Historical Environmental Tracker

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Project Description

This project will extend some aspects of project 2, the temperature and humidity sensor, and add additional sensors including barometric pressure, light, cO2, TVOC, and altitude sensors to create a device that records environmental data and sends it to a web server, most likely something like an AWS EC2 instance. This would be done on an ESP32 board running Arduino code. This data in turn would be queried by an Android app that would display the data based on user preferences, such as the time to be queried, and the specific sensors, whether looking at the data historically or currently.

Design Approach

The work will be split up between different aspects of the Android application, the hardware code, and the Web instance. One person would be responsible for the hardware code, while another person would handle the main structure of the Android application, and any additional work on the application would be shared.

In order to demonstrate the success of the app, we would show historical data gathered over the course of the creation of the project, as well as show the data being manipulated and a “new” environment of the classroom being added and showcased in the Android application.

If time becomes a constraint, we will have to limit the number of sensors used, the number of ways to view the data, and/or the amount of analysis tools available to the user of the Android application.

Milestone

We will need to physically have all of the Hardware by 3/10/2022.
We should be able to send data to an EC2 server with less than a day of work editing our Project2 code. We should be able to start sending data by Sunday.
We would like to demonstrate some viewing of the historical data with the temperature and humidity by the time we get our new hardware.