AIR-LOCK

The Project:

The project "Air Lock" allows us to unlock a door via hand gesture using a RaspberryPi 4 with 2 ESP 8266 microcontroller, a servo, a gesture sensor, a proximity sensor, relay, RGB led and a button.

The system was implemented with Arduino IDE, Node-RED and the MQTT protocol that facilitates connection between all devices.

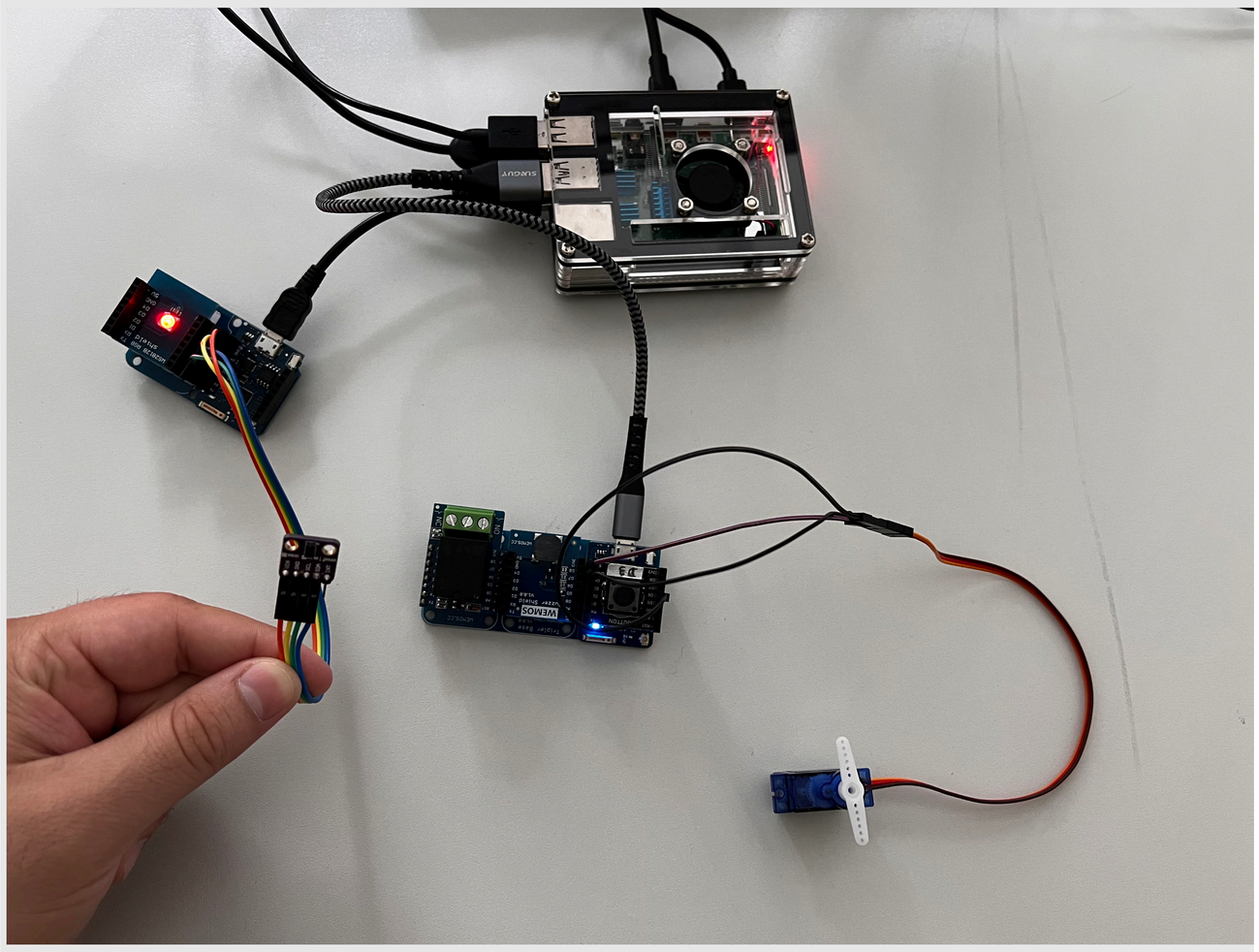

Fig. 1: RaspberryPi4+Hardware

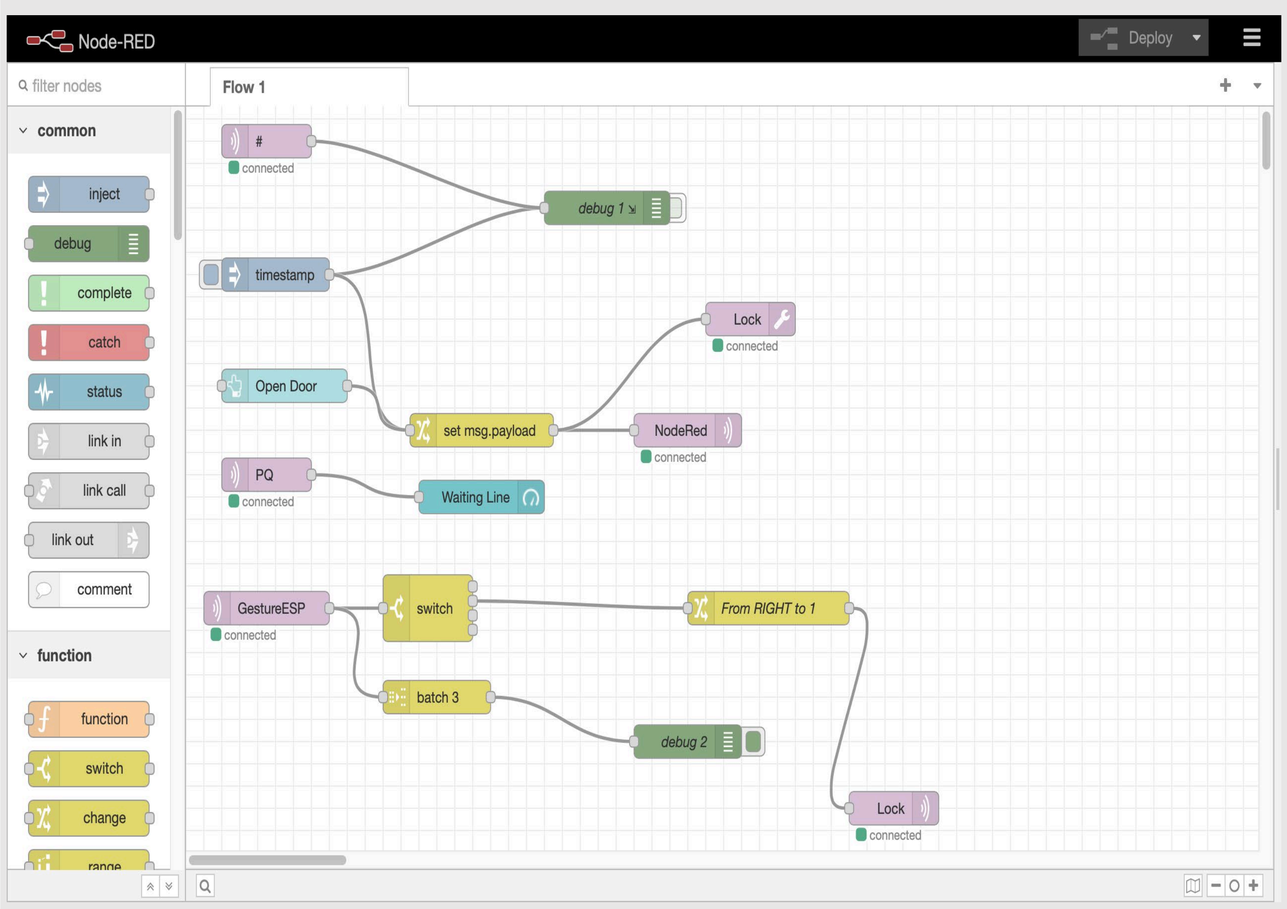

Fig. 2: Node-RED

Goal:

The goal of this project is to realize a touchless door opening that is controlled by simple hand gestures to be implemented in secured facilities, where it mainly functions as a human verification method and act as future proof from Robots entering the building. Improving hygiene comes as an advantage.

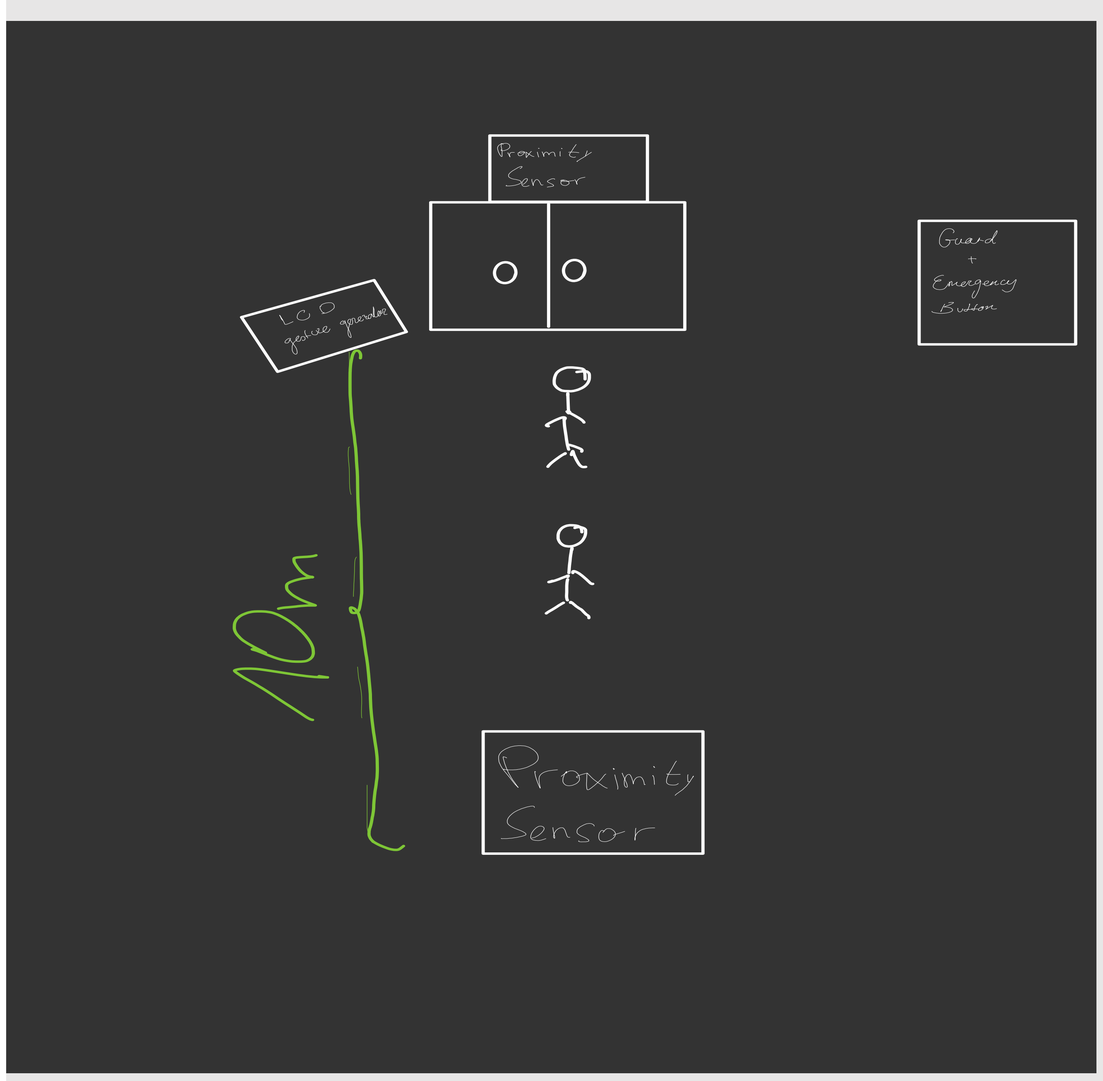

Fig. 3: Sketch of Project

The result:

The result of the project is a functional system that reliably responds to various hand gestures and triggers the door opening. The combination of hardware and Node-RED provides a flexible and scalable solution.

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