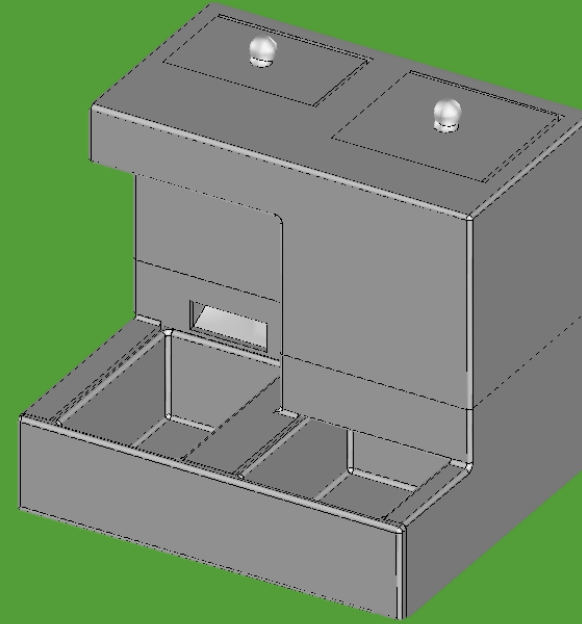


SMART PET FEEDER



Projeto de Internet das Coisas – 2022/2023

Licenciatura em Engenharia Eletrotecnia e de Computadores

O que é o Smart Pet Feeder?



A Motivação

Existem neste momento, em Portugal, mais de 3,5 milhões de animais de companhia registados

(SIAC - Sistema de Informação de Animais de Companhia)



- Na atualidade as pessoas passam grande parte do seu tempo fora de casa, seja em trabalho ou em lazer



- Cada animal de estimação tem o seu próprio habito alimentar ou dieta



- Elevado número de abandono animal
- Instituições sobrelotadas e com recursos inadequados

Como é que o Smart Pet Feeder vai fazer a diferença?



Objectivo



Dispensa e reposição automática de alimento



Monitorização e gestão através de App Móvel e Desktop



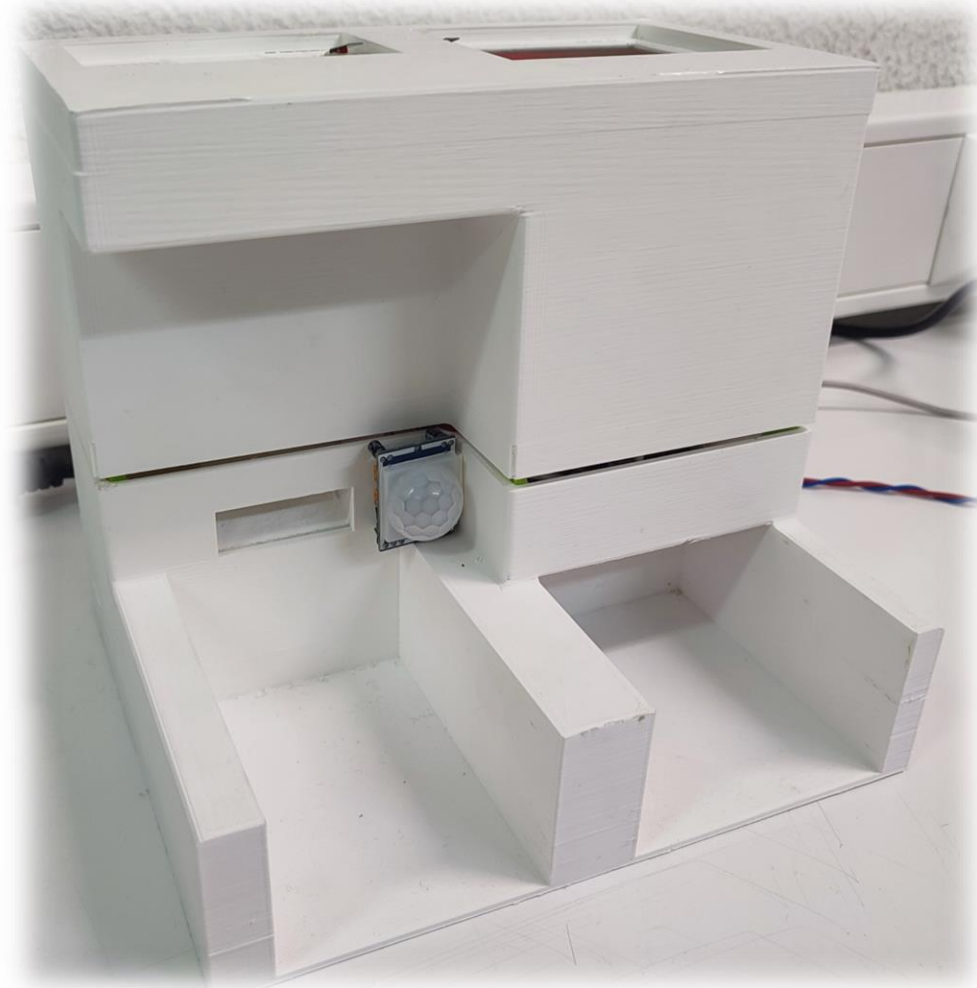
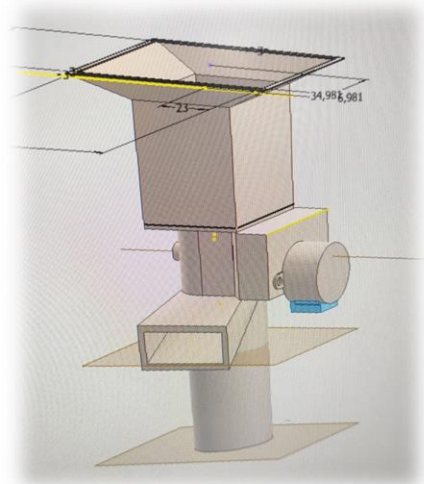
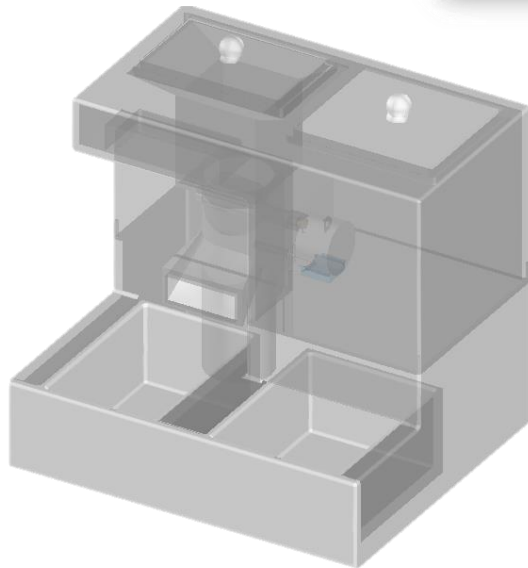
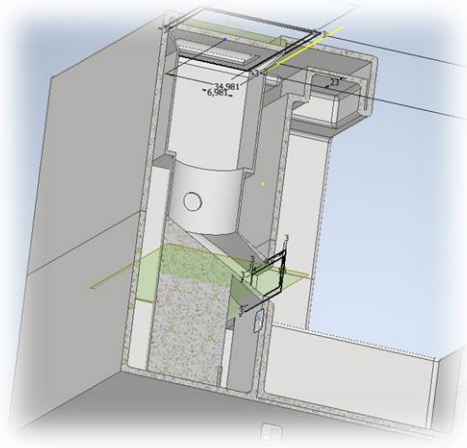
Gestão centralizada de mais que uma unidade terminal

Mercado Alvo

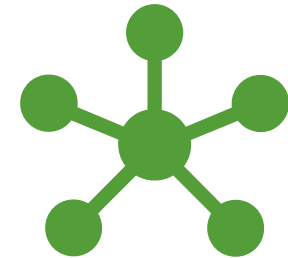


Fonte: <https://www.siac.vet/>

O Protótipo



Arquitetura do Smart Pet Feeder



Visão Geral

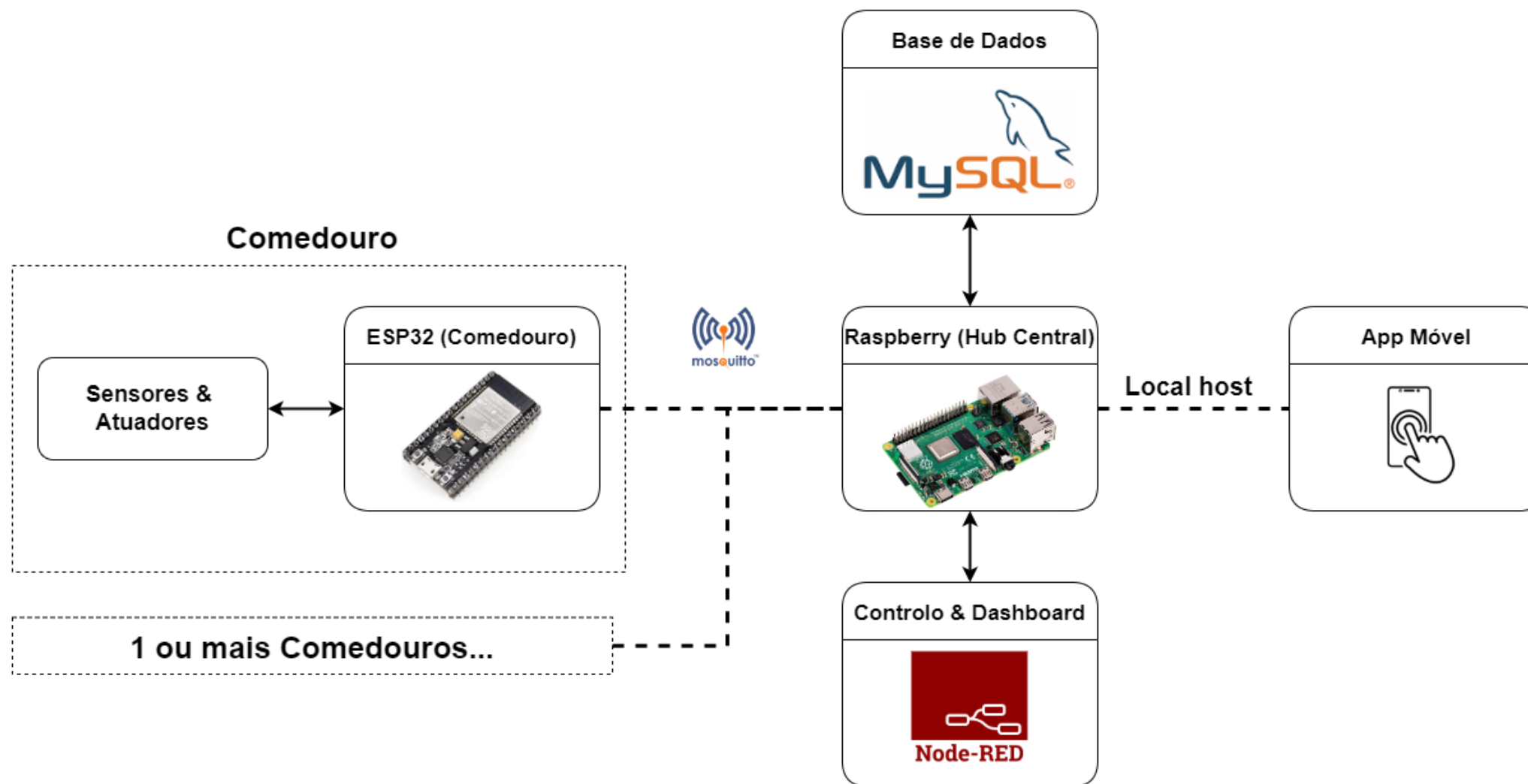
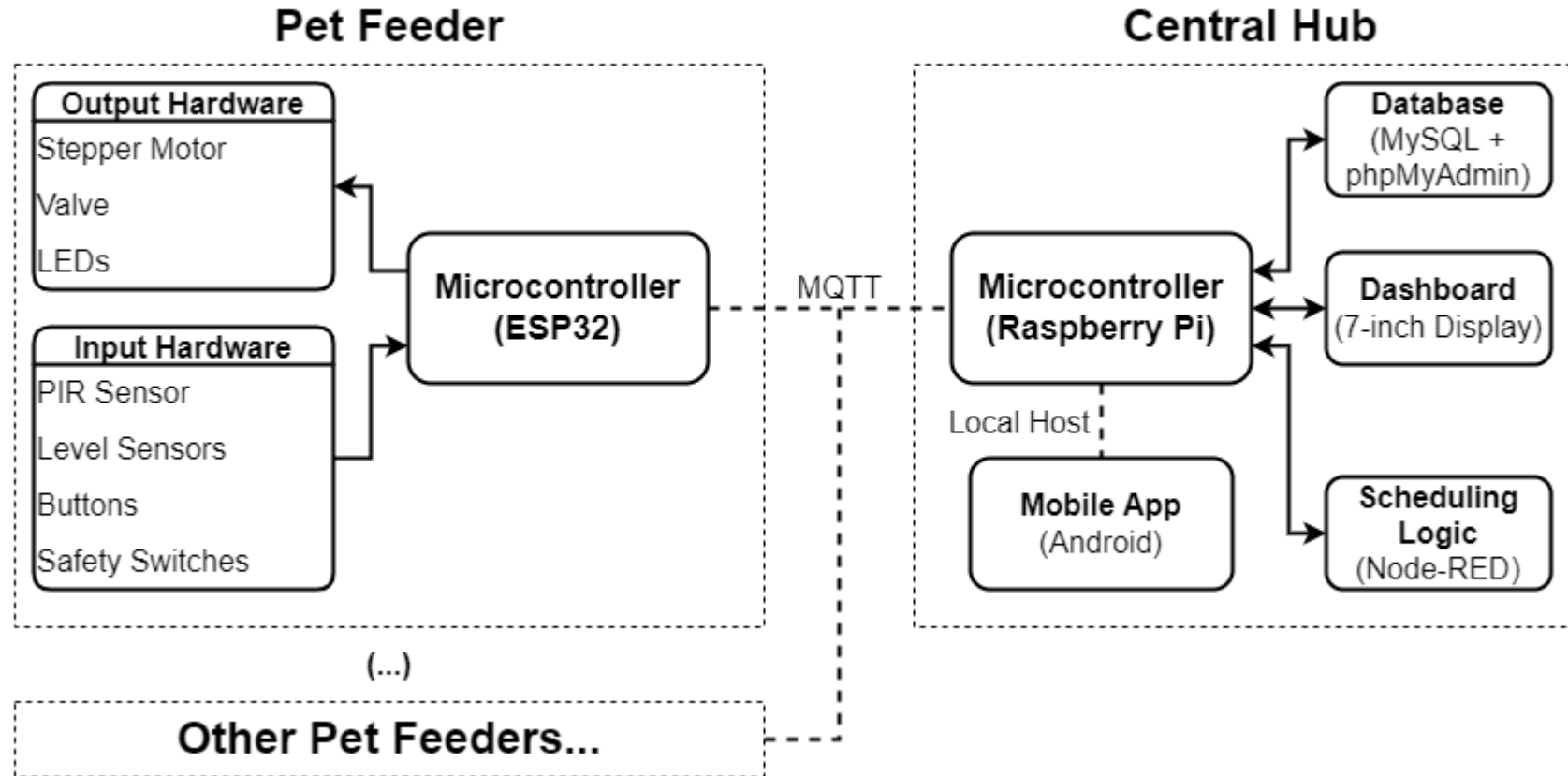
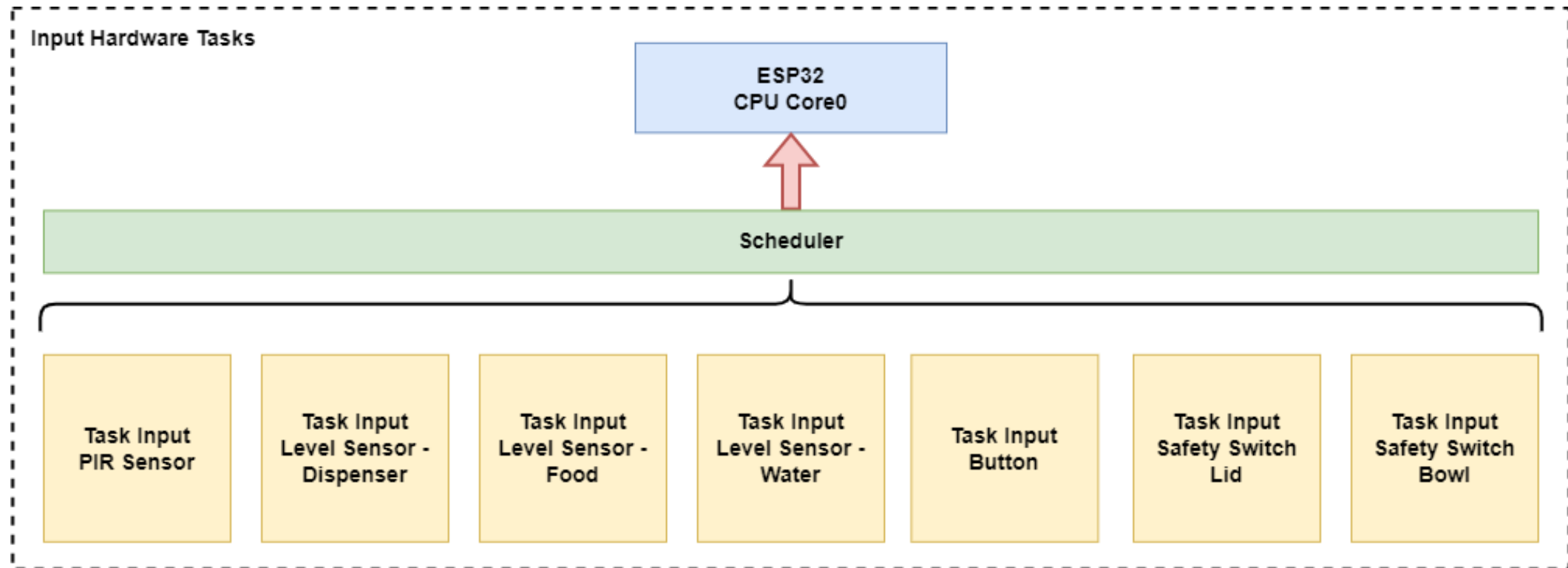


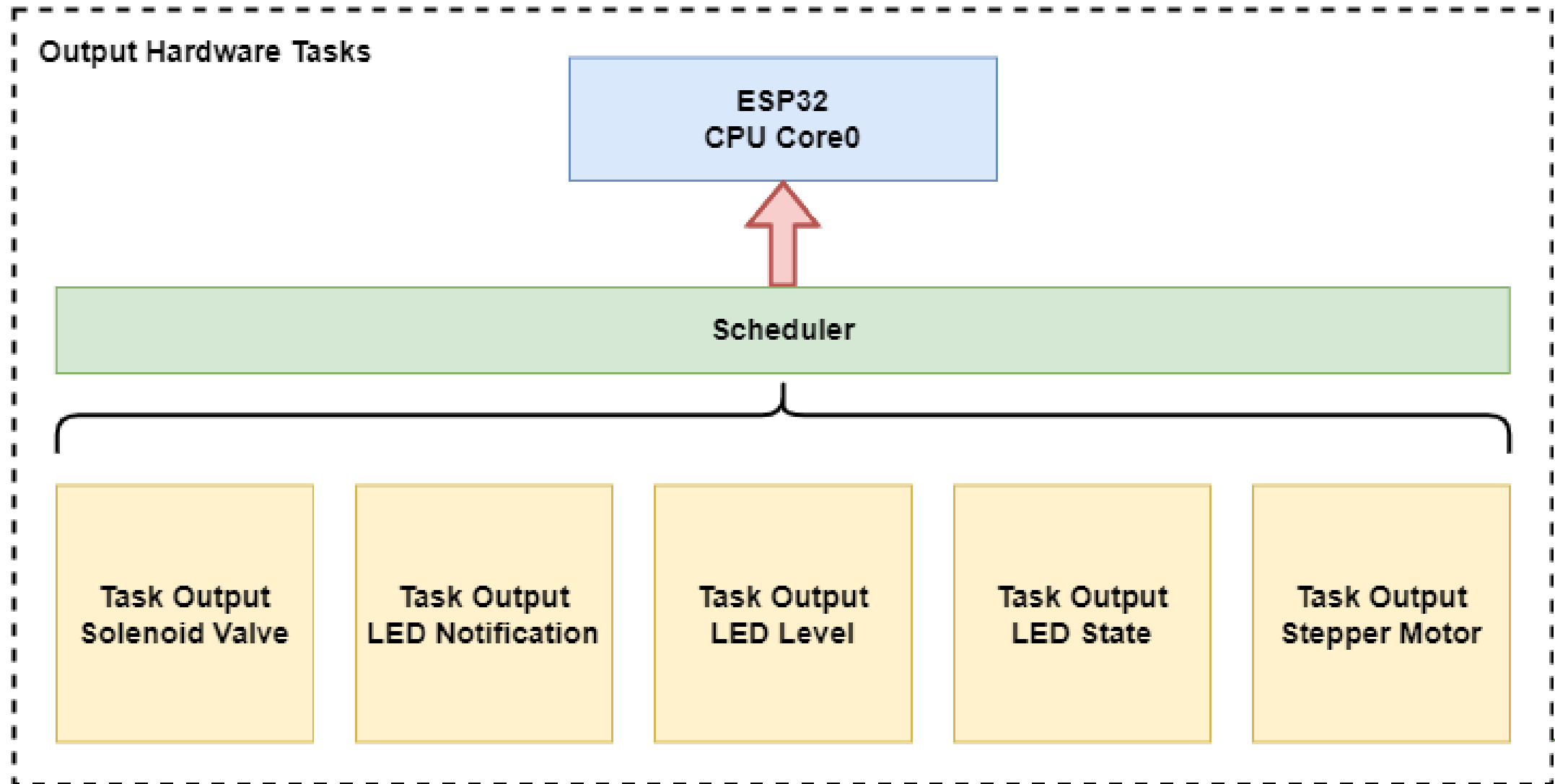
Diagrama de Blocos



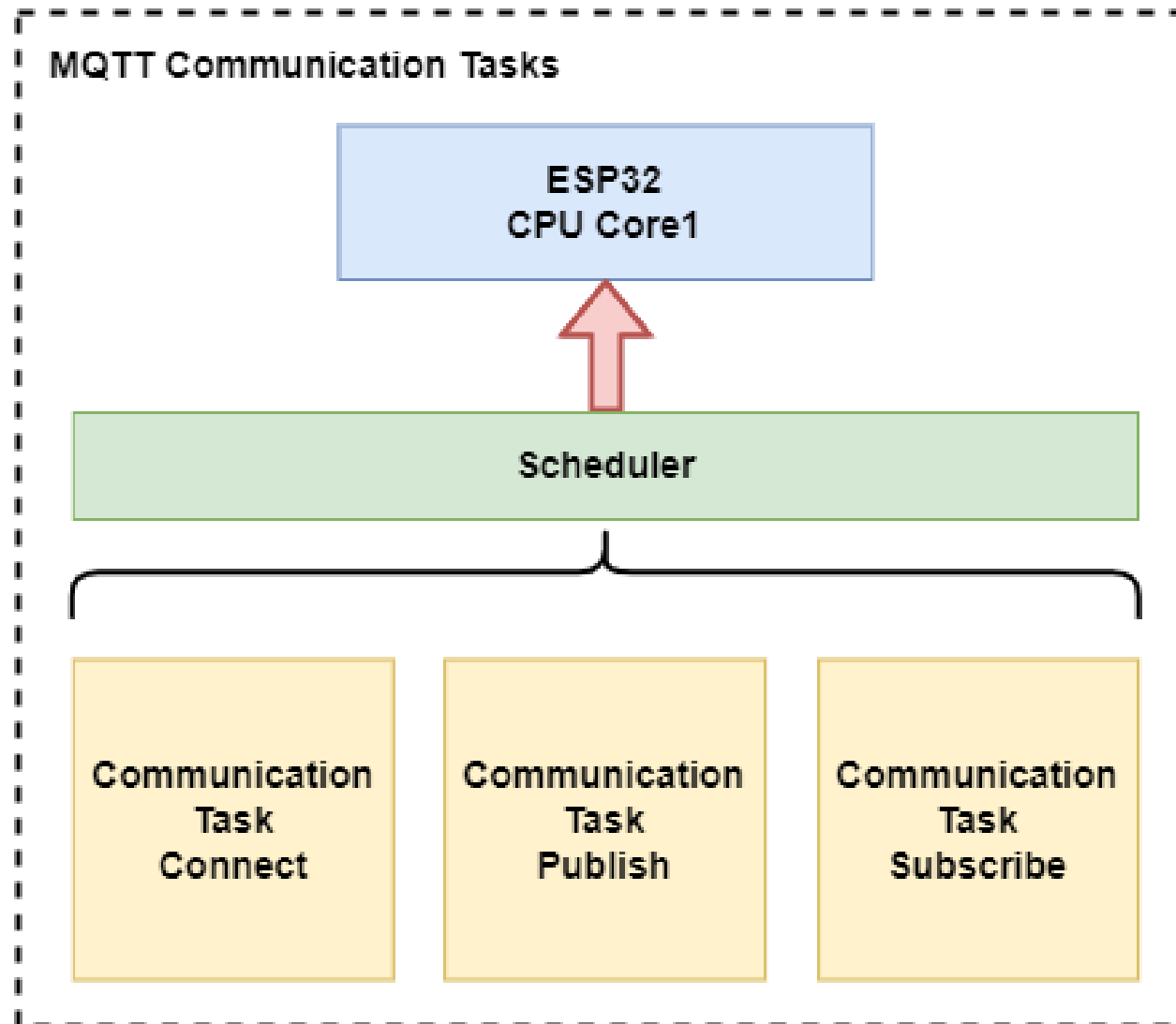
Arquitetura do Firmware (Inputs)



Arquitetura do Firmware (Outputs)



Arquitetura do Firmware (MQTT)



Arquitetura do Firmware (MQTT Queue)

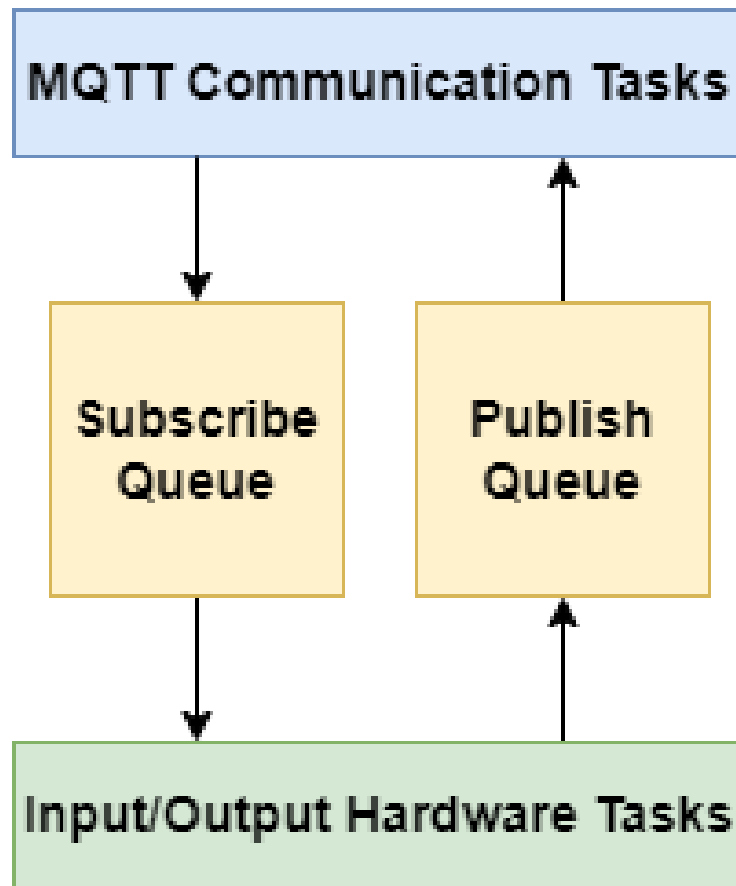
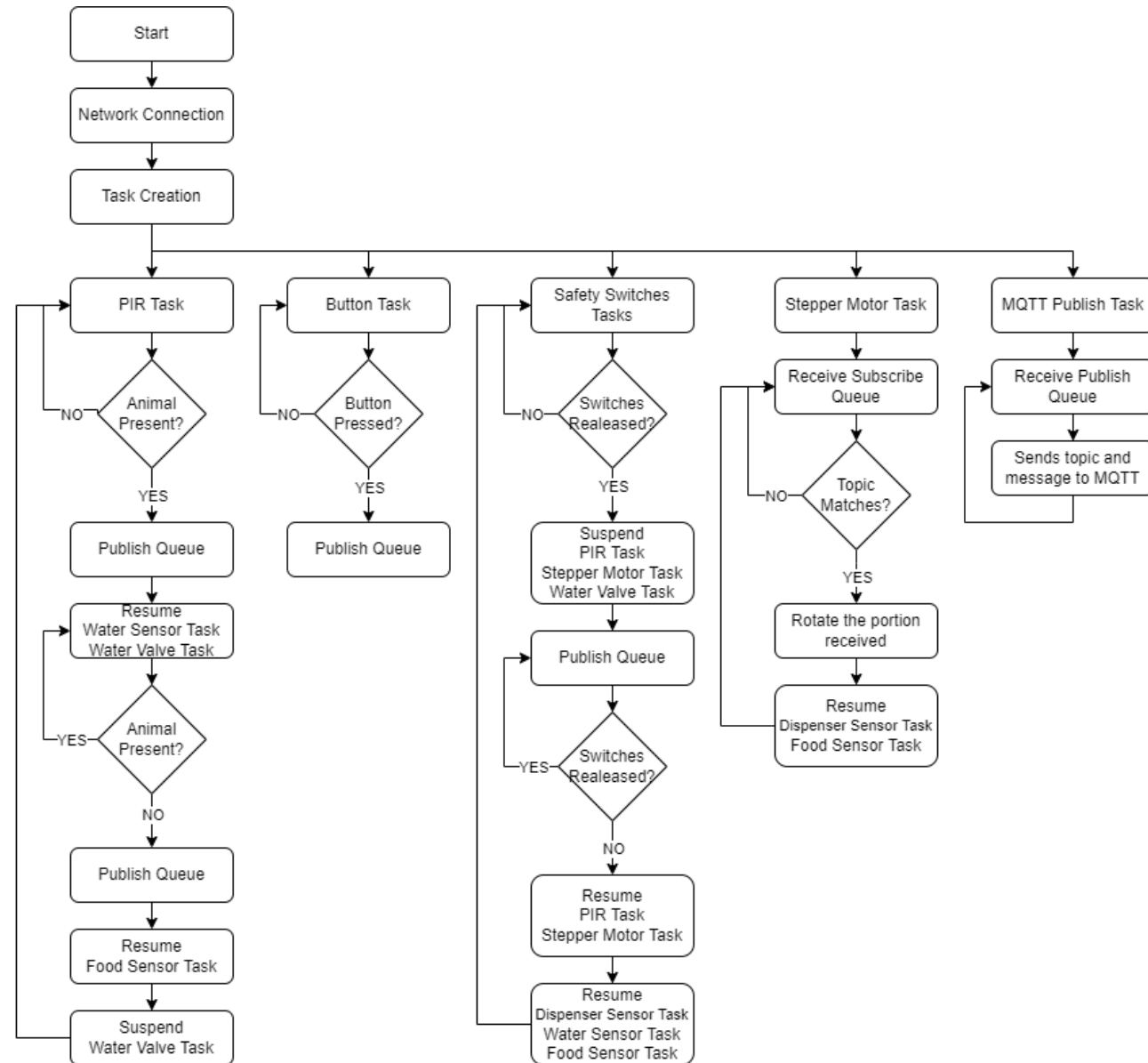
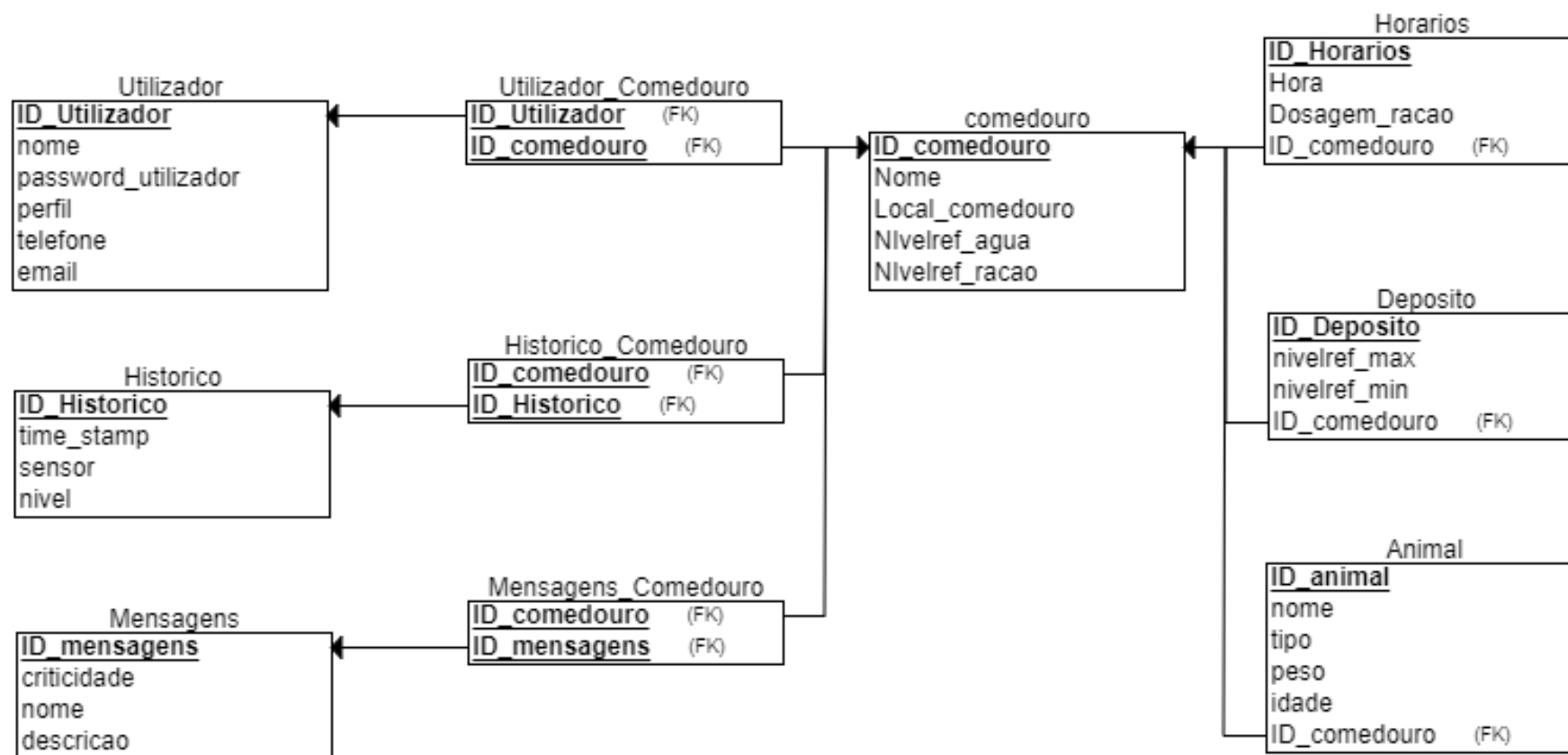


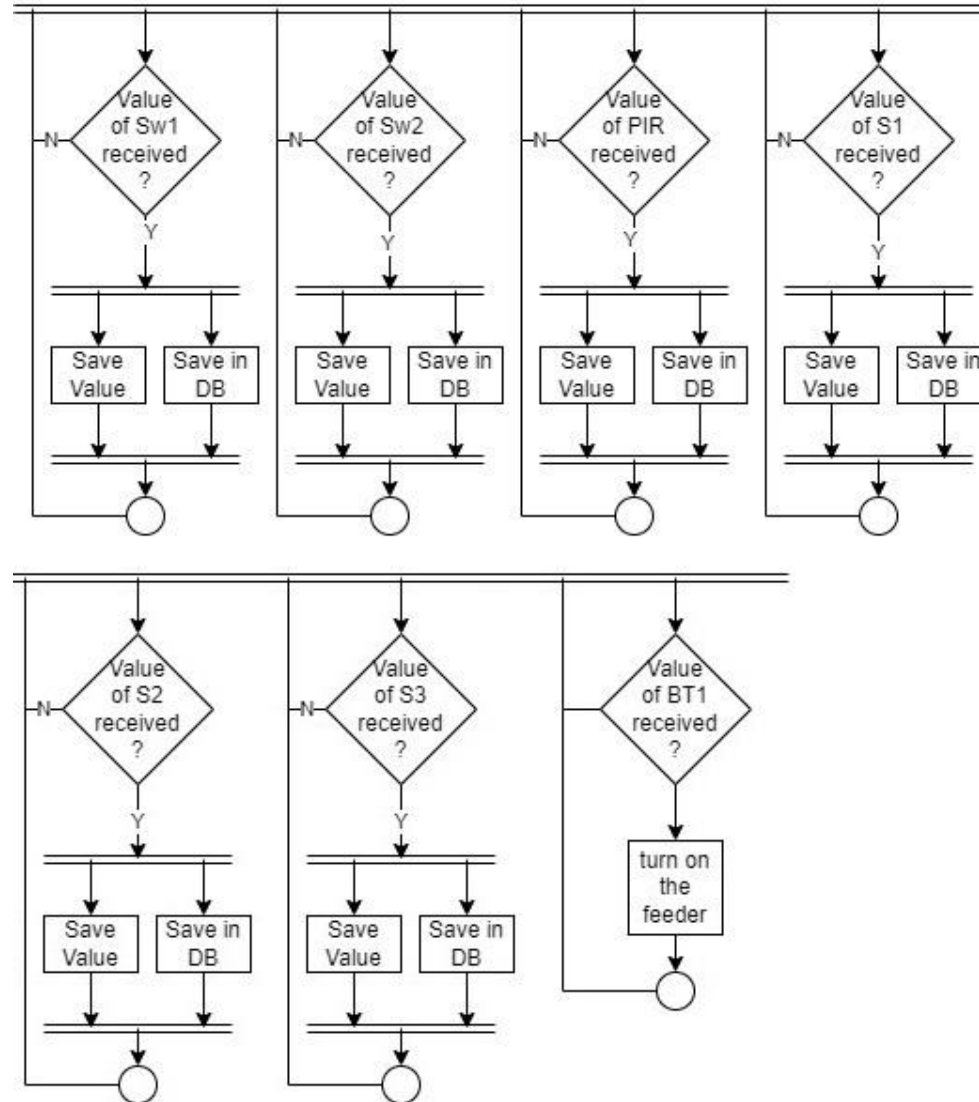
Diagrama do Firmware



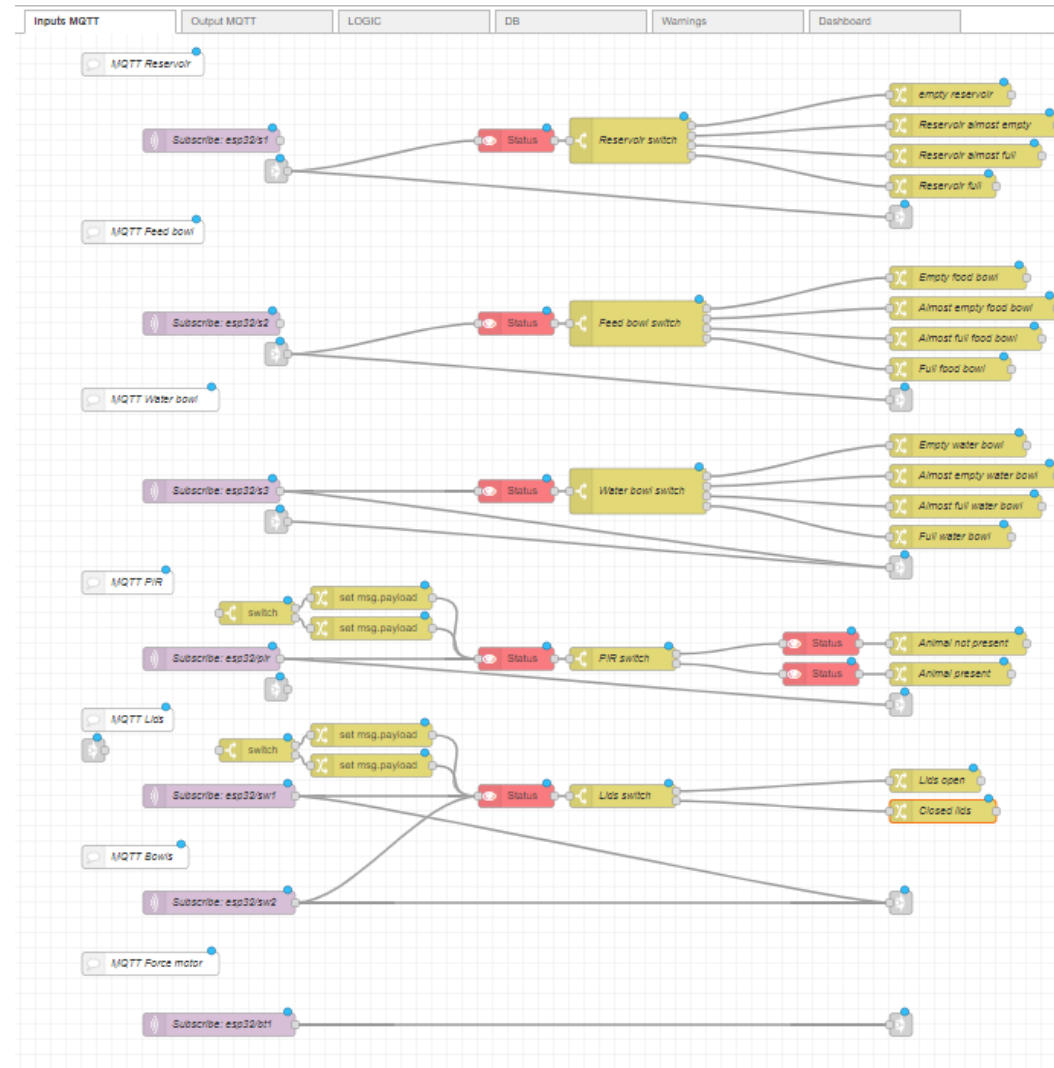
Base de Dados - MR



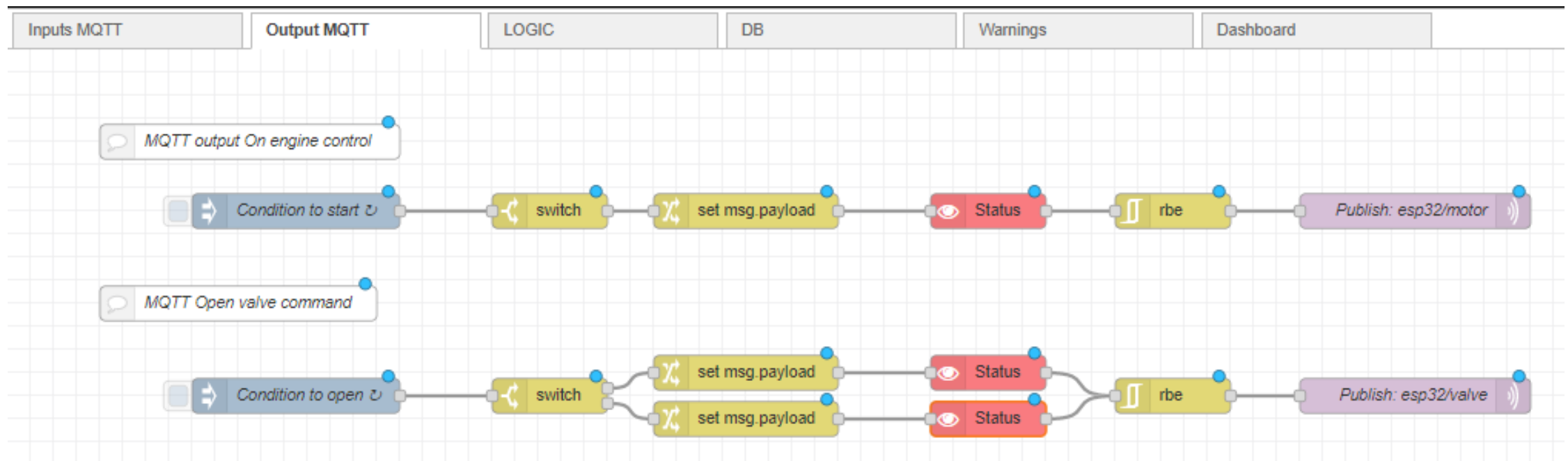
Node-RED



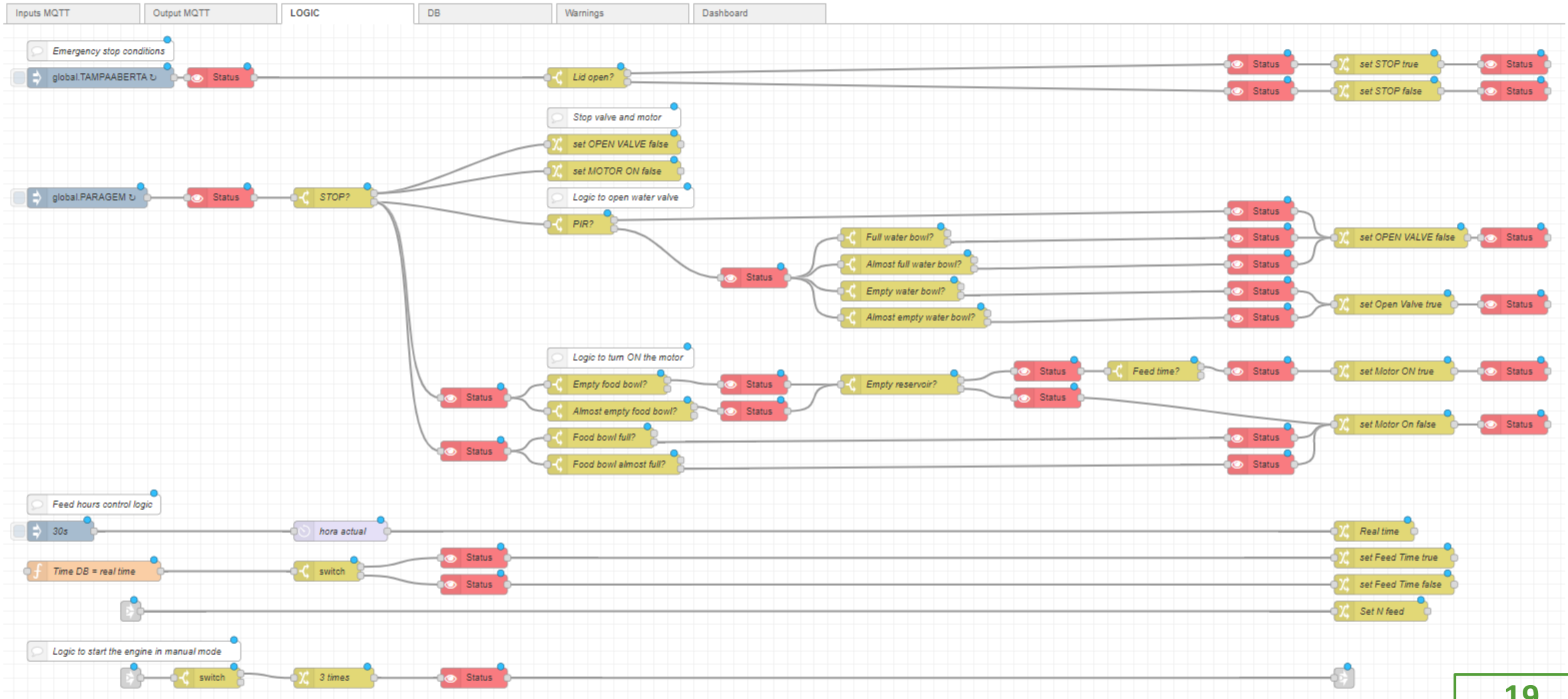
Node-RED (Inputs MQTT)



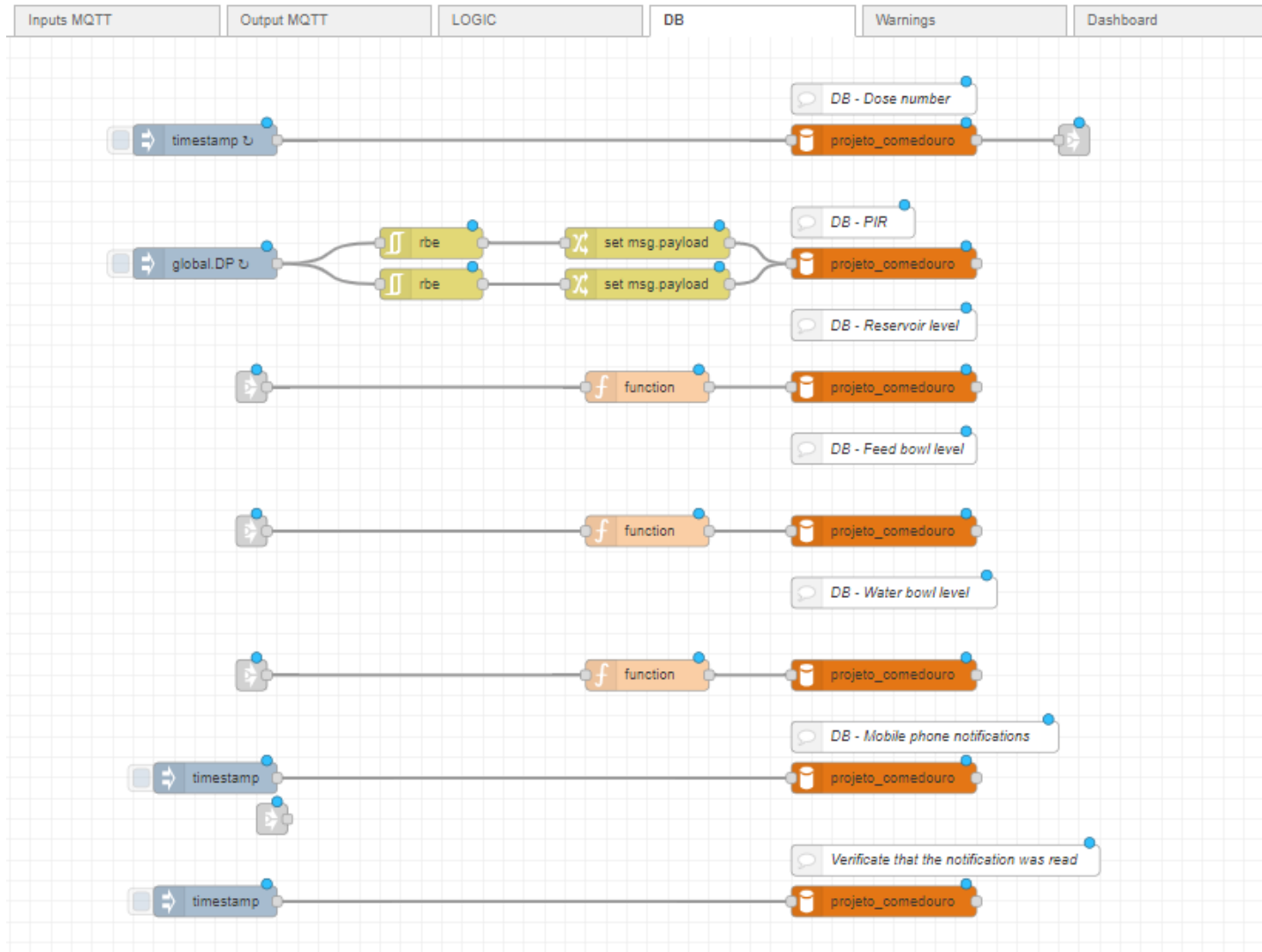
Node-RED (Outputs MQTT)



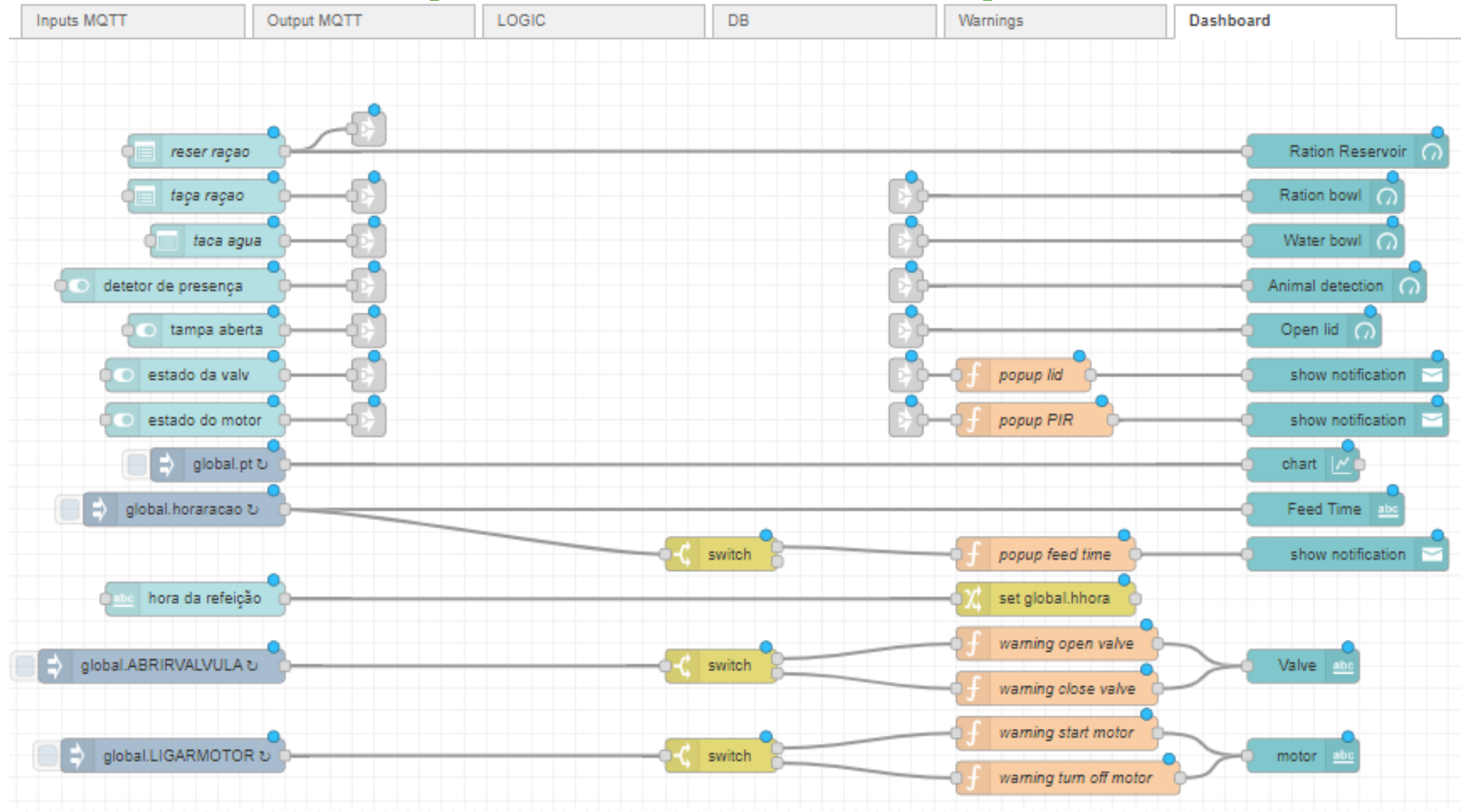
Node-RED (Logic)



Node-RED (Base de Dados)



Node-RED (Dashboard)

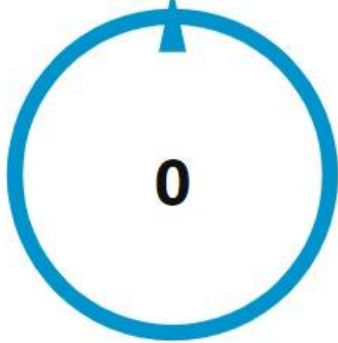


Node-RED (Dashboard Cockpit)

≡ Info

NOTICE - ANIMAL DETECTION

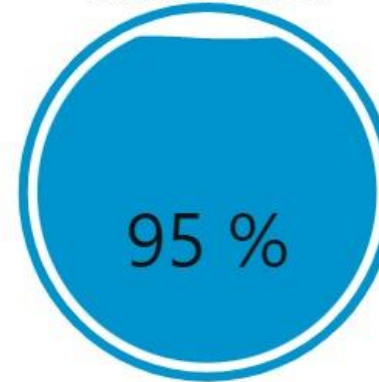
Open lid



Animal detection



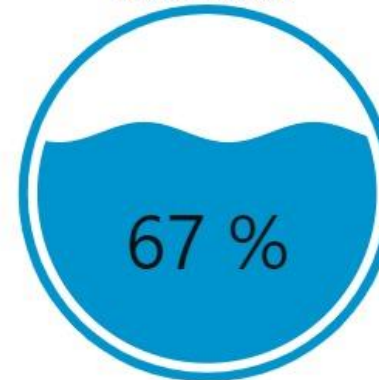
Ration Reservoir



Water bowl



Ration bowl



Aplicação Móvel



- Receber notificações e avisos dos níveis das tigelas, reservatórios e comportamentos irregulares dos animais;
- Visualizar dados com o histórico de refeições;
- Agendar as refeições do animal de estimação;
- Definir o número de doses em cada refeição



Aplicação Móvel

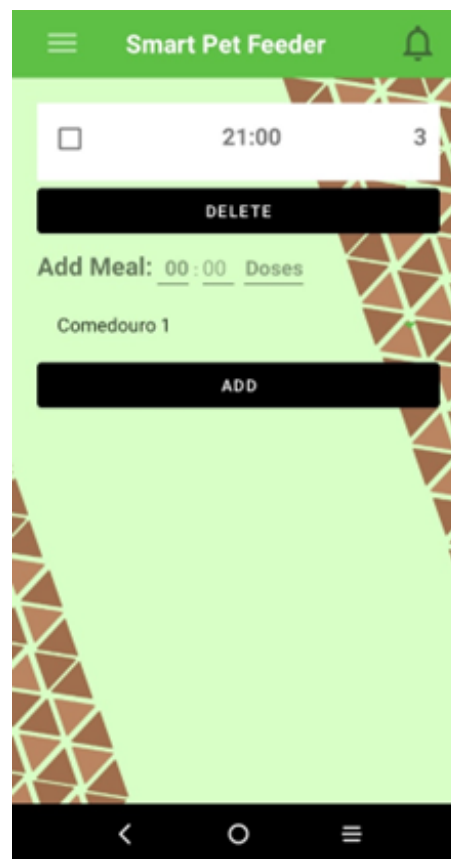
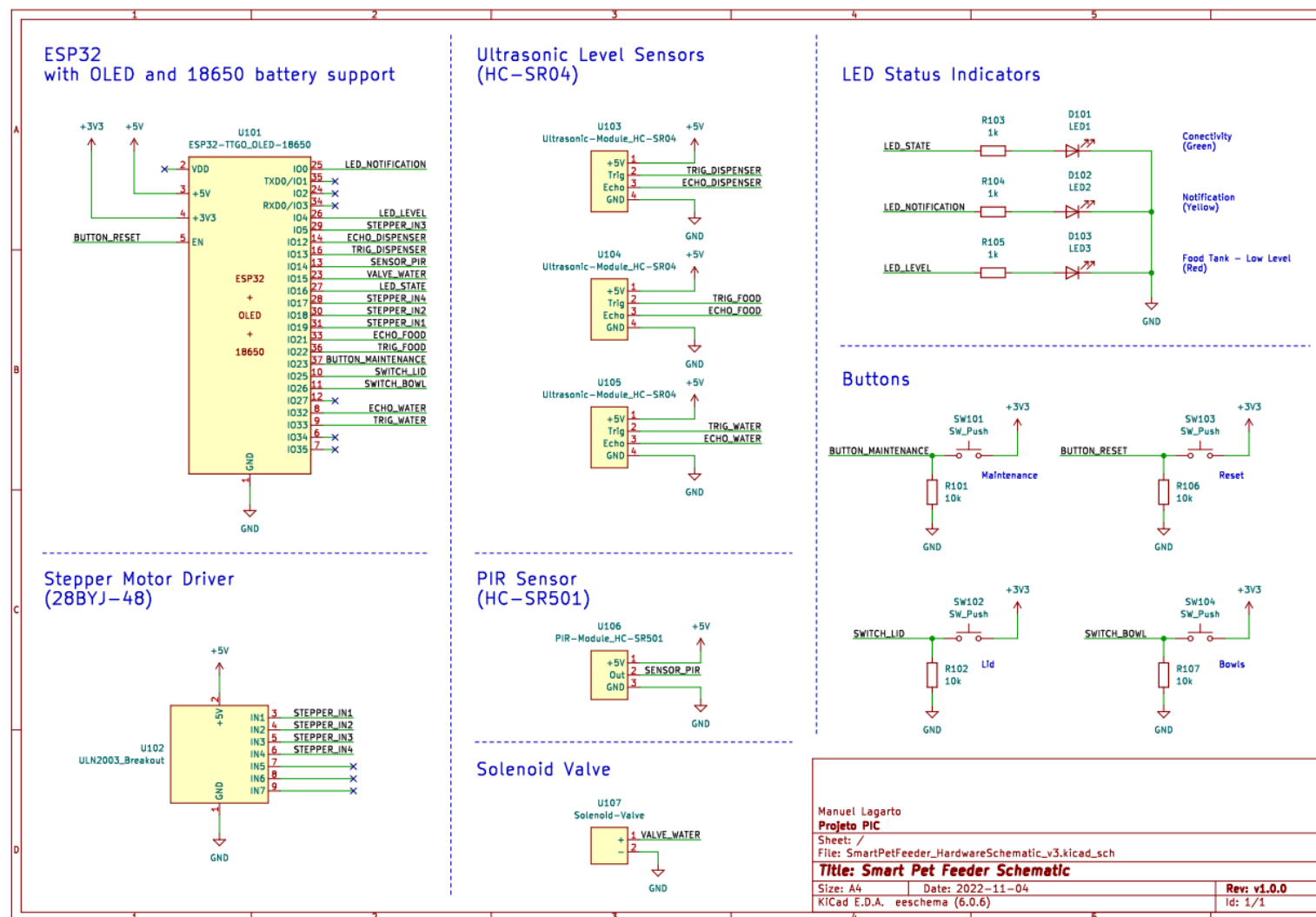


Diagrama Eléctrico



Construção do Protótipo

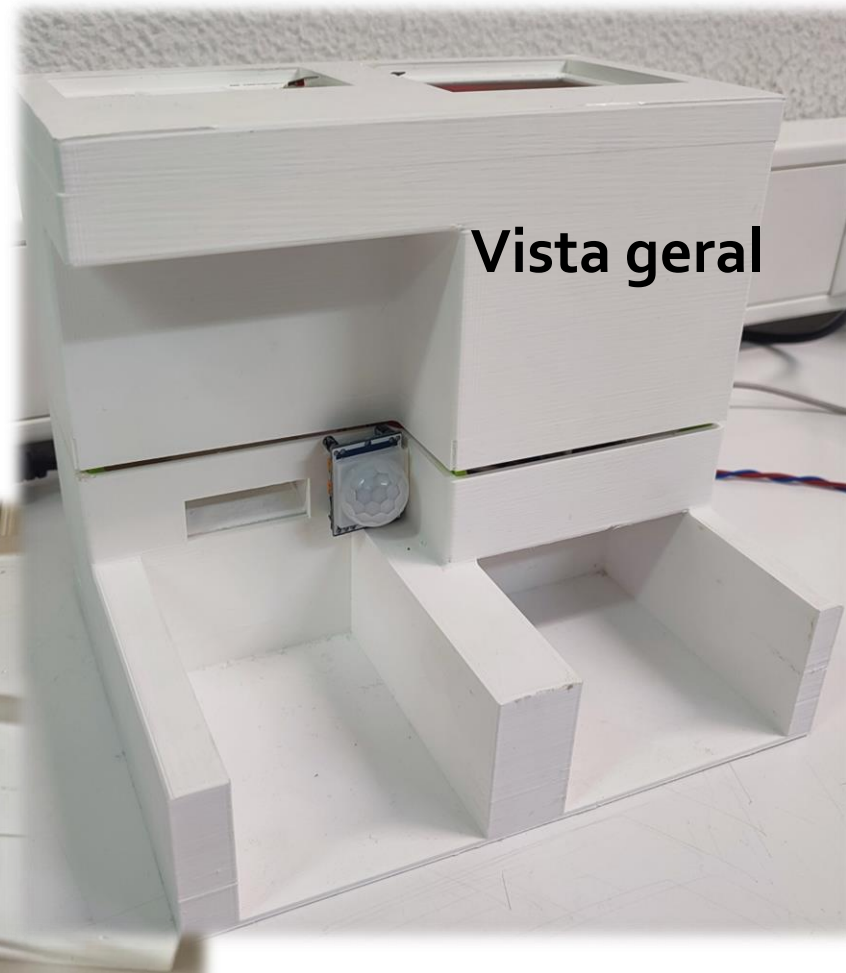
Vista sensor de
presença e nível da
ração



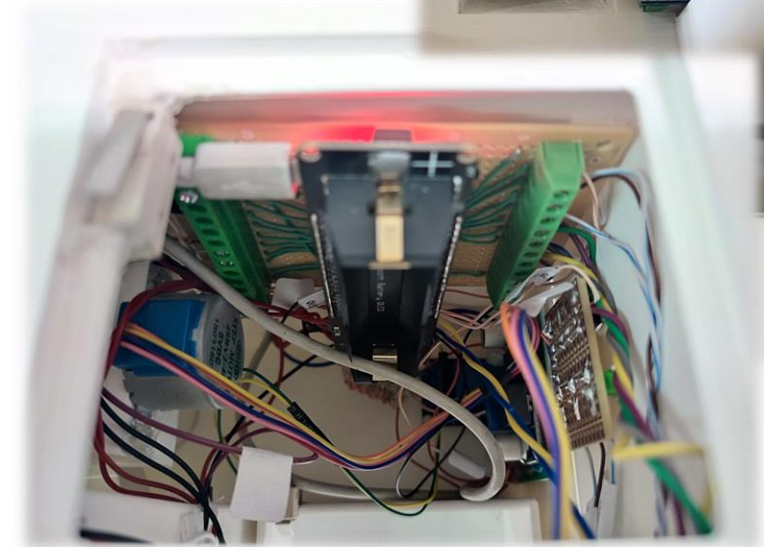
Montagem
dos
indicadores



Vista geral



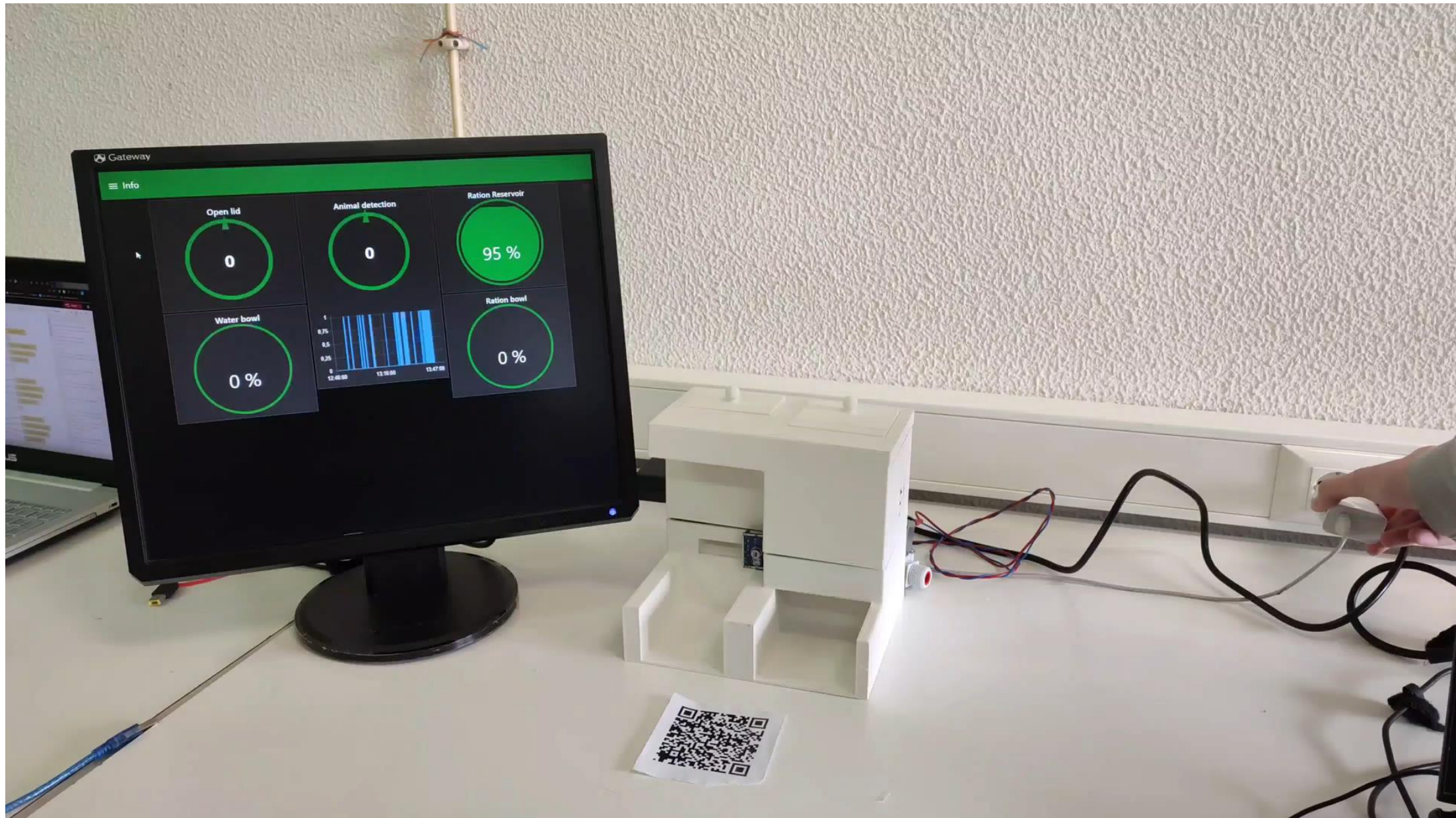
Fornecimento
de água



Montagem da PCB - ESP 32

VÍDEO





QUESTÕES

