Exercise 16

16a:

A server is a computer that is part of a network. Other computers, called clients, can access a server to retrieve or store information. Generally, a server serves multiple clients.

16b:

GET and POST are HTTP-methods that are used to communicate with a server. GET requests a resource **from** the server. POST requests to send data **to** the server and therefore modifies it in some way (if allowed).

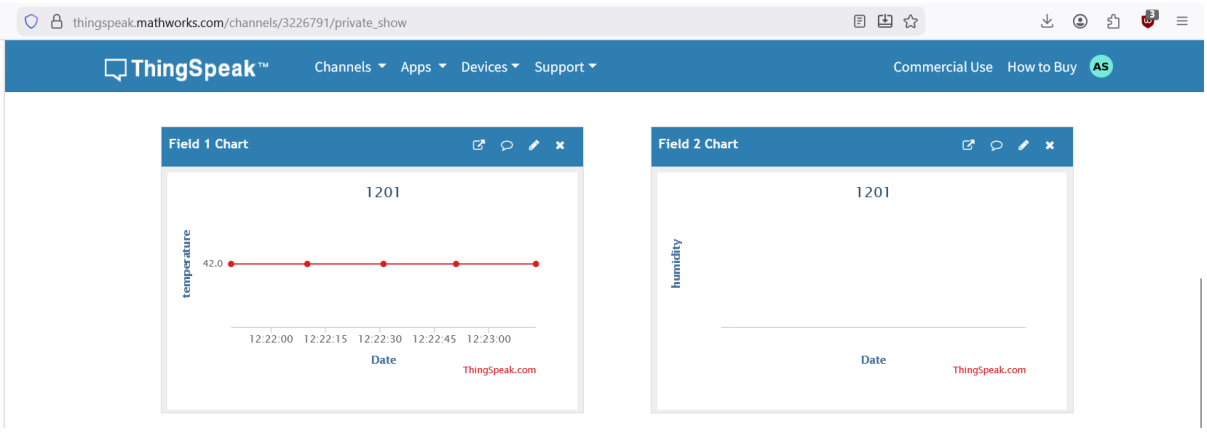
16c:

See video “webpage.mp4”. The guidelines were followed and led successfully turned on and off using the web page.

Exercise 17

The provided code connects the board to the specified Wi-Fi network in the setup function. Then, every 20 seconds, a connection to ThingSpeak is opened, the value 42.0 is posted to the specified channel and the connection is closed.

The code was successfully used to upload to ThingSpeak. See image below.



17a-17b:

See code “day6_ex17.ino” and “matlab_script.m” and link below. A RSSI value and the state of a LED light were uploaded to ThingSpeak. A simple button was used to change the state of the led to introduce variability. A Matlab template provided by ThingSpeak was used to create a multi-variable graph.

The following link can be used to access the visualisation:

https://thingspeak.mathworks.com/apps/matlab_visualizations/653377

17c:

Here are some possibilities of ThingSpeak:

- A channel can have 8 fields.

- Data can be analysed using Matlab.

- Matlab can also be used to write to ThingSpeak, not just read from it. This could be useful for processing a signal before plotting.

- Information like coordinates and elevation can be shared along the data.

- API keys are used to access write/read, unless the channel is public. The data can therefore be read by multiple clients and utilised further. Having multiple clients write data seems less useful, but could be used for backup sensors, for example.

- There are widgets such as indicator lamps that can be used to better visualize some kinds of data.