

The background features a complex network diagram with numerous circular nodes connected by thin lines. Each node contains a white icon on a colored background (blue, green, or orange). The icons represent various concepts: a car, a shopping bag, a building, a location pin, a factory, a person silhouette, a watch, a house, a laptop, a game controller, a padlock, a piggy bank, a truck, a shopping cart, a medical bottle, and a smartphone. The overall theme is interconnectedness and smart technology.

Internet das Coisas

Uma interface web para o usuário

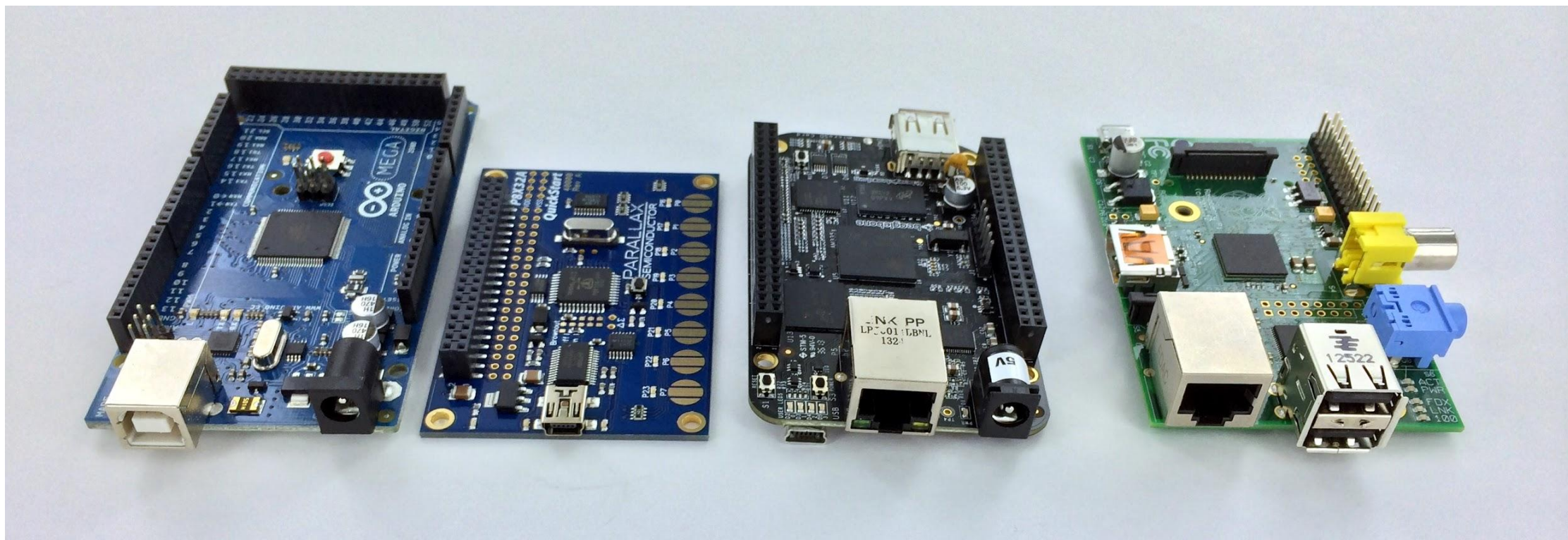
Gelmer Heradio Apaza Calla

Orientador: Ricardo Santos Ferreira

Conteúdo

- **Motivação**
- **Objetivos**
- **Problema**
- **Esquema de funcionamento**
- **Demonstração**
- **Conclusões**

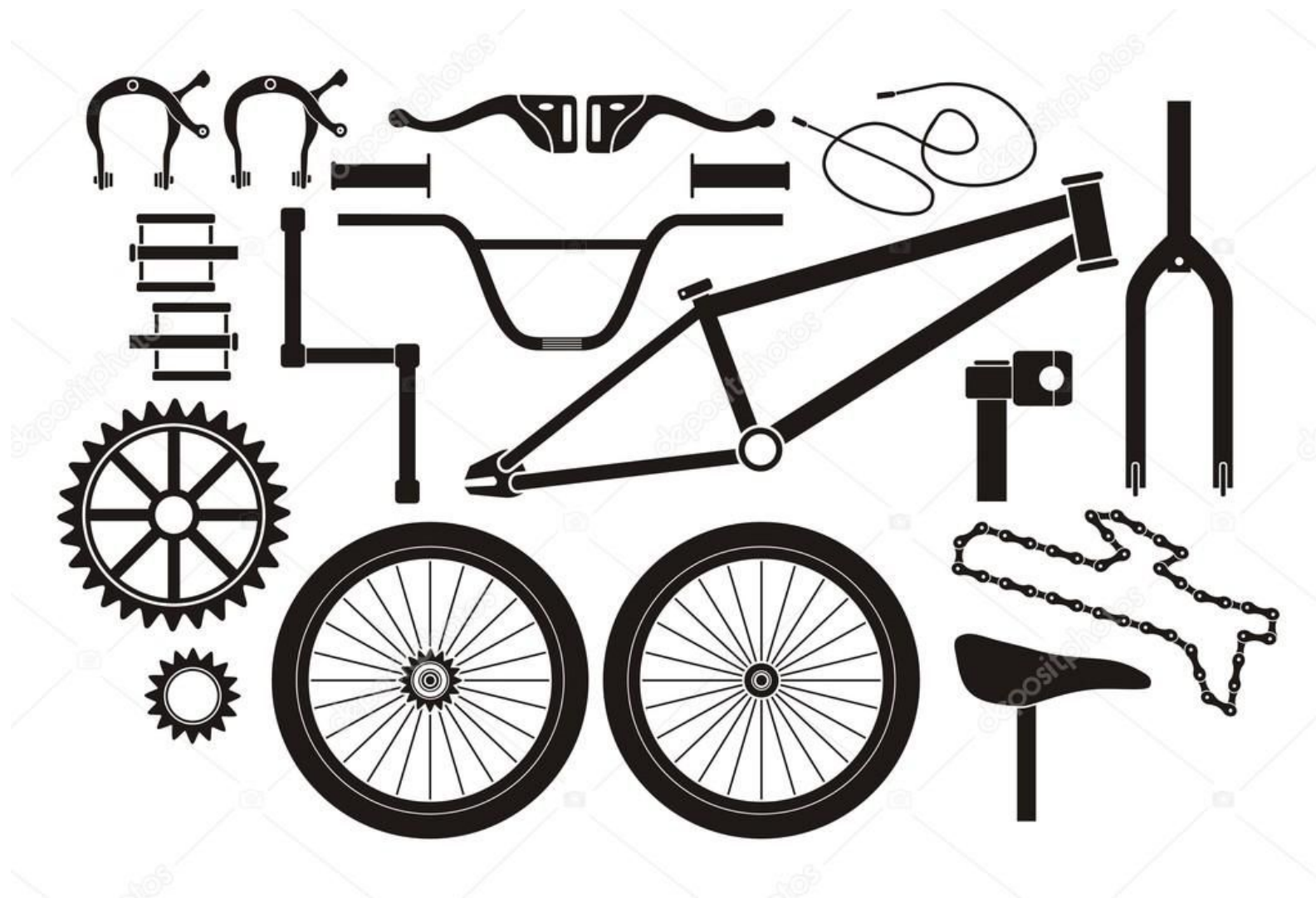
Motivação

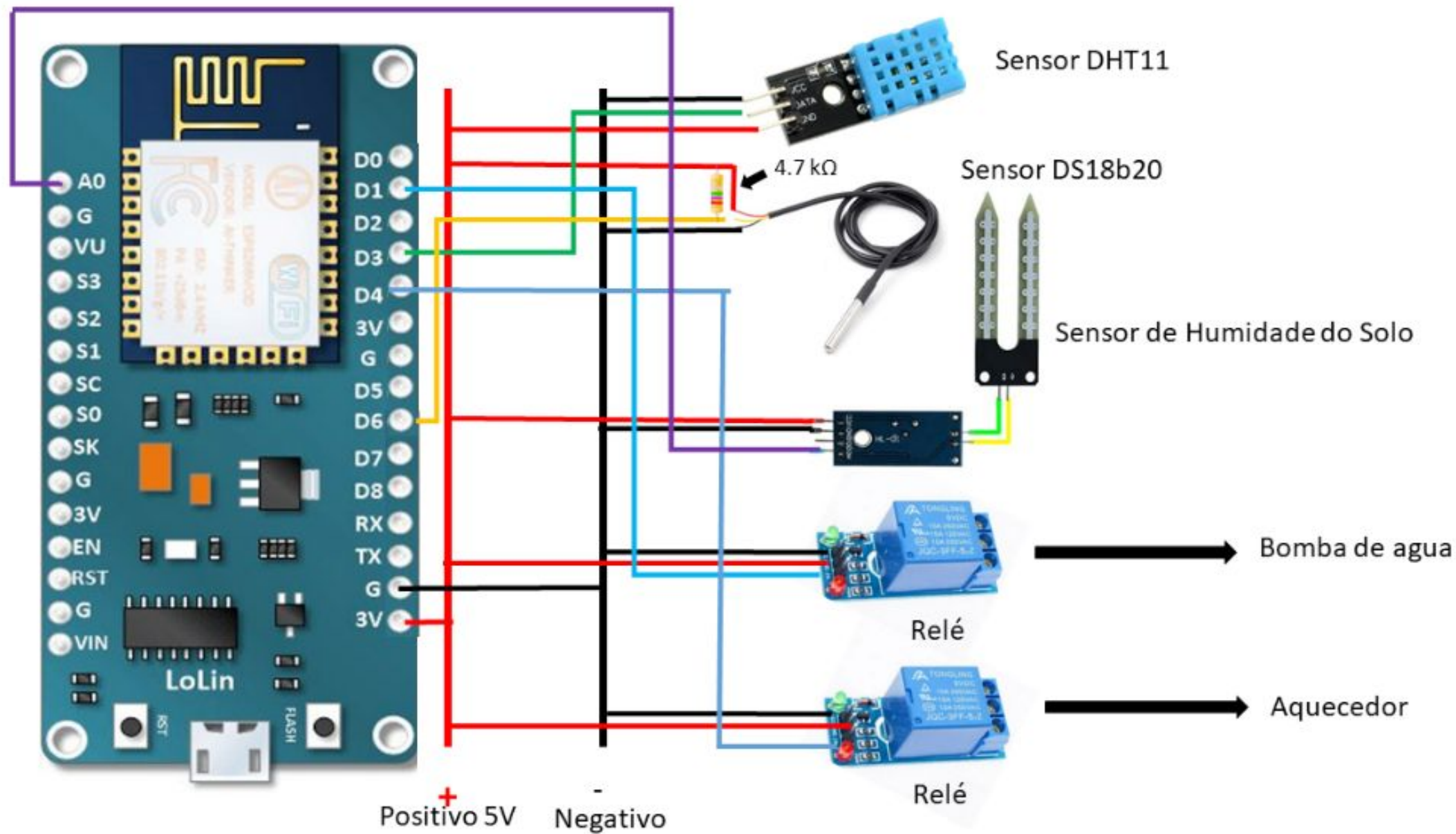


Objetivos



1. Criar uma interface web transparente onde o usuário possa interagir com o aparelho (microcontrolador). usando NodeRED.
2. Aprimorar os conhecimentos em Javascript.
3. Que uma pessoa sem conhecimento de programação possa montar uma estufa inteligente.

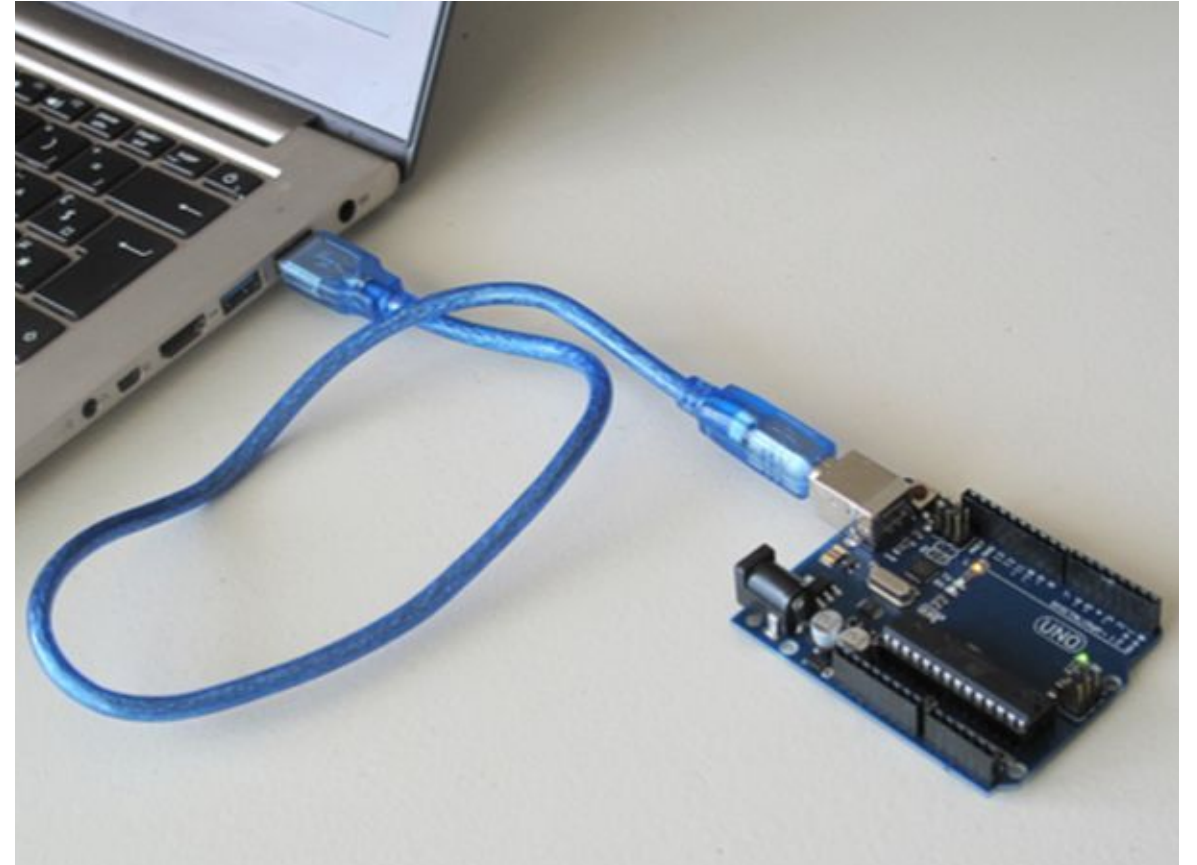




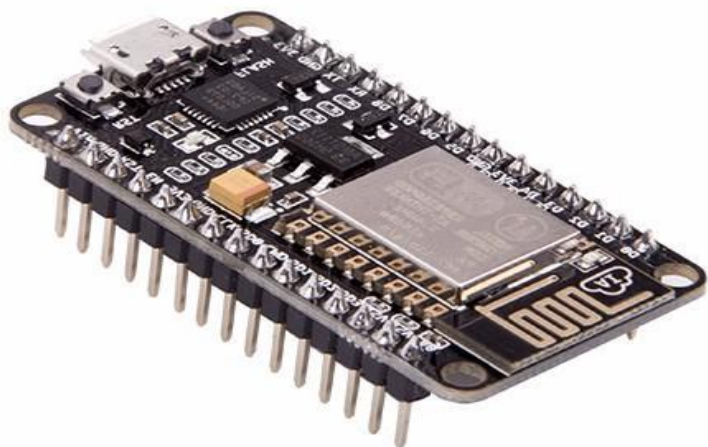
Problema



1. Necessidade de compilar sempre que se modifica um programa.
2. Conhecimentos básicos de programação.

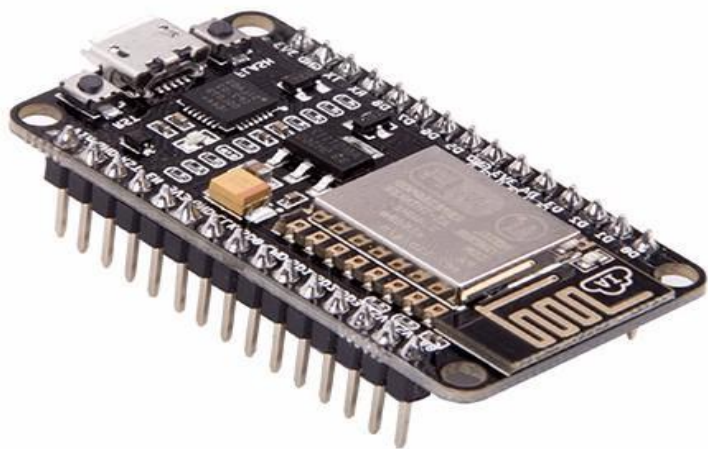


Etapa 1



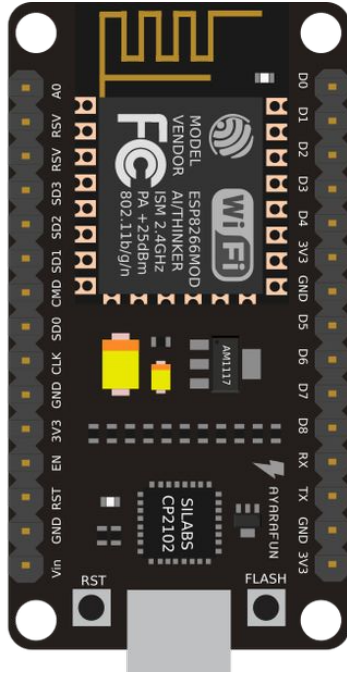
NodeMCU

Etapa 2

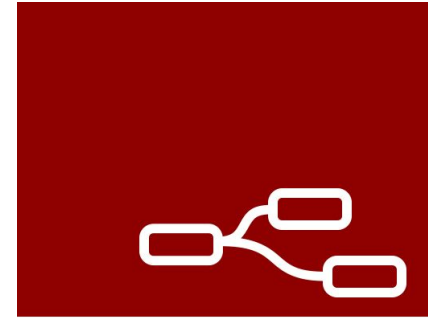


NodeMCU



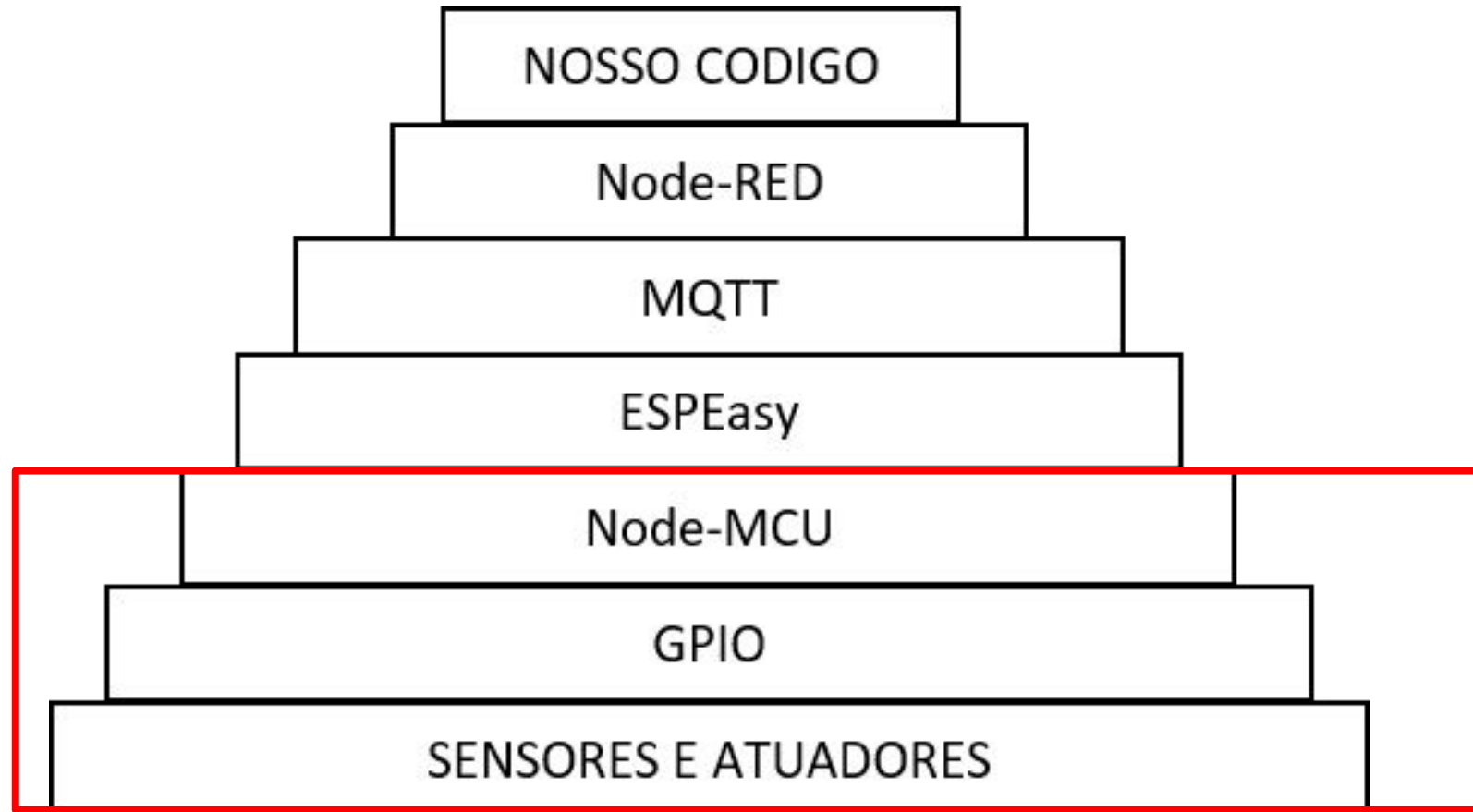


ESPEasy

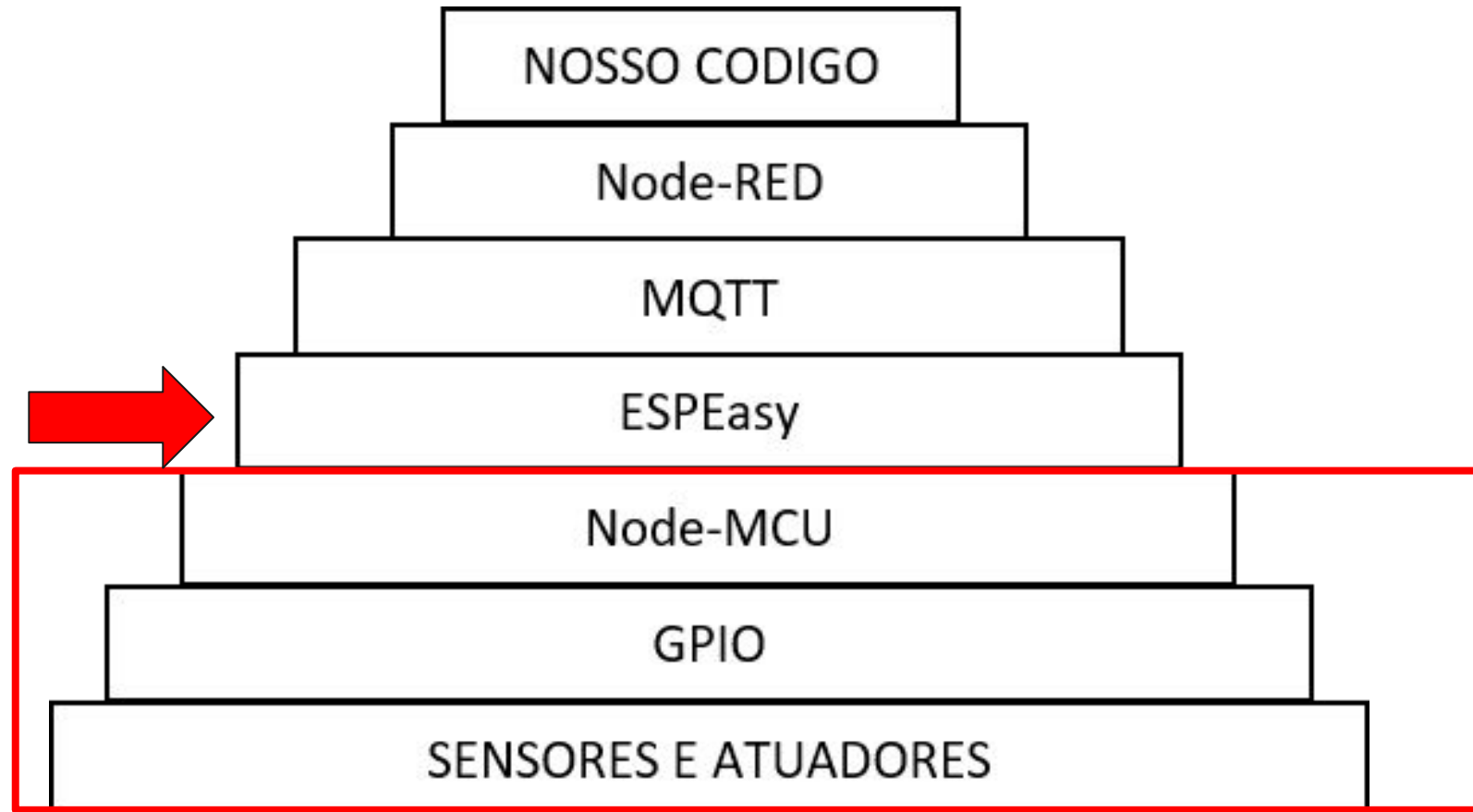


Node-RED

Camadas do Projeto



Camadas do Projeto



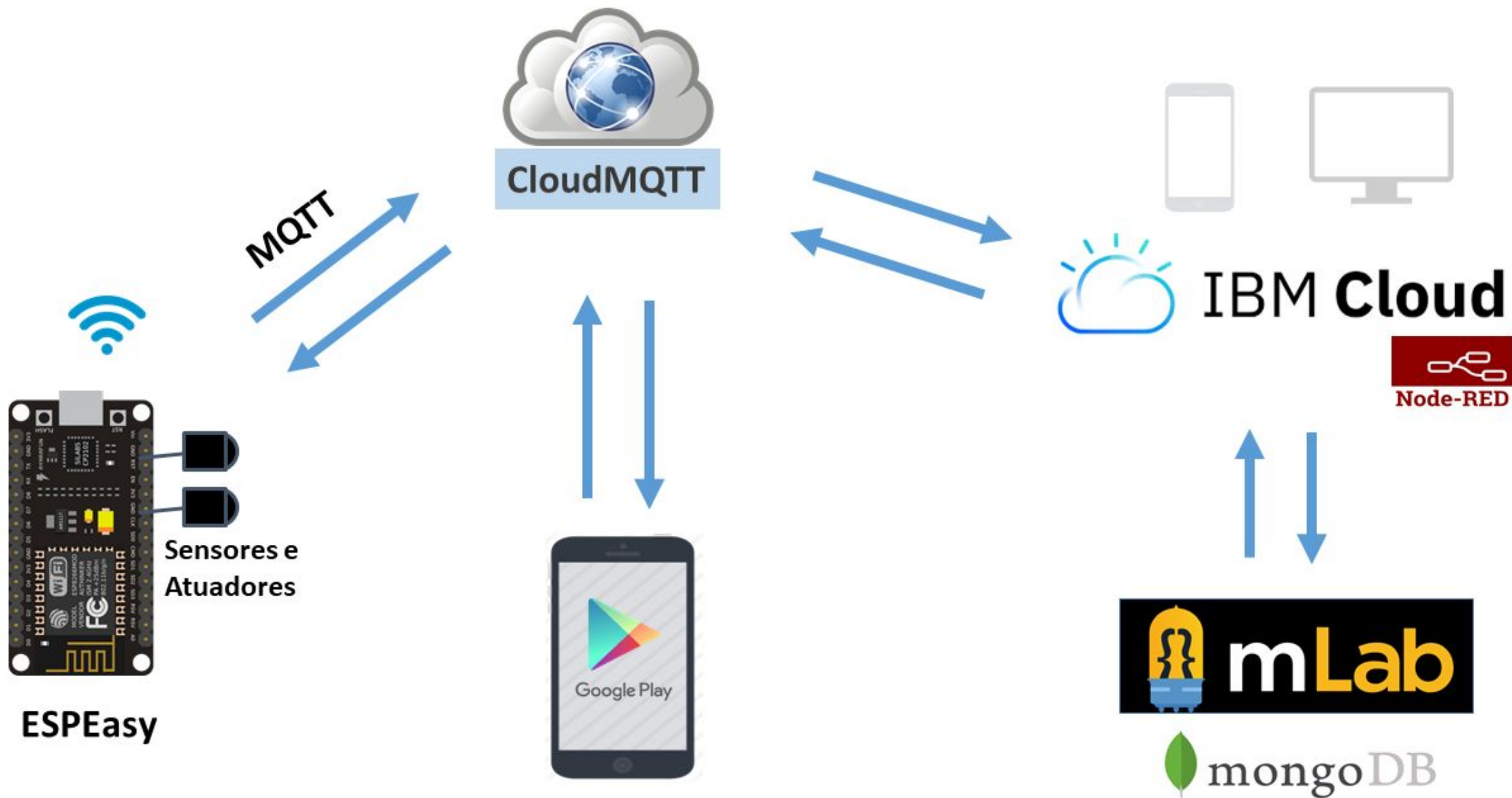
Interface do ESPEasy

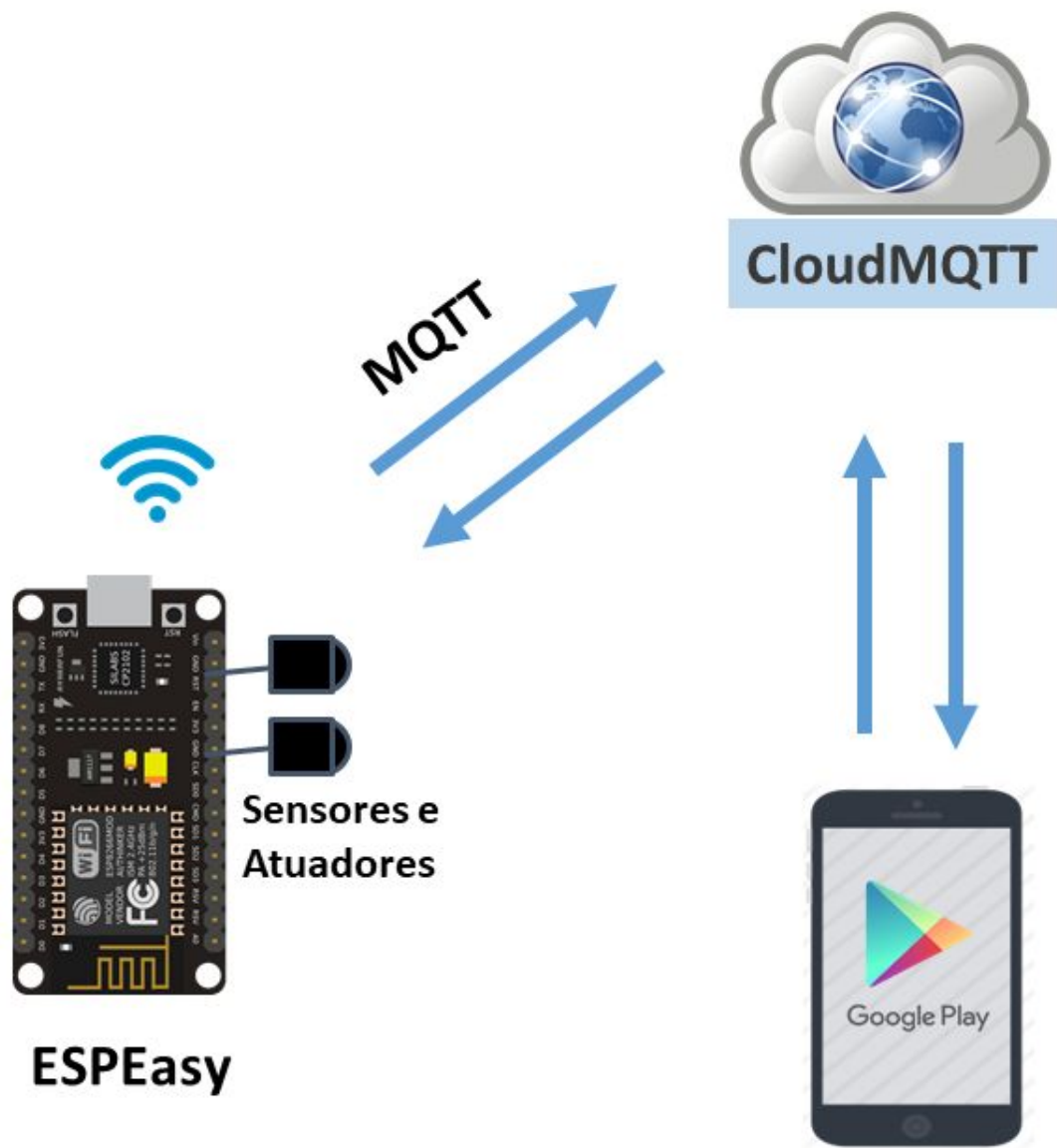
Welcome to ESP Easy: ESP-01

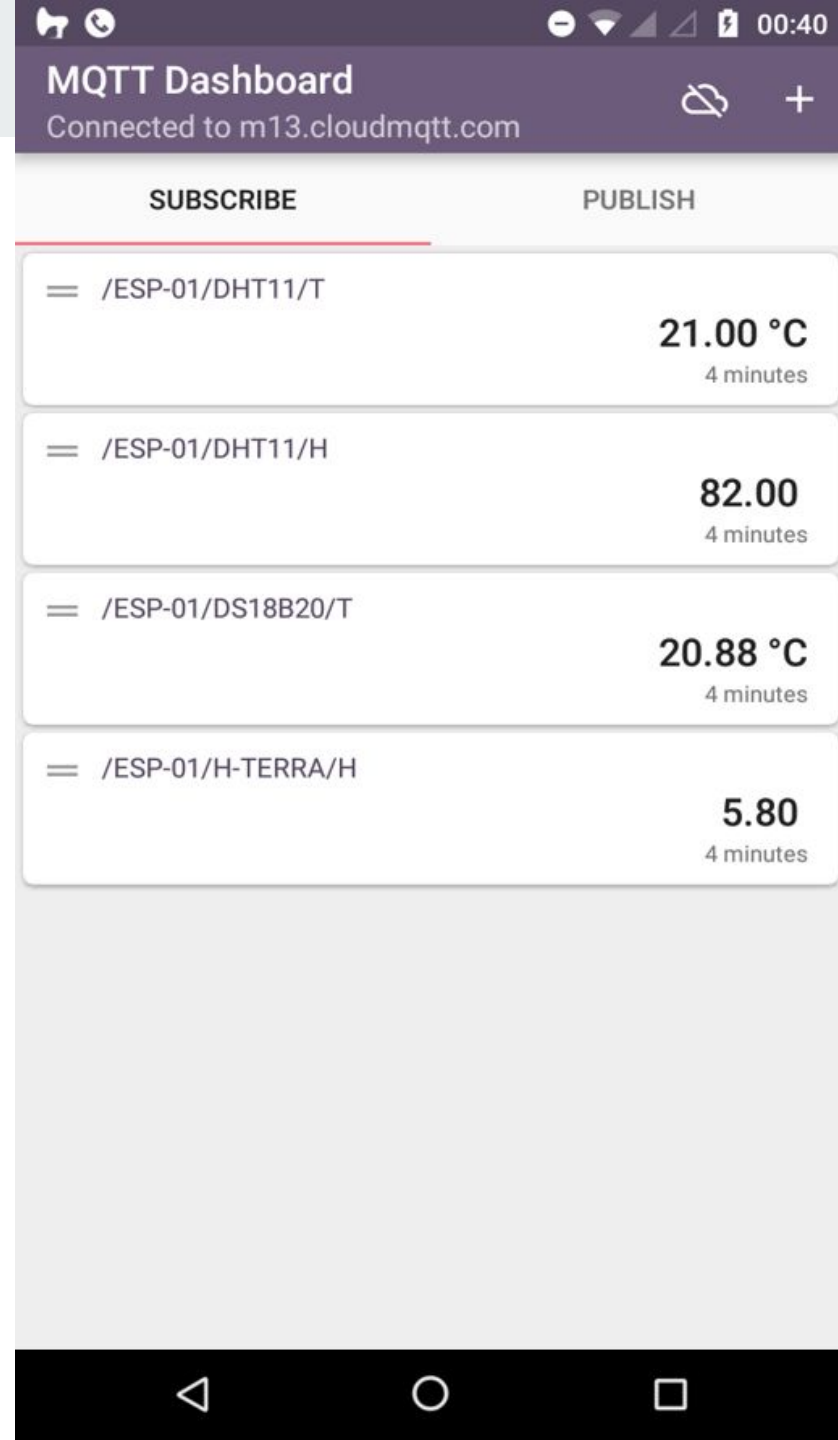
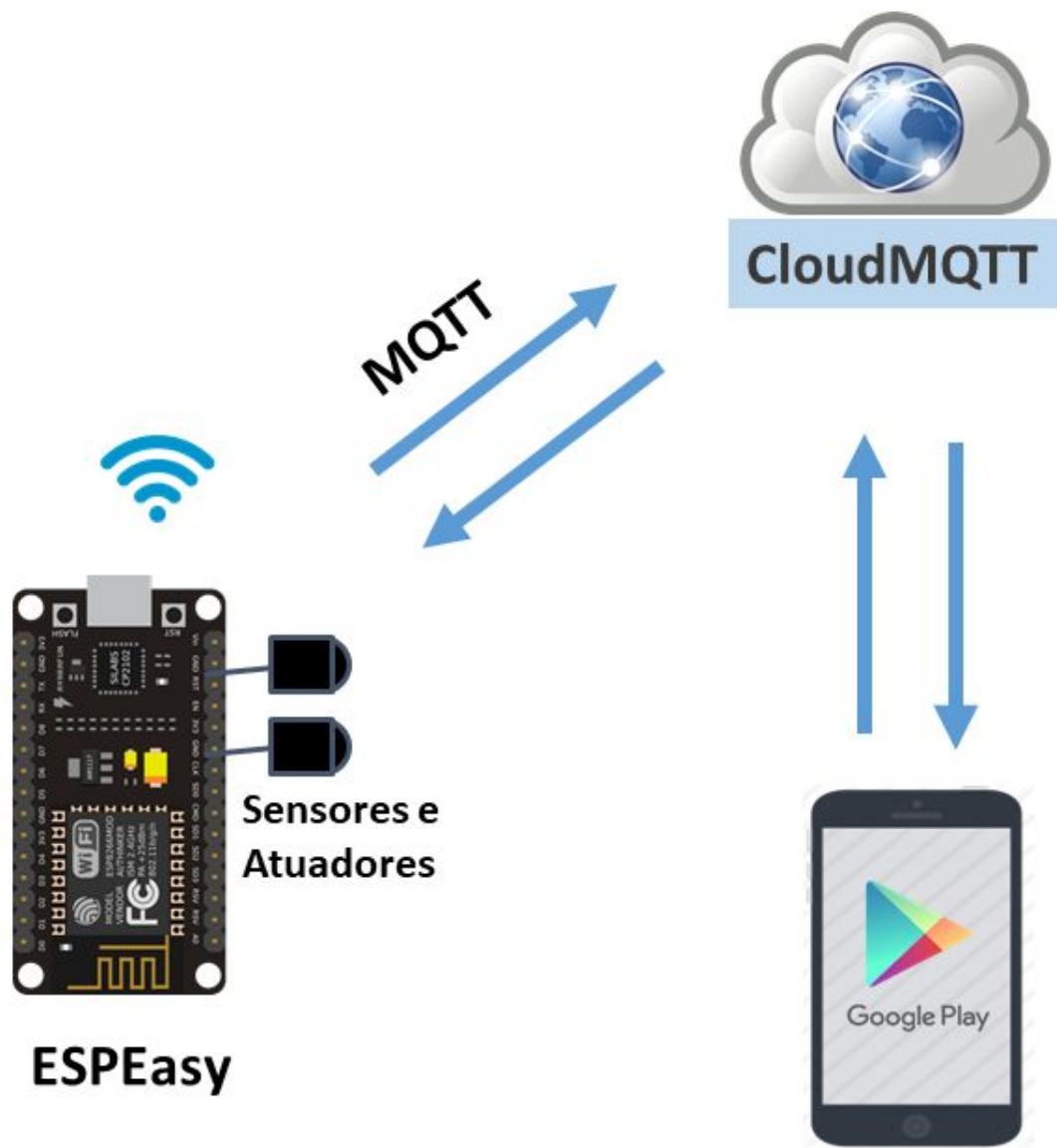
[Main](#) [Config](#) [Hardware](#) [Devices](#) [Tools](#)

| < > | Task | Device | Name | Port | IDX/Variable | GPIO | Values |
|------|------|------------------------------|---------|----------------------|--------------|------------|------------------|
| Edit | 1 | Temperature & Humidity - DHT | DHT11 | | 1 | GPIO-0 | T: nan H: nan |
| Edit | 2 | Analog input | H-TERRA | | 3 | ADC (TOUT) | H: 9.50 |
| Edit | 3 | Temperature - DS18B20 | DS18B20 | 28-ff-20-e-61-16-3-f | 2 | GPIO-12 | T: 21.31 |
| Edit | 4 | | | | | | |

Powered by www.esp8266.nu







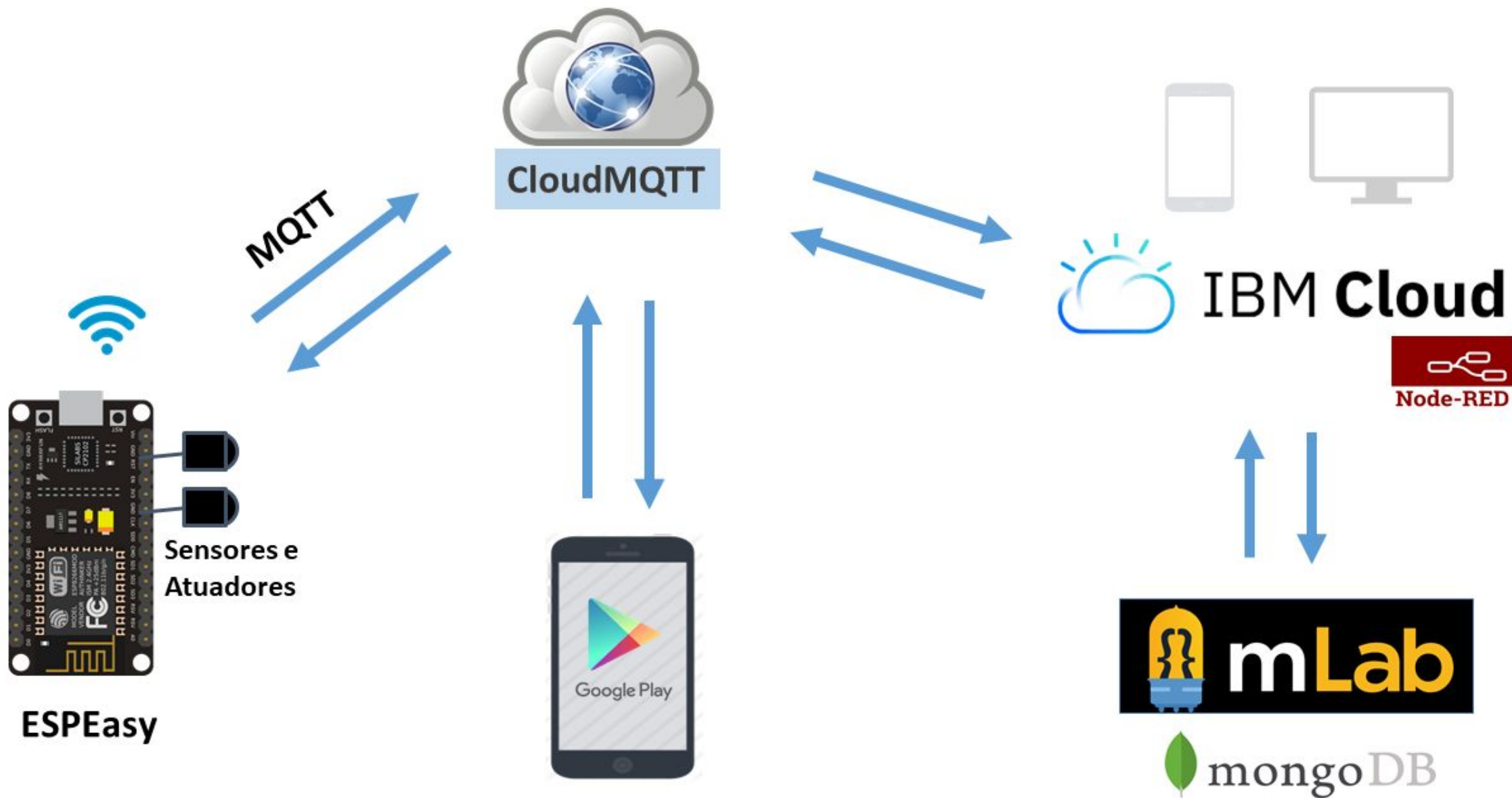


TABELA DO BANCO DE DADOS



Temperatura_AR

- _id
- dado
- data
- data_real

Humidade_AR

- _id
- dado
- data
- data_real

Temperatura_SOLO

- _id
- dado
- data
- data_real

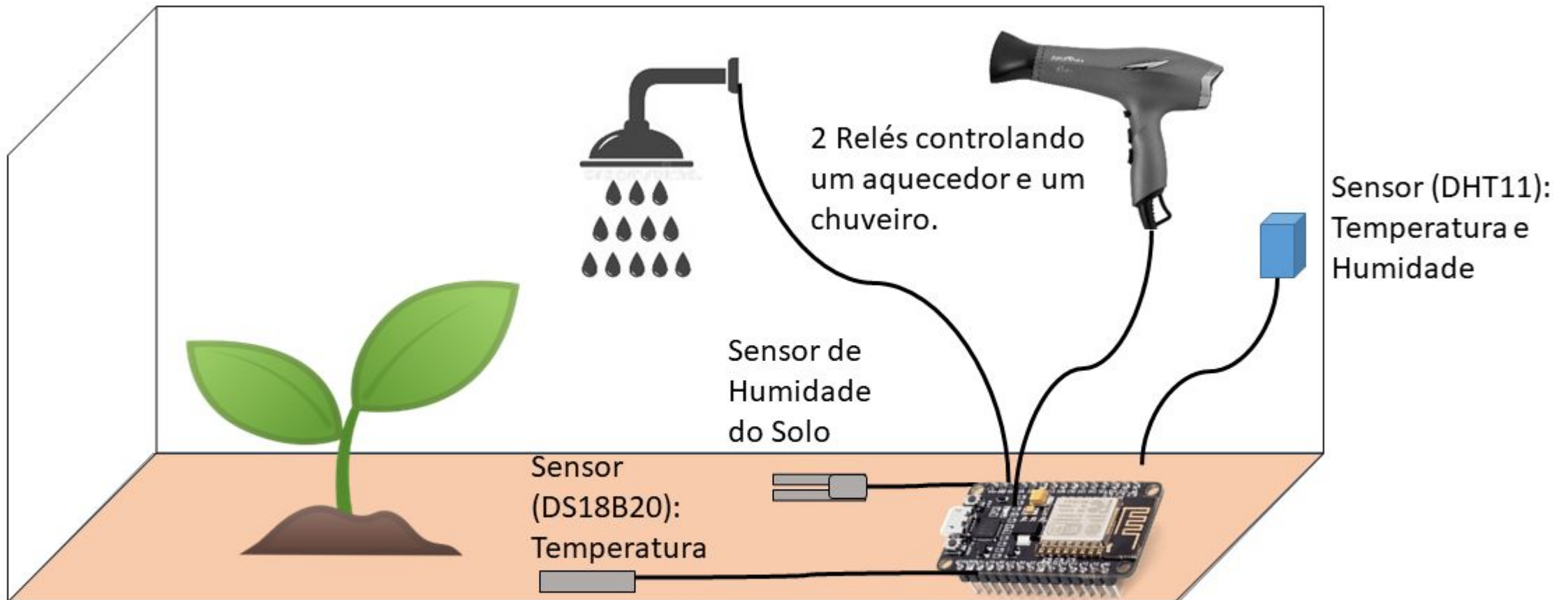
Humidade_SOLO

- _id
- dado
- data
- data_real

funcoes

- _id
- temp_min_chuveiro
- hume_min_chuveiro
- temp_min_aquecedor

Protótipo Ideal



Sensor de AR

Temperatura

22

°C

-10100

Humidade

78

0100

Temperatura e Humidade

Salvar no Banco de Dados

Estado do Sensor Temperatura AR:

NORMAL

Estado do Sensor Humidade AR:

NORMAL

1

Sensor de SOLO

Temperatura

18.81

°C

-10100

Humidade

-2.4

0100

Temperatura e Humidade

Salvar no Banco de Dados

Estado do Sensor Humidade SOLO:

NORMAL

Estado do Sensor Humidade SOLO:

NORMAL

2

Informacao

Chuveiro (Relé 4)

DES-LIGADO

Aquecedor (Relé 5)

DES-LIGADO

LED

DES-LIGADO

Aquecedor TEMP

10

Chuveiro TEMP

10

Chuveiro HUME

10

3

Testes Manuais

RELE (4)

RELE (5)

LED

T AR (-10-100)

H AR (0-100)

T SOLO (-10-100)

H SOLO (0-100)

4

Ligar Aquecedor

Temperatura limite: (°C)

10

ligar Chuveiro

Temperatura menor que:

10

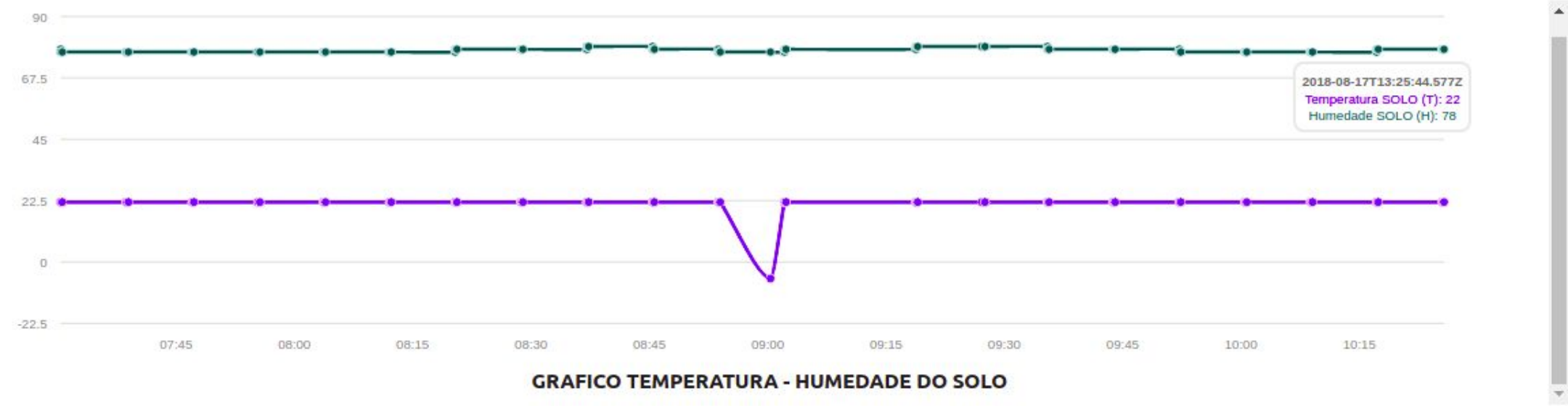
Humidade menor que:

10

5

Dados

Ultimo Dia

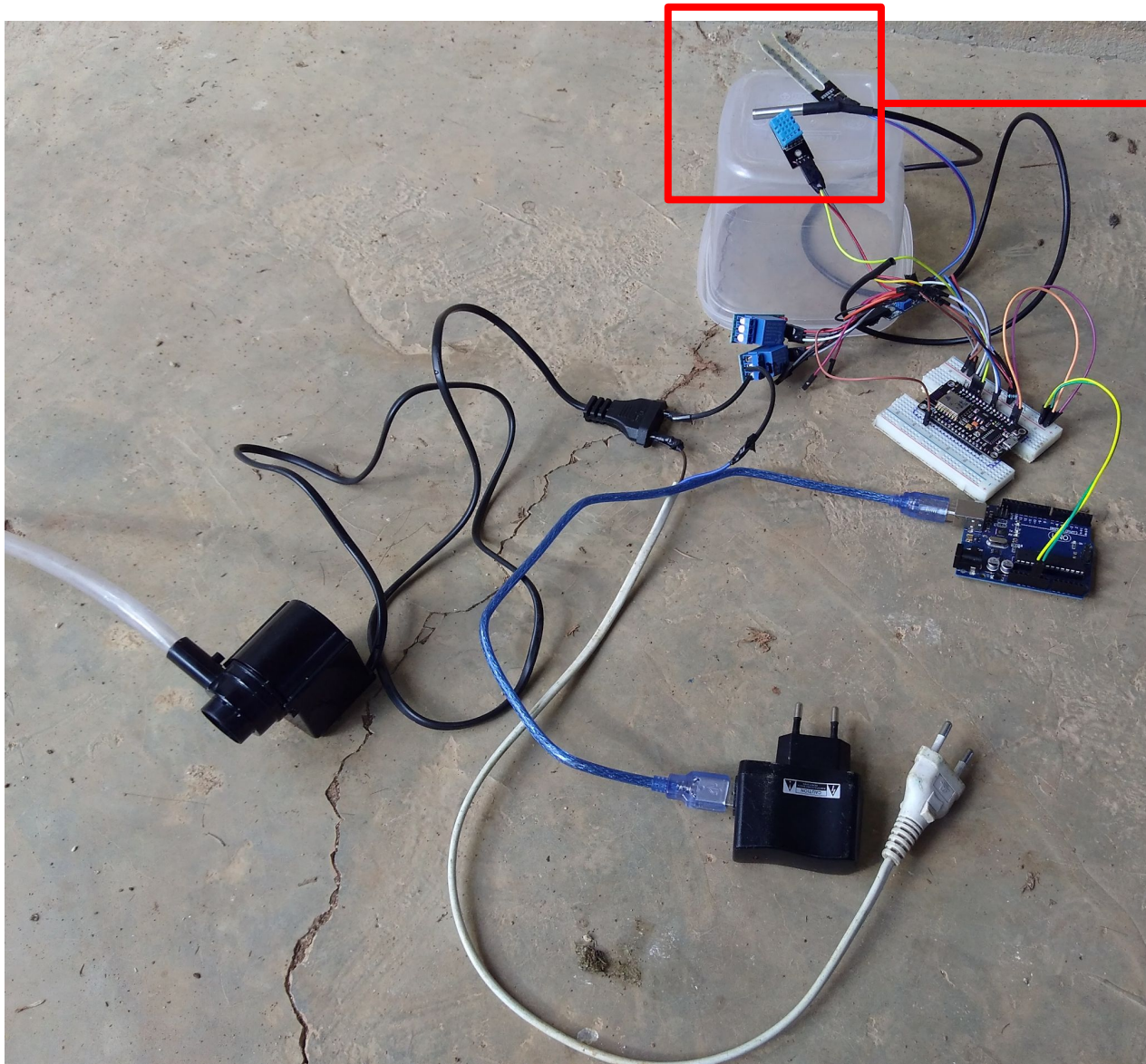


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PODE SER EXPORTADO PARA UM ARQUIVO CSV

<http://noderedufv.mybluemix.net/ui/#/0>
<https://www.pushbullet.com/>

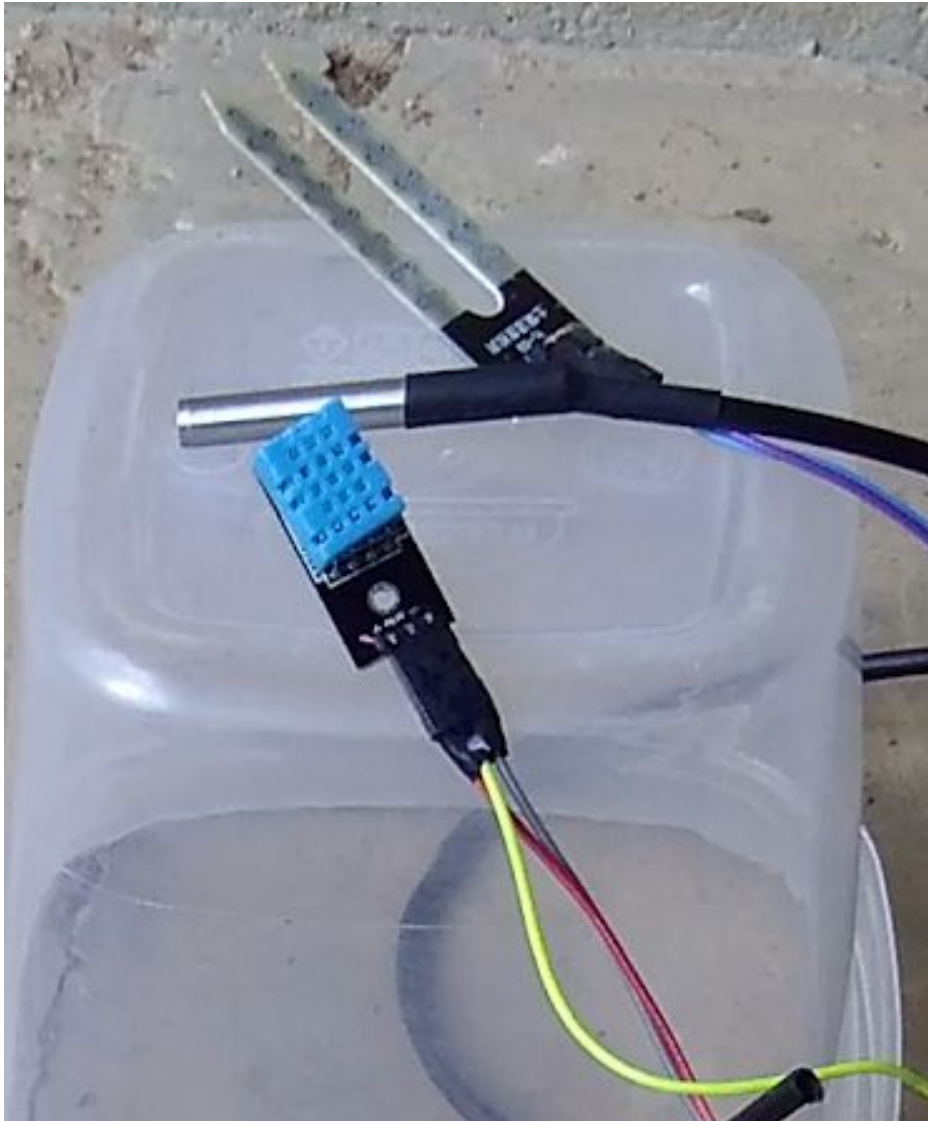
PROTÓTIPO FINAL



SENSORES

**Humidade e
Temperatura**

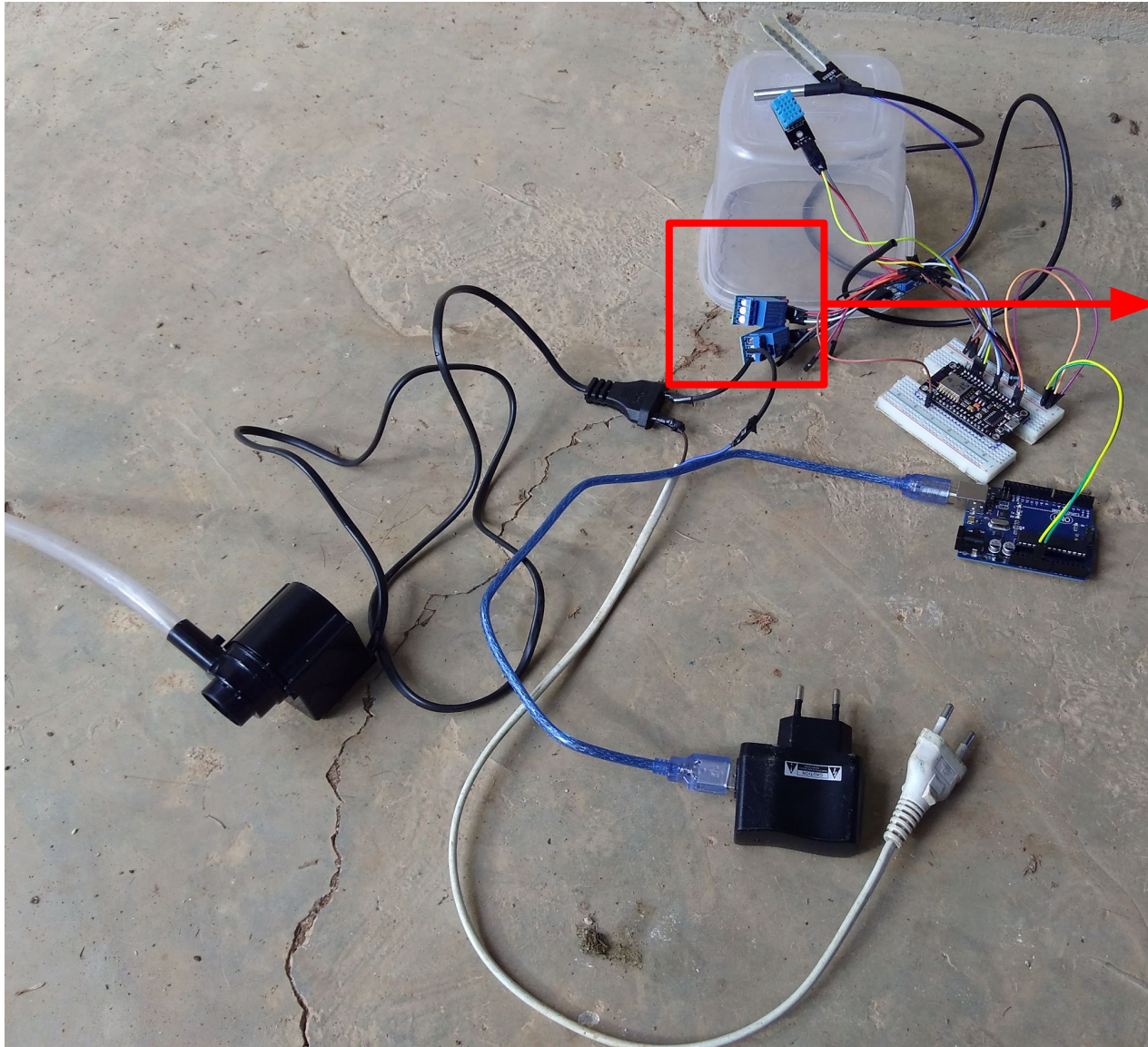
Protótipo Real



SENSORES

**Humidade e
Temperatura**

Protótipo Real



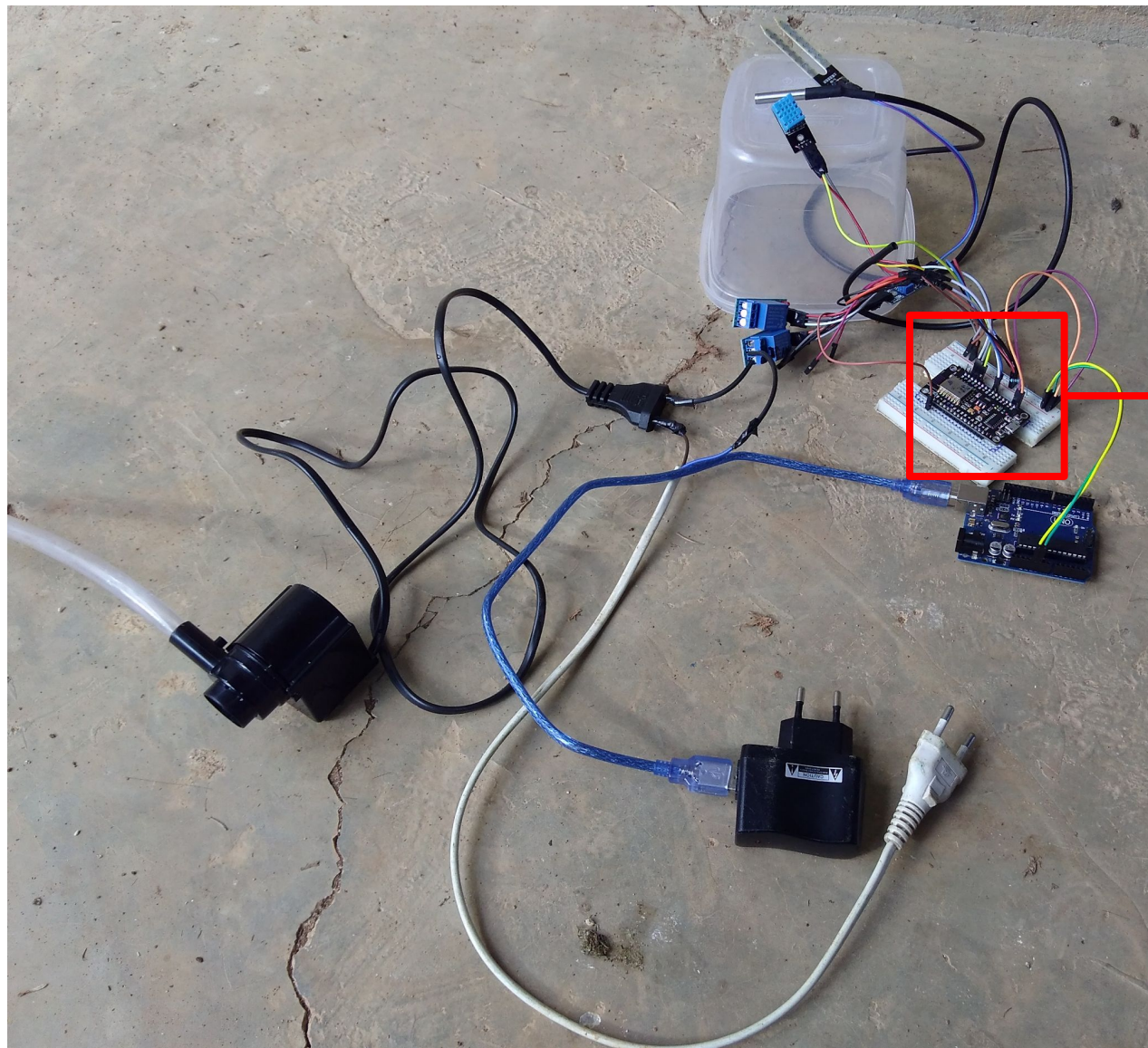
RELÉS

Protótipo Real



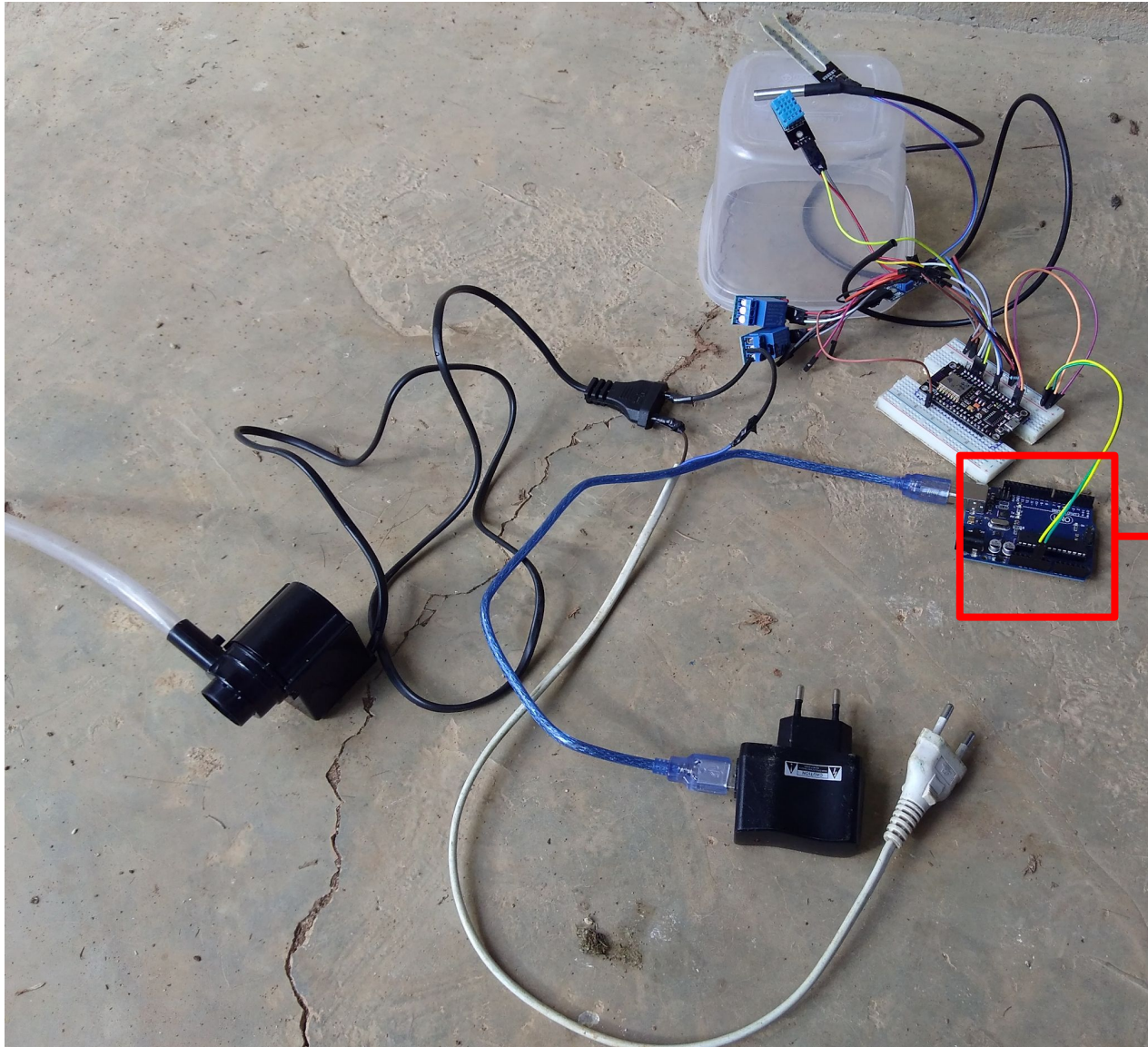
RELÉS

Protótipo Real



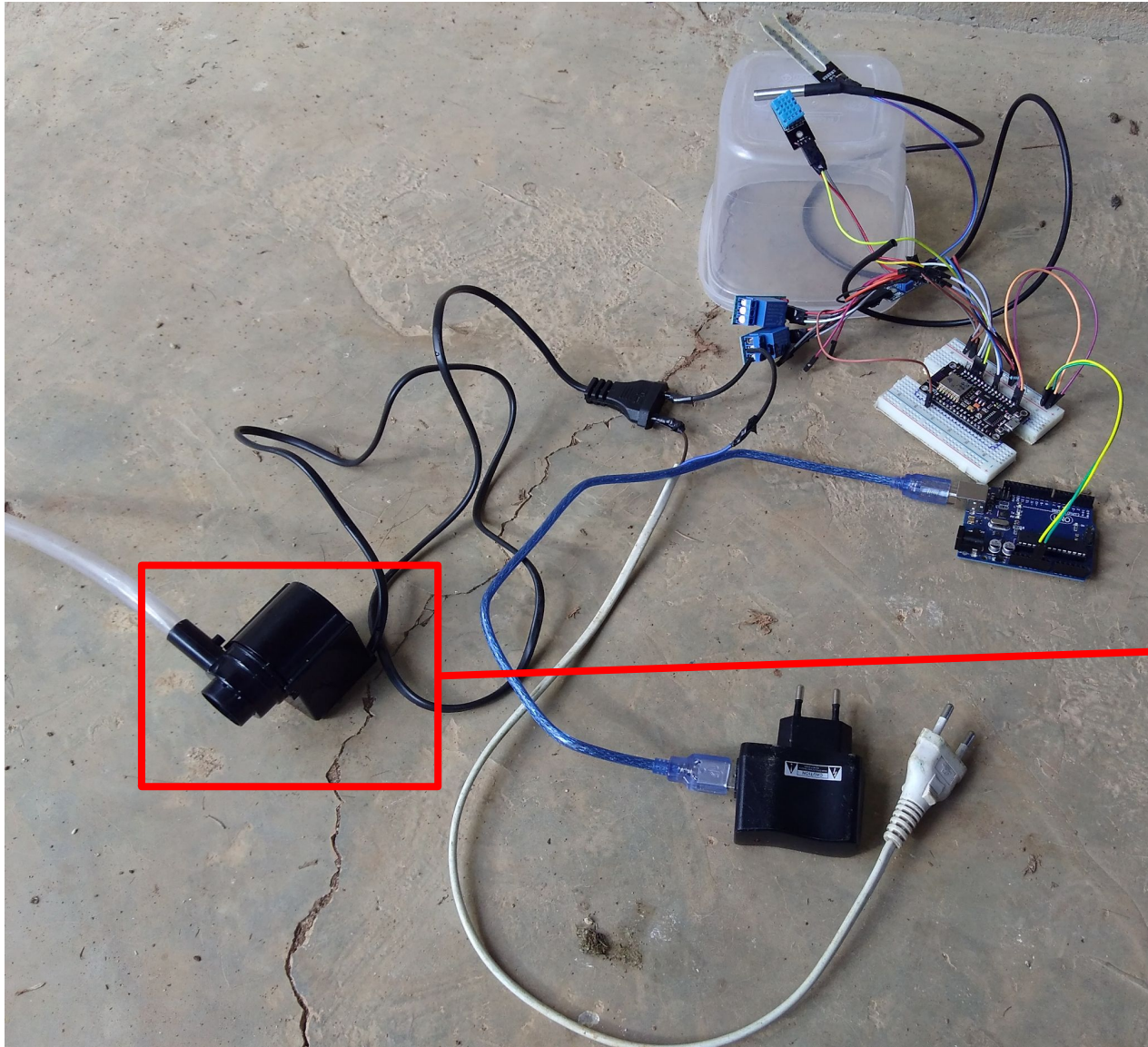
NODEMCU

Protótipo Real



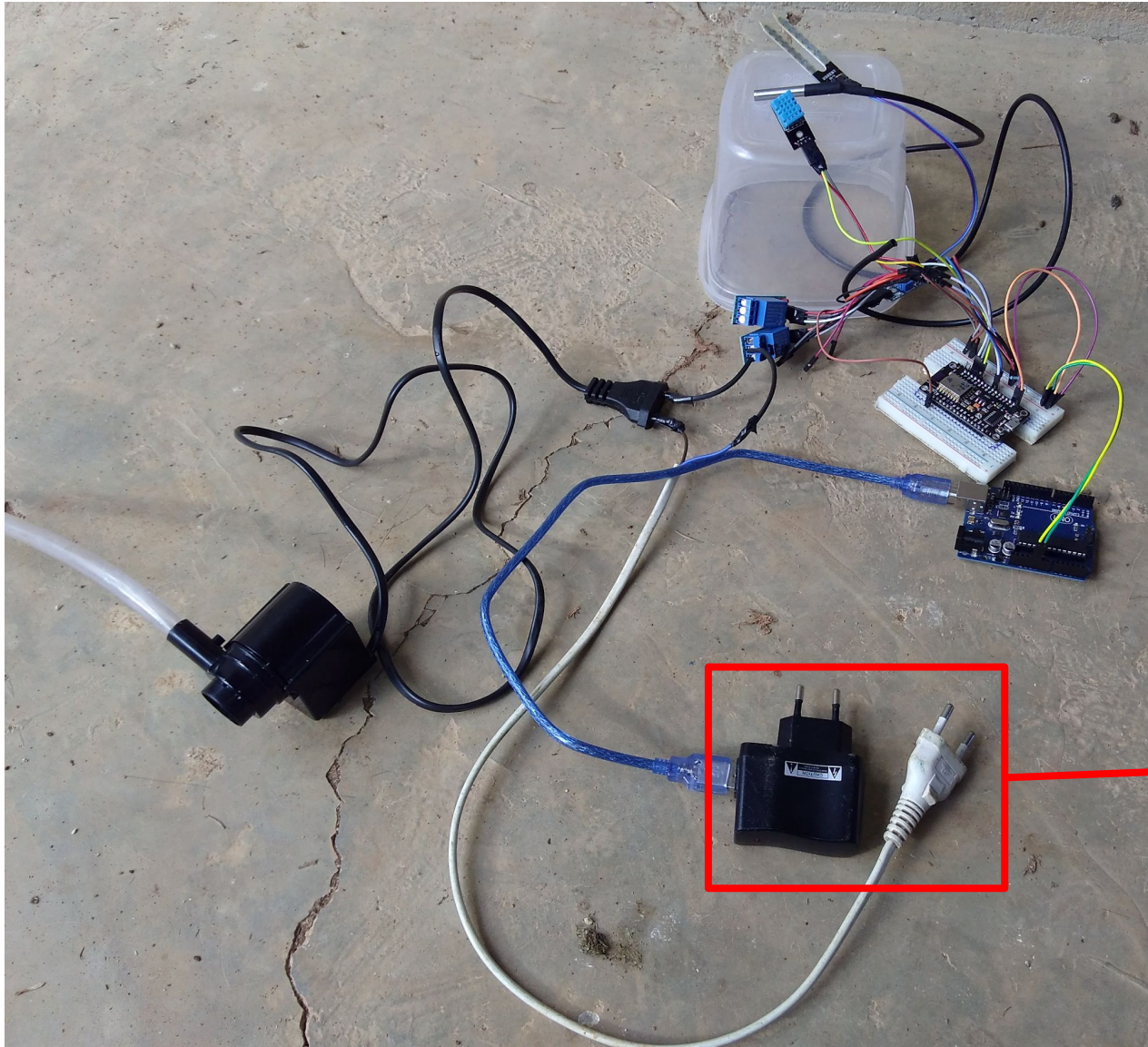
ARDUINO

Protótipo Real



BOMBA DE AGUA

Protótipo Real

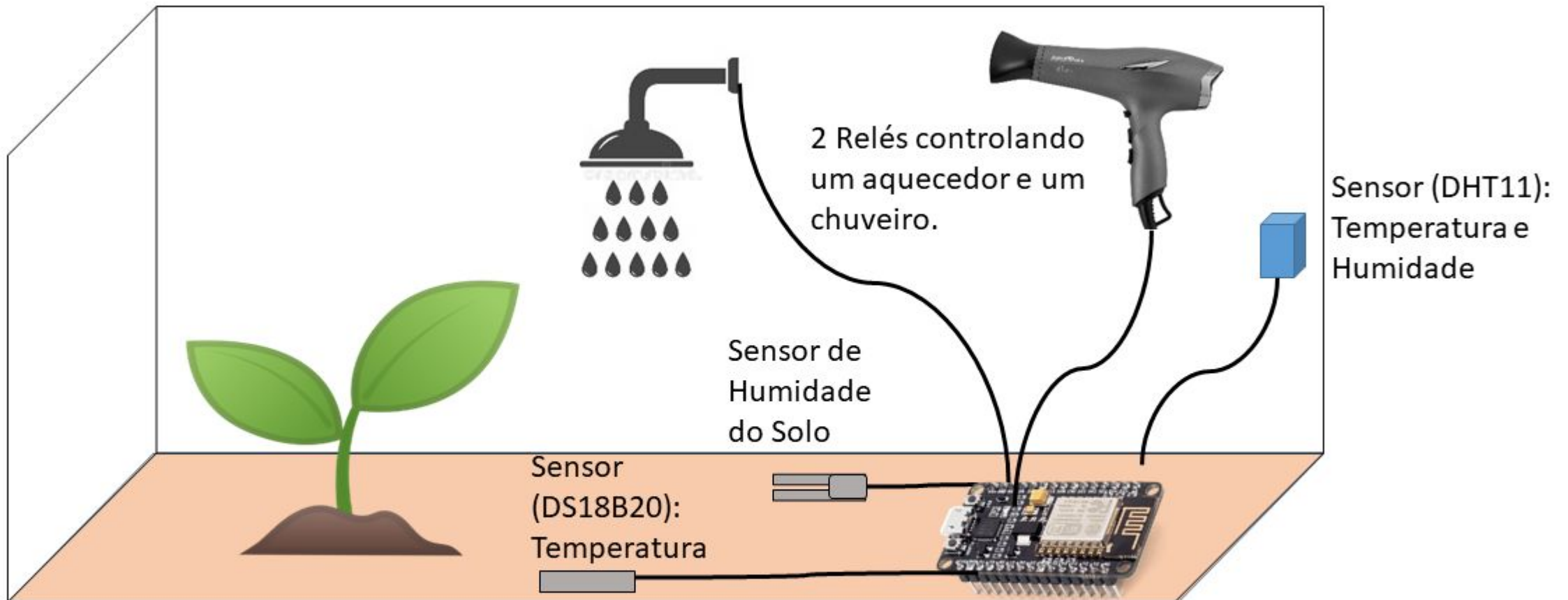


ENFIAR NA TOMADA

Protótipo Ideal



Protótipo Ideal





VIDEO

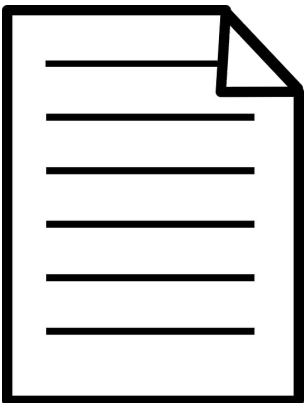
Conclusões



É possível que qualquer pessoa possa configurar desde zero uma estufa inteligente.

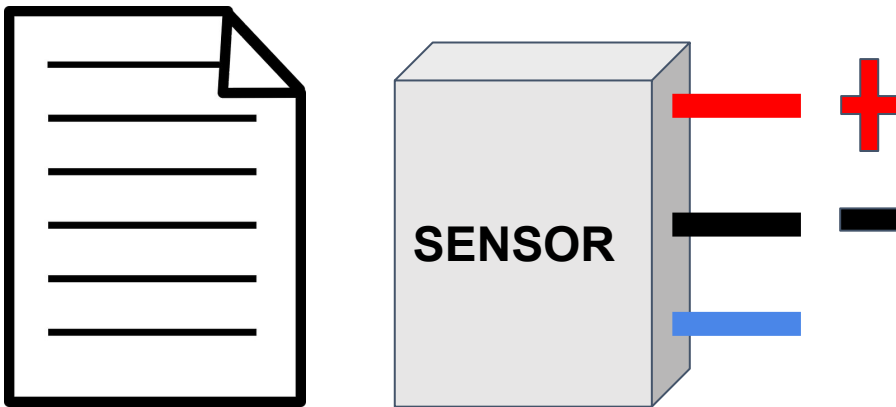
Conclusões

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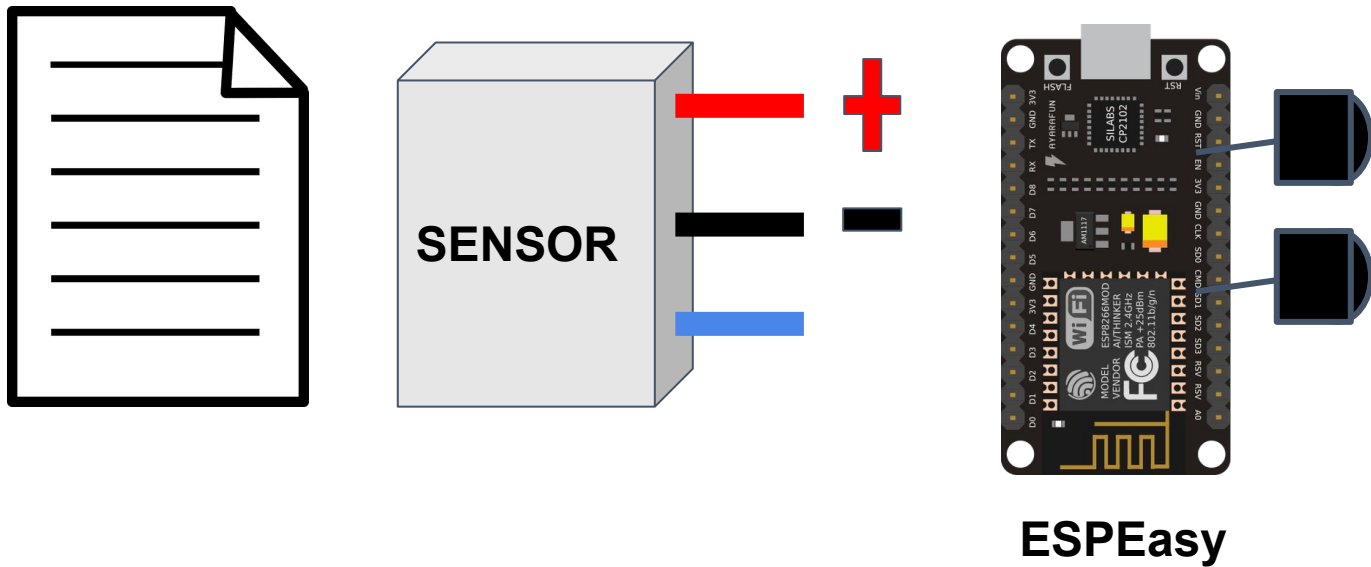
Conclusões

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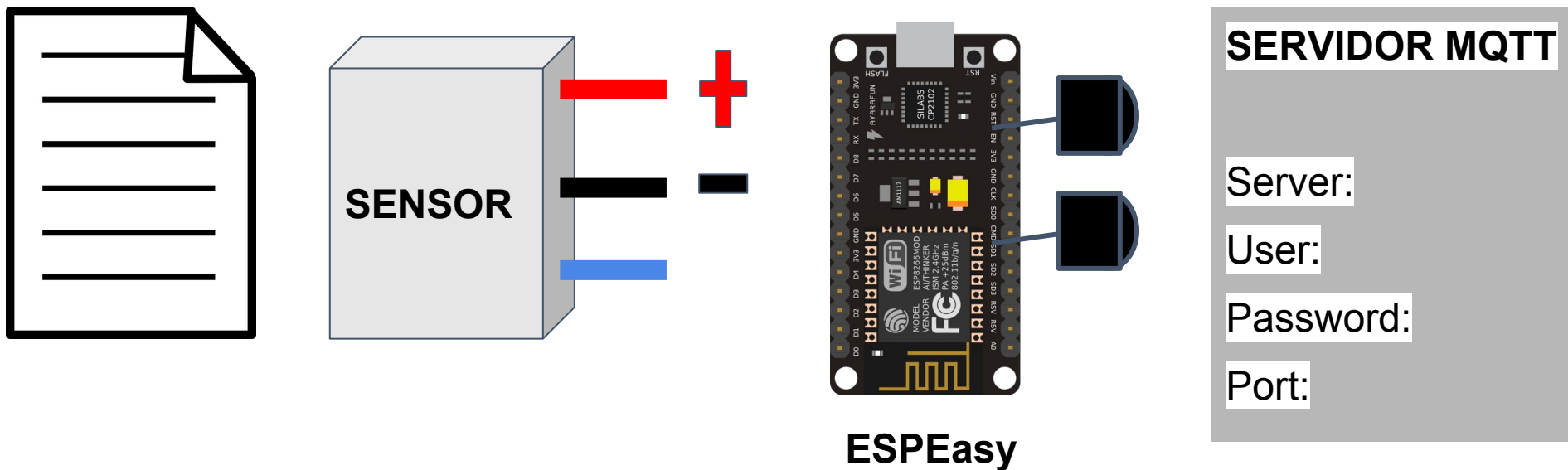
Conclusões

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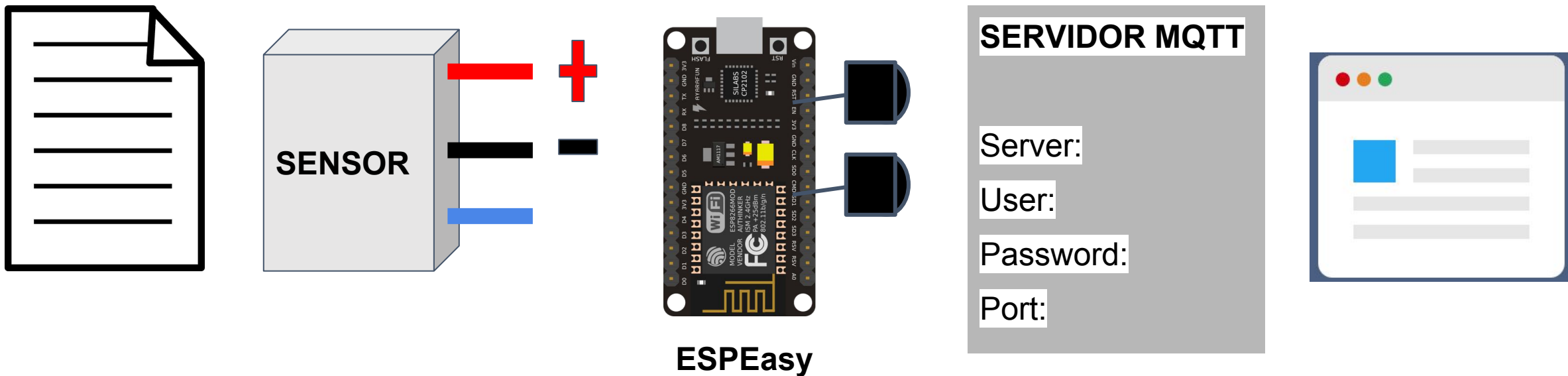
Conclusões

É possível que qualquer pessoa possa configurar desde zero uma estufa inteligente.



Conclusões

É possível que qualquer pessoa possa configurar desde zero uma estufa inteligente.



Sugestões de trabalhos futuros



1. ESCALABILIDADE

2. USUÁRIOS

Dúvidas?



<https://sites.google.com/view/gelmer-tcc/>