Construction of the LEOPOLT-Green Wall

Project description

With this project, we want to show through measurements how the climate in cities on hot summer days can be influenced by greening walls and/or roofs.

Therefore, we have developed a measuring device that can measure and store light, temperature and humidity. This device can be installed in various places such as house walls, roofs, parking spaces with or without greening and it can take the measurements automatically around the clock. After the end of the measurement, the memory card is read out to demonstrate and compare the values as tables or diagrams.

Good luck with the rebuilding of our construction and interesting measurement results!

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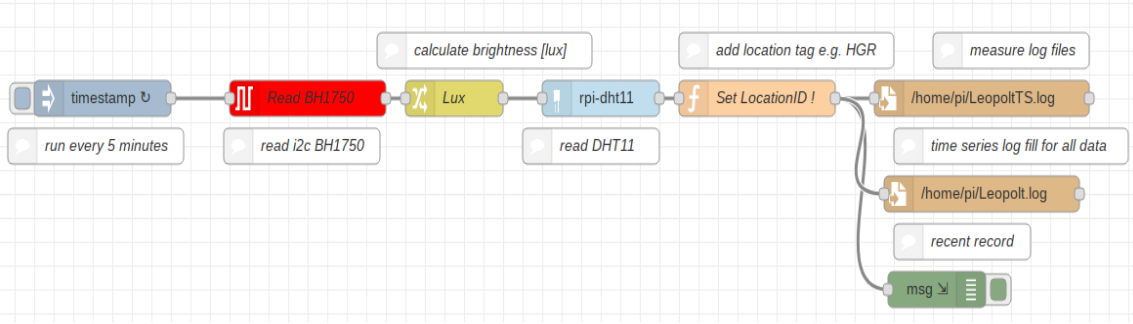
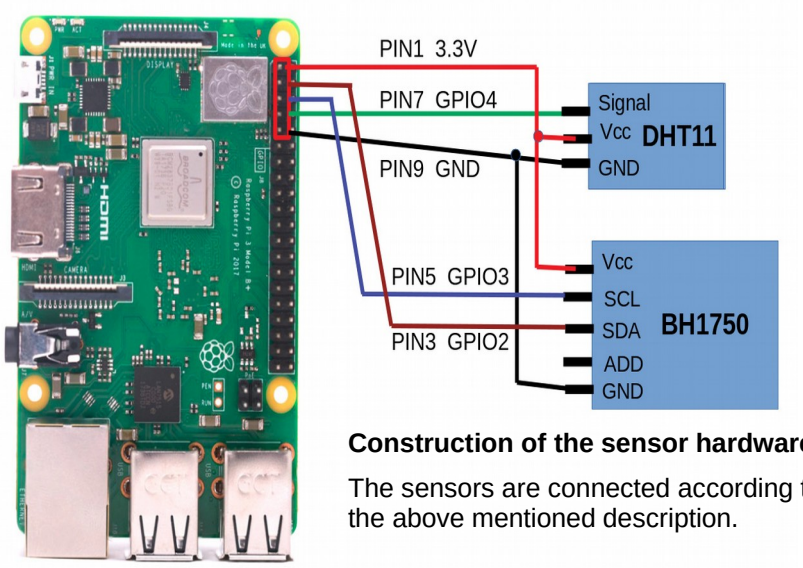


Components

- DHT11 - humidity and temperature sensor
- BH1750 - light sensor
- Cables and jacks for Raspberry pin bar
- USB power supply or power bank for Raspberry
- Raspberry Pi with micro SD card
- Case (can be built from Lego, for example)



Construction of the sensor hardware

The sensors are connected according to the above mentioned description.

Measurement software

The software is set up as node-RED flow. The additional node installations for::

- i2c
- BH1750-Sensor-Einstellung
- DHT11

The node RED flow can be expanded so that the measurement results are sent to a server via mail. The server stores the measurements of the different stations in a database and displays them in charts.

Links

Leopolt – Project page: https://padlet.com/robert_ringel/Leopolt2018

I2c-Node-Lib: https://flows.nodered.org/node/node-red-contrib-i2c
Einstellung zum BH1750-Sensor: https://discourse.nodered.org/t/read-bh1750-sensor/3378
DHT11/22-Node-Lib: https://flows.nodered.org/node/node-red-contrib-dht-sensor

Download Node-RED-Flow:
https://www.hackster.io/robert-ringel/green-walls-4-city-climate-2276e0