Fish Tank Monitor Week 17 Updates

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Dear Project Partner,

Since our last update, our team has made considerable progress in the development of our fish tank monitor. In the programming sector of the project, the functions dedicated to controlling the temperature sensor and outputting the resulting data to the screen are complete. It is capable of outputting temperature in both Celsius and Fahrenheit and this can be selected by the user. Next, the functions dedicated to interpreting data produced with the color sensor are complete. The color sensor now accurately detects what color is in front of it and sends the resulting color data to our screen for outputting on the screen. This data can then be interpreted to determine the parameter levels of the water in the fish tank. These functions must now undergo testing to ensure their reliability and accuracy with such a small area of color which is read on the test strips. Lastly, we have been working on the development of the user interface. This entails building the pages and displaying them on the screen. The difficulty of this portion of the code comes from placement of objects on the screen and needing certain values to be displayed across all pages of the system, such as the date and time. Solving these problems will allow the user interface's design to be easier to implement and is a high priority at the moment.

As far as the printed circuit board goes, everything is reaching its final stages of development. The circuit design has been finalized, and the board layout is nearing completion. Additionally, the first iteration of the device enclosure has been completed and will be iterated upon in the coming weeks. This initial design used 2 large thumb screws to secure the enclosure to the fish tank wall and was mostly a proof of concept. Moving forward we will reference the PCB daughter board size to attach the screen inside of the enclosure. Holes will also be added to facilitate the I/O characteristics of wiring.

For the actual mechanical testing methodology we have nailed down how we plan on doing testing of the individual testing strips. At this point the strips will be inserted into a rotating cylinder, which will position them under a the water dispensing head that will saturate the testing pads, then the color sensor will record the colors of the testing pads by moving up and down on a screw assembly. This whole assembly will attach to the main enclosure and will hang over the inside of the tank.