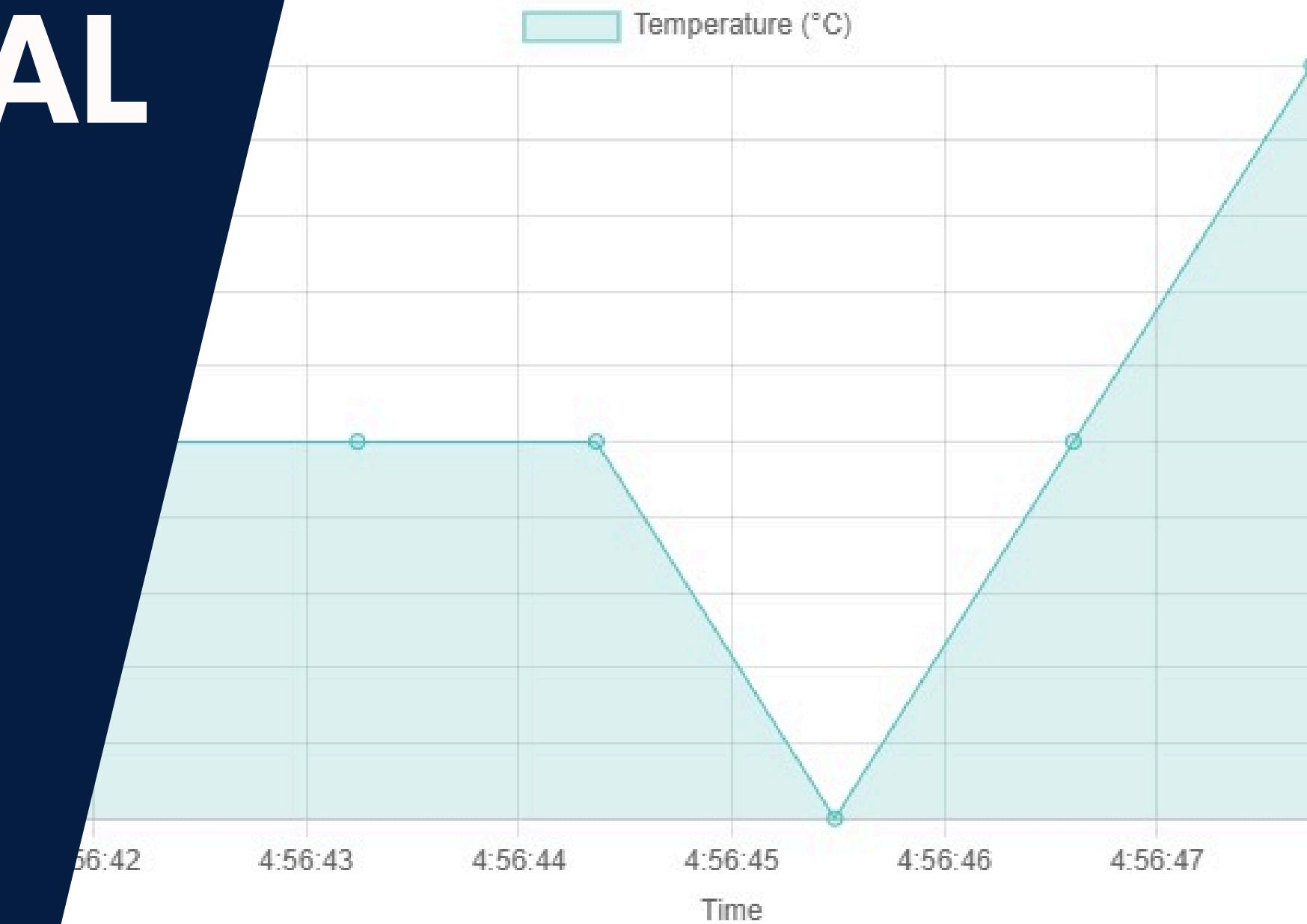


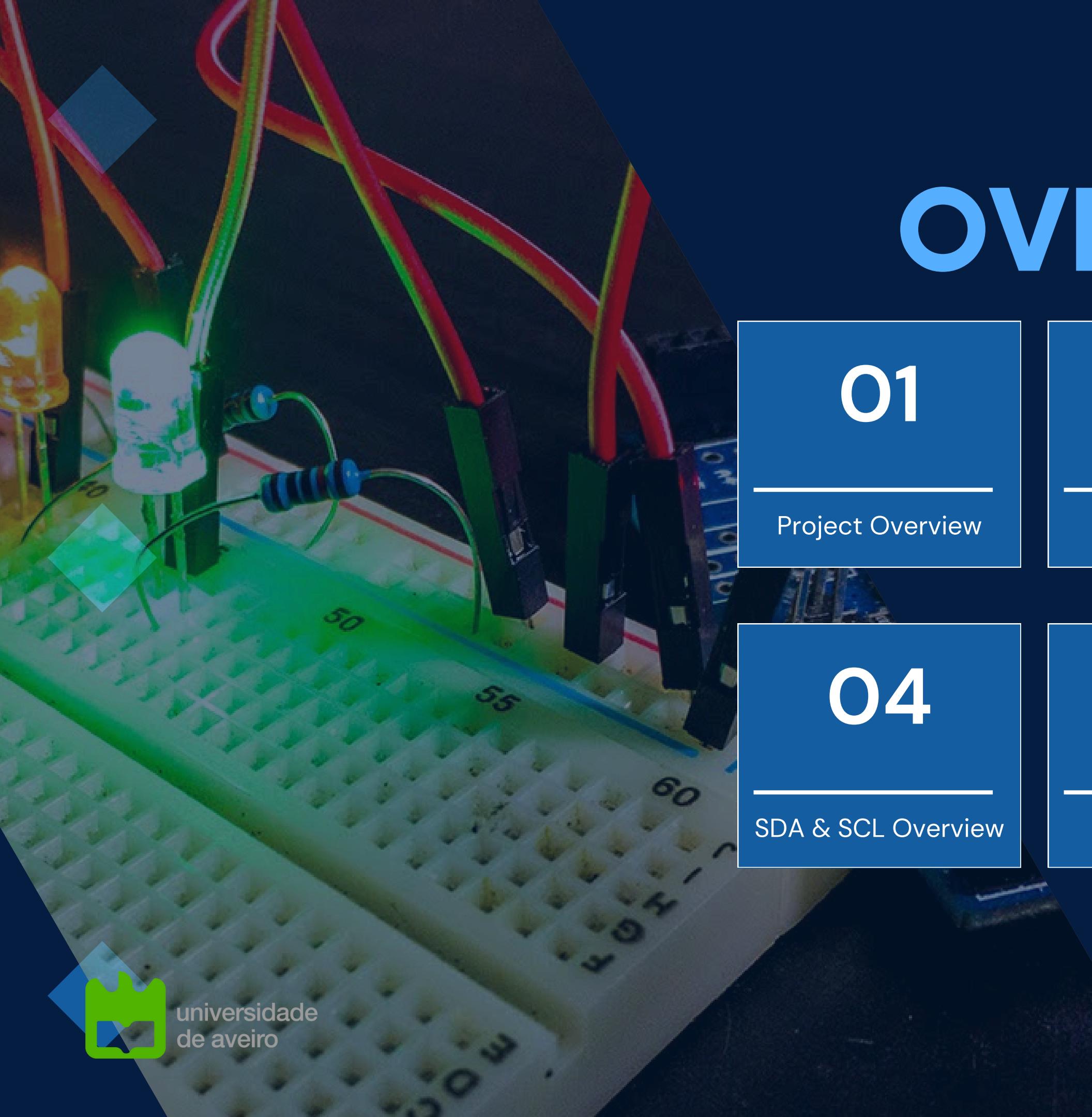
SMART ENVIRONMENTAL MONITORING TRACKING SYSTEM

Work done by:
Bernardo Marçal (103236)
Sebastian Gonzalez (103690)

Temperature Monitor

Current Temperature: 29°C





OVERVIEW

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Project Overview

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Architecture

03

Implementation

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SDA & SCL Overview

05

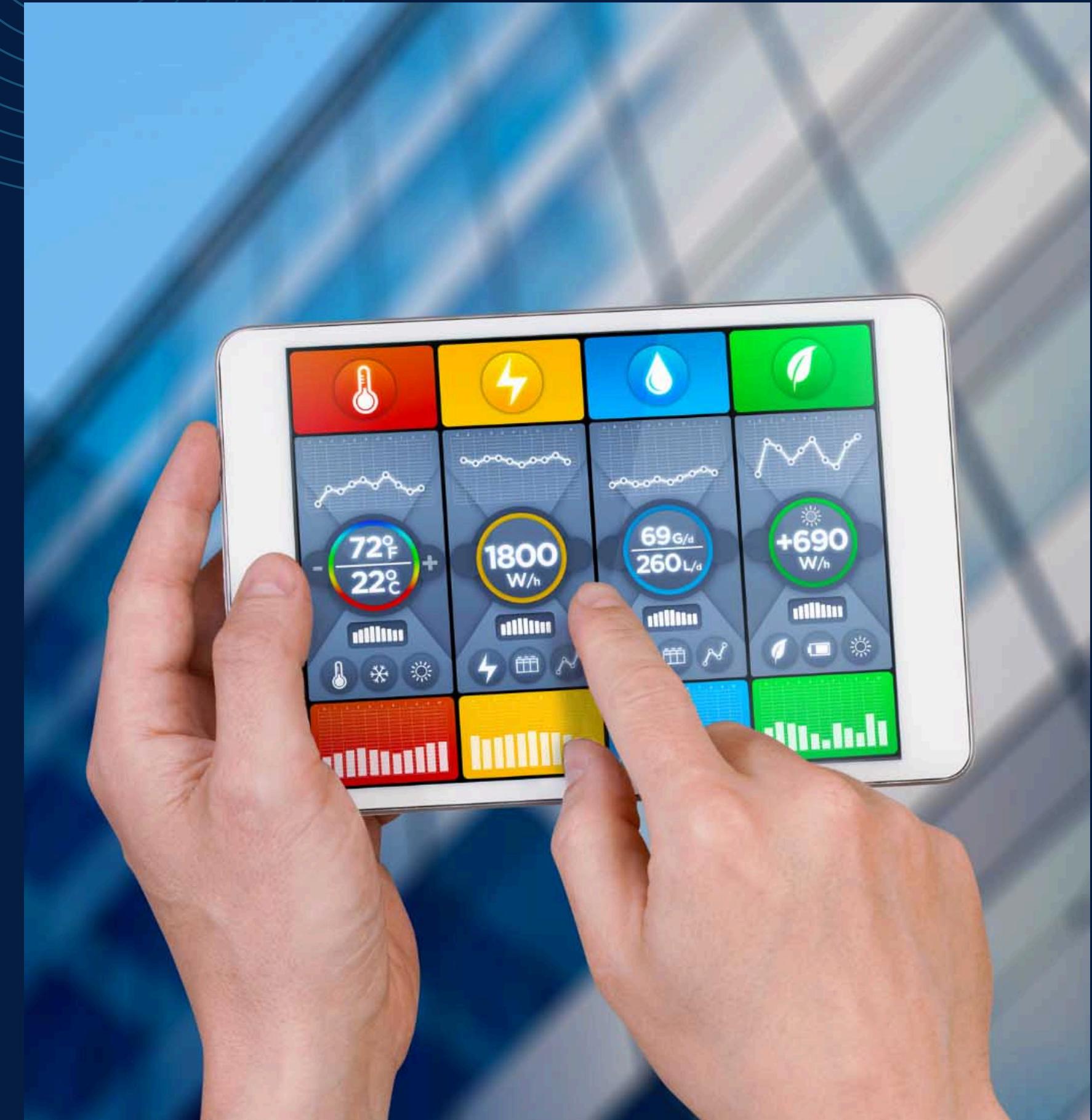
Live Demo

06

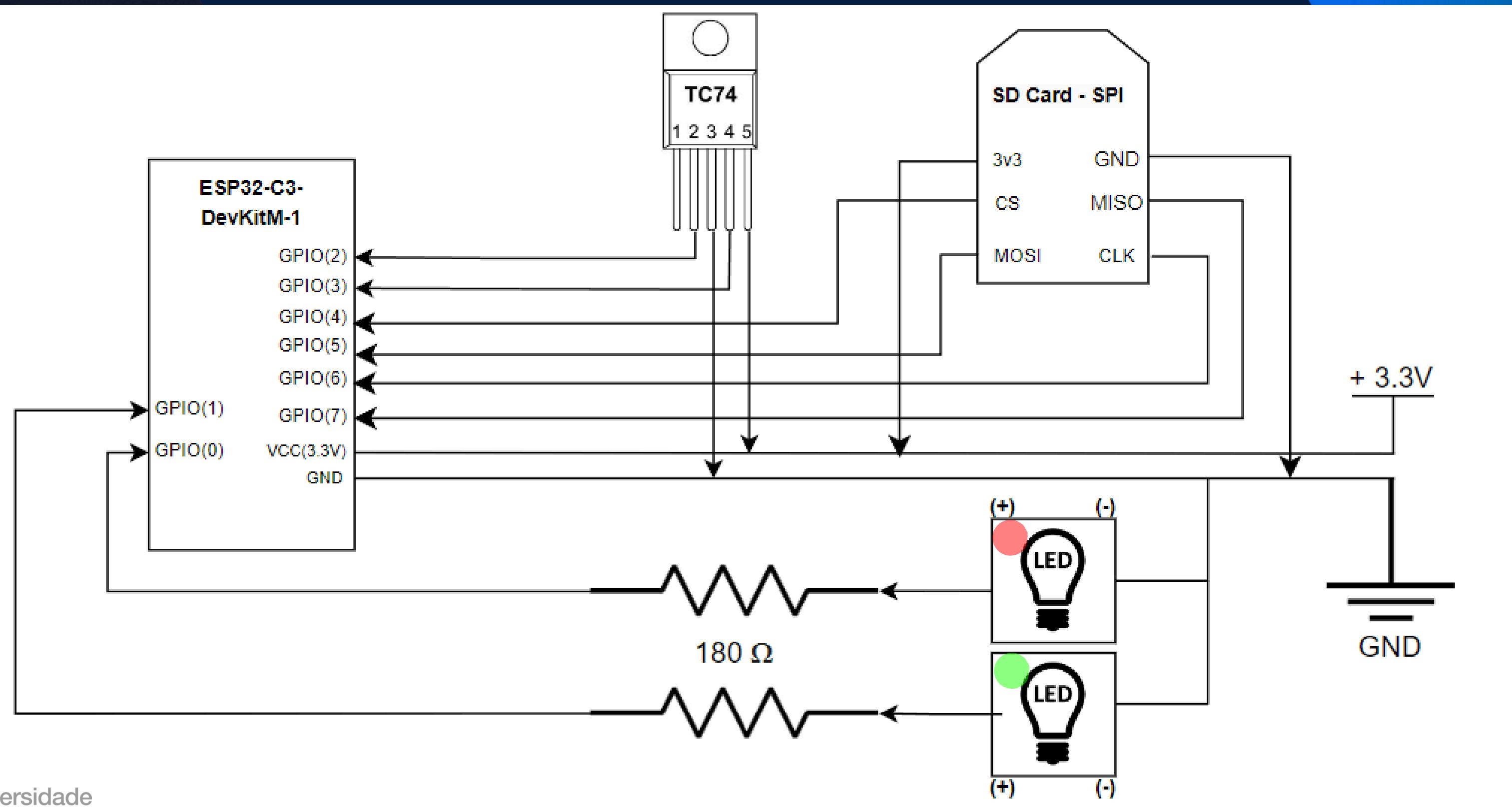
Future Work

Main Objective

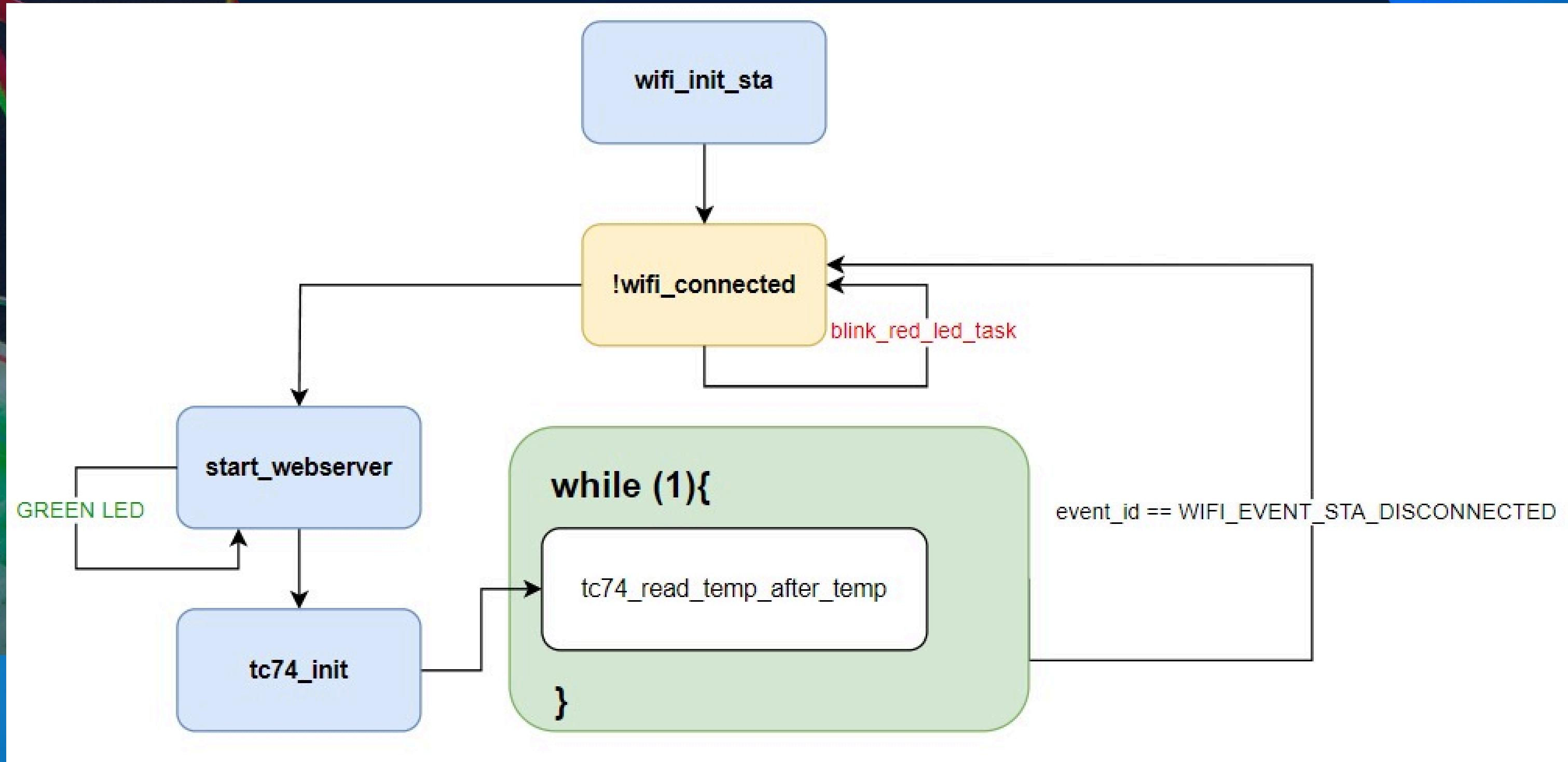
- Our objective is to develop a functional and responsive frontend for real-time monitoring using data from the TC-74 and BME280 sensors. Utilizing the ESP32, the system will acquire and transmit sensor data to the frontend, ensuring continuous, internet-connected real-time display. This is just a basic version, and we aim to add more features and enhancements in future work.



HARDWARE ARCHITECTURE

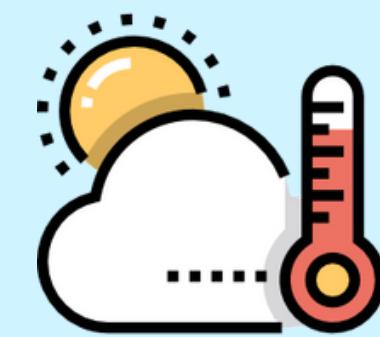


SOFTWARE ARCHITECTURE



IMPLEMENTED FEATURES

These are the top 3 main features we implemented in our project involving the ESP32-C3



TC-74

We used the TC-74 to retrieve the temperature data of the environment we are on, displaying it on the FrontEnd to make it easier for the user



SD Card Reader

We implemented a SD Card Reader to save the daily data that is retrieved from the TC-74 into the FrontEnd



Wi-Fi Connection

With this Wi-Fi connection we built a FrontEnd which enables us to watch the live Temperature of the place your in

TC-74_READ_TEMP_AFTER_TEMP ANALYSIS



Receive Byte Format

S	Address	RD	ACK	Data	NACK	P
7 Bits			8 Bits			

Temperature: 34

Temperature: 34

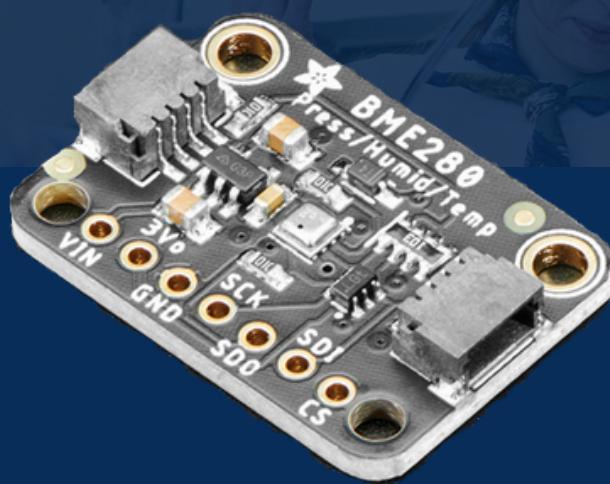
Temperature: 34





LIVE DEMO

FUTURE WORK



BME280 Implementation

Currently, we use the TC-74 sensor for temperature monitoring. We plan to upgrade to the BME280 sensor, which also measures pressure and humidity.

This will provide more comprehensive data for advanced applications like weather forecasting and air quality monitoring.



SD Card Implementation

We unfortunately couldn't implement the SD Card the way we wanted to, after a lot of tries we couldn't make a successful approach at implementing it, but surely is something we want to implement, to ease the way to view and to save the Temperatures recorded through the day

Thank you for listening !!

Any questions ?
Feel free to ask

