

IOT



**Automação
residencial
De uma maneira
mais fácil
Que você pensa**

WHO I AM?

[Leonardo252.github.com](https://leonardo252.github.com)

Laboratório de inovação tecnológica

Sistemas Embarcados

Meu curso é foda



THE GOAL !

Automatizar a luz do seu quarto usando nodeMCU e Lua.
Uma forma simples pra quem tem preguiça de levantar da cama pra apagar a luz !



Tools



Build



Code



Show Off

A photograph of a laptop keyboard and a small electronic circuit board (placa) resting on a wooden surface. The keyboard is white with black keys. The circuit board is orange and green, with various components like a microcontroller, capacitors, and a USB connector. A semi-transparent purple overlay covers the right side of the image, where the text is located.

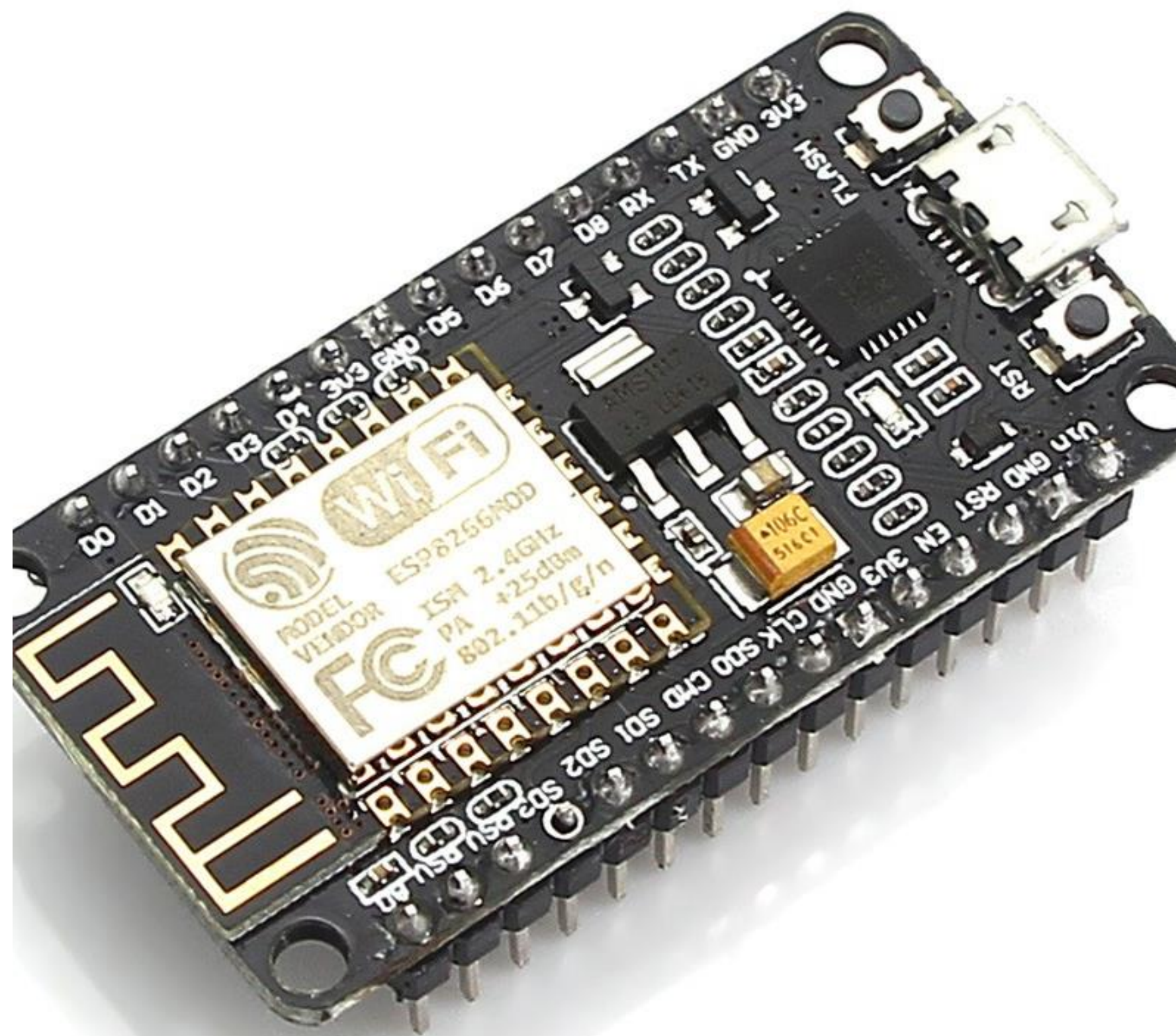
WHY IT'S EASY ?

Uma **placa** que tem tudo o que
você precisa

Um pouco de força de vontade

PACIÊNCIA

THE BOARD



ESP8266

RISC processor
Real-Time Operating System
Wi-Fi



LINGUAGEM

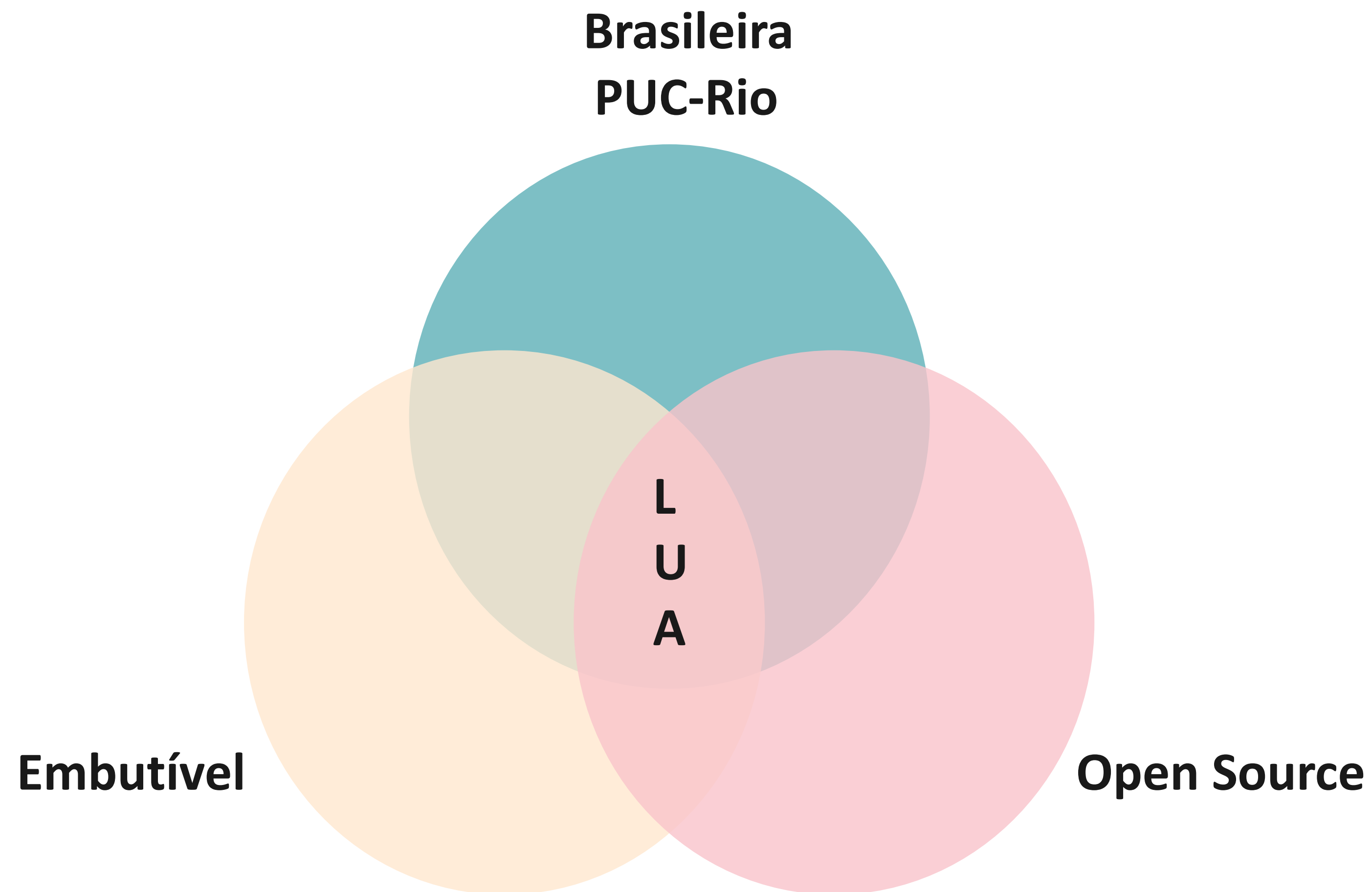
Lua
Python
C



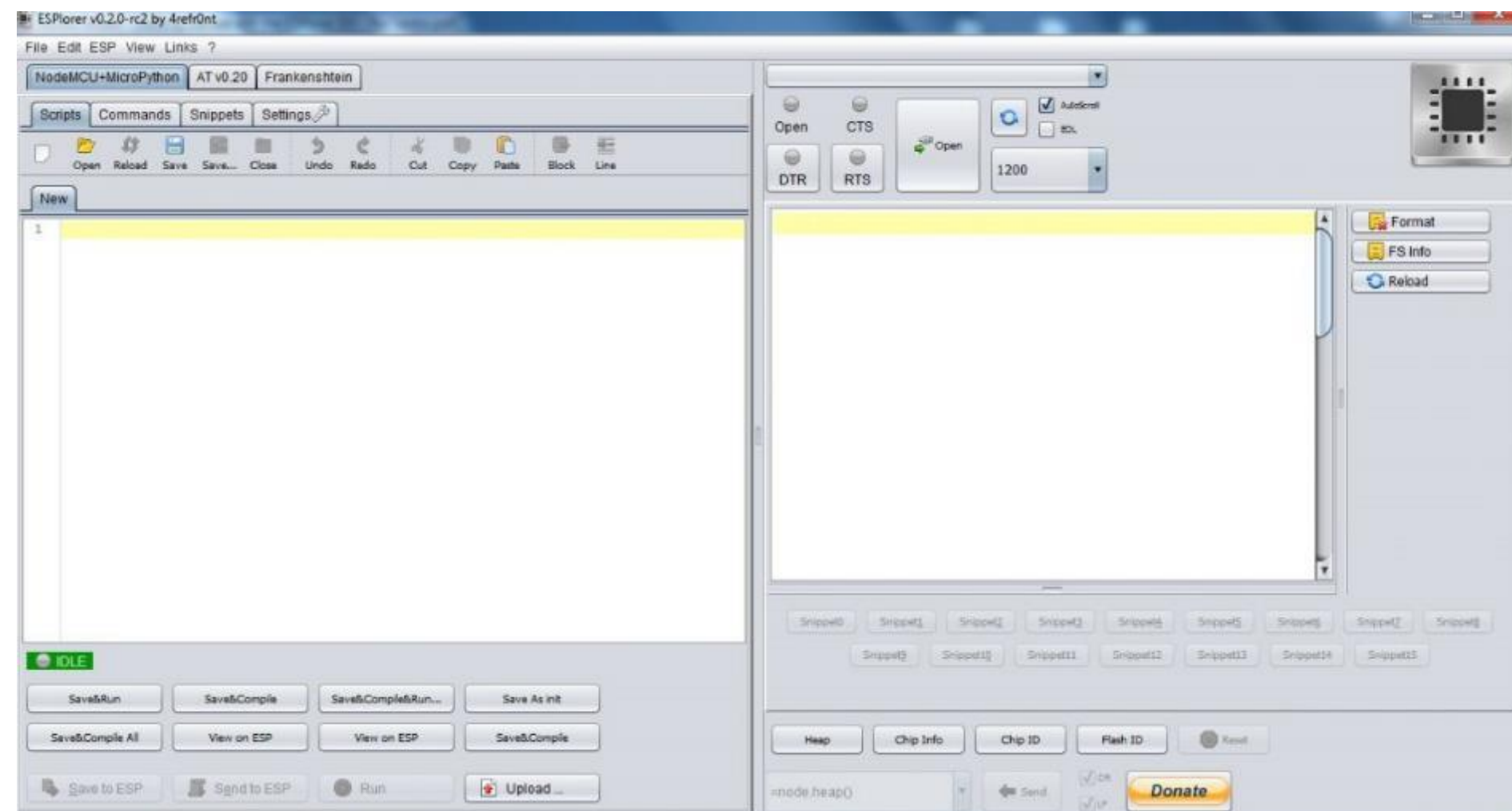
OPEN HARDWARE

Esquemático aberto

WHY LUA ?

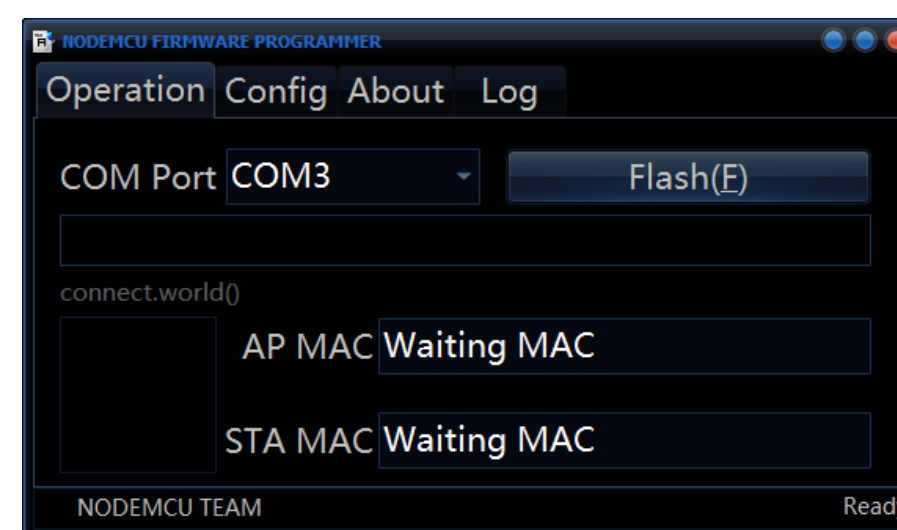
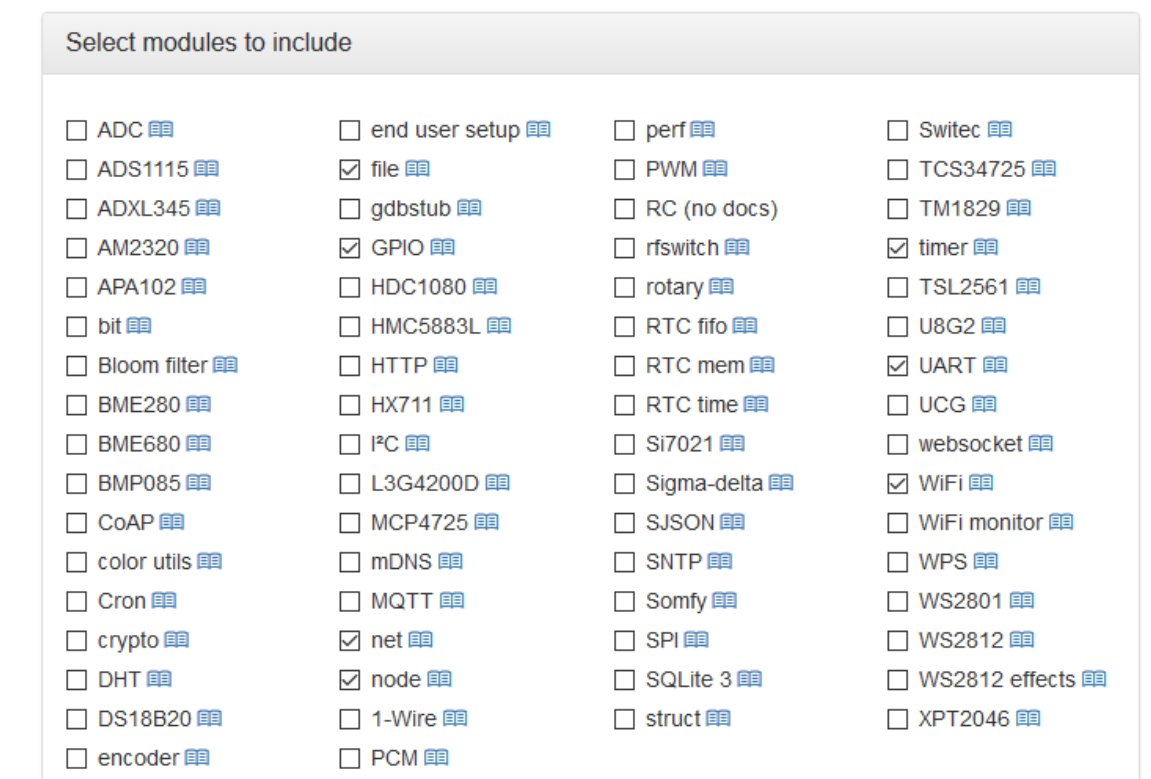


Tools



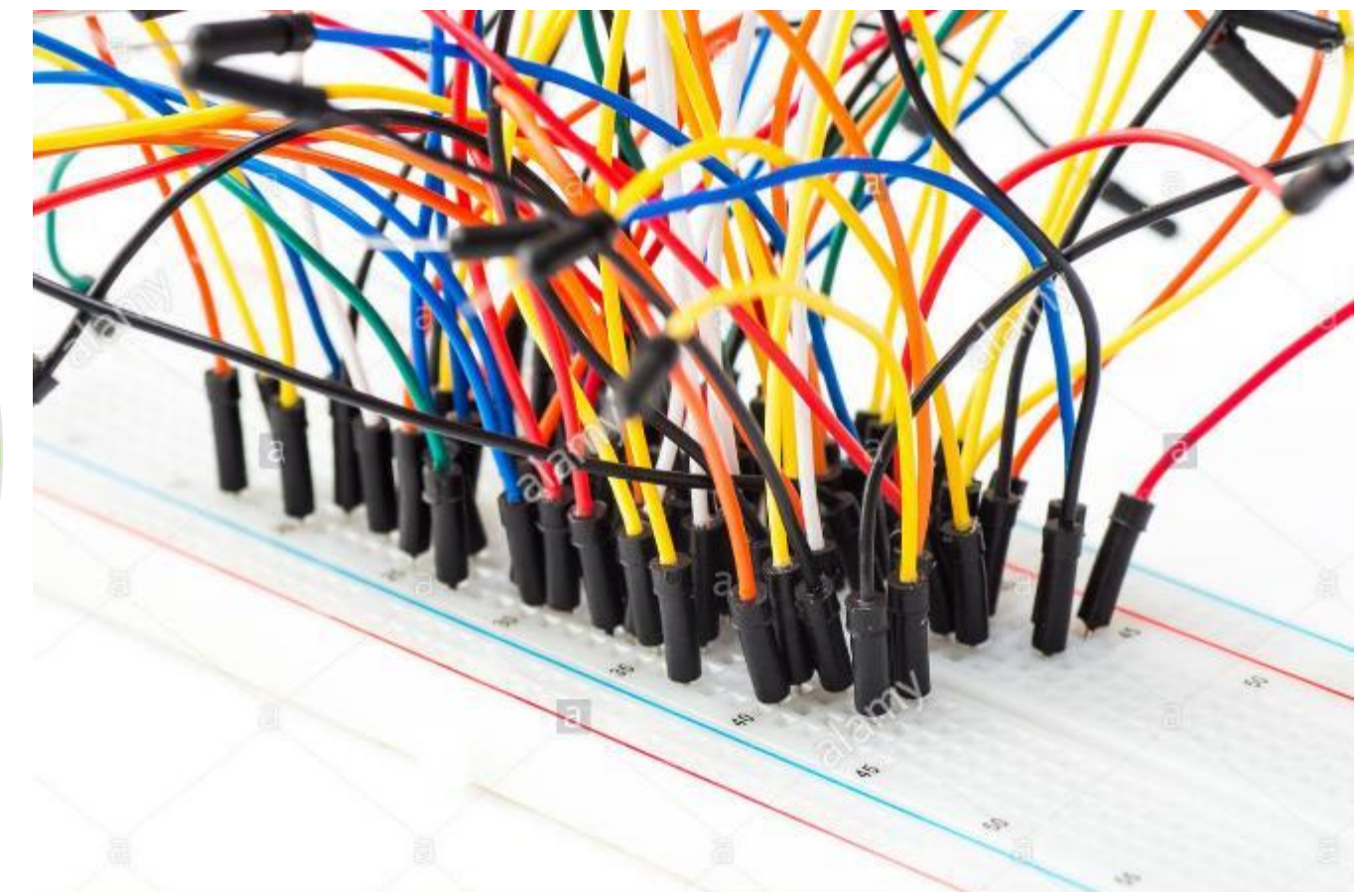
**ESPlorer
IDE**

**Firmware
Cloud**

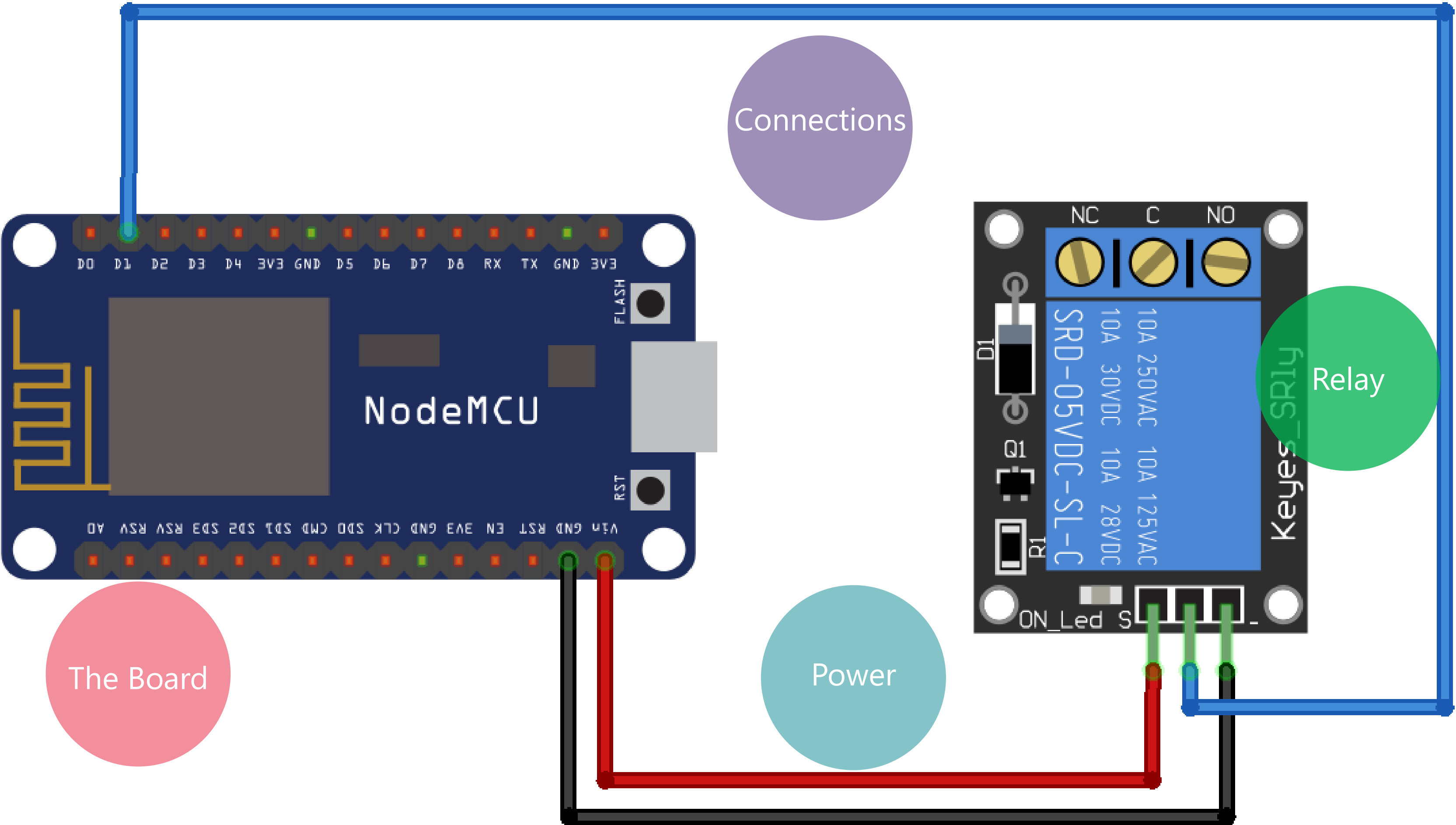


**NodeMCU
Flasher**

**Componentes
De
Prototipagem**



BUILDING



CODE: init.lua

```
1  -- init.lua --
2  |
3  station_cfg={}
4  station_cfg.ssid="SSID"
5  station_cfg.pwd="PASSWORD"
6
7  wifi.setmode(wifi.STATION)
8  print('set mode=STATION (mode='..wifi.getmode()..')\n')
9  print('MAC Address: ',wifi.sta.getmac())
10 print('Chip ID: ',node.chipid())
11 print('Heap Size: ',node.heap(),'\n')
12
13 wifi.sta.config(station_cfg)
14
15 dofile("main.lua")
16
```



Boot File

CODE: main.lua

```
1  -- main.lua --
2
3  print("Starting Web Server...")
4
5  srv = net.createServer(net.TCP, 30)
6
7  srv:listen(80,function(conn)
8      conn:on("receive", function(conn, payload)
9
10         function esp_update()
11             mcu_do=string.sub(payload,postparse[2]+1,#payload)
12
13             if mcu_do == "Rele+Liga" then
14                 gpio.write(rele_pin, gpio.LOW )
15                 print('Rele_pin mode LOW\n')
16             end
17
18             if mcu_do == "Rele+Desliga" then
19                 gpio.write(rele_pin, gpio.HIGH)
20                 print('Rele_pin mode HIGH\n')
21             end
22         end
23
24
25         postparse={string.find(payload,"mcu_do=")}
26         if postparse[2]~=nil then esp_update()end
27
28
```

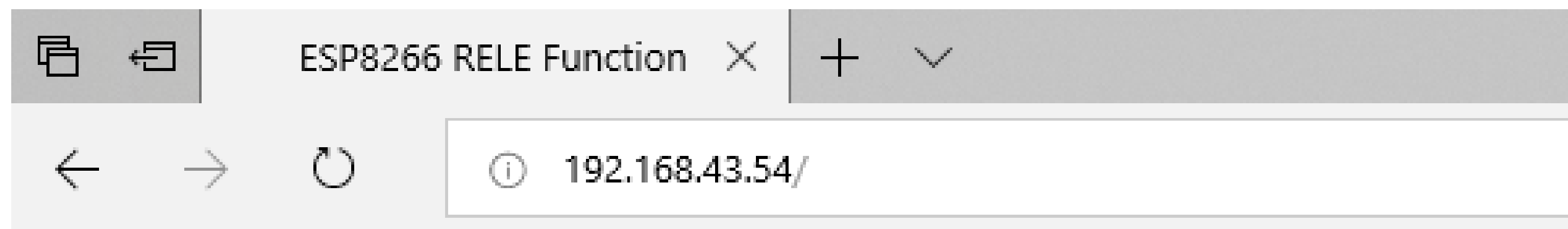
Starting
Web
Server

CODE: main.lua

HTML
Page

```
63     if postparse[2]~=nil then esp_update() end
64
65     -- CREATE WEBSITE --
66     conn:send('HTTP/1.1 200 OK\n\n')
67     conn:send('<!DOCTYPE HTML>\n')
68     conn:send('<html>\n')
69     conn:send('<head><meta content="text/html; charset=utf-8">\n')
70     conn:send('<title>ESP8266 RELE Function</title></head>\n')
71     conn:send('<body><h1>Deixa de preguica e vai apagar a luz !</h1>\n')
72
73     -- Buttons
74     conn:send('<form action="" method="POST">\n')
75     conn:send('<input type="submit" name="mcu_do" value="Rele Liga">\n')
76     conn:send('<input type="submit" name="mcu_do" value="Rele Desliga">\n')
77
78     conn:send('</body></html>\n')
79     conn:on("sent", function(conn) conn:close() end)
80 end)
81 end)
82
```


SHOW OFF: WEB PAGE

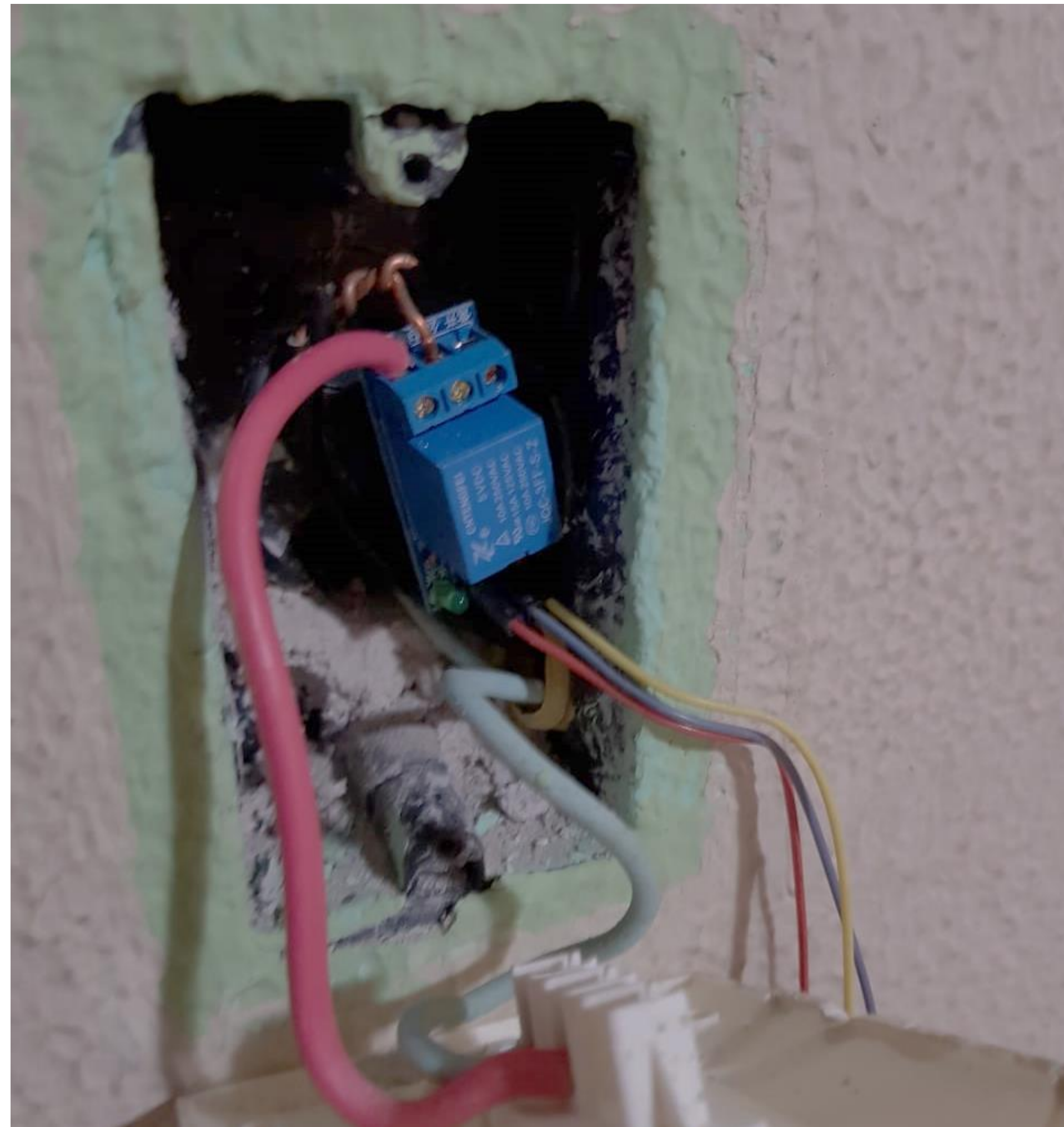


Deixa de preguica e vai apagar a luz !

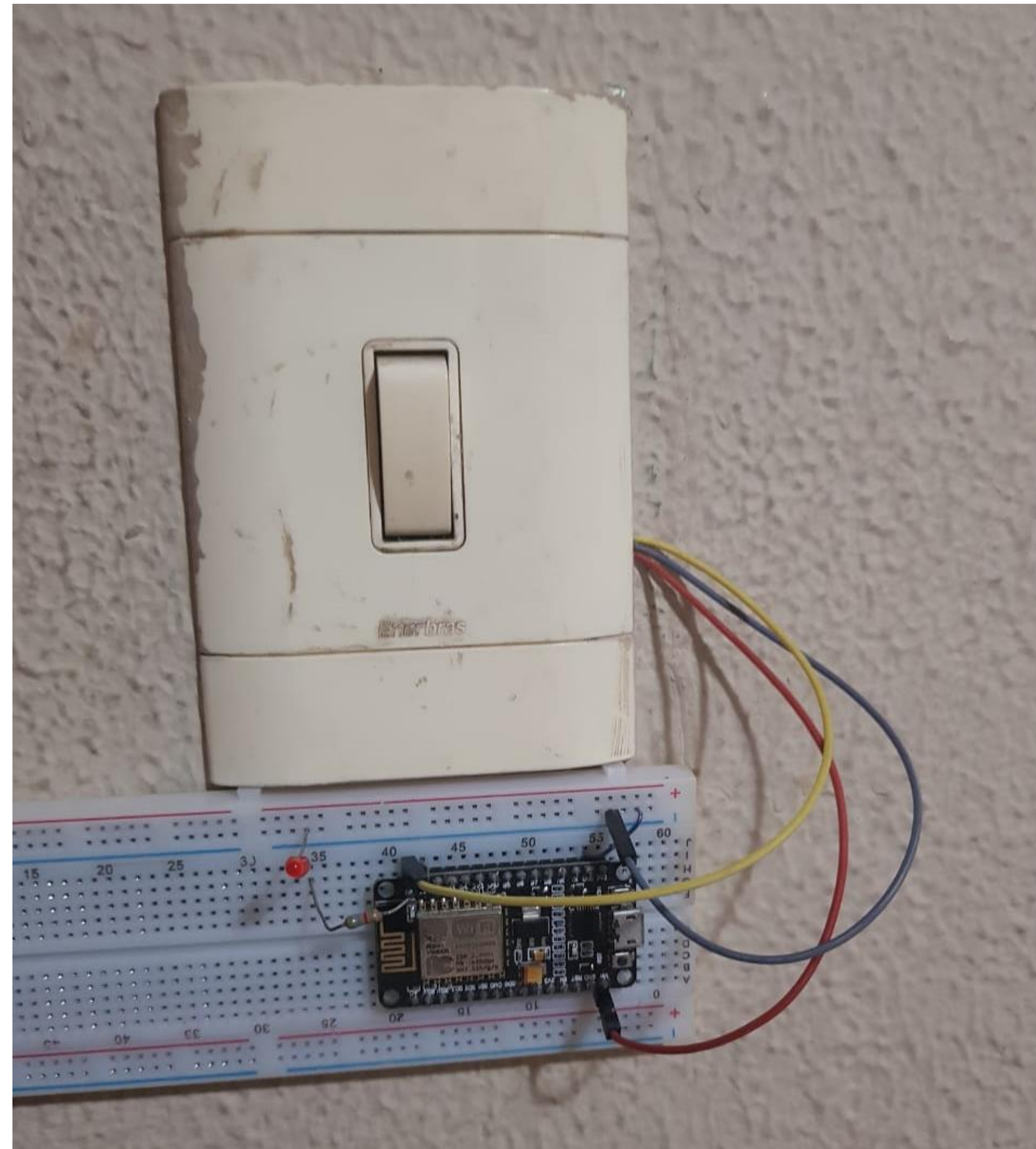
Rele Liga

Rele Desliga

SHOW OFF: BUILDING



SHOW OFF: BUILDING



Doubts ?



github.com/leonardo252



nodemcu.readthedocs.io/en/master/



@oleonardo