# Team Gelzen and Sam

# Design Philosophy

Since our project was going to revolve around working with wireless communication, we first had to decide on a protocol for this requirement. We decided on going with the WiFi protocol as it is easier than the other protocols and can have a lot of functionality if integrated with internet and is able to easily extend with more devices. Additionally, Wifi is also versatile and has a lot of protocol for communication within it and we ultimately decided to use the HTTP protocol as that is a very simple yet effective protocol. Outside of communication, we just tried to follow the project requirements and specification to the best of our ability.

As for our algorithms, we didn’t really use algorithm from other sources other than the basic workings of our HTTP protocols, and readings from the DHT sensor. And although we didn’t really have a complex algorithm that we implemented, I was proud of doing the communication algorithm. It involved a lot of debugging throughout the whole production since it involves a lot of C pointers and conversion between a collection of bytes into something like floats, and integer. This project really helped me improve my understanding of C language as I used a lot of C features I don’t have a lot of experience on like preprocessor macros, use of structs and pointers manipulation.

# Team assignments and report

We organized the team task based on the strengths and weaknesses of our team. Gelzen did the communication part of the code (80%) as he has more grasp and basic background of the HTTP protocol in general. Throughout the whole production time he has both the ESP devices and an Arduino uno so he can test and do some organization of the code structure. While Sam focused on trying to implement all the sensor readings and their calibration (20%) as he brought with him all the sensor devices and the Arduino mega for test. As for the system setup, Sam has more background with circuit development and different the component we needed, so he took on about 75% of the work for wiring the sensor to the system and connecting everything that is on the peripheral side.

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