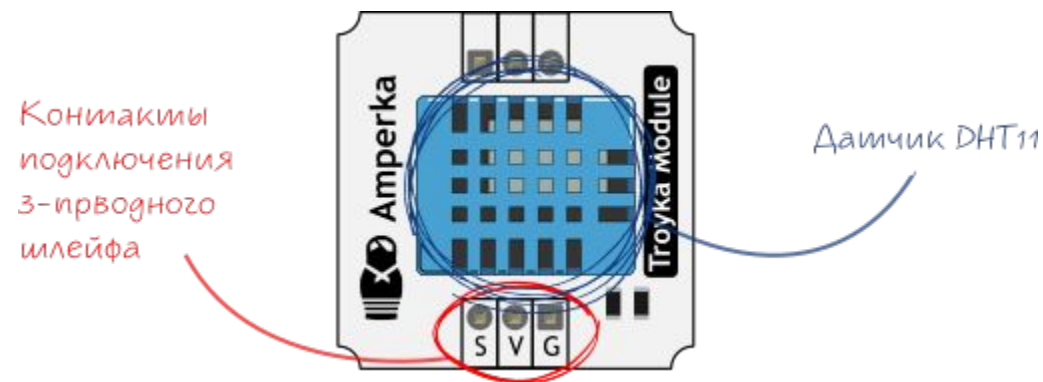


Data transfer to the dveet.io platform

Nikita Ilin

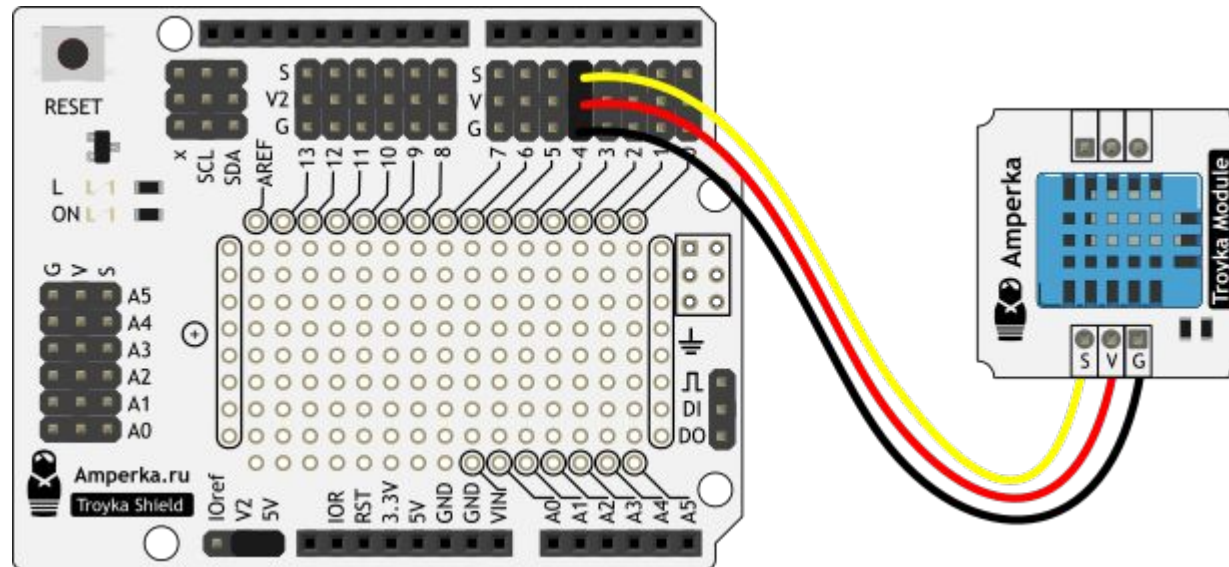
Temperature and humidity sensor

- The DHT11 digital sensor is a composite sensor that provides a calibrated digital signal with temperature and humidity readings.
- The sensor includes a resistive humidity measuring component and a negative temperature coefficient (NTC) temperature measuring component, which are connected to a high-performance 8-bit microcontroller.



DHT sensor protocol

The sensor output is a digital signal. Temperature and humidity are transmitted over one signal wire (S). DHT11 communicates with a host like Arduino using its own protocol.



Creating a device for the dweet.io platform

Link: <https://dweet.io/dweet/for/temp?hello=world>

← → ↻ 🔒 dweet.io/dweet/for/temp?hello=world 🔍 ☆ 📧 🔑 📄 👤 ⋮

```
{"this": "succeeded", "by": "dweeting", "the": "dweet", "with": {"thing": "temp", "created": "2019-11-08T21:08:41.854Z", "content": {"hello": "world"}, "transaction": "80b7cc68-9167-4a44-9e1d-79c4627cc53d"}}
```

Creating a control program

- Library for working with the sensor (if it is not installed, it must be added)

#include <TroykaDHT.h>

- Add the pin number to which the sensor is connected:

DHT dht(4, DHT11);

- We start the sensor in the section void setup()

dht.begin();

- Reading data from the sensor in the section void loop()

dht.read();

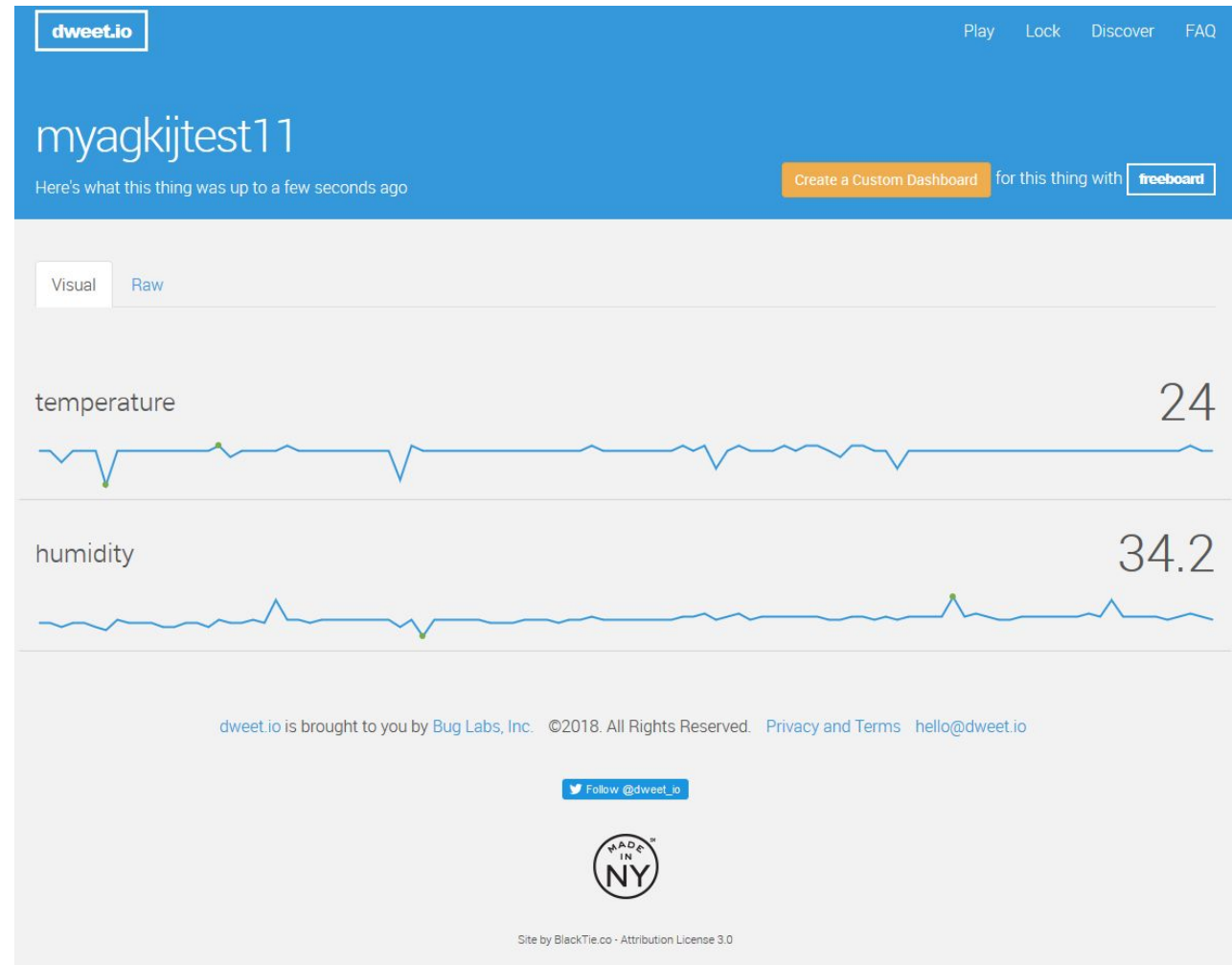
Creating a control program

- Displaying temperature readings in Celsius, Kelvin and Fahrenheit;
(section void httpRequest())

```
client.println(String ("POST /dweet/for/garden?Light=") + String  
(sensorLight.getLightLux()) + String ("&C=") + String  
(dht.getTemperatureC()) + String ("&K=") + String  
(dht.getTemperatureK()) + String ("&F=") + String  
(dht.getTemperatureF()));
```

Assignment

- Display temperature sensor readings on dweet.io



Freeboard interface

1. Go to www.freeboard.io
2. Create account / Login to account
3. On the www.dweet.io website, click the Create a custom dashboard button

Example

The image shows a dark-themed dashboard interface for 'freeboard'. At the top left, the 'freeboard' logo is enclosed in a white box. Below it are several menu items: '+ ADD PANE', 'DEVELOPER CONSOLE' (with a terminal icon), 'IMPORT' (with a folder icon), 'EXPORT' (with a document icon), and 'SETTINGS' (with a gear icon). On the top right, there is a 'DATASOURCES' section containing a table with two columns: 'Name' and 'Last Updated'. The table lists one data source named 'Temperature' with the value 'never'. To the right of the 'Temperature' row are two icons: a refresh icon and a trash icon. Below the table is an 'ADD' button. In the center of the dashboard, there is a small grey button with an upward-pointing arrow. At the bottom left, a gauge widget is displayed. The gauge is a semi-circle with a white needle pointing to the center, and the number '0' is shown in the middle. The scale ranges from 0 to 100, with '0' at the left end and '100' at the right end. Above the gauge are three icons: a plus sign, a wrench, and a trash can.

freeboard

+ ADD PANE

DEVELOPER CONSOLE

IMPORT EXPORT SETTINGS

DATASOURCES

Name	Last Updated
Temperature	never

ADD

0 100

Changing the interface

