Fish Tank Monitor Week 10 Updates

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Dear Project Partner,

In the time since our last update, our team has worked on developing our Fish Tank Monitor's design and has reached a stage where we are comfortably ending our first class term and preparing to move on to the next stage of the project. We have finalized our blocks and requirements and used these to develop our project further. These have allowed us to align ourselves better with the goals of the Fish Tank Monitor and avoid extraneous work. These requirements will remain the same throughout the rest of the project's development.

We have selected the parts that we will be using for the project's development, including the color sensor, temperature sensor, motor, and peristaltic pump. We have now ordered these parts and await their delivery to begin development and testing. As we have selected these parts, we have been able to begin work with both CAD and programming. The programming has been split into a variety of sections depending on the necessary functionality and the CAD has been split into sections based on the internal components. With the development of the programming for the device, we have created a user interface that will be programmed into the device. This interface has been tested and improved based on feedback received by users. We have decided to attempt to 3-D print as many of our parts as possible. Due to the risk of dangerous materials impacting the life inside of the aquarium, we will seek aquarium-safe materials to 3-D print with or coat the parts with aquarium-safe solutions. This way, we can avoid corroded materials over time.

Our group has spoken with our professors regarding market research and learned what our requirements for that will be. Moving forward, we will conduct research through online platforms, user studies, and interviews with aquarium hobbyists. Along with this, we will continue conducting research on the usability of our device through these same methods.

We have selected connection protocols for the screen, motors, and sensors. Specifically, we have decided to use the I2C protocol throughout our system due to its commonality and usefulness with multiple components.

Lastly, we have continued work on solving the problem of how test strips will be deposited into the system, used by the system, and discarded. This module has been the most challenging, but we now have a general drawing and plan for the system's handling of the test strips.

We continue to meet weekly and rely on our task list to remain on track with our goals. Each week we follow the same meeting structure to remain on task and have been successful thus far with each meeting providing positive and necessary guidance for the following week of work.