MEMORANDUM

TO: Professor Healy
FROM: *Zak Rowland*
DATE: 1-9-20
SUBJECT: "Weekly Status Memo"

Problems

Our primary concern is learning how to use the ESP-32 WiFi Arduino to either host a website or connect to a locally hosted website to retrieve data. There are quite a few examples included in the ESP-32 library which will help us get started, but naturally changes are required to fit our needs. Originally, Hayden and I were going to bring the Arduinos home for testing, however we decided it would be best for James to take the one I was using so he is able to test his website and code.

Progress

All the parts we ordered arrived during the break, so we began testing this week. I wrote some simple code to test the functionality of the passive infrared sensors which consisted of reading the digital signal the sensor provides, printing either a '1' or '0' to the terminal for a high or low level respectively, and moving different objects in front of the sensor to observe the sensitivity. These sensors are quite sensitive and cannot be adjusted, but they will work just fine for our needs. Hayden wrote code and built a circuit to test the serial-in to parallel-out shift registers with LEDs which work well. The ShiftIn and ShiftOut functions in the Arduino IDE makes using the shift registers much easier. James continued learning how to build the website and began testing with some of the example code included in the ESP-32 library. He discovered that in order to host a website on the Arduino, it must be connected to a network. Our first choice is to use one Arduino to generate a network and the other Arduino to connect to this network and host the website. However, if that doesn't work, we can always use a router to generate a network instead. James' friend, who has experience in web development, showed him how to use Visual Studio to build a website which James is familiar with. Beto didn't make it to this lab meeting due to sickness, so he didn't contribute this week.

Discussion

Since ESP-32 WiFi functionality is new to all group members, we need to discuss how we can all help make progress to prevent James from being overwhelmed. GitLab will allow us to easily collaborate on code which is a great help.

Next steps

We need to make some substantial progress on the WiFi functionality, so the next step is learning how to host the website so we can begin integrating the different modules together. Since interfacing with the shift registers and infrared sensors isn't as difficult, the team will help James whenever possible. I also need to confirm that the parallel-in to serial-out shift registers function as intended with 8 of the sensors connected.