

LAB 4

Connectivity

The goal of this Lab is to provide connectivity to your application, meaning that you will send (and receive) data. We will start by setting up the physical layer, then we will move to the Transport and application layer. An accompanying source code for this Lab is available at <https://github.com/institut-galilee/Lab-Four/src>

Reminder

- All bugs that you will encounter should be filled as issues in this repository <https://github.com/institut-galilee/Lab-Four/issues>;
- The more non-trivial issues you fill and more generally the more active you are in GitHub, the more you get good appreciation for your final mark from us;
- This being said, before submitting a bug, try to resolve it by “google”-ing or “stackoverflow”-ing it and don’t hesitate to resolve your own or other’s issues;
- You will find the format for issuing a bug here <https://github.com/institut-galilee/Lab-One/issues/1>.

4.1 A simple server

4.1.1 Installation

See `README.md` in the server folder.

Contents of `db.json`

This file will encompass all the measurements that will be sent to the server from the ESP32. Here is the format (json) of a measurement in the database.

```
1 {
2   "temperature" : [
3     {
4       "timestep": 0,
5       "value": 0
6     }
7   ]
8 }
```

4.1.2 Result

Here is what you will get in your terminal and in your browser respectively after installing and launching the server :

```
1  $ json-server db.json
2
3  \{^_^\}/ hi!
4
5  Loading db.json
6  Done
7
8  Resources
9  http://localhost:3000/temperature
10
11  Home
12  http://localhost:3000
13
14  Type s + enter at any time to create a snapshot of the database
15  GET /db 200 19.273 ms - 76
16  GET /__rules 404 3.542 ms - 2
17  GET /temperature 200 26.592 ms - 45
```

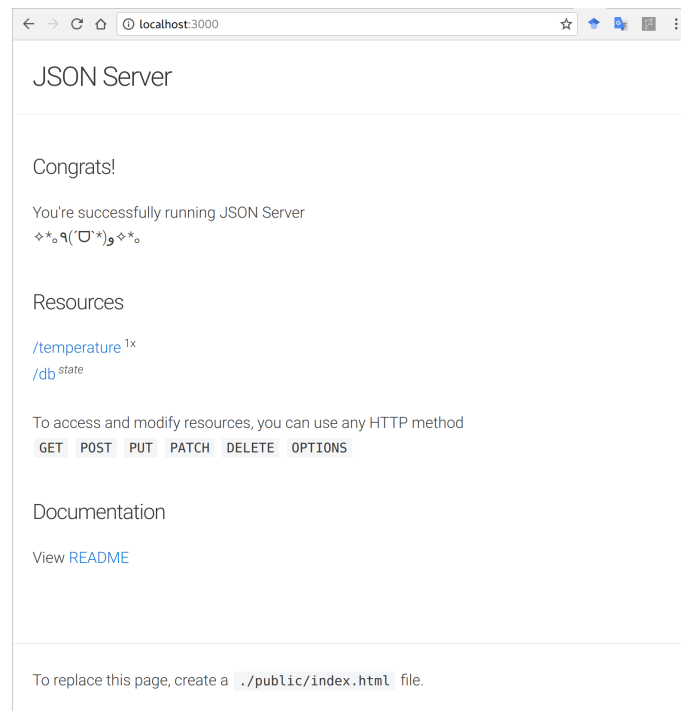


FIGURE 4.1 – This is what you should get when you navigate to `localhost:3000`

4.2 Establish a local network

Here, you will need to make your smartphone as a hotspot. The ESP32 as well as your computer, which will play the role of a server, have to be connected to this network. Take a look at `src/connectivity/phy_layer.c` and set the right credentials.