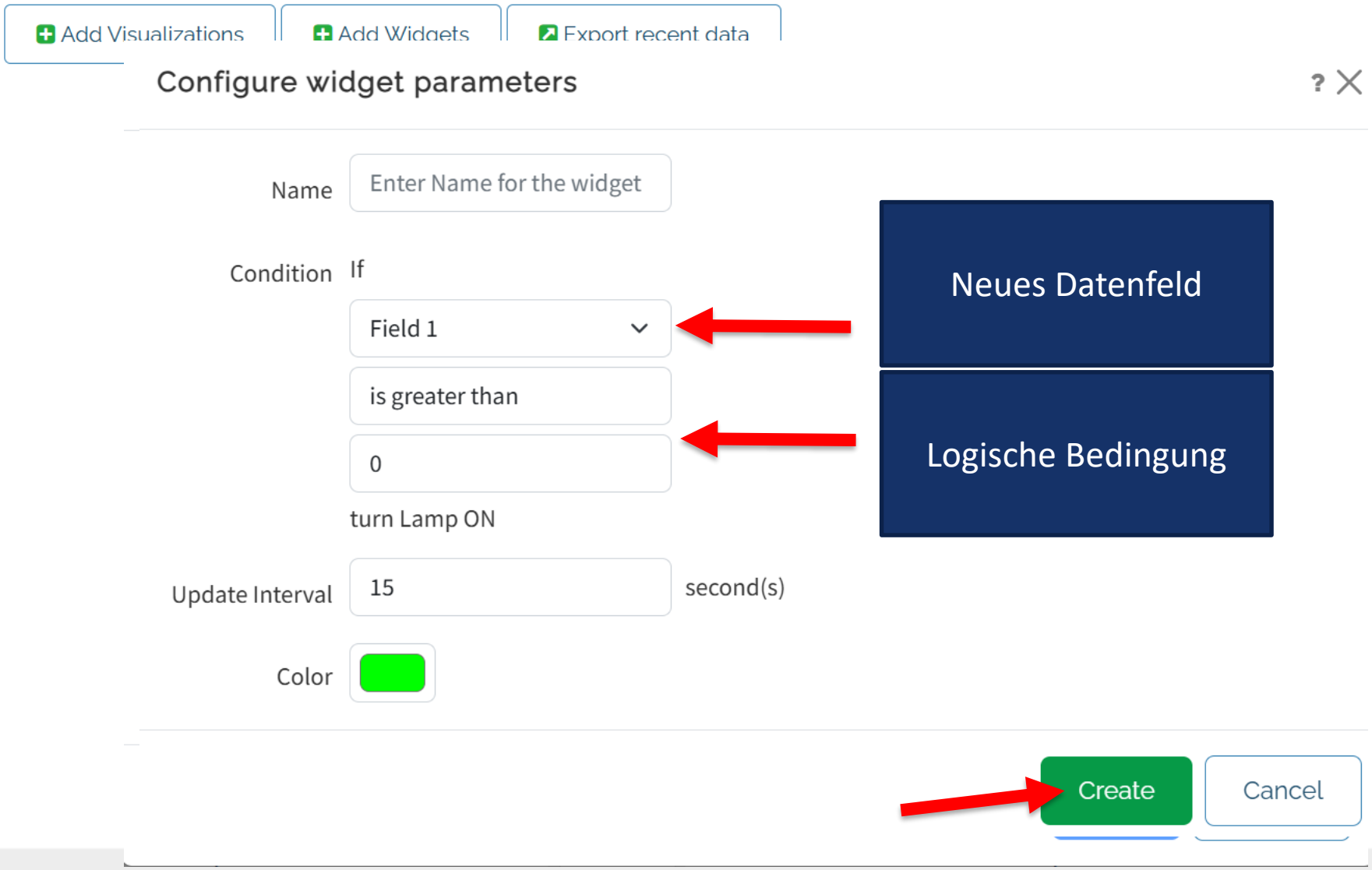
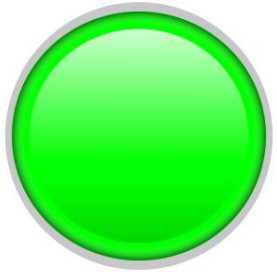
„Live“-Anzeige



„Live“-Anzeige



„Live“-Anzeige



Quasi „Live“ Anzeige

Aktualisierung alle 15 Sekunden

Smarthomes – Sensorwerte auslesen

- Sensorwerte eines Smarthomes auslesen, per WLAN zu ThinkSpeak übertragen und darstellen
  - z.B. Ausschlag für Klingel oder Alarme
  - Überwachung der Feuchtigkeitswerte, Temperaturen, …

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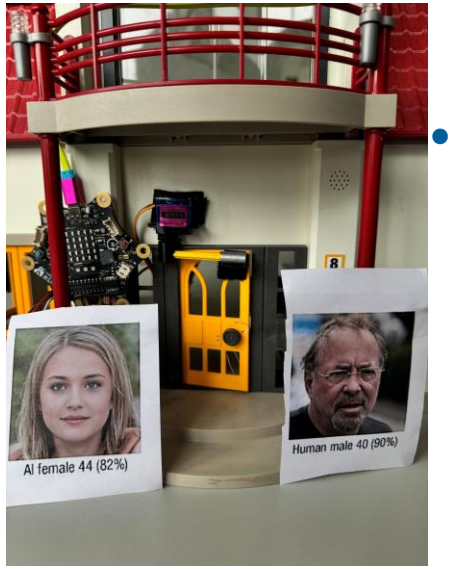
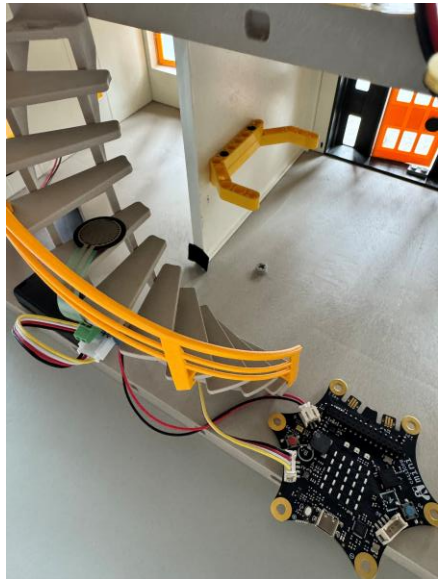
Smarthome-Projekt



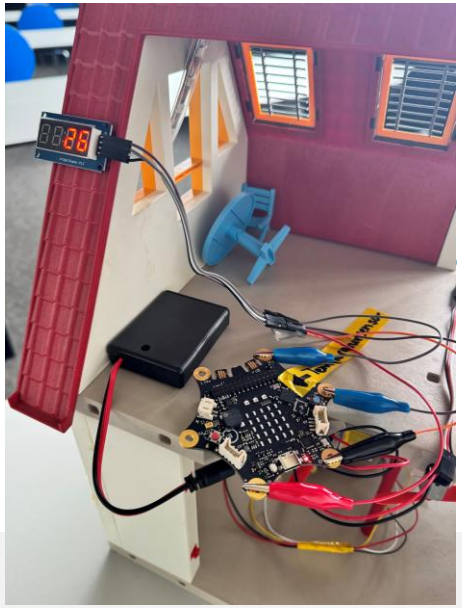
- Gesichtserkennungs-Klingel



Einbruchssicherung / Alarm

- Weihnachts-beleuchtung

- Hitze-schutz



Feuchtigkeits-Prävention

- Erdbeben schutz